What motivates managers' choice of discretionary accruals?

Victor L. Bernard, Douglas J. Skinner*

University of Michigan Business School, Ann Arbor, MI 48109-1234, USA

(Received June 1996; final version received July 1996)

Abstract

The papers by Subramanyam (1996) and Kasanen, Kinnunen, and Niskanen (KKN, 1996) both consider why managers manipulate accounting accruals. Subramanyam finds that discretionary accruals are associated with several performance measures, and concludes that managers' accrual choices increase the informativeness of accounting earnings. However, a strong competing alternative is that the 'Jones model' systematically mismeasures discretionary accruals, so that they contain a significant non-discretionary component. Unlike many US studies, KKN find strong evidence of earnings management in Finland, where Finnish managers set earnings to satisfy the demand for dividends by keiretsu-like institutional investors.

Key words: Capital markets; Methodology; Earnings management; Accrual tests; Dividends

JEL classification: M41; G14; G21

1. Introduction

Much accounting research investigates whether managers exercise their accounting discretion to influence reported earnings. Following an important

*Corresponding author.

This discussion was written by the second author after Victor Bernard, the original conference discussant, passed away suddenly in November 1995. The discussion is based on notes from Bernard's original presentation, on his marked-up copies of the two papers, and on the second author's recollection of the original presentation. Every effort has been made to be faithful to Bernard's thoughts about these papers and, more generally, about the literature on managers' discretionary accrual choices.
paper by Healy (1985), a large number of papers examine managers' accrual choices for evidence of 'earnings management'. However, researchers do not always agree on how this evidence should be interpreted: while some believe that their research provides evidence of earnings management, others argue that research design ambiguities limit the extent to which we can rely on these studies. Moreover, even if we take managers' ability to manipulate earnings as given, it is still unclear why managers choose to intervene in the reporting process. While some argue that managers’ accrual choices are 'opportunistic', adding noise to reported earnings, others believe that managers exercise their discretion to improve the informational value of accounting numbers (Watts and Zimmerman, 1986; Healy and Palepu, 1993).

The papers by Subramanyam (1996) and Kasanen, Kinnunen, and Niskanen (1996, hereafter KKN) both consider why managers choose to manipulate accounting accruals. This is an important question in at least two respects. First, financial statement users are interested in how discretionary accruals should be interpreted – in what settings do these numbers increase and decrease the informativeness of reported earnings? Second, standard setters tend to act to reduce managers’ ability to exercise discretion in the reporting process, apparently based on the assumption that managers exercise their accounting discretion opportunistically. If, instead, managers use their discretion to increase the informativeness of accounting earnings, standard setters may want to rethink their approach.

Subramanyam finds that discretionary accruals are associated with contemporaneous stock prices and future earnings and cash flows, and concludes that managers choose accruals to enhance the informativeness of accounting earnings. Subramanyam uses the 'Jones model' (Jones, 1991) to measure discretionary accruals, and his conclusions depend on how well this model separates discretionary and nondiscretionary accruals. As a result, the current discussion assesses the reliability of this proxy for discretionary accruals, along with other aspects of the Subramanyam study.

The KKN paper addresses a different motivation for earnings management in an unusual setting. These authors examine whether managers of a sample of Finnish firms adjust earnings to a target level that simultaneously: (1) is large enough to allow the payout of a smoothly increasing dividend stream (since dividends are closely tied to earnings in Finland) and (2) allows managers to minimize corporate income taxes (since taxes are based on reported earnings).

---


2 The dichotomy between the opportunism and information arguments is probably too simplistic: at a minimum, managers make accounting choices for 'efficiency' reasons as well.
The authors find strong support for the idea that Finnish managers set earnings to satisfy the demand for dividends by their keiretsu-like institutional investors, although it is not clear whether the results generalize to other countries and regulatory regimes.

