MANAGERS' REASONS FOR DEPRECIATION METHOD CHOICE: EXPLORING TECHNICAL AND PAT EXPLANATIONS IN EGYPTIAN COMPANIES

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Abstract

Purpose: The paper seeks to complement a more conventional PAT-based study of accounting method choice in Egyptian firms (Dey *et al*., 2007) by examining three alternative computational reasons for depreciation method choice: simplicity; compatibility with industry norm; and suitability for class of asset.

Design/methodology/approach: The paper draws on a questionnaire survey, sent to Egyptian companies, in which managers were asked to indicate their reasons for choosing depreciation methods as well as the actual depreciation methods used.

Findings: The paper finds that technical reasons were frequently given in survey responses from managers. However, the available evidence on the actual depreciation methods used by their firms and industries is in fact more consistent with PAT-based theories of accounting choice than with such alternatives. This suggests that the responses to the survey reflected managers' rationalisations of decisions made for self-interested purposes.

Originality/value: Most recent work on managerial decisions concerning accounting choices utilises data gathered from databases of published financial information and is undertaken within a PAT context. This study extends that approach by utilising the results of a questionnaire distributed in Egypt to test some additional hypotheses that reflect possible technical accounting reasons for justifying depreciation methods.

Keywords: Accounting method choice, depreciation, Egypt.

Classification: Research paper

1. Introduction

Empirical research on accounting method choice has tended to explain and predict managers' accounting choices by reference to positive accounting theory (PAT) (Watts & Zimmerman, 1986; 1990). Conventional PAT studies are conducted in a hypothetico-deductive style and test hypotheses concerning managerial behaviour using only data gathered from accounting statements. They generally make no attempt to *ask* managers *why* they have made particular accounting choices. This paper adds to the existing literature by exploring the extent to which Egyptian managers' motives for making accounting method choices may be grounded in simpler, more pragmatic concerns. In particular, the paper considers the extent to which the widespread international usage of straight-line depreciation (SLD) (Gray *et al*., 1984), may owe more to practical or technical considerations than to notions of economic self-interest (Watts & Zimmerman, 1986) or theoretical rigour (Green *et al*., 2002). Although PAT-based empirical research has dominated this part of the accounting literature for many years, it has also been subjected to sustained challenge on a number of levels (see, for example, Tinker *et al*., 1982; Sterling, 1990).

In addition to the hypotheses that underlie conventional PAT-based research, the paper identifies some alternative hypotheses for reasons for depreciation method choice in firms in Egypt that relate to technical accounting issues. These explanations include: (a) simplicity of calculation, (b) suitability for class of asset, and (c) conformity to industrial norm. The first of these possible explanations has been frequently raised in the accounting literature to support or recommend the use of straight-line depreciation (see, for example, Hendriksen and Van Breda, 1992). The second explanation, in contrast, attempts to link depreciation method choice to a more defensible technical rationale (see, for example, Baxter, 1971). The third explanation put forward in this paper is inductively generated from pilot interviews with managers of Egyptian firms. It would be a rational reason for choice if managers desired their firms to be compared with others in their industry on the same basis, since the use of different methods of depreciation could be expected to reduce direct comparability.

Reviews of accounting theory typically highlight the fact that inductive questions of the type outlined here originally preceded PAT-based research (Henderson *et al.*, 1992). Such reviews frequently suggest inductive accounting research has often been limited in scope and depth because of its failure to evaluate practice adequately or to resolve wider normative questions about accounting (see, for example, Gray *et al.*, 1996). However, its use in this paper is justified on two grounds. Firstly, in seeking to understand managerial motivations for accounting choice, this paper confronts the empirical investigation of such issues in a direct way. It uses an inductive questionnaire-based approach, informed by initial pilot interviews, to solicit managers' views on the importance they attach to possible motives for accounting choice. Secondly, the inductive theorising and research in this paper is not intended to be mutually exclusive to a PAT-based approach. Instead, the paper explicitly seeks to (a) compare managers' responses to both technical and PAT-based explanations for accounting choice and in doing so to (b) establish whether managers' stated reasons for accounting choice are consistent with the available evidence. Conversely, although it examines alternatives, the paper does not attempt to dismiss PAT-based research. Indeed, it recognises that managers' responses may be rationalisations of choices made to further their own economic self-interests.

