Determinants of accounting policy choices under international accounting standards

Evidence from South Asia

Muhammad Jahangir Ali and Kamran Ahmed
Department of Accounting and Data Analytics, La Trobe University, Melbourne, Australia

Abstract

Purpose – The purpose of this paper is to examine the determinants of accounting policy choices under International Accounting Standards (IASs) of listed firms in South Asia.

Design/methodology/approach – We selected three IASs-based accounting policy choices from 369 listed companies in India, Pakistan and Bangladesh for the financial year 2007-2008.

Findings – Our results show that firm size, investment opportunity set, leverage and ownership by the general public are significant determinants of accounting policy choice in South Asian countries. However, we do not find a significant relationship between firms' accounting policy choices and profitability, assets-in-place and taxes.

Practical implications – Our results suggest that as some flexibility exists in IASB's accounting standards, this may allow managers to use income-increasing/decreasing methods. There is scope for regulators and standards setters to reduce the alternative methods which are likely improve firms' reporting quality.

Originality/value – Our study contributes to the understanding as to what determines managers' choice of a particular accounting method allowed in IAS.

Keywords South Asia, International Accounting Standards, Accounting policy choices

Paper type Research paper

1. Introduction

This paper empirically examines the determinants of accounting policy choices in South Asia. Since the seminal work of Watts (1974), a significant amount of research has examined managers' under International Accounting Standards (IASs) of listed firms motivations for their accounting policy choices (Hagerman and Zmijewski, 1979; Zmijewski and Hagerman, 1981; Ball and Foster, 1986; Watts and Zimmerman, 1986, 1990; Christie, 1990; Astami and Tower, 2006). Prior research investigated the motivations for managers to lobby standard-setters and the reaction of stock markets to changes in accounting standards (Francis, 1987; Leftwich, 1981). Holthausen (1990) identified three perspectives of accounting method choice: opportunistic behaviour, efficient contracting and information perspective.

In recent years, it has been quite common for emerging economies to adopt either whole or partly modified International Accounting Standards (IASs)/International Financial Reporting Standards (IFRS) promulgated by the International Accounting Standards Board (IASB) with a view to: first, improving corporate reporting standards and, second, encouraging international investments for the development of their economies which have struggled due to the lack of resources. To this end, South Asian countries such as India, Pakistan and Bangladesh have adopted IFRS as the sources of their respective national accounting standards. Although a number of developed and emerging countries have converged their accounting standards with the IFRS, there is some managerial discretion existing within the IFRS. Therefore, it is interesting to examine whether managers choose different accounting methods for opportunistic reasons, especially in the cross-country context. India, Pakistan and Bangladesh have been chosen due their geographical, population and economic potential (Ali *et al.*, 2004).

Prior research (Moses, 1987) on the economic consequences of accounting method choices identified a number of factors (i.e. political costs, ownership controls, contractual relationships and taxes) to explain managers' selection of accounting methods. Accounting policy choice researchers have hypothesised that these factors motivate managers to use alternative accounting methods so that they can either maximise or minimise accounting income. A plethora of research[1] has investigated the accounting method choice issue using a single country. Astami and Tower (2006) analyse the determinants of accounting choice in a study using listed companies in the Asia Pacific region including Australia, Hong Kong, Indonesia and Singapore. However, their study is conducted prior to the adoption of IFRS, i.e. they use 2000-2001 company annual reports for the study. Therefore, there results may not be generalisable in the context of IFRS. More recently, Waweru *et al.* (2011) examine the choice of accounting measurement methods for 15 listed companies in Tanzania and observe that company size, internal financing, the proportion of non-executive directors and labour force are associated with the income increasing accounting policies. Moreover, they find that company size and internal financing are positively associated with a firm's income strategy which is inconsistent with the prior literature. Very recently, Shaheen (2012) examines the determinants of accounting methods for companies listed on the Kuwait Stock Exchange. Using multiple regression analyses, he finds that firm size, debt contract, profitability ratio, governmental equity and capital intensity all have a minor impact on the decisions made by managers of Kuwaiti companies in selecting accounting methods.

IFRS are criticised as there is also flexibility in many areas of standards whereby more than one accounting treatment is allowed (Briginshaw, 2008); therefore, managers may have opportunity to use to particular accounting method. Hence, our study is significantly different from prior studies because to the best of our knowledge, no studies to date have addressed the determinants of accounting policy choice after the adoption of IFRS in a multi-country context. We aim to fill the gap in the current international accounting literature. Our results will confirm whether the determinants of accounting policy choices under IFRS are likely to differ from studies conducted prior to the adoption of IFRS.

