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Effects of ethical context and Machiavellianism on attitudes toward earnings management in China

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Abstract

Purpose *– The purpose of this study is to investigate the effects of Chinese industry accountants' perceptions of the ethical context in their organization and Machiavellianism on attitudes toward earnings management.*

Design/methodology/approach *– The research is based on a survey of professional accountants employed by companies in Mainland China.*

Findings *– The results indicate that perceptions of a strong organizational emphasis on serving the public interest (benevolent/cosmopolitan climate) significantly reduced professional accountants' willingness to condone accounting earnings management. Professionally certified accountants also judged accounting earnings management more harshly. Consistent with our expectations, high Machiavellians judged earnings management more leniently, although this effect was only marginally significant in the case of accounting earnings management. In contrast to prior studies of earnings management in the USA, the participants judged accounting earnings management more leniently, but judged operating earnings management more harshly.*

Originality/value *– This is the first study to document that an organizational emphasis on serving the public interest can restrain aggressive behavior among industry accountants. Claims of serving the public interest in accounting have traditionally focused on the role of the independent auditor in protecting the public from misleading financial reporting. The results indicate that appeals to public interest obligations also have resonance for professional accountants in industry. The fact that certified accountants were less tolerant of accounting earnings management also has important implications, demonstrating the practical value of professional certification programs and their associated training and socialization processes. The contrast observed between the ethical judgments of our Chinese participants and US accountants surveyed in previous studies raises important questions for further research.*

Keywords

Earnings, Ethics, Accountants, China

1. INTRODUCTION

This study examines the effects of organizational ethical context and Machiavellianism on

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attitudes toward earnings management among industry accountants in Mainland China. Earnings management has been a great concern for the accounting profession for decades, and many researchers have studied earnings management from a behavioral perspective in western cultures (Merchant and Rockness, 1994; Fischer and Rosenzweig, 1995; Kaplan, 2001a, b; Elias, 2002, 2004). However, no prior study has investigated attitudes toward earnings management in China. Many observers argue that unethical behavior has become systemic in the Chinese business community (Tam, 2002; Snell and Tseng, 2002; Wang, 2003). Thus, there is clearly a need to obtain a better understanding of attitudes toward earnings management in this context.

Prior studies have also not addressed the effects of multidimensional measures of ethical context on attitudes toward earnings management. Studies in business ethics demonstrate that the ethical context in organizations significantly impacts ethical decisions (Trevin˜o et al., 1998; Parboteeah et al., 2005). In this study, we simultaneously examine the effects of two measures of organizational ethical context: ethical climate and ethical culture. The ethical climate construct developed by Victor and Cullen (1988, 1987) has been influential in the business ethics literature, and employee perceptions of the ethical climate in their organization have been found to predict dysfunctional behavior (Martin and Cullen, 2006). Owing to its explicit acknowledgement of the importance of serving the public interest and upholding professional rules and standards, we felt that the ethical climate construct had clear relevance for professional accountants' attitudes toward ethical issues. We also test the effects of the Trevin˜o et al. (1998) measure of organizational ethical culture on earnings management attitudes. This construct includes factors such as the overall ethical environment in an organization and rewards for ethical behavior, which are also potentially relevant to decisions regarding earnings management.

In addition to the effects of organizational ethical context, we examine the impact of Machiavellianism on attitudes toward earnings management. Machiavellianism is a measure of the general propensity for manipulative or deceptive behavior (Christie and Geis, 1970); thus, we felt that it also had clear relevance for decisions regarding the intentional manipulation of reported accounting information. Machiavellianism has been found to be associated with unethical behavior in recent accounting studies (Hartmann and Maas, 2010; Shafer and Simmons, 2008), but its impact on the propensity for earnings management has not previously been tested.

Section 2 reviews the relevant literature and develops our research hypotheses. This is followed by a description of the research method and presentation of the empirical findings. The paper concludes with a discussion of the findings and suggestions for further research.

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2. Literature review and hypothesis development

2.1. Ethical climate

Denison (1996, p. 624) observes that organizational climate is "rooted in the organization's value system"; it represents the organization's social environment which is consciously perceived by organizational members and affects the members' behavior. Ethical climate is a subset of organizational climate, which focuses on the aspect of ethics. According to Victor and Cullen (1988, p. 101), ethical climate can be defined as "[...] the prevailing perceptions of typical organizational practices and procedures that have ethical content". The ethical climate comprises general and pervasive characteristics of organizations, which could affect a broad range of decisions. Ethical climate influences both decision making and subsequent behavior in response to ethical dilemmas (Martin and Cullen, 2006).

In this study, we adopt the widely recognized theoretical model of ethical climate developed by Victor and Cullen (1987, 1988). This theory posits that organizational Ethical context and Machiavellianism 373 ethical climates vary along two primary dimensions: the ethical criteria used for decision making and the locus of analysis or perspective adopted with respect to ethical issues. At the lowest or least sophisticated level of ethical criteria, decisions are driven primarily by egoism or self-interest. At the next level, decision makers are concerned with benevolence or consideration of the interests of others. At the highest level, decisions are guided by principle. The locus of analysis varies from the individual to the local to the cosmopolitan or societal level. The crossing of these two dimensions results in nine theoretical climate types, as illustrated in Table I.

Specific climate types will be briefly discussed to clarify the theory. The pursuit of egoism at the individual level results in little concern other than one's own self-interest (cell 1). If the focus is extended beyond merely oneself to the local environment (usually presumed to be the organization in this context), egoism results in a focus on company profitability (cell 2). At the cosmopolitan level, Victor and Cullen (1988, 1987) suggest that egoism will result in a focus on efficiency (cell 3), which is in the best interest of society. The benevolence criterion may similarly be applied at various levels of analysis. The emphasis will be on friendship at the individual level (cell 4); team interest at the local level (cell 5); and on the public interest of collective well-being of society at the cosmopolitan level (cell 6). The pursuit of principle at the individual level results in a focus on one's own personal moral beliefs or standards (cell 7). At the local level, adherence to principles should translate to a focus on following the organization's rules, policies or procedures (cell 8). At the cosmopolitan level, principle may be equated with the laws of society or professional codes of ethics (cell 9).