Following on from the empirical study undertaken by Dey *et al.* (2007), the research discussed in this paper is based on data gathered from a sample of firms operating in Egypt. The general economic climate in Egypt is characterised by a steady deregulation towards a more liberal market economy. Since the early 1990s, this has been accompanied by the renewal and expansion of the Cairo stock exchange and an accelerating program of privatisation (World Bank, 2001). Governmental support for the modernisation and growth of the economy has included a system of tax-based incentives. In Egypt, straight-line is the usual basis for calculating depreciation for tax purposes. Nevertheless, managers are allowed to use accelerated depreciation of up to 25% of the value of assets used in the modernisation of business processes (Abdel-Rahman, 2001). In this way, a range of depreciation methods is permitted by the tax regime. Dey *et al.* (2007) discussed the cultural issues that may affect

reporting choices in Egypt. These did not appear to produce behaviour that differs from that observed in more economically developed countries. Consequently, one could reasonably assume that the evidence of that paper has relevance beyond economically developing Islamic societies.

It should be noted that the possible influence of technical reasons on managers' accounting method choices cannot easily be inferred by correlating accounting choices against other variables in an *ex post* review of accounting statements. Consequently, in contrast to much conventional PAT-based research, this work requires a direct empirical approach that explicitly seeks out the views of managers involved. It is recognised in this paper that managers' responses may not always reflect the real reasons for accounting choices. Nevertheless, we consider that they are a source of empirical data that merits examination.

Although the empirical observations were undertaken in Egypt, there seem to be no compelling cultural or environmental reasons that would cause the observations to be inapplicable to other Middle Eastern countries. On the basis of the discussion in the previous section, different possible managerial reasons for accounting method choice may be identified, which incorporate both (a) a widely-recognised agency-based motive embodied in PAT-based research and (b) an alternative set of possible reasons which are related to technical accounting issues. They may be formally stated in theoretical hypotheses.

2. Theoretical Hypotheses

PAT-based research on accounting choice stems from clear assumptions regarding the agency issues surrounding the separation of ownership and control. In common with most PAT studies (see Fields *et al.*, 2001), when establishing a hypothetical framework for accounting choice, this paper takes as its starting point the economic self-interest of managers who act as agents of business owners. If one accepts the usual perception of separation of ownership and control in large organisations, one can assume that managers will adopt depreciation methods that maximise their personal income. Hypothesis 1 below reflects that economic rationality:

H1.   Managers choose depreciation methods that enhance their own remuneration.

This hypothesis appears to be strongly supported by significant statistical data in the earlier study using the survey data (Dey *et al*., 2007). Other possible PAT hypotheses, such as leverage, were also examined in that study, but did not receive the same level of support, so they will not be considered further here.

The previous section indicated the possible influence of some technical accounting issues on managers' choices of depreciation method. These were (a) the minimisation of information processing costs (i.e. simplicity of calculation); (b) the suitability of the depreciation method to the class of asset concerned; and (c) the perceived need to comply with existing norms of accounting method choice within the firm's industrial sector. These are reflected in hypotheses 3, 4 and 5 as follows:

Managers choose depreciation methods for technical accounting reasons to:

H2.   minimise information processing costs;

H3.   maximise the usefulness of the accounting information by choosing the most suitable depreciation method for the class of asset involved.

H4.   maximise the comparability of their firms performance with those of other firms in their industries;

3. Alternative Empirical Hypotheses

Given their origins in PAT-based research, the empirical application of hypothesis 1 is relatively straightforward. Hypothesis 1 asserts that managers will act to maximise their own income, which in conventional PAT studies generates the bonus-plan hypothesis. Agency theory is used to assert that the contractual incentives provided by owners – typically bonus schemes - will link corporate performance to managerial remuneration, and hence managers' economic self-interest will be aligned with the interests of owners. In this scenario, and in the

context of accounting for depreciation, managers are assumed to choose straight-line depreciation in order to increase reported income. This topic and the development of the resulting hypotheses were extensively covered in Dey *et al*. (2007). Hypotheses $H1_e$ is the alternative empirical hypotheses for theoretical hypotheses H1 following this conventional thinking:

$H1_e$ (i) A majority of managers assign importance to the effect on net income for the choice of depreciation methods;

(ii) There is a positive association between the use of management bonus schemes and the use of straight-line depreciation (SLD).

