What is Role of Accruals? Are Accounting Models able to Detect Earnings Management?

Wattanee Siriatsawas, Ph.D. CPA*

ABSTRACT

As generally accepted accounting principles, accrual basis is used for preparation of financial statements in order to provide beneficial information in economic decision for users of financial statements. The information can appropriately reflect economic events of the financial statements. However, the accrual basis sometime is related with management's judgment such as management estimation. As such the judgment, it opens an opportunity for management to manage earnings. Therefore, this article has objectives to present the use of accrual basis in preparation of financial statements and measurement of the basis as well as an explanation of development of accounting models in order to apply them in earnings management studies. Furthermore, the article describes characteristics, benefits, and limitation of each model to enhance understanding in the application of such models in any studies onward.

* Lecturer, Thammasat Business School, Thammasat University

A main objective on use of accrual in accounting is to provide financial information of reporting entity that is useful in assessing its economic performance. Concept of accruals focus on the principle of revenue recognition and matching of revenue and expenses which allow firms to recognize economic events in the period it should be recognized. The accruals concept also incorporates timely gain and loss recognition principle which improves a relevance of reported earnings of firms by assessing performance close to their economic circumstance. However, use of accruals required estimations which depend on management's discretion. In this regard, the degree of subjectivity and verifiability of information used for estimates in accruals are of concerned by market participant.

The purpose of this paper is to discuss on role of accruals in financial accounting and how it is defined in academic researches. Also, paper contains review of accounting models which are used in earnings management study. It includes development of the models from the early period until the present period. The specific perspectives of most widely used accruals models are examined to provide the better understanding on use and limitation for each of the models.

Keywords: Accruals, Earnings Management, Accounting Modelling

บทคัดย่อ

ตามหลักของการบัญชีโดยทั่วไป เกณฑ์คงค้างถูกใช้ในการจัดทำงบการเงิน เพื่อให้ข้อมูลที่มีประโยชน์แก่ผู้ใช้งบการเงินในการตัดสินใจเชิงเศรษฐกิจ ซึ่งทำให้สามารถสะท้อนถึงเหตุการณ์ทางเศรษฐกิจในงบการเงินได้อย่างเหมาะสม อย่างไรก็ตาม บางครั้งเกณฑ์คงค้างที่เกี่ยวข้องกับดุลยพินิจของผู้บริหาร เช่น การประมาณการต่าง ๆ ซึ่งเป็นช่องทางให้ผู้บริหารสามารถตกแต่งกำไรในงบการเงินได้ บทความมีวัตถุประสงค์เพื่อนำเสนอถึงการใช้เกณฑ์คงค้างในการจัดทำงบการเงินและการวัดค่าของบัญชีคงค้างในงานวิจัยที่เกี่ยวข้องกับเรื่องการตกแต่งกำไร รวมถึงการอธิบายการพัฒนาตัวแบบจำลองทางบัญชี เพื่อนำมาใช้ในการศึกษาเกี่ยวกับการตกแต่งกำไร นอกจากนี้ บทความนี้ได้อธิบายถึงลักษณะต่าง ๆ ของแต่ละตัวแบบจำลอง รวมถึงประโยชน์และข้อจำกัด เพื่อเพิ่มความเข้าใจในการนำตัวแบบจำลองต่าง ๆ มาใช้ในการศึกษาต่อไป

วัตถุประสงค์หลักของการจัดทำงบการเงินโดยใช้เกณฑ์คงค้างนั้น เพื่อให้ข้อมูลการเงินที่มีประโยชน์แก่ผู้ใช้งบการเงินในการตัดสินใจเชิงเศรษฐกิจ ซึ่งเกณฑ์คงค้างได้มุ่งเน้นถึงเกณฑ์การรับรู้รายได้ การจับคู่ระหว่างรายได้และค่าใช้จ่ายเพื่อให้ธุรกิจสามารถสะท้อนถึงเหตุการณ์ทางเศรษฐกิจของข้อมูลนั้นให้เป็นไปอย่างเหมาะสม ทั้งนี้เกณฑ์คงค้างยังมุ่งเน้นถึงการรับรู้กำไรและขาดทุนให้เป็นไปอย่างทันท่วงที (Time Recognition of Gain and Loss) ซึ่งข้อมูลที่มีประโยชน์ต้องเกี่ยวข้องกับการตัดสินใจของผู้ใช้งบการเงินและสามารถวัดผลการดำเนินงานของธุรกิจได้อย่างมีประสิทธิภาพ แต่เนื่องจากการจัดทำบัญชีใช้วิธีเกณฑ์คงค้างนั้นเกี่ยวเนื่องกับการประมาณการที่ใช้ดุลยพินิจของผู้บริหาร ดังนั้นรายการทางบัญชีดังกล่าวจึงมีประเด็นที่ผู้ใช้งบการเงินให้ความสนใจในด้านของระดับการใช้ดุลยพินิจของผู้บริหาร และระดับการตรวจสอบได้ของข้อมูล