Although ethical climate is conceptualized as a group-level variable, representing shared

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perceptions and thus implying some degree of consensus among organizational members (Victor and Cullen, 1988, 1987), it consequences are manifested at the individual level. As observed by Martin and Cullen (2006, p. 177), individuals' perceptions of the climate in their organization become "[...] a psychological mechanism through which ethical issues are managed". Such perceptions consequently influence ethical decision making and other individual-level outcomes such as organizational commitment and job satisfaction (Martin and Cullen, 2006; Trevin˜o et al., 1998). Indeed, empirical research on ethical climate often aggregates individual responses across multiple organizations and tests their impact on various outcome measures (Elc¸i and Alpkan, 2009; Shafer and Simmons, 2008; Peterson, 2002; Barnett and Vaicys, 2000; Trevin˜o et al., 1998). This approach, also adopted in this study, implicitly recognizes that the consequences of ethical climate occur through individual psychological mechanisms, and thus propositions regarding the effects of ethical climate on individual outcomes generally should hold true across organizational contexts[1].

Researchers have documented the intuitive propositions that egoistic climates will tend to result in less ethical decisions in organizational contexts, while benevolent and principled climates will result in more ethical decisions (Peterson, 2002; Trevin˜o et al., 1998). Based on their meta-analysis of studies of ethical climate, Martin and Cullen (2006) concluded that egoistic/individual and egoistic/local climates (collectively referred to as instrumental climates) are positively correlated with dysfunctional and unethical employee behavior, while benevolent and principled climates are negatively correlated with such behavior

It seems apparent that these relationships should also hold true in the context of earnings management. In particular, employee perceptions of the extent to which the organization supports the public service (benevolent/cosmopolitan) and professional obligations (principled/cosmopolitan) of accountants would seem to have an important influence on their attitudes toward earnings management, since these obligations explicitly emphasize the importance of fairness and objectivity in financial reporting. In contrast, if employees feel that the organization places a strong emphasis on the pursuit of instrumental concerns such as self-interest and firm profitability, this should clearly encourage short-term manipulations of reported financial results.

Table I.
Theoretical climate types

	Locus of analysis		
	Individual	Local	Cosmopolitan
Ethical criterion			
Egoism	Self-interest (1)	Company profit (2)	Efficiency (3)
Benevolence	Friendship (4)	Team interest (5)	Social responsibility (6)
Principle	Personal morality (7)	Company rules and procedures (8)	Laws and professional codes (9)

Source: Victor and Cullen (1988)

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2.2. Ethical culture

The concept of organizational ethical culture is broadly similar to ethical climate since both are measures of the general ethical environment within an organization. Trevin˜o et al. (1998) developed a conception of ethical culture that is less theoretical than the ethical climate construct, emphasizing formal and informal organizational policies and practices that may encourage ethical or unethical behavior. Included in ethical culture are factors such as the extent to which top managers serve as role models for ethical conduct, the presence of financial incentives that may either encourage or discourage unethical behavior, and expectations for obedience to authority within the organization. Based on a survey of college alumni, Trevin˜o et al. (1998) found that their measure of organizational ethical culture was a stronger predictor of observed unethical behavior in organizations than was ethical climate.

This conception of ethical culture certainly has intuitive appeal as a potential antecedent of attitudes toward earnings management. Factors such as the examples set by top management (the "tone at the top") and incentive structures that may encourage ethical or unethical behavior are explicitly recognized in professional auditing standards as important influences on the risk of financial statement fraud (American Institute of Certified Public Accountants (AICPA), 2008). Accordingly, in addition to the potential effects of ethical climate, we were interested in examining the effects of employee perceptions of organizational ethical culture on their attitudes toward earnings management.

2.3. Earnings management

Following Fischer and Rosenzweig (1995), we define earnings management as actions that serve to manipulate current reported earnings of an organization, but may be detrimental to the organization's long-term economic profitability. Prior research suggests that managers and accountants manipulate earnings for many purposes. Healy (1985) contends that managers manipulate reported earnings through accounting accruals to increase the size of their earnings-based bonuses. Merchant (1990) concluded that a large proportion of profit center managers boost earnings in recessionary years Ethical context and Machiavellianism 375 to meet their budget targets. Hand (1989) found that firms undertake debt-equity swaps to smooth reported earnings and thus conceal fluctuations in actual earnings patterns. Recent market studies have also documented evidence of earnings management in China. By examining a sample of 83 initial public offerings (IPOs) of stock completed in China between 1992 and 1995, Aharony et al. (2000) conclude that Chinese IPO firms intentionally manage their earnings. Similarly, Haw et al. (2005) found that listed companies in China manage earnings to meet regulatory benchmarks[2]. Findings such as these suggest that earnings management is a common phenomenon in China.

Several studies have measured accountants' and managers' perceptions of earnings management

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to obtain a better understanding of this practice from an ethical perspective. Based on interviews with practicing managers, Merchant (1989) developed a survey instrument to assess attitudes toward earnings manipulation. This instrument, which has been used in several accounting studies, makes an a priori distinction between two basic types of earnings management: accounting and operating manipulations. Accounting manipulations involve the falsification of accounting numbers or the deliberate misapplication of accounting principles or methods. In contrast, operating manipulations involve making management decisions for the explicit purpose of achieving short-term earnings targets. Examples of operating manipulations include delaying needed expenditures such as repairs and maintenance until a future accounting period, and accelerating sales by offering liberal payment terms near period-end.