Theoretical hypotheses 2, 3 and 4 asserted that managers will be guided by the technical desire to: minimise the costs of following a particular accounting method choice; maximise the usefulness of the accounting information by choosing the most suitable depreciation method for the class of asset involved; and/or comply with perceived norms of accounting method choice in their industries.

As indicated above, it has been suggested (see, for example, Hendriksen, 1982) that a dominant reason for using SLD would be simplicity of calculations, which reduces the complexity and therefore the cost of calculations. This perception allows H2 to be tested by reference to $H2_e$(i) and (ii):

$H2_e$ (i) A majority of managers assign importance to the simplicity of calculations for the choice of depreciation methods.

(ii) There is a positive association between the importance which managers assign to the simplicity of calculations for the choice of depreciation methods and their use of SLD.

Theoretical hypothesis H3 can be tested in a straightforward manner by reference to empirical hypotheses $H3_e$(i) and $H3_e$(ii):

H3$_e$ (i) A majority of managers assign importance to the suitability of method to the

class of asset for the choice of depreciation methods.

(ii) There is a positive association between the importance which managers assign

to the suitability of method to the class of asset for the choice of depreciation

methods and the extent to which they use different methods for different classes of

asset.

Similarly, H4 can be tested by reference to H4$_e$(i). The hypothesis H4$_e$(ii) provides a test of

the extent to which managers' statements in H4$_e$(i) are consistent with their behaviour:

H4$_e$ (i) A majority of managers believe that the methods usually used in their industry

are important to the choice of depreciation methods.

(ii) There is a positive association between managers' statements that depreciation

methods usually used in their industry are important and their use of the method

that is mainly used in the industry.

It should be noted that, in each case, part (ii) of the alternative hypothesis seeks to test the

credibility of the survey responses that relate to part (i) of each hypothesis.

4. Empirical Method

In developing the propositions contained in the technical hypotheses, managers' motivations

must be explained through more direct empirical methods than those typically employed in

PAT-based studies. By using a questionnaire-based method, data may be gathered about

managerial responses to suggested motives for accounting policies, which is different to that

available from databases. The availability of such data in this study allows the exploration of

alternative motivations for accounting method choice, including a comparison of surveyed

responses against available financial information. This enables the study to assess whether

managers' stated motives for their behaviour are consistent with their decisions.

A questionnaire was distributed in 2002 to the 320 Egyptian firms with the largest net

asset bases in the Cairo, Alexandria and Menoufia Governorates (the most industrialized areas

in Egypt). Ninety-three firms responded to the questionnaire, a response rate of 29%. Appendix 1 shows the survey questions that are relevant to this paper. The issue of non-response bias was investigated using the idea that later respondents to a survey are more similar to non-respondents than are earlier respondents (Wallace and Mellor, 1988). Completed questionnaires were divided into two groups: those received in the first three weeks were placed in the first group. The first group consisted of 48 respondents while the second group consisted of 45 respondents. Based on the two groups, Mann-Whitney U-tests (Mann and Whitney, 1947) were applied to those variables that were measured on the ordinal scale; while for those questions based on a categorical scale, a chi-squared test was performed. Only two of the 42 variables tested showed a significant difference between groups at the 5% level. Since one would expect 2.1 variables out of 42 to be false positives [1] it is evident that the results of the first group in the sample are similar to those in the second group. This finding supports the presumption that the viewpoints of non-respondents were unlikely to be significantly different from those of respondents.

One could expect that firms would only use bonus schemes if their owners perceived a need to motivate and control managers as agents. Consequently, it is probable that a majority of firms that use bonus schemes are managed by agents and not owners (principals). The sampled firms could therefore also be categorised into (a) owner-managed (OM) (firms without bonus schemes) and (b) agent-managed (AM) (firms with bonus schemes) subsets This categorisation can help the interpretation of the subsequent analysis, and the distribution is shown in Table 1.