บทความทางวิชาการนี้เป็นการอธิบายถึงการใช้เกณฑ์คงค้างในการจัดทำงบการเงินและการวัดค่าของบัญชีคงค้าง ในวิจัยที่เกี่ยวข้องกับตกแต่งกำไร และได้อธิบายการพัฒนาตัวแบบจำลองทางบัญชีเพื่อนำมาใช้ในการคำนวณในวิจัย ทางด้านการตกแต่งกำไรซึ่งเกี่ยวข้องกับการใช้ดุลยพินิจของผู้บริหาร ทั้งนี้บทความทางวิชาการนี้ได้อธิบายหลักเกณฑ์ที่ แตกต่างกันของแต่ละตัวแบบจำลอง รวมถึงประโยชน์และข้อจำกัดของแต่ละตัวแบบจำลองที่ได้มีการสร้างขึ้นมา เพื่อเสริมสร้างความเข้าใจในการใช้ประโยชน์จาก แต่ละตัวแบบจำลอง

คำสำคัญ: เกณฑ์คงค้าง การตกแต่งกำไร แบบจำลองทางบัญชี

INTRODUCTION

The accruals are regarded as having an economic role in providing relevant financial information for investor in assessing its economic performance. Accruals based accounting recognizes economic events on a timely basis, regardless the timing of cash flows. But, it involves judgment as they require estimations about future events that are not considered in current cash flows. The degree of subjectivity and verifiability of information used for estimates in accruals are of concerned by market participants as manager can exercise their discretion over accruals to alter financial reports that either to mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers. The practice that managers can use accounting discretion opportunistically by introducing estimation noise that makes reported earnings misleading about the firm's economic performance is called earnings management.

In general, earnings management concerns managers using their discretion over accounting accruals and accounting choices, presumably for a private purpose. Accruals are used by manager to modify the timing when earnings will be recognized. Discretionary accruals are adjustments to cash flows induced by the manager, allowing them to transfer earnings between periods. Because earnings management and managerial intent are not directly observable, an essential part for earnings management study is to measure management's discretion over earnings (McNichols, 2000).

The purpose paper is to discuss on role of accruals in financial accounting and how it is defined in academic research. Also, paper contains review of accounting modeling in detecting earnings management which includes development of the model from the early period until the present period. The specific perspectives of most widely used aggregate accruals models are examined to provide the better understanding on use and limitation for each of the models.

The layout of this paper is as follows. Overview on role of accruals in financial accounting practice and in academic research is provided in section of "What are Accruals?" How accruals are defined in earnings management models is explained in

the following section. Then, the paper explains development of earnings management research designs and its research design issues associated with aggregate accruals proxies for earnings management. The final section is conclusions.

What is Role of Accruals?

The role of accruals in accounting is well recognized in both of financial accounting practices and in academic literatures. The importance of earnings and the accrual process have included in FASB 1978 Statement of Financial Accounting Concepts No. 1, which states that earnings and its components measured by accrual accounting generally provide a better indication of firm performance than cash flows. By mitigating timing and matching problems inherent in cash flows, earnings are deemed to smooth out random timing fluctuation in cash flows which are subjected to temporal variation.

Dechow (1994) has proposed that the smoothing property of earnings rely on the role of accruals in increasing the informative of report earnings. That is, it produces earnings that are less noisy than cash flows which are subjected to exogenous or manipulative variation in working capital items. In comparison with accounting income, operating cash flow is noisy because it incorporates period-to-period variation in working capital assets such as inventory, prepayments, and accounts receivable, and in working capital liabilities such as unearned revenue, warranty provisions and accounts payable (Ball and Shivakumar, 2005). This noise makes operating cash

flow a less efficient than accounting earning in measuring firm performance, while accruals has incorporated noise-reducing accrual accounting adjustments.

A large body of research has examined whether the effect of accruals in increasing earnings quality and make financial reports more informative (Ball and Brown, 1968; Wilson 1986; Wilson 1987). On the other hand, accrual-based accounting also involves judgment as they require estimations about future events that are not considered in current cash flows. Sloan (1996) point out that the key difference between the accrual and cash flow components of earnings is that the accrual component involves a greater degree of subjectivity. Although the subjectivity lead to unintentional error, uses of accruals in accounting has been widespread.

In this regards, questions on the reliability and relevance of accruals have been raised due to the degree of subjectivity involves, the competency of management to determine estimates, and potential verifiability of accrual components. Investors argue that it is difficult to compare performance across firms because of the variety of methods used to calculate accrual items, and most importantly, whether accruals have been induced by manager to alter performance and obtain a private gain of the management itself. The practice that managers can use accounting discretion opportunistically by introducing estimation noise that makes reported earnings misleading about the firm's economic performance is called earnings management.