Using the Merchant (1989) instrument, Merchant and Rockness (1994) found that judgments of the acceptability of earnings management varied based on several considerations. For example, year-end manipulations were viewed as less acceptable than quarter-end manipulations, and accounting manipulations were viewed as less acceptable than operating manipulations. Bruns and Merchant (1990), who collected data from 649 managers and accountants using the same instrument, reached similar conclusions. Again using the Merchant (1989) instrument, Fischer and Rosenzweig (1995) surveyed three groups including undergraduate accounting students, MBA students and accounting practitioners. All three groups judged operating earnings management as more acceptable than accounting earnings management.

The results of these studies all point to the general conclusion that the US managers and accountants judge accounting (operating) manipulations toward the unethical (ethical) end of the scale; thus, they tend to dismiss the significance of operating manipulations. The apparent failure to recognize the ethical implications of operating manipulations has been described as "frightening" (Bruns and Merchant, 1990, p. 22) and "ethically troubling" (Rosenzweig and Fischer, 1994, p. 32). It appears that US managers and accountants adopt a rather strict rules oriented approach that leads them to view earnings management as an acceptable practice, provided it does not explicitly violate accounting principles or standards. However, operating manipulations also clearly raise ethical issues, as they often entail boosting short-term earnings at the expense of the long-term interests of stakeholders (Bruns and Merchant, 1990)[3].

Despite the conclusion of several authors that the attitudes of US managers and accountants toward earnings management are troubling, few subsequent studies have attempted to determine the underlying causes of these attitudes. Elias (2002) surveyed a sample of 763 accounting practitioners, faculty and students to examine the relationship between corporate social responsibility, personal moral philosophies and ethical perceptions of earnings management. He found that individuals who believe more MAJ 26,5 376 strongly in corporate social responsibility

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and long-term gains rate earnings management actions as more unethical while individuals who place more emphasis on short-term gains rate them as more ethical.

Elias (2004) appears to be the only prior study to investigate the effects of corporate ethical culture or values on perceptions of earnings management. That study measured corporate ethical values with the five-item scale developed by Hunt et al. (1989), which was designed to measure perceptions of three specific aspects of corporate values:

(1) the extent to which management acts ethically;

(2) the extent to which management is concerned about ethics; and

(3) the extent to which ethical (unethical) behavior is rewarded (punished).

Elias (2004, p. 89) suggested that "accountants employed in organizations with high (low) ethical values will perceive earnings management actions as more unethical (ethical)". The results, based on a survey of CPAs in public accounting, industry and education, partially supported this contention, showing some significant relationships between perceived corporate values and judgments of the morality of earnings management among all groups surveyed. This study extends this line of research to the context of China, and also uses more refined measures of organizational ethical culture. An examination of the Hunt et al. (1989) scale reveals that all the items essentially measure aspects of what Trevin˜o et al. (1998) refer to as the "general ethical environment" in an organization. Thus, it does not consider key aspects of the ethical context such as the extent to which the organizational ethical environment emphasizes serving the public interest and adhering to professional ideals, or organizational expectations for obedience to authority. Accordingly, we employ more comprehensive measures of organizational ethical context in this study.

When the ethical context in an organization is perceived as supportive of ethical behavior and intolerant of unethical behavior, this should influence employees' views of the moral acceptability of questionable actions. For example, if top managers are exemplars of ethical behavior and organizational reward systems encourage ethical behavior this should send a strong message to employees. Similarly, an emphasis in the organization on the public service and professional obligations of accountants should be a strong signal that financial statement manipulations are not considered acceptable. Accountants are socialized to adopt high standards of ethical behavior, and their professional training emphasizes the importance of fair and honest presentation of financial results. If their organization provides a supportive ethical environment, this should reinforce their commitment to professional ideals and lead them to be more critical of earnings manipulations. On the other hand, if accountants find themselves in an environment that encourages unethical behavior, organizational pressures may lead them to rationalize such behavior as morally acceptable. Indeed, case studies of corporate fraud reveal that professional accountants frequently face organizational pressure to manipulate accounting numbers in order to meet earnings targets,

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and often succumb to such pressure (Knapp, 2008). It is also widely recognized that one of the key enablers of accounting fraud is rationalization of the actions by managers and accountants (AICPA, 2008). Such rationalization may take many forms (e.g. "the amounts are small, so no one will really be hurt"), but generally should lead to the conclusion that the moral intensity (Jones, 1991) of the action in question is relatively low and thus the action is ethically acceptable. This discussion leads to H1[4]:

H1. An organizational ethical context that is perceived as more (less) supportive of ethical behavior will lead accountants to judge earnings management as more unethical (ethical).

2.4. Machiavellianism

The Machiavellianism construct was intended to describe individuals with manipulative, cold and calculating personalities and little concern for conventional standards of morality (Christie and Geis, 1970). High Machiavellians have traditionally been viewed as relatively aggressive and possessing a strong desire to pursue "winning" even at the expense of morality or ethics (Geis et al., 1970). An obsession with winning seems particularly likely to predispose high Machiavellians to unethical behavior in competitive business contexts, where "winning" is usually closely related to personal success and it is easy to rationalize unethical actions as being necessary for the well-being or survival of the organization. Indeed, research has documented that high Machiavellians are more prone to unethical behavior across a variety of business settings, including evading income taxes through dishonest reporting (Ghosh and Crain, 1995), misleading potential customers (Ross and Robertson, 2000), cheating on product service guarantees (Wirtz and Kum, 2004) and disregarding intellectual property and privacy rights (Winter et al., 2004).