2. Subramanyam (1996) on the pricing of discretionary accruals

The central research question in Subramanyam's paper is whether managers choose discretionary accruals to convey information or whether their choices are opportunistic (so that discretionary accruals increase the noise in reported earnings). To investigate this question, Subramanyam tests whether his estimates of discretionary accruals help: (1) explain contemporaneous stock price movements, (2) predict cash flows and earnings, (3) predict dividend changes, and (4) improve the persistence and predictability of earnings. Subramanyam finds that discretionary accruals help to do all of these things, and concludes from this that discretionary accruals are used by managers to increase the informativeness of accounting earnings. However, to interpret the evidence in this way, we have to be confident that discretionary accruals are measured correctly. In particular, an alternative explanation for these findings is that the 'Jones model' systematically misclassifies nondiscretionary accruals as discretionary. Because the measurement of discretionary accruals is crucial for the interpretation of these tests, the next section discusses the efficacy of the Jones model that Subramanyam uses to separate accruals into discretionary and nondiscretionary components.

2.1. How well does the 'Jones model' work?

The key methodological issue in the Subramanyam paper is how well the Jones model classifies accruals into discretionary and nondiscretionary components. This model has been used extensively in the earnings management literature and may be the best alternative currently available to test for earnings management. For example, a recent paper by Dechow, Sloan, and Sweeney (1995) compares five commonly-used models of discretionary accruals, and concludes that the Jones model (or their 'modified' Jones model) works best. Nevertheless, all of the models give fairly similar results. Moreover, Dechow et al. indicate that none of these models works very well in detecting earnings management, i.e., the models generally lack power. So it may be that the 'state of the art' is not very good.

The goal of discretionary accrual models is to allow the researcher to separate total accruals into discretionary and nondiscretionary components. The Jones model assumes that nondiscretionary accruals depend on the change in revenues and the level of property, plant, and equipment. The rationale is that a firm's
working capital requirements depend on sales, while its depreciation (and perhaps deferred tax) accruals depend on the level of property, plant, and equipment. Once the model is estimated (either in time-series or cross-sectionally), the researcher uses forecasted values to estimate nondiscretionary accruals. Estimated discretionary accruals then fall out as the prediction error. That is, in the Jones model, total accruals are (researchers typically deflate the variables by total assets):

\[ TA_{it} = \alpha + \beta \cdot (ARevenues_{it}) + \gamma \cdot (PP&E_{it}) + \epsilon_{it}, \]

so that nondiscretionary accruals (NDA) are estimated as

\[ NDA_{it} = \hat{\alpha} + \hat{\beta} \cdot (ARevenues_{it}) + \hat{\gamma} \cdot (PP&E_{it}), \]

and discretionary accruals (DA) are:

\[ DA_{it} = TA_{it} - NDA_{it}. \]

By construction, any accruals not treated as nondiscretionary are included as discretionary accruals. The key question is how well this model works. Subramanyam estimates the model cross-sectionally by year, using groups of firms in the same two-digit SIC code industry. Although he does not report the average explanatory power of the model, he does report some information on the estimated coefficients and on levels of discretionary accruals, and these numbers can be used to get an idea of how well the model works.

The estimated coefficients indicate that the model seems to 'work' to some degree, but that its estimation is not very precise, so that some 'legitimate' accruals are treated as discretionary. For example, estimates of the \( \beta \) coefficient have an average value of 0.06, which may be reasonable, but there is a lot of variation around this number – the standard deviation is 0.37, the range is from 2.68 to -6.30, and the estimated coefficient has the 'wrong' sign 27% of the time. Estimates of the \( \gamma \) coefficient show less variation but still vary a good deal: the average coefficient is -0.07 with a standard deviation of 0.10 and a range of 1.13 to -1.29, and the coefficient assumes the 'wrong' sign 7% of the time.

When Subramanyam uses firm-specific time-series data, the estimated coefficients are even less precise. For example, the average estimate of the \( \beta \) coefficient is 0.09 (similar to the cross-sectional estimation), but the standard deviation is now 1.16 and the range of estimates is from 54 to -89! Finally, Subramanyam reports that the standard deviation of estimated discretionary accruals is 0.108, which is larger than the standard deviation of net income of 0.096 (both variables are deflated by total assets). Can it really be that discretionary accruals vary more than net income? It seems more likely that this result is telling us something about the noise in the model's estimates.

Another way of assessing whether the model yields plausible estimates is to consider some of the accruals that the model will classify as discretionary. First, the model will identify some true discretionary working capital accruals, which
is of course the objective. However, the model will also treat most nonoperating gains and losses and other special items as discretionary. While the timing and magnitude of some of these items are often plausibly viewed as discretionary (consider large write-downs and restructuring charges), this is not always the case. For example, it is much less likely that the gain on the sale of a subsidiary or that gains and losses from lawsuits are discretionary.