Table 1: Categorisation of sample firms by bonus scheme usage

	Number of firms	*%*
No bonus scheme (Owner-managed)	43	46.2
Bonus scheme (Agent-managed)	50	53.8
Total	93	100.0

Table 2 shows the level of adoption of straight-line depreciation for each class of asset. A strong tendency to adopt SLD across all types of asset is evident, with 73 of the 93

surveyed firms doing so. Of the remaining 19 firms, only 3 chose to vary their use of depreciation method between SLD and alternative methods. The widespread preference for SLD in the sample data is consistent with a general international trend (Green *et al.*, 2002), and with the usual taxation conventions in Egypt outlined earlier in this paper.

Table 2: Adoption of straight-line depreciation method

Asset class	Use SLD	Do not use SLD
Buildings	73	19
Plant and machinery	73	19
Vehicles	73	19
Furniture	73	19
Computers and office equipment	76	16

The remarkable consistency of depreciation method identified above implies that most managers do not differentiate between classes of asset in deciding which method of depreciation to use. Therefore, one would expect the responses to the questionnaire to reflect a low priority to the importance of suitability for class of asset.

Table 3 shows the distribution of depreciation choices by surveyed firms across industry types. Of the eleven industry sector categories used in the survey, seven exhibit what appears to be depreciation method 'norms' (being the use, or non-use, of SLD by at least 75% of firms in the sector). In contrast, only three relatively small sectors – Building Materials, Electrical Appliances and Wood & Paper - exhibit a clear mix of depreciation methods amongst firms.

The sectoral distribution of the respondent firms is compared with the corresponding distribution for the target population in Table 3. In order to confirm that the sample is representative of the population, a chi–squared test of the null to the hypothesis that the proportion of responses is the same for each sector was carried out. This test results in a chi–squared goodness of fit statistic of 12.17 on 10 degrees of freedom, with a p–value of 0.274. Hence the null hypothesis cannot be rejected at the 5% level, and concerns regarding bias from the sample to the population may not be serious.

Table 3: Sectoral distribution of firms

Industry Sector	Always Use SLD	Never Use SLD	Change Method	Sample Total	Target Population	Response Rate (%)
Textiles	15	5		20	43	46.5
Food & Spirits	9			9	35	25.7
Steel	3			3	6	50.0
Chemical Production	8			8	34	23.5
Construction	6	1		7	29	24.1
Building Materials	2	2		4	25	16.0
Hotels & Tourism		3		3	16	18.8
Electrical Appliances	3	3		6	19	31.6
Wood & Paper	2	1	2	5	22	22.7
Communications	3			3	3	100.0
Pharmaceuticals & Medical	9	1	1	11	36	30.6
Other	14			14	52	26.9
Total	74	16	3	93	320	29.1

In contrast to the significance of asset class to depreciation method, this data appears to suggest that norms within industries may be important to managers, because the use of methods other than SLD appears to be concentrated in a relatively small number of different industry types.

The next section examines the responses given by sampled firms concerning the importance they attribute to the range of possible motives identified in this paper.

5. Descriptive Statistics

Table 4 shows the relative importance attached by respondents of various factors to their company's choice of depreciation method (see question 5 in appendix 1):

Table 4: Mean Responses for Reasons for Choice of Depreciation Method

Importance to Depreciation Method Choice of:	Overall Mean	Use Other Depreciation	Use Only SLD	Owner Managed	Agent Managed
PAT					
Effect on Net Income	2.911	2.556	3.000	2.732	3.061
Technical					
Simplicity of Calculation	3.022	2.833	3.070	3.146	2.918
Suitability for Class of Asset	4.538	4.525	4.525	4.558	4.520
Importance of Industry Norm	4.178	4.611	4.085	4.415	3.980

Note: Respondents answered using a 5-point Likert scale, with 1 = Not important at all, 5 = Very important.

The overall means in the table indicate that the technical reasons identified in Panel B seem to be more important to managers than the PAT-based motive in Panel A. Managers rated the influence of the agency-related financial issue of impact on net income lower than suitability for class of asset and importance of industry norm, and indeed seem relatively indifferent to it. Even simplicity of calculation received better support than the PAT-based hypothesis, with the exception of the agent-managed group.