Recent studies have also recognized the potential negative effects of Machiavellianism on professional accountants' ethical decision making. Wakefield (2008) found that high Machiavellian accountants have more relativistic ethical orientations, implying they are more prone to ethical transgressions. Shafer and Simmons (2008) investigated the impact of Machiavellianism on Hong Kong tax professionals' ethical decisions, finding that high Machs believe less strongly in the importance of corporate ethics and social responsibility and are more likely to condone aggressive tax avoidance schemes. Hartmann and Maas (2010) found that Machiavellianism has significant main effects on business unit controllers' propensity to create budget slack, and that high Machiavellians who are engaged in the management of their unit are more likely to accede to organizational pressures to create slack. The findings of Hartmann and Maas (2010) appear particularly relevant to our study, as they indicate that high Machiavellian industry accountants are more likely to engage in intentional manipulations of accounting reports.

High Machs' inclination toward manipulative tactics is closely related to what Christie and Geis describe as the "cool syndrome", characterized by a detached, opportunistic stance in social

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settings (Gunnthorsdottir et al., 2002; Wilson et al., 1998; Mudrack and Mason, 1995; Vecchio and Sussmann, 1991; Christie and Geis, 1970). As noted by Gunnthorsdottir et al. (2002, p. 56), "high Machs with their cool, rational attitude should be true gamesmen, and better than Lows at going after their short-term self-interest [...]". This reasoning clearly suggests that high Machiavellians will be more likely to judge earnings management as ethically acceptable. Earnings "management" is a prototypically manipulative behavior, a form of gamesmanship that high Machs obsessed with "winning" should have a strong propensity to engage in. This proclivity, combined with their relative lack of concern for morality and ethics, implies that high Machs are more likely to dismiss concerns regarding the moral acceptability of earnings management. This proposition is reflected in H2:

> H2. Accountants with stronger Machiavellian orientations will perceive earnings management as more ethical.

3. Research method

3.1. Instrument

Participants completed the earnings management instrument, Machiavellianism scale, ethical climate and ethical culture scales and a demographic questionnaire. The Merchant (1989) instrument was used to gauge attitudes toward the ethical acceptability of earnings management (Appendix 1). The instrument includes 13 scenarios – six operating manipulations and seven accounting manipulations. Participants assume the role of a supervisor whose subordinate engages in the various earnings manipulation schemes, and are asked to evaluate the subordinate's actions on a five-point scale anchored on "ethical" (1) and "totally unethical" (5). This instrument has been widely used in behavioral studies of earnings management (Merchant and Rockness, 1994; Fischer and Rosenzweig, 1995; Elias, 2004).

The Machiavellianism scale (Christie and Geis, 1970) is also a widely used instrument, having been adopted in many studies in business and the social sciences. The scale includes 20 statements designed to measure Machiavellian tendencies (Appendix 2). Responses are provided on a seven-point scale anchored on "disagree strongly" (1) and "agree strongly" (7), with higher numbers indicating a greater propensity for Machiavellianism. A single score for each participant is calculated by summing responses to the 20 items and then adding a constant of 20 to the total.

Ethical climate was assessed using the Cullen et al. (1993) instrument, which includes four items for each of the nine theoretical climate types (Appendix 2). This instrument has been used in virtually all studies of ethical climate since its development. We retained the original six-point scale for the ethical climate items, anchored on "completely false" (1) and "completely true" (6). To assess organizational ethical culture we adapted the Trevin˜o et al. (1998) scale (Appendix 2) and

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used the same six-point scale used for the ethical climate instrument.

The scales were translated from English to Chinese using a back translation procedure. First, two graduate business students who were fluent in both languages independently translated the English versions to Chinese, then compared and reconciled any differences. This Chinese version was then independently translated back to English by a professional translator. The original and back-translated English versions were then compared. All discrepancies were resolved and the Chinese version was agreed upon by all translators. Finally, the Chinese version of the instrument was reviewed by three professional accountants in Hong Kong who were also fluent in both languages, and minor adjustments were made by the translators based on the feedback received.

3.2. Sample and data collection

Accountants employed by local and multinational corporations in Shenzhen and Shanghai participated in the study. Access to participants was obtained through personal contacts; thus, the non-random sampling procedure should be recognized as a limitation of the study. A total of 15 companies participated in the study: ten local Chinese companies and five multinationals. The companies were from a variety of industries, including traditional manufacturing (nine), high technology (three), financial services (two) and retail (one). We visited each company and delivered the instrument directly to participants. The survey was accompanied by a cover letter assuring participants that their responses would be treated as strictly confidential. Participants were instructed to complete the survey without assistance or discussion with others, Ethical context and Machiavellianism 379 seal the completed instrument in a provided envelope, and return it directly to the researchers. Approximately 120 instruments were distributed and 89 usable responses were received, resulting in a relatively strong response rate of 74 per cent.

The mean age of participants was 34, and their average accounting experience was 5.5 years. About two-thirds were employed by local Chinese companies (companies with no significant operations outside China), with the remainder employed by multinational firms. Slightly over half (56 per cent) of participants were female. Over 70 per cent held a professional certification such as CPA or chartered accountant.

4. Findings

4.1. Mean responses

We first sought to compare our participants' attitudes toward earnings management with those reported in prior studies. A very limited number of studies have reported descriptive statistics for responses to the Merchant (1989) earnings management scale. In fact, Merchant and Rockness (1994) appears to be the only prior study to report both means and SDs for the individual earnings

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management scenarios. Merchant and Rockness (1994) surveyed managers, controllers and internal auditors in the USA, and pooled responses across all participant groups. Thus, it should be noted that even that study is not directly comparable to ours due to the inclusion of managers as well as professional accountants in the sample. Table II compares the mean responses reported by Merchant and Rockness (1994) with those of our participants. Interestingly, a clear contrast was found between the two studies: the US respondents judged accounting manipulations significantly more harshly than the Chinese, but the Chinese respondents judged most of the operating manipulations more harshly. As indicated in the table, our respondents judged four of the six operating manipulations significantly more harshly than participants in the Merchant and Rockness (1994) study. On the other hand, the Merchant and Rockness participants judged all the accounting manipulations to be significantly more unethical.