The model will also treat some nondiscretionary working capital accruals as discretionary. First, the \( \beta \) coefficient is estimated with sampling error which, based on the above, may be quite large. Second, true \( \beta \) is likely to vary across firms within the same two-digit SIC code industry group, since these groupings are very broad [for example, Dresser Industries (a maker of heavy equipment for the oil and gas industry), Toro Co. (a maker of lawn mowers), Atari (a maker of video games), and Gateway 2000 (a maker of personal computers) are all in the same two-digit industry (35)]. Finally, to the extent that working capital accruals are driven by factors other than changes in sales, the Jones model omits variables. For example, receivables that are unrelated to sales (consider a tax refund), the effect on payables when managers 'stretch' out payments to creditors, and other accruals that are 'legitimate' (such as payroll) but which depend on factors other than sales, will all be treated as discretionary accruals. In fact, any working capital accrual that is not linear in the change in sales will be misclassified.

The upshot is that estimated discretionary accruals will likely contain some nondiscretionary items, and to this extent it is not surprising that measured discretionary accruals correlate with stock prices, future cash flows, and other performance measures.

2.2. How does misclassification of discretionary accruals affect the interpretation?

Mismeasurement of discretionary accruals will at best lower the power of the research design to detect earnings management, and at worst cause the researcher to conclude that there is earnings management when none actually exists. In the Subramanyam study, however, misclassification crucially affects the conclusions that we can draw about the role of discretionary accruals.

Subramanyam first investigates whether discretionary accruals help explain stock price movements by regressing stock returns on his measures of operating

---

3 See DeAngelo, DeAngelo, and Skinner (1994) for evidence on the discretionary nature of asset write-offs and other special charges.

4 This is well-recognized in the literature. Tests have low power if there is no relation between the researcher's measure of earnings management and economic performance, but are biased (overreject the null) if the researchers' partitioning scheme and earnings performance are correlated. See, e.g., McNichols and Wilson (1988) and Dechow et al. (1995).
cash flows, nondiscretionary accruals, and discretionary accruals. The coefficients on all variables are reliably positive, although the coefficient on discretionary accruals is smaller than those on cash flows and nondiscretionary accruals (Table 3).

There are three possible explanations for this result. First, the positive coefficient on discretionary accruals may indicate that discretionary accruals are informative, as Subramanyam claims, but that they are less informative than the other components of earnings. Second, it may be that managers choose discretionary accruals opportunistically, but that the market responds mechanically to total earnings, so that discretionary accruals are erroneously 'priced' by the market in the current period. This interpretation is consistent with the evidence in Sloan (1996) that the stock market responds mechanically to total earnings, and does not appreciate until subsequent periods that operating cash flows are more persistent than accruals. Finally, if, as argued above, the model erroneously classifies nondiscretionary accruals as discretionary, the coefficient on discretionary accruals is overstated, implying that discretionary accruals are informative when they are not. 5

In an attempt to rule out opportunism as an alternative explanation, Subramanyam also tests whether current-period discretionary accruals help predict future cash flows, earnings, and dividends. One would expect this to be the case if discretionary accruals increase the informativeness of current earnings with respect to future performance. To do this, he regresses these future performance measures on the three components of current earnings: operating cash flows, nondiscretionary accruals, and discretionary accruals. He finds (Tables 7 and 8) that all three earnings components help predict future levels of performance, and that cash flows are the most useful. This result is consistent with recent evidence in Sloan (1996) that operating cash flows are a more persistent component of earnings than accruals. However, if estimated discretionary accruals actually contain a nondiscretionary component, estimated discretionary accruals should be informative with respect to future performance measures. As a result, we still cannot reliably discriminate between misclassification and the author's claim that discretionary accruals are informative.