Accordingly, our study contributes to the literature in four ways. First, although a number of studies have examined the economic determinants of accounting policy choices in Western developed countries, to the best of our knowledge, no analyses have examined this with reference to South Asian countries. Our study will shed light on the accounting choice decisions in such countries which are based on different financial reporting requirements, government regulations and agency relationships when compared to developed countries. It is thus assumed that the same accounting policy choice hypothesis which pertains to developed countries may not hold in the context of South Asia. Second, our study is relevant

because firms in South Asian countries follow IASs-based accounting methods, and there are a number of alternatives existing in the IASs that may cause differences in earnings. Thus, our study will provide more insight regarding what firm-specific factors motivate managers to use a particular accounting method under the IASs. Third, in South Asian countries, the majority of firms are closely held which dominate the economy (Belal, 2008). Consequently, managers in South Asian countries are likely to have different economic incentives than in Western countries when it comes to using different accounting policies to increase/decrease income. Fourth, Leuz *et al.* (2003) contend that a weak legal environment facilitates opportunistic earnings management because the risk of disciplinary actions against such behaviour is relatively low. Consequently, the issue of accounting policy choice in a weaker investor protection environment merits empirical investigation. Finally, although there are well-developed equity markets in South Asian countries, apart from equity market, firms usually borrow substantial amounts of money from banks and other financial institutions. It is therefore interesting to examine managers' accounting policy choice in this unique institutional setting.

Using a multiple regression model, we find that firm size, investment opportunity set (IOS), leverage and ownership by general public are associated with accounting policy choice. However, we do not find a significant relationship between accounting policy choice and profitability, assets in place and taxes in the selected South Asian countries.

The remainder of this paper is structured as follows. Section 2 outlines accounting policy choice environment in South Asia. The development of hypotheses is discussed in Section 3, while Section 4 explains the research design employed. The test results are presented in Section 5, while the final section concludes the paper.

2. The accounting policy choice environment in South Asia

The main authority that develops accounting standards within each South Asian country is the Institute of Chartered Accountants. Accounting standards are developed in these countries on the basis of standards issued by the IASB following a "due process". Indian Accounting Standards (AS) began aligning with the IASs/IFRS at the beginning of 2000 when the Accounting Standards Board of India and the ICAI worked together and introduced 12 new accounting standards and narrowed the gap between AS and the IASs/IFRS. The Reserve Bank of India also stated that all banks are required to prepare their financial statements in line with the IFRS for the period beginning on or after 1 April 2011. According to ICAI, entities that are part of the National Securities Exchange 50 (Nifty 50), the Bombay Stock Exchange Sensex (BSE 50), entities whose shares are listed overseas and companies (listed or not) having a net worth of more than Indian Rupees 1,000 crore should follow the IFRS when preparing and presenting their financial statements (IAS Plus, 2012).

Pakistan has adopted almost all of the IASs (except for IAS-29 and IAS-41). However, the ICAP Council has decided to gradually adopt all IASs/IFRSs to be used by public interest entities. The Securities Exchange Commission requires companies to comply with the IFRS, which are used as national standards through company legislation (Section 234 of the Companies Ordinance, 1984) and are mandatory for all listed companies (Section 42 of the SEC Ordinance). In 2007, the ICAP Council developed strategies for the implementation of IFRS for all listed entities in 2007. This includes strict enforcement of IFRS, monitoring, identification of problems faced by entities in the implementation of IFRS and finding solutions to overcome these problems (Rashid *et al.*, 2012).

In Bangladesh, the Securities and Exchange Commission requires compliance with IASs/IFRSs and are referred to as the Bangladesh Accounting Standards (BAS) and Bangladesh Financial Reporting Standards (BFRS). These standards are developed based on IAS and

IFRS issued by the IASB. The ICAB has a Technical and Research Committee which is in charge of reviewing the national and international pronouncements and standards on accounting (IAS Plus, 2012).

In this study, we use three accounting policy choices, namely, inventory, depreciation and valuation of property plant and equipment. All these measurement methods are promulgated by the regulatory bodies which are based on the IFRS.

3. Development of the hypotheses

We develop hypotheses based on the costly contracting theory and positive accounting theory. The costly contracting theory states that a firm is a nexus of contracts (Coase, 1937) such as contracts between the firm and outsiders and between the firm and insiders (Ronen and Yaari, 2008). There are a number of contractual agreements between owners and managers, bondholders and shareholders; and current owners and potential owners to mitigate agency conflicts that depend on accounting numbers, for example, management compensation contracts and debt covenants (Fields *et al.*, 2001).

Due to the separation of ownership and control between managers and owners, there is a potential conflict of interest between managers and investors (Stulz, 2005). This causes managers to act in their own self-interest at the expense of stakeholders. This opportunistic behaviour is known as the agency problem which arises because managers are likely not to work in the interests of the firm. Dyl (1989) argues that managers may abuse discretionary power inherent in the agency relationship. Opportunistic managers maximise their wealth by pursuing income-increasing and income-decreasing methods depending on the circumstances.