This general pattern of judging accounting manipulations more harshly than operating manipulations has been found in other studies conducted in the USA. For instance, Elias (2002) reported mean ethical judgments for US CPAs in public accounting, industry and academia, as well as responses from US accounting students. Two means were reported for each group: one for accounting manipulations and one for operating manipulations. Across all participants, the means reported by Elias (2002) are strikingly similar to those reported by Merchant and Rockness (1994), with a mean ethical judgment for accounting (operating) manipulations of 3.62 (1.65) compared with a mean of 3.61 (1.61) in the Merchant and Rockness study. Similarly, based on a survey of US management accountants,

Table II.
Perceptions of earnings management comparison with Merchant and Rockness (1994)

Method	Item	Current study Mean	SD	Merchant and rockness Mean	SD
Operating EM	1**	*1.78*	1.00	1.26	0.58
	2**	*2.52*	1.20	1.81	1.01
	3**	*3.22*	1.26	2.09	1.27
	5	2.01	1.26	1.96	1.09
	6	1.27	0.70	1.31	0.69
	7*	*1.42*	0.77	1.25	0.68
Accounting EM	4**	2.38	0.99	*3.42*	0.8
	8**	2.69	1.00	*3.27*	1.07
	9**	2.80	1.21	*3.51*	1.19
	10**	2.12	1.10	*3.59*	1.18
	11**	2.53	1.10	*3.69*	1.11
	12**	2.11	0.95	*3.76*	0.98
	13**	3.27	0.99	*4.05*	0.94

Notes: Mean difference significance at: *0.05 level or smaller and **0.01 level or smaller; the means reported above represent participants' ethical judgments regarding the acceptability of earnings management. In both studies, judgments were provided on a five-point scale anchored on "ethical" (1) and "totally unethical" (5); to contrast differences in the patterns of responses, means that were significantly higher are presented in italics; two-tailed *t*-tests were used to check the significance of mean differences

Rosenzweig and Fischer (1994) reported a mean response of 3.50 (1.51) for accounting (operating) earnings management[5]. In contrast, our participants' mean ethical judgment across all accounting (operating) manipulations was 2.56 (2.04). Although the difference in means for

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accounting and operating judgments was also significant in our study, it was much less pronounced. Thus, it appears that US respondents tend to view accounting manipulations as unethical but operating manipulations as ethical, while our Chinese participants were relatively ambivalent regarding the ethical acceptability of both types of earnings management.

4.2. Factor analysis

Exploratory factor analysis of the ethical climate items revealed two interpretable factors with eigenvalues in excess of one. One factor included three principled/cosmopolitan items ("the first consideration is whether a decision violates any law", "people are expected to comply with the law and professional standards over and above other considerations" and "in this organization, people are expected to strictly follow legal or professional standards") and one of the principled/local items ("everyone is expected to stick by organizational rules and procedures"). This factor had an acceptable coefficient α of 0.79. The second factor included two of the benevolent/cosmopolitan items ("people in this organization have a strong sense of responsibility to the outside community" and "people in this organization are actively concerned about the public interest"). The coefficient α of this factor was 0.68, indicating a marginally acceptable internal reliability.

A similar factor analysis for the ethical culture scale resulted in four factors with eigenvalues in excess of one. The first factor included three items that measure expectations for obedience to authority ("this organization demands obedience to authority figures, without question", "people in this organization are expected to do as they're told" and "the boss is always right in this organization") and accordingly will be labeled "obedience to authority". The second factor included five items describing ethical role modeling by top management and incentives for ethical behavior ("the top managers of this organization represent high ethical standards", "people of integrity are rewarded in this organization", "top managers of this organization regularly show that they care about ethics", "ethical behavior is the norm in this organization" and "top managers of this organization guide decision making in an ethical direction"), and will be referred to herein as "ethical norms/incentives". The third factor included two items describing penalties for unethical behavior ("penalties for unethical behavior are strictly Ethical context and Machiavellianism 381 enforced in this organization" and "unethical behavior is punished in this organization"), and will be referred to as "penalties". The coefficient α statistics for the ethical culture factors were all relatively strong (0.93, 0.87 and 0.81, respectively, for the penalties, obedience to authority, ethical norms/incentives factors). Scales were constructed for the ethical climate, ethical culture, accounting earnings management and operating earnings management factors by calculating the mean of the related items.

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4.3. Correlation and univariate analyses

Correlation coefficients for the continuous measures are presented in Table III. As indicated, the correlations between the two earnings management variables and the ethical context factors were generally not significant. One notable exception is the significant positive correlation between the benevolent/cosmopolitan climate and judgments of accounting earnings management, which provides partial support for H1. As would be expected, participants who perceived a stronger benevolent/cosmopolitan climate in their organization judged accounting manipulations to be more unethical. Consistent with H2, Machiavellianism was significantly and negatively correlated with attitudes toward both operating and accounting earnings management.

Machiavellianism was also significantly and negatively correlated with three of the ethical context factors: the ethical norms/incentives culture and the benevolent/cosmopolitan and principled/cosmopolitan climates. Given that high Machiavellians tend to be cynical toward ethical/moral issues and suspicious of the motives of others, these correlations are somewhat intuitive. For example, high Machiavellians should be more likely to dismiss the efforts of top management to serve as role models for ethical behavior as disingenuous, and more likely to view organizational claims of serving the public interest and following professional ethical standards as mere rhetoric.