In another set of tests, Subramanyam finds that discretionary accruals help smooth earnings, generating a more predictable and persistent earnings series. He interprets this as evidence that managers smooth earnings to increase their signal value. But notice that this finding does not rule out the possibility that

5 The coefficients on operating cash flows, nondiscretionary accruals, and discretionary accruals are 1.4, 1.5, and 1.0, respectively. If the true coefficient on discretionary accruals is zero and two-thirds of the discretionary accruals are really nondiscretionary, this result could be fully explained by misclassification error.
managers smooth earnings *opportunistically*, and that the market reacts to this *artificially* smoother series.

There is also an interpretation problem with this evidence if the model misclassifies discretionary accruals. We know from previous research (and the economic nature of accruals) that operating cash flows and accruals tend to be negatively related (Dechow, 1994). Subramanyam reports that discretionary accruals appear to drive this relation – the correlation between discretionary accruals and operating cash flow is $-0.6$, compared to a correlation of $-0.1$ between nondiscretionary accruals and operating cash flows. Absent misclassification, this finding could be interpreted as evidence of income smoothing. But notice that if operating cash flows are unusually high (low), accruals will *naturally* be unusually low (high), and most of these unusual accruals will be treated by the model as discretionary. Indeed, since our prior is that cash flows and nondiscretionary accruals *should* be negatively correlated, the different magnitude of these correlations could be interpreted as *evidence* of misclassification!

Finally, Subramanyam performs a number of sensitivity tests to support his interpretation and reduce the likelihood that the misclassification of nondiscretionary accruals affects his inferences. Unfortunately, these tests are all based on the same basic methodology, and thus do little to mitigate the fundamental interpretational problem. For example, the author reperforms his tests using time-series estimates of the Jones model as well as the 'modified Jones model' (Dechow et al., 1995). As noted above, the time-series estimates are, at least here, even less precise than the cross-sectional estimates. Moreover, we know from Dechow et al. that the Jones model and the modified Jones model yield similar inferences, so it is unclear that this test helps much. Finally, Subramanyam reperforms his tests after deleting firms for which the Jones model yields estimates that are 'unreasonable' (defined as of the wrong sign or as outlying observations). However, based on the earlier discussion, there is no reason to expect that the misclassification of accruals is limited to firms with extreme or unusual estimates. For example, nonoperating gains and losses are treated as discretionary for all firms, and there will still be problems in those industries with a great deal of variation across firms.

2.3. *Some conclusions and suggestions*

Taken at face value, Subramanyam's findings suggest that discretionary accruals are informative, although they are less informative than nondiscretionary accruals or operating cash flows. However, the results are also consistent with an important alternative explanation: that the Jones model misclassifies discretionary and nondiscretionary accruals.

The upshot is that it is difficult to draw conclusions about the extent to which managers use their discretion over accruals to communicate information to
investors. The misclassification problem is, of course, common to all earnings management papers, where it generally reduces the power of the tests. In the Subramanyam paper the problem is much more crucial, and goes to the heart of how we interpret the results. The only way to resolve this problem is to develop better specified models of the accruals process. Some useful alternatives may be as follows. First, researchers could focus on narrower settings where modeling opportunities are richer. This may mean modeling accruals in particular industries (as in Beaver and Engel, 1996) or modeling particular components of accruals (as in McNichols and Wilson, 1988).

Alternatively, researchers might try and use tools from financial statement analysis to better model accruals, perhaps in conjunction with Compustat data. For example, some argue that the most important opportunities for earnings management lie in accrued liabilities, inventories, receivables, and some nonoperating items. If this is the case, we could start by removing the effects of the other accruals from discretionary accruals. Once this is accomplished, researchers could model the remaining accrual categories in more detail, using the same ratios an analyst would use to assess whether a balance was unusually high or low. Finally, researchers could separately analyze the informativeness of different categories of accruals, given different priors about managers' ability to manipulate accruals in each category. Of course, this type of approach moves us away from the mechanical use of large scale databases, but this may be necessary if the literature is to progress, so that clear inferences about these important questions can be drawn.


In the US, we generally think of corporate dividend policy as reflecting the firm's past, current, and perhaps future earnings levels. This view is based on the idea originally proposed by Lintner (1956) that managers are reluctant to cut dividends, so that dividend changes represent a lagged response to changes in earnings. In Finland, however, the reverse seems true – here the demand for dividends by institutional investors is so strong that dividend policy is effectively set outside the firm, so that earnings have to be managed to justify the requisite dividend payout.