When these differences are examined in more statistical detail, industry norm (overall mean = 4.178, p-value=0.000) and suitability for class of asset (overall mean = 4.538, p-value=0.000) are given significantly more than neutral importance (i.e. 3) by managers [2]. The PAT-based variable can be tested against each of the technical reasons in Panel B by a paired-samples t-test. These tests reveal that, while simplicity of calculation is not significantly more important than the PAT-based reason (mean = 3.022, t = 0.577, one-sided p-value = 0.283), both industry norm (overall mean = 4.178, t = 6.57, p = 0.000) and suitability for class of asset (overall mean = 4.538, t = 10.648, p = 0.000) are given significantly more importance by managers. Acceptance of responses at their face value suggests that more 'technical' reasons exert a substantially greater influence on managers' choice of depreciation methods than the motive identified by PAT. Interestingly, the 'simplicity' rationale suggested by Hendriksen and Van Breda (1992) received no clear

support. That could be consistent with managers choosing rationalisations of their choices that they perceive reflect more favourably on themselves (in other words, they may think that 'simplicity' reflected adversely on their technical capability).

The responses are sub-divided by splitting them into two further subsets. Following the arguments presented in the previous section on empirical hypotheses, the subsets of (a) SLD/non-SLD use, and (b) bonus plan/non bonus plan groups. Taking the first of these subsets, the difference between those using SLD and those using other forms of depreciation was expressed as a slight preference by firms using SLD for all four reasons except industry norm, where non-SLD users gave significantly ($p = 0.005$) higher importance (mean = 4.611) than SLD users (mean = 4.085). On the other hand, those (agent-managed) firms with bonus schemes rated the PAT-based reason slightly higher than (owner-managed) firms without a bonus scheme, but were more indifferent to technical reasons for depreciation choice. Such increased favouring of PAT-based motives for accounting choice is consistent with expectations, but this observation is tempered by the fact that in general, managers of firms with bonus schemes still rate technical reasons higher.

The strong preference across the overall sample for technical reasons of industry norm and suitability for class of asset is worthy of note. However, the strength of this expressed preference should not necessarily be taken at face value. The general level of importance attached by respondents to the suitability of depreciation method to the class of asset does not appear to be reflected in the actual depreciation methods used. Table 2 shows that only three of the 93 surveyed firms did not use the same type of depreciation method across all types of asset. Unless one accepts that all classes of assets have similar economic characteristics, a comparison of tables 2 and 4 suggests a major inconsistency between the sentiments expressed by managers in the survey and the evidence from their actual depreciation choices. At the same time, however, the importance attached to industry norm appears to be more consistent with the available evidence in table 3, which suggests that some conformity exists in the depreciation choices made by managers in specific industrial sectors. The likely reasons for these contrasting comparisons will be explored later in the paper.

6. Tests of Hypotheses

Table 5 summarises the results of testing the null hypotheses. Hypotheses (i) were tested using the Wilcoxon (1945) signed rank test of the median. Hypotheses (ii) were tested using Kendall's Tau(b) measure of correlation for ordinal data (Kendall, 1970). For $H1_e$(i) the statistical null hypothesis is that managers assign the neutral level of importance (3) to the effect on net income for the choice of depreciation methods while the alternative hypothesis states that the majority of managers assign greater importance (than 3) to the effect on net income. Consideration of table 5 indicates that it is not possible to reject the null ($p = 0.862$), so the alternative underlying hypothesis is not supported by managers' responses. It is however interesting to note from table 4 that AM firms (with bonus schemes) are more supportive than OM firms. It could be reasonably assumed that managers might be averse to admitting that they are primarily motivated by self-interest. Consequently, it is not very surprising that they attribute choice by reference to technical accounting factors. For $H1_e$(ii) the null hypothesis is that there is no association between the use of management bonus schemes and the use of straight-line depreciation (SLD), and the alternative is that there is a positive association between the use of management bonus schemes and the use of SLD. It is noteworthy that this more conventional analysis of the data conducted previously (Dey *et al*., 2007) also showed a strongly significant ($p = 0.000$) rejection of the null for $H1_e$(ii). This provides support for the alternative of $H1_e$ and suggests that the responses are inconsistent with observed behaviour that could be motivated by self-interest.