Correlation and analysis of variance (ANOVA) models were used to test the effects of the demographic variables. In general, the demographic variables had few significant effects on our dependent measures. Somewhat surprisingly, we found that females tended to perceive operating earnings management as more ethical than males. The ANOVA model for professional certification indicated that this variable had a significant effect on attitudes toward accounting earnings management. In our study, accountants who held professional certifications (e.g. CPAs, chartered accountants) were more likely to perceive earnings management to be unethical than non-certified accountants. This result is not surprising, since certified accountants have more

Table III.
Correlation coefficients

	ACEM	OA	NORMS	PEN	BCCLIM	PCCLIM	MACH
OPEM	0.418**	−0.083	0.112	0.11	0.122	0.007	−0.239*
ACEM		−0.003	0.025	−0.112	0.252*	−0.011	−0.212*
OA			−0.128	−0.418**	−0.243*	−0.023	0.138
NORMS				0.464**	0.518**	0.462**	−0.335**
PEN					0.398**	0.47**	−0.127
BCCLIM						0.518**	−0.326**
PCCLIM							−0.276**

Notes: Significance at: *0.05 and **0.01 levels (two tailed test); OPEM, operating earnings management; ACEM, accounting earnings management; OA, obedience to authority; NORMS, ethical norms; PEN, penalties; BCCLIM, benevolence/cosmopolitan ethical climate; PCCLIM, principle/cosmopolitan ethical climate; MACH, Machiavellianism

training on ethics and have experienced socialization processes that emphasize the ethical obligations of the profession. Neither education level nor age was significantly associated with any of our dependent measures. Where appropriate, the demographic variables with significant effects

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are included in our multivariate models reported below.

4.4. Regression models

Regression models for accounting and operating earnings management are reported in Table IV. The independent variables in the models include the ethical climate and ethical culture measures, Machiavellianism and professional certification. Gender was also included in the model for operating earnings management due to its significant effect in our univariate tests. The model for accounting earnings management (Panel A) provides partial support for H1, with the benevolent/cosmopolitan climate having a significant effect on ethical judgments. As anticipated, a greater organizational emphasis on serving the public interest led to more harsh judgments of accounting earnings management. Consistent with H2, we found a marginally significant negative association between Machiavellianism and ethical judgments, indicating that high Machiavellians were more likely to perceive accounting manipulations as ethically acceptable. We also found a significant association between certification and perceptions of accounting earnings management, consistent with the correlation analysis. As previously discussed, certified accountants viewed accounting earnings management to be more unethical. The model was highly significant and explained approximately 23 per cent of the variation in ethical judgments. In the model for operating earnings management (Panel B), only Machiavellianism and gender had significant effects on ethical judgments. Again, high Machiavellians viewed earnings management to be more ethically acceptable. Consistent with our correlation analysis, females also viewed operating earnings management more leniently.

Independent variables	Std beta	t-statistic	p-value
Panel A: dependent variable = ethical judgments for accounting earnings management			
Benevolent/cosmopolitan climate	0.305	2.492	0.015
Principled/cosmopolitan climate	−0.014	−0.118	0.906
Obedience to authority	0.103	0.885	0.379
Ethical norms	−0.058	−0.467	0.642
Penalties	−0.196	−1.520	0.132
Machiavellianism	−0.203	−1.917	0.059
Certificate	−0.290	−2.798	0.006
Model F-value	3.368		
Model significance	0.003		
Model R^2	0.225		
Panel B: dependent variable = ethical judgments for operating earnings management			
Benevolent/cosmopolitan climate	0.046	0.351	0.727
Principled/cosmopolitan climate	−0.052	−0.419	0.677
Obedience to authority	0.024	0.189	0.850
Ethical norms	0.021	0.159	0.874
Penalties	0.078	0.561	0.576
Machiavellianism	−0.253	−2.215	0.030
Certificate	−0.048	0.431	0.668
Gender	0.236	2.197	0.031
Model F-value	1.367		
Model significance	0.224		
Model R^2	0.120		

Table IV. Regression models for earnings management

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5. Conclusions and discussion

This study provides some interesting findings with respect to attitudes toward earnings management in Mainland China, and raises questions that should be addressed in future research. The results indicate that if professional accountants perceive an organizational emphasis on serving the public interest (benevolent/cosmopolitan climate), they will view accounting earnings management more harshly. Accountants' professional codes of conduct emphasize the importance of serving the public interest, but this has traditionally been most closely associated with the independent auditing function. Indeed, ours is the first study to examine the impact of the professional ideal of public service on the ethical decisions of industry accountants. This finding is significant because it suggests that the emphasis of professional accountants' obligations to the public, even within a corporate environment, will restrain aggressive behavior such as earnings management. It is commonly argued that the ethical climate in organizations may be effectively managed (Schminke et al., 2007; Grojean et al., 2004; Trevin˜o et al., 1999; Cohen, 1993); thus, taking a proactive approach to the establishment of an environment that emphasizes professional accountants' duty to protect the public interest may improve the quality of financial reporting. Future studies should examine this issue by examining changes in the perceived ethical context and ethical decisions surrounding organizational initiatives to strengthen their ethical environments.

Consistent with prior accounting and business studies (Ghosh and Crain, 1995; Ross and Robertson, 2000; Wirtz and Kum, 2004; Shafer and Simmons, 2008; Hartmann and Maas, 2010), we also found that high Machiavellians tend to make less ethical decisions, in this case judging earnings management more leniently. In this study, the effects of Machiavellianism were stronger for operating manipulations, which are generally viewed as more ethical than accounting manipulations (Merchant and Rockness, 1994) but are clearly done with manipulative intent. This result is perhaps not surprising, given that the Machiavellianism construct is closely associated with a propensity for manipulative tactics.