Economic consequences theories proposed by Watts and Zimmerman (1978, 1986) are closely associated with the costly contracting theory which predicts accounting choice on the basis of a firm's contracting environment. They developed a theoretical framework to explain managers' behaviour in the choice of accounting procedures. Accounting numbers are used as an essential part of the formal and informal contracts of a firm (Watts, 1974). The positive accounting theory of accounting method choice decisions makes a number of assumptions with regard to managers' behaviour. The theory explains the economic consequences of existing alternative accounting measurement methods. In this section, we identify determinants which affect accounting policy choice by reviewing previous studies.

3.1 Firm size

Firm size is identified as a proxy for the political costs of the firm (Watts and Zimmerman, 1978; Trombley, 1989). Larger firms in the public eye are likely to choose accounting methods which reduce net income to mitigate political costs (Watts and Zimmerman, 1986). In contrast, Bowen *et al.* (1981) posited that large firms are subject to intense critical public scrutiny and hence select income-increasing accounting alternatives.

The empirical results of this hypothesis are mixed which is consistent with Rahman and Scapens (1988) who posit that political cost theory would produce different results in developing countries. While Watts and Zimmerman (1978), Hagerman and Zmijewski (1979), Zmijewski and Hagerman (1981) and Dyl (1989) find that larger firms use income-decreasing accounting methods, Bowen *et al.* (1981) and Langer and Lev (1993) report larger firms select income-increasing accounting alternatives.

On the other hand, smaller firms are less visible and, therefore, less exposed to political wealth distribution (Zmijewski and Hagerman, 1981). Trombley (1989) conjectures that as small firms are less diversified and riskier, managers are likely to

have a higher proportion of incentive-based compensation based on accounting earnings. Therefore, managers of small firms select income-increasing accounting methods which may not receive wide public attention. In South Asian countries, larger firms are likely to be exposed to politically visible and, therefore, expect to use income-decreasing accounting strategies. Based on the above arguments, the following non-directional hypothesis is formulated:

H1. Managers of large firms choose income-increasing/decreasing methods.

3.2 Assets-in-place (capital intensity)

Hagerman and Zmijewski (1979) argue that a capital-intensive firm does not charge the opportunity cost of capital in determining net income and thus will report higher profits than a labour-intensive firm. However, capital-intensive firms are subject to political costs and are likely to reduce reported profit by selecting income-reducing methods. Gaver and Gaver (1993) also argue that firms which are highly capital-intensive are likely to generate higher accounting profits than high-growth option firms. Similarly, Smith and Watts (1992) and Skinner (1993) argue that managers of firms with more assets-in-place are more likely to use income-increasing accounting procedures.

Astami and Tower (2006) find a negative relationship between accounting policy choice and assets-in-place. However, Zmijewski and Hagerman (1981) do not a find significant relationship between capital intensity and accounting policy choice. They argue that the effect of capital intensity on reported earnings is small; therefore, managers are likely not to use accounting methods that reduce reported earnings. As the empirical evidence is mixed, we formulate the following hypothesis:

H2. Managers choose income-increasing/decreasing methods when firms' capital intensity is higher.

3.3 Investment opportunity set

Myers (1977) coined the term IOS which describes firms' value as depending on discretionary expenditures. According to Riahi-Belkaoui (2000), it also indicates companies' growth prospects and growth opportunities. The contracting cost hypothesis states that the IOS influences contracts in place, hence a manager's accounting policies are partially driven by the firm's IOS (Smith and Watts, 1986; Skinner, 1993). IOS is defined as the "extent to which firm value depends on future discretionary expenditures by the firm" (Astami and Tower, 2006, p. 6). Riahi-Belkaoui (2000) conjectures that firms with higher IOS provide actual or future profitability and managers use their discretion to increase accounting income. First, Skinner (1993) and, later, Astami and Tower (2006) examine the association between a firm's IOS and its accounting choices and provide mixed results. Skinner (1993) reports that IOS is positively associated with a firm's income-increasing accounting methods, while Astami and Tower (2006) find that accounting choices are negatively associated with IOS. Prior research such as Smith and Watts (1986), Gaver and Gaver (1993) and Skinner (1993) use IOS proxies in accounting policy choice studies. Following prior research, we develop the following non-directional hypothesis:

H3. Managers use income-increasing/decreasing accounting techniques when the IOS is higher.

3.4 Financial leverage/debt covenants

The debt covenant hypothesis states that as firms with a higher level of debt are constrained by debt covenants, managers of these firms select income-increasing accounting methods to reduce the probability of covenant violation and avoid the potential costs of renegotiation of debt contracts (Trombley, 1989). If managers violate debt covenants, firms may incur significant costs including legal fees and renegotiation fees and may have problems in obtaining external credits (Hall, 1993).