KKN provide strong evidence that managers set earnings to justify dividend payments in Finland. The nature of this evidence is described further in Section 3.1, while Section 3.2 discusses some of the implications of the KKN study.

---

6DeAngelo, DeAngelo, and Skinner (1994) analyze accrual components separately, arguing that some accruals are more likely to be affected by economic performance than others.
3.1. Institutional features and evidence of earnings management

There are several important features of the Finnish market that create a demand for managers to adopt a policy of smoothly increasing dividends. First, Finland is similar to some other countries (most notably Japan) in its keiretsu-like ownership structure: stock ownership is dominated by large institutional holders (banks and insurance companies) and cross-holdings are common. Because this structure makes equity markets relatively illiquid, and because these institutions are reluctant to dilute their holdings, it is expensive for institutions to sell even part of their stockholdings. In addition, Finnish regulations are such that only realized income (i.e., dividends) may be included as part of the capital base of these institutional stockholders, which includes regulatory capital for banks and insurance companies. As a result of these factors, institutions demand relatively large dividend payments, and so it is not surprising that dividend receipts are a large part of the income of these institutions. For example, KKN indicate that dividend receipts for the average Finnish bank represent 46% of operating income before depreciation.

In addition to this institutional demand for dividends, managers of Finnish firms are restricted by law to paying dividends out of earnings, including retained earnings. This provides managers with an incentive to report earnings that are sufficiently high to justify the required dividend. However, since Finnish taxes are based on reported financial income, managers have an incentive to minimize reported income subject to the dividend constraint. KKN refer to the resulting income level as ‘target’ income for Finnish managers.

Finally, managers of Finnish firms have an unusual amount of flexibility in the reporting process. KKN report that there is sufficient slack in the reporting system so that the range of income available to managers averages nearly five times the level of reported income (see their Fig. 1). Consequently, managers have both the means and the incentive to manage earnings, and that is what KKN find.

The behavior of reported earnings is strongly consistent with the authors’ predictions. This is clearest in their Fig. 2, which plots the level of reported earnings, dividends, and ‘unmanaged’ (IAS) earnings for the sample period (1970–1989). Reported earnings track dividends very closely, especially before 1984, consistent with the authors’ argument. After 1984, however, these firms appear to report earnings in excess of dividends, which implies that these firms pay taxes unnecessarily. Indeed, many things change around this time, with unmanaged earnings and dividends both increasing sharply in the later sample years. This may reflect the fact that the institutional features necessary for the authors’ argument to hold began to break down during the 1980s, in which case the authors’ interpretation is strengthened.

There is another clear implication of the fact that reported earnings and dividends track each other so closely (at least before 1984). Since dividends can
be paid out of both current and retained earnings, this result suggests either that managers of these firms pay out all of their earnings as dividends, or that managers only pay dividends out of current period earnings. It would be interesting to know which of these explanations holds. At one point the authors indicate that '...there seems to be a tendency not to tap retained earnings but to pay out dividends from current earnings (in our sample, 80.1% of cases)' (p. 13). Unfortunately, the authors do not follow this up or explain why it is. For example, it would be interesting if Finnish dividend payout ratios were very high, since this would imply that these firms – given the availability of debt financing from within their keiretsu – are not concerned about having to retain funds within the firm to fund investment opportunities. 7

KKN measure target earnings as the minimum earnings that would allow target dividends to be paid. 8 They report two measures of target earnings: TAREAR1 assumes that dividends may only be paid out of current earnings, while TAREAR2 assumes that dividends may be paid out of both current and retained earnings. The authors report results based only on TAREAR2, but indicate that the results are 'virtually the same' when they use TAREAR1. This is expected since the regressions are estimated in changes form, and retained earnings will largely change because of changes in current earnings (the correlation between changes in these variables is 0.8). Of more interest would be some data on how often retained earnings are sufficient to pay dividends (so that target earnings are zero), and what the payout rates are for sample firms.

The authors' tests are straightforward. They regress changes in reported earnings on changes in both target earnings (TAREAR2) and unmanaged (IAS) earnings. They find that the coefficients on both variables are positive and strongly significant. The significance of target earnings variable is consistent with their predictions, while the significance of unmanaged earnings indicates that there is at least some reliable 'signal value' in reported earnings.