Another interesting finding of the study is the significant impact of professional certification on attitudes toward earnings management. Based on our regression results, Chinese accountants who were professionally certified were significantly less likely to condone accounting earnings management. This result indicates that the employment of certified accountants in positions of authority should increase the overall quality of financial reporting.

We also found a distinct contrast in the attitudes of Mainland Chinese respondents and accountants in the USA reported in prior studies. Prior surveys in the USA have uniformly found that accountants, managers and accounting students view accounting earnings management as

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unethical, but view operating earnings management as an ethically acceptable business practice. This sharp distinction between accounting and operating earnings management was not present in our sample. Our participants were generally ambivalent toward the ethical acceptability of both types of earnings management, rating both near the midpoint of the scale. They viewed accounting manipulations less harshly than their US counterparts, but viewed operating manipulations more harshly. This pattern of results indicates that Chinese accountants are less likely to adopt a strict rules based approach when evaluating the moral acceptability of earnings management. Of course, this finding should be interpreted with caution since some of the US studies were conducted more than a decade before our study.

Future studies should simultaneously examine both ethical context and attitudes toward earnings management in China and western countries to provide a sound basis for comparisons. This would seem to be a particularly interesting question in light of the frequent criticisms of business ethics in Mainland China (Tam, 2002; Snell and Tseng, 2002; Wang, 2003). Indeed, the potential for cross-cultural differences in ethical context and ethical decision making in accounting has often been recognized, but relatively little research along these lines has been conducted. For instance, Parboteeah et al. (2005) hypothesized that national culture would affect the ethical climate in public accounting firms, and based on their comparison of Japanese and US firms they found significant differences in perceptions of principled climates. Studies have also found cross-cultural differences in ethical decision making in public accounting firms (Ponemon and Gabhart, 1993; Tsui and Windsor, 2001), but research is needed on potential cross-cultural differences in the ethical decisions of professional accountants employed in private industry.

Notes

1. Studies of the antecedents of ethical climate usually treat climate as a group-level variable. For example, such studies have compared the mean perceptions of ethical climate for organizations in different industries (Victor and Cullen, 1988) and countries (Parboteeah et al., 2005).

2. From 1996 to 1998, Chinese security regulations required firms to achieve accounting rates of return on equity .10 per cent for three consecutive years to be qualified to issue stock to the public.

3. For example, intentionally delaying expenses such as repairs and maintenance to future periods may boost short-term accounting profit (often to the personal benefit of managers), but may lead to significantly higher costs of repairing or replacing assets in the long term.

4. Because we did not know what specific aspects of ethical context would emerge in our study,

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we did not propose separate hypotheses for the effects of the various components of ethical climate/culture. Also, we did not anticipate differential effects of context on accounting vs operating earnings management. As discussed previously, US accountants appear to view operating manipulations more leniently than accounting manipulations, but we felt the hypothesized effects of ethical context on judgments will hold true regardless of the type of manipulation in question.

5. Rosenzweig and Fischer (1994) reported mean responses for each of the 13 earnings management scenarios, but did not report SDs; thus, we were unable to test the significance of the mean differences between their study and ours and have not presented the means for the individual items. Rosenzweig and Fischer (1994) also used a modified version of the ethical judgment scale with endpoints of 4 (ethical) and 0 (totally unethical). Consequently, we converted their reported responses back to the original version of the scale to make them comparable with the other studies. Fischer and Rosenzweig (1995) reported mean responses pooled across accounting students and practicing management accountants, but apparently the sample of management accountants was the same sample used in the Rosenzweig and Fischer (1994) paper; thus, we have only reported means from the latter paper since they are more comparable with ours.

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Appendix 1. Earnings management scenarios

(1) The division's headquarters building was scheduled to be painted in 1999. But since profit performance was way ahead of budget in 1998, the division general manager (GM) decided to have the work done in 1998. Amount: $150,000.

(2) The GM ordered his employees to defer all discretionary expenditures (e.g. travel, advertising, hiring and maintenance) into the next accounting period, so his division could make its budgeted profit targets. Expected amounts of deferrals: $150,000:

- the expenses were postponed from February and March to April in order to make the first quarter target; and
- the expenses were postponed from November and December to January in order to make the annual target.

(3) On 15 December, a clerk ordered $3,000 of office supplies, and the supplies were delivered on 29 December. This order was a mistake because the GM had ordered that no discretionary expenses be incurred for the remainder of the fiscal year, and the supplies were not urgently needed. The company's accounting policy manual states that office supplies are to be recorded as an expense when delivered. The GM learned what had happened, and to correct

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the mistake, he asked the accounting department not to record the invoice until February.

(4) In September, the GM realized the division would need strong performance in the fourth quarter to reach its budget targets:

- he decided to implement a sales program offering liberal payment terms to pull some sales that would normally occur next year into the current year; customers accepting delivery in the fourth quarter would not have to pay the invoice for 120 days;
- he ordered manufacturing to work overtime in December so that everything possible could be shipped by the end of the year; and
- he sold some excess assets and realized profit of $40,000.

(5) At the beginning of December 1998, the GM realized the division would exceed its budgeted profit targets for the year:

- he ordered his controller to prepay some expenses (e.g. hotel rooms, exhibit expense) for a major trade show to be held in March 1999 and to book them as 1998 expenses. Amount: $60,000; and
- he ordered his controller to develop the rationale for increasing the reserve for inventory obsolescence. By taking a pessimistic view of future market prospects, the controller was able to identify $700,000 worth of finished goods that conservative accounting would say should be fully reserved (i.e. written off), even though the GM was fairly confident the inventory would still be sold at a later date at close to full price.