Table 5: Summary of Results

Support for Alternative Hypotheses		Sub hypothesis (i) Level of importance attached	Sub-hypothesis (ii) Association with use of SLD
H1_e:	*Effect on Net Income*	N ($p = 0.862$)	Y ($p = 0.000$)
H2_e:	*Simplicity of Calculation*	N ($p = 0.571$)	N ($p = 0.268$)
H3_e:	*Suitability for Class of Asset*	Y ($p = 0.000$)	N ($p = 0.471$)
H4_e:	*Importance of Industry Norm*	Y ($p = 0.000$)	N/A

$H2_e$ is concerned with the possibility that simplicity of calculation affects managers' choices of depreciation policy. Sub-hypothesis (i) relates to managers' responses and the results for all respondents do not allow rejection of the null ($p = 0.571$). OM firms are more supportive than AM firms, but not significantly so ($p = 0.208$). Overall, there is no support from the survey for the alternative hypothesis. The sub-hypothesis $H2_e$(ii) tested the compatibility of responses to $H2_e$(i) with observed behaviour. It shows a positive relationship between support for simplicity and the use of SLD, which is contrary to the null and supports the alternative, but with a *p*-value of 0.268. Therefore, the evidence is consistent with the expected relationship between support for simplicity and adoption of SLD, but is not statistically significant.

'Suitability for class of asset' receives significant support from the total sample of respondents with an overall mean of 4.538 and *p*-value of 0.000. The null for $H3_e$(i) can therefore be rejected if one accepts the validity of the responses. Sub-hypotheses $H3_e$(ii) sought to test that validity. It is clear from table 2 that very few firms use more than one depreciation method, regardless of the class of asset. Indeed only three of the ninety-three firms used anything other than SLD. Clearly this observation challenges the validity of managers' responses concerning suitability for class of asset. A formal statistical test of the null sub-hypothesis of no association between the importance which managers assign to the suitability of method to the class of asset for the choice of depreciation methods and the extent to which they use different methods for different classes of asset would have low power when there is such near uniformity of choice of depreciation method over all asset classes.

Hypothesis $H4_e$ relates to the importance of consistency with accounting practice that predominates in a firm's industry (i.e. 'industry norms'). It is clear from Tables 4 and 5 that respondents assigned statistically significant emphasis to this reason. The null hypothesis to $H4_e$ is clearly rejected ($p = 0.000$), providing strong support for the alternative. To explore this further, it is helpful to impose a measurable definition of 'industrial norm', of use by at least 75% of firms in a sector. One could reason that firms which operate in industries that

conform to this criterion should rate the importance of 'industrial norm' more highly than those that do not. Of the 93 firms in table 3, 63 qualify as firms that operate within industries with measurable norms of depreciation method. The data for three firms are excluded, because they use both SLD and other depreciation methods, and a further three did not respond to the question. The mean responses for the remaining sub-sample of 87, are shown in table 6.

Table 6: Analysis of responses to importance of industry norm

Importance of Industry Norm in Depreciation Choice	All firms		Firms operating in industries with 75% norm	
	n	Mean	n	Mean
SLD Users	72	4.07	53	4.04
Non-SLD Users	15	4.73	10	4.60
Total	87	4.18	63	4.13

This table indicates that the subset of all firms which do not use SLD attribute even more importance to the existence of industrial norms than those firms which use SLD. The difference is statistically significant (one-tailed $p = 0.024$). Within the subset of firms operating in industries with measurable norms, this difference is slightly smaller and less significant (one-tailed $p = 0.098$). These observations do not increase the confidence in the credibility of the responses to the question concerning H4$_e$.

Based on the arguments detailed above, there is no conclusive evidence to support the validity of managers' responses. They express a clear preference for two technical reasons for choosing depreciation methods. Nevertheless, the evidence concerning 'suitability for class of asset' suggests an inconsistency that could imply that managers merely rationalised their decisions.

7. Conclusions

As indicated above, most recent work on managerial decisions concerning accounting choices utilises data gathered from databases of published financial information and is undertaken within a PAT context. This study extends that approach in two ways. Firstly, it proposes some additional hypotheses that reflect possible technical accounting reasons for discussing

depreciation methods. Secondly, it utilises the results of a questionnaire distributed in Egypt (the latter was used, together with a more conventional database sample, in a PAT oriented study reported in Dey *et al.*, 2007). This paper is concerned primarily with the survey-based data that allows the technical accounting hypotheses to be tested.