Most of the prior research uses leverage ratio as a proxy for the violation by a firm of its debt covenants. Debt holders are likely to monitor firms' performance and observe whether firms are violating debt covenants. Previous studies (Bowen *et al.*, 1981; Watts and Zimmerman, 1986; Dyl, 1989; Christie, 1990; Duke and Hunt, 1990; Press and Weintrop, 1990; Sweeney, 1994; Simon and Costigan, 1996; Astami and Tower, 2006) show that leveraged firms have greater incentives for income-increasing accounting procedures to avoid constraints on managers' behaviour imposed by debt covenants that limit their opportunistic behaviour.

In South Asian countries, commercial banks and specialised financial institutions usually provide finance to firms. Firms are required to submit their annual reports prior to the approval of a loan as well as on a regular basis during the term of that loan. Following the debt covenant argument, we can say that as banks play an important role in financing, they impose constraints that firms should be embarking on profitable project; consequently, firms taking loans are inclined to increase profitability. Following prior research, we use debt-equity ratio as the proxy for debt constraints. The above discussion leads to the following hypothesis:

H4. Managers select income-increasing methods when firms' debt-equity ratio is higher.

3.5 Profitability

Another determinant of accounting method choice is whether a firm has an incentive compensation plan (Watts and Zimmerman, 1978, 1986; Hagerman and Zmijewski, 1979; Zmijewski and Hagerman, 1981; Bowen *et al.*, 1981). Fields *et al.* (2001) contend that short-term bonus contracts are usually tied to reported income. If managers' remuneration is tied to accounting earnings, then it is expected that they will choose accounting methods that increase reported earnings if a portion of their income is derived from incentive plans (Hagerman and Zmijewski, 1979). According to the bonus plan hypothesis, managers whose bonus payments are ascertained on the basis of reported income are likely to use an income-increasing accounting policy (Healy, 1985; Inoue and Thomas, 1996; Gaver and Gaver, 1993; Guidry *et al.*, 1999). Bowen *et al.* (1981) and Astami and Tower (2006) find that the choice of an income-increasing accounting method is positively associated with a firm's profitability. As South Asian companies generally do not disclose bonus plans in their annual reports, we use profitability as a proxy for bonus[2]. Following the above discussion, we hypothesise that:

H5. Managers use income-increasing accounting policy choices when their bonus is tied with reported profit.

3.6 Ownership by general public

The separation of ownership and control leads to conflicts of interest between managers and shareholders. Fama and Jensen (1983) state that conflicts of interest between principals and

agents are higher in a widely held firm. In a closely held firm, shares are owned or controlled by a few people and managers may have ownership in the firm or their behaviour is monitored by the owners (Dyl, 1989). Therefore, the majority of shareholders have the ability to monitor the manager's behaviour because of their extent of investment in the firm.

Missonier-Piera (2004) argues that managers are likely to choose income-increasing procedures for firms where the ownership concentration is high. In South Asian countries, the majority of firms are owned by a limited number of shareholders and family members and the individual shareholders are less organised and wield significant power (Belal, 2008). Hence, managers of these firms do not have much discretionary power in providing information in their annual reports.

In a widely held firm, the share ownership base is regarded as being comprised of diffuse residual claimants; hence, owners have no ability or incentives to monitor the behaviour of the firm's manager. Prior research (Niehaus, 1989; Dhaliwal *et al.*, 1982; Amihud *et al.*, 1983) conjectures that managers use considerable discretion as to the choice of accounting alternatives when ownership is diffused. Mangers in these firms like to use the income increasing approach to maximise their profits to receive more remuneration. This will also attract more investment due to higher dividends being paid. On the basis of the above discussion, the following hypothesis is formulated:

H6. Managers select income-increasing methods for firms when the ownership by general public is high.

3.7 Taxes

Extant research also considers taxes to be one of the factors influencing accounting policy choice literature, and they are regarded as one of the measures of political costs. Tax laws, which are contracts between the firm and the government, are likely to have an influence on accounting policy choice (Lee and Hsieh, 1985). Fields *et al.* (2001) examine whether managers select accounting procedures to minimise the present value of taxes. They argue that firms may choose accounting procedures to minimise or defer taxes. We use tax rate as income tax expense divided by net income before tax following prior research (Duncan, 1992). This leads to our final hypothesis:

H7. Managers use income-decreasing methods when the effective tax rate is higher.

4. Research design

4.1 Sample selection

We have chosen three accounting policy choices from 369 listed companies for the 2007-2008 financial year. We collect a list of companies from the Web pages of stock exchanges and randomly select 179 companies from India, 100 from Pakistan and 90 from Bangladesh. As discussed earlier, many developing and developed countries did adopt IFRS in 2005, and our analyses are based on data for the 2007-2008 financial year. This is the year when many South Asian countries accepted the implementation of the IFRS.