(6) The next year, the division sold 70 per cent of the written-off inventory, and a customer had indicated some interest in buying the rest of that inventory the following year. The GM ordered his controller to prepare the rationale for reducing the reserve for obsolescence by $210,000 (i.e. writing up the previously written-off goods to full cost). The GM's motivation for recapturing the profit was:

- to be able to continue working on some important product development projects that might have been delayed due to budget constraints; and
- to make budgeted profit targets.

(7) In November 1998, the division was straining to meet budget. The GM called the engagement partner of a consulting firm that was doing some work for the division and asked that the firm not send an invoice until next year. The partner agreed. Estimated work done but not invoiced:

- $30,000; and
- $500,000.

Appendix 2. Scale items

Ethical climate

(1) In this organization, people are mostly out for themselves (EI).

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(2) The major responsibility for people in this organization is to consider efficiency first (EC).

(3) In this organization, people are expected to follow their own personal and moral beliefs (PI).

(4) People are expected to do anything to further the organization's interests (EL).

(5) In this organization, people look out for each other's good (BI).

(6) There is no room for one's own personal morals or ethics in this organization[1] (EI).

(7) It is very important to follow strictly the organization's rules and procedures here (PL).

(8) Work is considered sub-standard only when it hurts the organization's interests (EL).

(9) Each person in this organization decides for himself what is right and wrong (PI).

(10) In this organization, people protect their own interest above other considerations (EI).

(11) The most important consideration in this organization is each person's sense of right and wrong (PI).

(12) The most important concern is the good of all the people in the organization (BL).

(13) The first consideration is whether a decision violates any law (PC).

(14) People are expected to comply with the law and professional standards over and above other considerations (PC).

(15) Everyone is expected to stick by organizational rules and procedures (PL).

(16) In this organization, our major concern is always what is best for the other person (BI).

(17) People are concerned with the organization's interests – to the exclusion of all else (EL).

(18) Successful people in this organization go by the book (PL).

(19) The most efficient way is always the right way, in this organization (EC).

(20) In this organization, people are expected to strictly follow legal or professional standards (PC).

(21) Our major consideration is what is best for everyone in the organization (BL).

(22) In this organization, people are guided by their own personal ethics (PI).

(23) Successful people in this organization strictly obey the organizational policies (PL).

(24) In this organization, the law or ethical code of the profession is the major consideration (PC).

(25) In this organization, each person is expected, above all, to work efficiently (EC).

(26) It is expected that you will always do what is right for the public (BC).

(27) People in this organization view team spirit as important (BL).

(28) People in this organization have a strong sense of responsibility to the outside community (BC).

(29) Decisions here are primarily viewed in terms of contribution to profit (EL).

(30) People in this organization are actively concerned about the public interest (BC).

(31) People are very concerned about what is generally best for employees in the organization (BL).

(32) What is best for each individual is a primary concern in this organization (BI).

(33) People in this organization are very concerned about what is best for themselves (EI).

(34) The effects of decisions on the public are a primary concern in this organization (BC).

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(35) It is expected that each individual is cared for when making decisions here (BI).
(36) Efficient solutions to problems are always sought here (EC).

Ethical culture

(1) Management in this organization disciplines unethical behavior when it occurs.
(2) Employees in this organization perceive that people who violate the professional code of ethics still get formal organizational rewards[1].
(3) Penalties for unethical behavior are strictly enforced in this organization.
(4) Unethical behavior is punished in this organization.
(5) The top managers of this organization represent high ethical standards.
(6) People of integrity are rewarded in this organization.
(7) Top managers of this organization regularly show that they care about ethics.
(8) Top managers of this organization are models of unethical behavior[1].
(9) Ethical behavior is the norm in this organization.
(10) Top managers of this organization guide decision making in an ethical direction.
(11) Ethical behavior is rewarded in this organization.
(12) Professional ethics code requirements are consistent with informal organizational norms.
(13) This organization demands obedience to authority figures, without question.
(14) People in this organization are expected to do as they are told.
(15) The boss is always right in this organization.

Machiavellianism

(1) Never tell anyone the real reason you did something unless it is useful to do so.
(2) The best way to handle people is to tell them what they want to hear.
(3) One should take action only when sure it is morally right[1].
(4) Most people are basically good and kind[1].
(5) It is safest to assume that all people have a vicious streak and it will come out when they are given a chance.
(6) Honesty is the best policy in all cases[1].
(7) There is no excuse for lying to someone else[1].
(8) Generally speaking people would not work hard unless they are forced to do so.
(9) All in all, it is better to be humble and honest than to be important and dishonest[1].
(10) When you ask someone to do something for you, it is best to give the real reasons for wanting it rather than giving reasons which carry more weight[1].
(11) Most people who get ahead in the world lead clean, moral lives[1].
(12) Anyone who completely trusts anyone else is asking for trouble.
(13) The biggest difference between most criminals and other people is that the criminals are stupid enough to get caught.

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(14) Most people are brave[1].

(15) It is wise to flatter important people.

(16) It is possible to be good in all respects[1].

(17) The man who said "there's a sucker born every minute was wrong"[1].

(18) It is hard to get ahead without cutting corners here and there.

(19) People suffering from incurable diseases should have the choice of being put painlessly to death.

(20) Most people forget more easily the death of a parent than the loss of their property.

Legend

EI = Egoistic/individual climate.

EL = Egoistic/local climate.

EC = Egoistic/cosmopolitan climate.

BI = Benevolent/individual climate.

BL = Benevolent/local climate.

BC = Benevolent/cosmopolitan climate.

PI = Principle/individual climate.

PL = Principle/local climate.

PC = Principle/cosmopolitan climate.

Note

1. Reverse scored.