3.2. What do we learn?

KKN's results provide strong evidence of earnings management, in contrast to earnings management studies on US data, where researchers typically struggle to find enough power to detect earnings management. The difference is

---

7Interestingly, Dewenter and Warther (1996) indicate that the dividend policies of Japanese firms, and especially keiretsu-member firms, are affected less by agency and information asymmetry problems than are their US counterparts, which is broadly consistent with the KKN evidence.

8Target dividends are measured as actual dividends paid. The authors indicate in Section 7 that the results are essentially unchanged when they use forecast dividends based on the long-run growth rate in dividends (the correlation between forecast and actual dividend payments is 0.96, which is testimony to the smoothness of the dividend series).
the institutional setting. In Finland managers have both strong incentives to manage earnings and a great deal of accounting discretion. The large amount of flexibility available to Finnish managers raises the question of whether outside investors can rely on financial statements prepared under Finnish accounting rules. In fact, there is evidence in the paper that outside investors do not rely on Finnish financial statements. KKN report that financial analysts in Finland calculate and publish 'adjusted earnings', which are apparently purged of the tax- and dividend-motivated manipulations. In addition, beginning in the mid-1980s, around half of the sample began voluntarily disclosing two sets of financial statements: one based on Finnish accounting rules and the other based on IAS rules (the authors' measure of nonmanaged earnings). Finally, Finnish accounting rules were tightened considerably in 1993, perhaps reflecting the changes that were taking place in the financial markets (KKN indicate that the relative importance of outside equity holders has been increasing over the last ten years or so).

The bottom line is that alternative reporting mechanisms allow Finnish managers to respond freely to the incentives that the institutional setting provides. So it may not be too surprising that we see strong evidence of earnings management. Indeed, we might even argue that it would be surprising if we did not observe earnings management. The situation is somewhat analogous to how managers in the US respond to the different incentives that tax and financial reporting rules provide. Because two accounting systems are available, managers are able to respond freely to their incentives in one system (say to reduce taxes) without regard to the financial reporting consequences. So we expect that US managers act to minimize taxes. The same may be true for Finnish financial reporting.

Overall, the Finnish situation provides an interesting experiment, but it may be hard to generalize these conclusions to other countries. The authors argue that the results will also hold in other 'debt-dominated' financial markets with concentrated ownership structures and income taxes tied to reported earnings (examples include Germany, France, and Sweden). However, this will not be true unless these markets are also characterized by liberal financial reporting rules and a strong linkage between earnings and dividends. The authors also argue that the results may extend to 'equity-dominated' markets like the US, because there may be some implicit obligation on the part of managers to pay dividends. However, even for firms whose ownership is concentrated in a few institutions, there is little reason to expect that managers have to pay out dividends or manage earnings in a particular direction. The institutional linkages are just not that strong.

---

9 There is some tension between tax and financial reporting systems in the US. Mills (1996) reports that IRS scrutiny is more likely for firms that report large differences between accounting and taxable income.
4. Conclusion

Both papers discussed here provide evidence on managers' choices of accounting accruals. Researchers have generally specified these choices as reflecting either informational or opportunistic incentives, so that managerial discretion increases or decreases the 'signal value' of accounting earnings. Why managers make particular accrual choices is an important question for accounting researchers, for users of financial statements, and for accounting regulators, because it goes to the heart of how we interpret accounting earnings numbers. However, to progress, the literature must move forward methodologically: we need more reliable ways of measuring earnings management. The problem, of course, is that managers have an informational advantage over researchers as well as incentives to camouflage earnings management. The traditional response to this problem has been to rely on sophisticated statistical techniques applied to large databases to try and offset this informational disadvantage. A potentially fruitful alternative, proposed here, may be to analyze financial statements in more detail, much as analysts do, in the hope of uncovering more convincing evidence about how and why managers exercise their accounting discretion.

References


10Ironically, this conclusion is similar to that in DeAngelo (1988), who discussed the McNichols and Wilson (1988) paper eight years ago.
Mills, L.F., 1996, Book-tax conformity: Tax savings, financial reporting incentives, and internal revenue service audit adjustments, Thesis in progress (University of Michigan, Ann Arbor, MI).