As there is no single formatted database in South Asian countries, all information is hand-collected from the companies' annual reports. We purchased the annual reports for Bangladeshi companies from the Dhaka Stock Exchange and used company websites for India and Pakistan. The notes to the actual annual reports were searched to determine the measurement methods for inventory, depreciation and property, plant and equipment (Table I).

4.2 The accounting policy choices
Following prior literature, we determine a policy choice score for each firm which is the aggregate score of three accounting methods divided by the number of accounting measurement methods. The policy choice score is used as the dependent variable in the model to assess the extent of managerial choice of income-increasing or decreasing methods. This approach has been used by prior research which includes Skinner (1993), Bowen *et al.* (1981) and Astami and Tower (2006). The manager of a firm may choose an income-increasing accounting alternative by deferring an expense to a later period or recognised in revenues earlier periods (Christie and Zimmerman, 1994). We select three IASs-based accounting procedure choices for the study, specifically, inventory, depreciation and property, plant and equipment. Furthermore, we develop scale ranges from 1 to 2 to determine the extent of income-increasing or decreasing accounting methods.

With regard to inventory measurement, IAS 2 requires that inventories should be valued at lower of cost and net realisable (LCNRV). All the companies surveyed in this study comply with this requirement. Inventory costing methods are recognised as a subset of the valuation of inventory. In South Asian countries, managers select inventory valuation methods from three alternative options prescribed by the Standards including the first-in, first-out (FIFO), weighted-average (WA) or a combination of FIFO and WA methods. Skinner (1993) and Astami and Tower (2006) use the FIFO measure of inventory valuation as the income-increasing method and assigned it the highest score of two, while a combination of FIFO and the weighted-average method is scored as one because its effect on reported earnings lies between FIFO and the weighted-average methods. Among these three accounting alternatives, the weighted average method produces the least reported income and is therefore scored as zero.

Managers in the three different countries predominantly select depreciation methods from the three alternatives including the straight-line method (income-increasing), the reducing balance method (income-decreasing) or a combination of the two methods. The selection of depreciation policy has an important impact on tax policy (Herrmann and Thomas, 1995). IAS 16 requires that companies follow the depreciation method consistently, but it does not prescribe any particular method of depreciation. The straight-line method of depreciation results in higher net income (Skinner, 1993; Bowen *et al.*, 1981; Astami and Tower, 2006); thus, we assign it a score of 2. The reducing balance method produces the lowest reported income to which we assign a score of 1. Astami and Tower (2006) argue that managers may use single or joint accounting methods to achieve their goals. The impact of the combination

Industry type	India	Pakistan	Bangladesh
1. Auto and allied	21	9	4
2. Cable and electrical	15	2	3
3. Chemical and pharmaceutical	40	16	14
4. Clay product and refractory	17	14	9
5. Engineering	38	4	8
6. Food and allied	13	16	7
7. Leather and tannery	1	2	4
8. Paper and board	8	3	5
9. Plastic and rubber	3	1	10
10. Textile and allied	22	33	26
Total	179	100	90

Table I.
Sample size and distribution according to industry

of the straight-line and the reducing balance on reported profit falls between the income-increasing and income-decreasing methods, and it is therefore scored by 1.5.

AS 10 (India), BAS 16 (Bangladesh) and IAS 16 (Pakistan) prescribe that property, plant and equipment should be carried at historical cost or by revaluation-based methods. The revaluation-based method (modified historical cost) (income-decreasing) impacts on the net income of the firm because of the amount of depreciation charged in the income statement. The amount of depreciation is higher if managers use the revaluation of assets method. We assign a score of 2 for a firm that uses the historical cost method (income-increasing) for the valuation of property, plant and equipment, 1 for a combination of the historical cost and the revaluation methods and 0 for the revaluation method only.

Table II summarises the accounting choices of firms in selected South Asian countries. The table shows that the majority of South Asian firms use a combination of the FIFO and the weighted-average methods (83.19 per cent), whereas only 12.7 per cent employ FIFO exclusively and 4.05 per cent select the weighted-average method exclusively. The combination of FIFO and the weighted-average methods are widely used due to the fact that firms use different methods for items which are different in nature (Bhattacharyya, 2006). According to Federgruen and Heching (1999), certain inventory lines may be highly susceptible to deflation instead of inflation. Further, where the level of inventory is unsteady, unnecessary inventory liquidations likely effect on certain product lines. They argue that firms also use combined inventory valuation method to enjoy the tax benefits. This signifies that South Asian firms seem to use the income-decreasing procedure for their inventory measurement. With reference to the choice of depreciation methods, we find less variation between the use of straight-line and the reducing balance methods. Table II shows that 53.41 per cent of firms choose the straight-line method, while 42.04 per cent choose the reducing balance and 4.31 per cent select a combination of these two methods, indicating firms mostly use an income-increasing accounting measure of depreciation. Similarly, out of 369, 329 firms (88.16 per cent) choose the income-increasing accounting policy for the valuation of property, plant and equipment.