The answers provided by the respondents indicated no significant support for the PAT oriented hypotheses. Although the literature has identified simplicity of calculation as a possible technical reason for choosing SLD, that reason received no significant support from respondents. In contrast, 'suitability for class of asset' and 'importance of industry norm' received strong support. One could interpret the survey evidence as indicating no support from responses for (a) choices made to influence an accounting outcome that has potential economic consequences for the decision maker (i.e. PAT) and (b) simplicity (which could imply a lack of sophistication). In contrast, the two reasons that imply consideration of the relevance of the accounting decision for the appropriate interpretation of the economic meaning of figures of accounting income received strong support.

Unfortunately it is not possible to assign unreserved credibility to the responses. Firstly, the objective evidence for the bonus scheme hypothesis of PAT was strong (see Dey *et al.*, 2007) and is inconsistent with the subjective responses to the PAT related questions in the survey. Secondly, the responses concerning suitability for class of asset seem to be inconsistent with the observation that almost all firms used the same depreciation method for all classes of asset. Thus there was a failure to discriminate between the characteristics of different classes. In respect of the importance of industry norm the observed evidence provides a weak challenge to the responses. Overall, one cannot reject the implication that managers may have been rationalising their choices by supporting the responses that looked likely to be the most acceptable if they were seeking to present unbiased and meaningful financial statements.

Clearly, conscious or unconscious rationalisation of personal reasons for accounting choice may affect all survey-based accounting studies of such choices. This creates a potential methodological limitation of that mode of research – because of the dependency on the face

value of responses. Nevertheless, there seems to be value in such studies, given the absence of multi-respondent alternatives. This paper has tested responses by reference to objective data which has added some evidence to a possible hypothesis that such rationalisations occur. In summary, the study indicates support from the objective evidence (but not from managers' responses) for the PAT hypothesis that depreciation choices are influenced by the existence of agent-managers remunerated in part by bonus schemes. It does not provide convincing evidence that technical accounting alternatives to PAT may be the actual reasons for accounting choices. Instead, the responses to the survey reflected managers' rationalisations of decisions made for self-interested purposes.

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[1] The calculation leading to 2.1 as 5% of 42 is based on the definition of the significance level of a test as the probability that it will result in rejection of a true null hypothesis.
[2] These p-values are from Student's *t*-test applied to the mean (Pearson and Wishart 1942). Similar results are obtained using the non-parametric equivalent Wilcoxon test applied to the median (Wilcoxon, 1945).

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Appendix 1: Survey questions

The questionnaire used a five-point Likert scale with 1 equalling 'not important' and 5 indicating 'very important'. Some respondents did not answer in respect of all categories with each question. The total actual responses received are shown in italics.

Q1. In which main industry group(s) does your company operate?

Textile	*20*	Hotels & Tourism	*3*
Food & Spirits	*9*	Electrical application	*6*
Steel	*3*	Wood & Paper	*5*
Chemical production	*8*	Communications	*3*
Construction	*7*	Pharmaceuticals & Medical	*11*
Building materials	*4*	Other (please specify): -	*14*

_____

Q2. Please indicate your company's ownership status.

	Yes	No
One shareholder or one group (for example a family) owns 10% or more of the total share capital	*60*	*22*
A bank or insurance company owns 20% or more of the total share capital	*7*	*49*
One group of up to five shareholders (either physical persons or legal entities), who are not members of the same family own 10% or more of the total share capital	*28*	*36*
Your company is a privatized company and the government still owns more than 50% of the total share capital	*1*	*56*
Your company is a privatized company and the government still owns less than 50% of the total share capital	*12*	*61*

Q3. Does your company employ bonus schemes to remunerate members of its board of directors?

Yes	No
50	*43*

Q4. What depreciation method does your company employ?

Class of asset	Depreciation method	
	Straight line depreciation	Other
Buildings	*74*	*19*
Plant and machinery	*74*	*19*
Vehicles	*74*	*19*
Furniture	*74*	*19*
Computers and office equipment	*76*	*16*

Q5. How important are the following for your choice of the depreciation method?
(Scale: 1 = Not important at all, 2 = Not very important, 3 = Neutral, 4 = Important, 5 =Very important)

	1	2	3	4	5
Industry norm	6	5	2	31	46
Suitability for class of asset	1	1	5	26	60
Simplicity of calculation	18	13	18	31	10
Effect on net income	19	7	35	21	8