4.3 Model specification
A multiple regression model is used to measure the determinants of managers' accounting policy choices. The model specification is given below:

$$PCSCORE = \beta_0 + \beta_1 FSIZE + \beta_2 ASTIP + \beta_3 IOS + \beta_4 FLEV + \beta_5 PRFT$$
$$+ \beta_6 WHSOWN + \beta_7 ETR + \beta_8 INDDUM + \varepsilon_i$$

Inventory Accounting policies	Score	n	(%)	Depreciation Accounting policies	Score	n	(%)	Property, plant and equipment Accounting policies	Score	n	(%)
FIFO	2	47	12.7	SL	2	188	53.41	HC	2	329	88.16
WA	1	15	4.05	RB	1	148	42.04	REV	1	20	5.15
Combination	1.5	307	83.19	Combination	1.5	16	4.55	Combination	1.5	21	5.69
N		369	100	N		352	100	N		369	100

Table II.
Accounting treatments practised by surveyed listed companies

where:
PCSCORE = accounting policy choice score;
FSIZE = log10 of the book value of total assets of the reporting entity at the year-end;
ASTIP = book value of property, plant and equipment (PPE)/total assets;
IOS = gross PPE/market value of the firm (market value of equity + book value of debt);
FINLEV = ratio of total debt to the book value of total tangible assets;
PRFT = operating profit/operating revenues;
OWNGP = per cent of share ownership held by the general public;
ETR = income tax expense divided by net income before tax;
INDDUM: = industry dummies;
$\beta_0, \beta_1, \beta_2..\beta_8$ = the regression estimates; and
ε_i = the stochastic disturbance term.

5. Results and analysis

5.1 Descriptive statistics and Pearson's correlation matrix

Table III presents descriptive statistics for the dependent variable, composite scores for the three countries included in this analysis and the independent variables. The mean composite score is 1.43, while the maximum score is 2.00, indicating managers of South Asian firms use more income-increasing methods than income-decreasing methods. This result is consistent with Astami and Tower (2006) and Waweru et al. (2011) who also find that their sampled companies used more income-increasing accounting policies. The mean debt to equity ratio is 0.95 signifying that South Asian companies rely more on debt financing. The table also shows that the standard deviation of firm size proxied by total assets is large, therefore, following the prior research the log (base 10) of this variable is considered to manage the non-normal data and is used in the regression model.

Table IV presents the Pearson correlation matrix for the dependent and independent variables used in examining the determinants of accounting method choice in the South Asian countries. The table indicates that the highest absolute correlation coefficient is between log of assets and taxes (0.778), followed by a correlation coefficient of 0.482 between financial leverage and log of assets. These two coefficients are below the

Variable	N	Mean	Min	Max	Median	SD	Skewness
APCSCORE	369	1.432	0.667	2.000	1.500	0.329	−0.284
LASSETS	369	6.454	4.068	8.631	6.456	0.796	0.007
ASTP	369	0.402	0.001	1.756	0.396	0.227	0.776
LASTP	369	0.141	0.001	0.440	0.145	0.069	0.178
IOS	369	0.771	−23.557	18.681	0.637	1.818	−4.159
LIOS	369	0.091	−23.557	1.294	0.214	1.439	−13.196
FINLEV	369	0.946	0.014	2.589	0.902	0.465	0.751
PRFT	369	−0.100	−39.882	1.883	0.168	3.051	−12.121
OWNGP	369	0.490	0.000	0.987	0.500	0.180	0.087
TAX	289	5.533	2.037	8.113	5.606	0.976	−0.582

Notes: where: APCSCORE = accounting policy choice score; LgTASSET = $\log_{10}$ of the book value of total assets of the reporting entity at the year-end; ASTP = book value of property, plant and equipment (PPE)/ total assets; IOS = gross PPE/market value of the firm (market value of equity + book value of debt); FINLEV = ratio of total debt to the book value of total tangible assets; PRFT = operating profit/operating revenues; OWNGP = % of share ownership held by general public; TAXES = income tax expense divided by net income before tax

Table III.
Descriptive statistics
for dependent and
independent
variables

Variables	APCSCORE	LASSET	FINLEV	PRFT	ASTP	IOS	OCON	Tax
APCSCORE	1.000							
LASSET	0.3344*	1.000						
FINLEV	0.1568**	0.4829***	1.000					
PRFT	0.0470	0.1425***	−0.0707	1.000				
LASTP	−0.0519	−0.1376***	−0.1730***	−0.0368	1.000			
IOS	0.1217**	0.0638	0.0154	−0.0135	0.0152	1.000		
OWNGP	0.1669***	0.0751	0.0523	−0.0776	0.0631	0.1095**	1.000	
TAX	0.2933*	0.7781*	0.3699*	0.2200*	−0.1198	−0.0115	0.0176	1.000

Table IV.
Correlation matrix
for dependent and
independent
variables

Notes: **Significant at the 0.05 level; *significant at the 0.1 level; ***significant at the 0.01 level; where: APCSCORE = accounting policy choice score; LgTASSET = $\log_{10}$ of the book value of total assets of the reporting entity at the year-end; ASTP = book value of property, plant and equipment (PPE)/total assets; IOS = gross PPE/market value of the firm (market value of equity + book value of debt); FINLEV = ratio of total debt to the book value of total tangible assets; PRFT = operating profit/operating revenues; OWNGP = % of share ownership held by general public; TAXES = income tax expense divided by net income before tax

threshold level of 0.8 and should not pose multicollinearity problems (Judge *et al.*, 1988). This is evident from the estimated variance inflation factors (VIFs) for the regression models since no variable is greater than 3.1, indicating that multicollinearity is not present in the model[3].

5.2 Multivariate results
Table V presents the multiple regression results for the composite score to estimate the coefficients on the independent variables for South Asian firms. In running the model, we pooled the cross-sectional data. The results show that the adjusted R^2 of the model is 12.59 per cent and significant at the 1 per cent level. We find that firm size is positively related to the composite score at the 5 per cent significance level, and therefore supporting our *H1*.

Variables	Predicted sign	Coefficient	*t*-stat	*p*-value	VIF
Constant		0.211	6.05	0.000***	–
Firm size (LASSETS)	+/−	0.021	2.91	0.004**	3.10
Assets-in-place (LASTP)	+/−	−0.070	−1.08	0.283	1.78
Investment opportunity set (IOS)	+/−	0.016	2.36	0.019**	1.98
Financial leverage (LFINLEV)	+	−0.016	−1.81	0.072*	1.69
Profitability (PRFT)	+	0.001	0.08	0.937	1.37
Ownership by general public (OWNGP)	+	0.043	2.27	0.024**	1.08
Tax rate (TAX)	−	0.007	1.38	0.169	2.72
Industry dummy		Included			
R^2		18.45%			
Adjusted R^2		13.66%			
F-statistics		3.85***			

Table V.
Multivariate results
of determinants of
accounting policy
choice

Notes: **Significant at the 0.05 level; *significant at the 0.1 level; ***significant at the 0.01 level; where: APCSCORE = accounting policy choice score; LgTASSET = $\log_{10}$ of the book value of total assets of the reporting entity at the year-end; ASTP = book value of property, plant and equipment (PPE)/total assets; IOS = gross PPE/market value of the firm (market value of equity + book value of debt); FINLEV = ratio of total debt to the book value of total tangible assets; PRFT = operating profit/operating revenues; OWNGP = % of share ownership held by general public; TAX = income tax expense divided by net income before tax

However, this result is not consistent with positive accounting theory (Watts and Zimmerman, 1986). They argue that firms may use an income-decreasing accounting policy to reduce political costs. Nevertheless, our result is consistent with Waweru *et al.* (2011). This indicates that large firms in South Asian countries use income-increasing accounting methods to attract more investors to raise capital. This may also be due to the lack of political pressure in developing countries (Waweru *et al.*, 2011).

We find that IOS is positively associated with a firm's accounting policy choice in selected South Asian countries. It is significant at the 5 per cent level indicating that firms employ income-increasing accounting policies when the firms' level of IOS is high. This outcome also supports our hypothesis and is consistent with Skinner (1993). Furthermore, we find that share ownership by the general public is positively associated with firms' income-increasing accounting policy choice as hypothesised. It is argued that managers may use the income increasing approach to attract general shareholders to invest in their companies. With regard to leverage we find a negative and significant association with the firms' composite score. This indicates that leverage has a significant impact on accounting method choice in South Asian countries. This result is consistent with Astami and Tower (2006) who find a negative association between financial leverage and firm's income-increasing accounting method choices in Asia Pacific countries. In contrast, Zmijewski and Hagerman (1981), Watts and Zimmerman (1986), Christie (1990), Duke and Hunt (1990), Press and Weintrop (1990) and Skinner (1993) find positive association with accounting policy choices. As South Asian companies rely more on debt financing including bank and financial institutions (Ahmed and Nicholls, 1994), managers are therefore likely use income-increasing accounting methods. As Table V illustrates, profitability has an insignificant coefficient indicating that it does not influence managers' accounting method choice decisions in South Asian countries. This result is consistent with Astami and Tower (2006) and contradicts Hagerman and Zmijewski (1979). The potential reasons for such findings may be that in developing countries firms which are making a lower profit or loss are likely to have less incentive to use an accounting method that increase profits (Astami and Tower, 2006). We also find that the association between assets-in-place and firms' accounting policy choice strategies is negative and insignificant. This result is consistent with Zmijewski and Hagerman (1981) who argue that the effect of assets-in-place on reported profit is minimal; hence, managers may not use the accounting method which reduces earnings. Finally, we expect that firms may use income-decreasing accounting procedures to reduce or defer income tax expenses but find that tax is not associated with firms' accounting policy choice. The plausible reason for such a result may be that managers in South Asian companies have no motivation to reduce reported profit, and this consequently results in reduction of income tax expense.

For robustness test, we use log of sales as proxy of size (Table VI). We find that log of sales (size proxy), IOS, leverage and ownership by the general public is associated with accounting policy choice, which is consistent with the results shown in Table VI. Furthermore, we test the main model using alternative proxies of profitability (ROA) and leverage (long-term debt/total assets) and our untabulated results provide similar results.

6. Conclusion
The purpose of our study is to examine the determinants of accounting policy choices in South Asia, namely, in India, Pakistan and Bangladesh. To date, most accounting policy choice studies have been conducted in developed countries using positive accounting theory and for those years before the IFRS were adopted. Recently, many developed and emerging countries have implemented IFRS promulgated by the IASB. However, to the best of our knowledge, no studies have examined accounting policy choices following the adoption of the IFRS. We chose

Variables	Predicted sign	Coefficient	t-stat	p-value	VIF
Constant		0.230	6.72	0.000***	–
Firm size (LSALES)	+/–	0.018	2.24	0.026**	4.18
Assets-in-place (LASTP)	+/–	−0.062	−0.93	0.353	1.78
Investment opportunity set (IOS)	+/–	0.016	2.35	0.019**	1.98
Financial leverage (LFINLEV)	+	−0.011	−1.23	0.222	1.52
Profitability (PRFT)	+	−0.001	−0.25	0.806	1.44
Ownership by general public (OWNGP)	+	0.042	2.22	0.027**	1.08
Tax rate (TAX)	–	0.007	1.07	0.284	3.82
Industry dummy		Included			
R^2		17.44%			
Adjusted R^2		12.59%			
F-statistics		3.59***			

Table VI.
Robustness check: multivariate results of determinants of accounting policy choice

Notes: ***Significant at the 0.01 level; **significant at the 0.05 level; where: APCSCORE = accounting policy choice score; LgTASSET = $\log_{10}$ of the book value of total assets of the reporting entity at the year-end; ASTP = book value of property, plant and equipment (PPE)/total assets; IOS = gross PPE/market value of the firm (market value of equity + book value of debt); FINLEV = ratio of total debt to the book value of total tangible assets; PRFT= operating profit/operating revenues; OWNGP = % of share ownership held by general public; TAX = income tax expense divided by net income before tax

three accounting policies which are based on the IASs of India, Pakistan and Bangladesh and randomly selected 369 listed companies for the 2007-2008 financial year. Our results show that firm size, IOS, ownership by the general public and financial leverage determine accounting policy choice in these South Asian countries. Our results are consistent with prior research conducted in the US and Europe except for firm size and IOS which produce contradictory results and are inconsistent with the positive accounting theory. We find that firm size and IOS are negatively, while ownership by the general public is positively associated, and leverage is negatively associated with a firm's income-increasing accounting policies. However, we do not find a significant relationship between accounting policy choice and assets in place, profitability and taxes.

The policy implication findings of our research is that there are some flexibility exists in the IASB's accounting standards and managers and preparers of financial statements have discretion to select a particular accounting method which maximises their own benefits at the expense of shareholders which lead to greater earnings management and lower reporting quality. Therefore, there is scope for regulators and standards setters to reduce the alternative methods allowed in IASB's standards which may likely improve firms' reporting quality.

In this study, we only use three accounting policy procedures from three important South Asian countries; thus, future research can be conducted using additional policy choices, considering inflation factor, and including two more South Asian countries, namely, Sri Lanka and Nepal.

Notes

1. see Hagerman and Zmijewski (1979), Zmijewski and Hagerman (1981), Bowen *et al.* (1981), Daley and Vigeland (1983), Granof and Short (1984), Healy (1985), Ayres (1986), Trombley (1989) and Dhaliwal *et al.* (1999).

2. Astami and Tower (2006) also used profitability as a proxy for bonus in their study.

3. A multicollinearity problem arises when a VIF value is greater than 10 (Naser *et al.*, 2002).

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Corresponding author

Muhammad Jahangir Ali can be contacted at: m.ali@latrobe.edu.au