In general, earnings management occurs when managers exercise their discretion over accounting numbers because they may act with a short-term self-interest motive and manage earnings for short-term benefit (Field et al., 2001). Since manager can use accruals to modify the timing when earnings will be recognized, and it is difficult from the outsider to observe or distinguish accruals which are resulted from earnings management from normal accruals. The accounting researches in earnings management study focus on how to measure the amount of accruals that are induced by manager by their private benefit and not the amount which generally reflects fundamental performance or economic condition of the firms.

The general earnings management detection model is presented by McNichols and Wilson (1988) which provide a general outline of discretionary accruals framework. In the model, accruals are partitioned into a discretionary (DA) and non-discretionary (NDA) component. The discretionary accruals are regarded as adjustments to cash flows induced by the manager, allowing them to transfer earnings between periods, the discretionary accruals are estimated by the difference between total accruals (TA) and non-discretionary accruals (NDA).

Because discretionary accruals cannot be observed directly from financial statements, they have to be estimated from difference between total accruals and non-discretionary accruals using an expectation model. Recent accounting models for earnings management study have developed

expectation model of the non-discretionary accruals level which are not subjected to management discretion and to present the amount resulted from firm's fundamental performance. The extent to which models are well developed depend on an ability of the model to accurately measure changes in business circumstances affect accruals (Dechow et al., 2010). Any amount which deviates from this level is assumed to be the discretionary accruals, so discretionary accruals depended on structure of expectation model employed in each of the study. And, whether this is a good proxy for earnings management depends on the ability of the model to accurately measure changes in business circumstances affect accruals.

Until present, researchers develop various models to detect earnings management. The academic researches related earnings management model and comment on their model specification are discussed in in Section "Detecting Earnings Management through Total Discretionary Accruals".

How Accruals are Defined in Earnings Management Model?

The definition of accruals used in the academic research has been changed over time. In early research, accruals are defined as non-cash working capital less depreciation expense (Healy, 1985; Sloan, 1996; and Jones, 1991). Under this approach, the amount of accruals is measured as consecutive changes in the balance sheet items which rely on the supposed relations between changes in working capital balance sheet accounts and accrual components of revenues and

expenses on the income statement. However, the accrual definition of non-cash working capital has omitted several accruals and deferrals because all other asset and liability accounts are results of the accrual accounting process (Richardson et al., 2005).

Richardson et al. (2005) suggest that a definition of accruals which based on only current operating accruals are less reliable accruals and lead to lower earnings persistence. As long-term operating assets and liabilities are also accounting accruals, the effect of these accruals on earnings persistence is related to the reliability. They develop a more comprehensive definition of accruals and decompose the balance sheet into change in current net operating assets, changes in noncurrent net operating assets, and changes in net financial asset and show that the aggregate change in both current and noncurrent net operating assets provides a more comprehensive measure of accruals.

Since an introduction of the Statement of Cash Flows, accruals can be defined as the difference between earnings and cash flows where cash flows is defined as cash flows from operation and can be obtained from the Statement of Cash Flows. The use of this measure is introduced by Hribar and Collins (2002) who argue that the method of measuring accruals obtained from balance sheet approach to test for earnings management are potentially contaminated by measurement error in accruals estimates and are likely to erroneously leading to a conclusion that earnings management

exists when there is none. Specifically, Hribar and Collins (2002) examine the impact of measuring accruals as the change in successive balance sheet accounts, as opposed to measuring accruals directly from the statement of cash flows. The study supposes that the method of measuring accruals from the statement of cash flows resolve error induced by non-articulation events, such as mergers and acquisitions or discontinued operations.

Detecting Earnings Management through Total Discretionary Accruals.

This section reviews the widely used aggregate accruals model. The central focus is that the discretionary accrual obtained does represent amount of earning management induced by managers.

The review of earnings management model begins with Healy (1985) and DeAngelo (1986) who used total accruals and change in total accruals as measures of management's discretion over earnings. Jones (1991) Model construct an expectation model using a regression approach to control for non-discretionary factor influencing accruals, specifying a linear relation between total accruals and change in sale revenues and property, plant, and equipment. Then, the Modified Jones Model is developed to include changes in credit sales in the event period as a result from earnings management in order to include circumstance when part of revenue is also managed. Subsequently, the Performance-Adjusted

Modified-Jones (1991) Model is developed to control for these changes with parameters that supposedly adjust the expected accruals to the change in circumstances.

Healy (1985) Model

Healy (1985) tests his hypotheses on earnings management using total accruals (scaled by lagged total assets) as proxy for discretionary accruals (DA).

The Healy (1985) Model is specified as follows:

$$TA_t = DA_t \qquad (1)$$

Where TA_t = total accruals in year t; DA_t is discretionary accruals in year t.

By using total accruals as proxy for discretionary accruals, the model implicitly assumes that there are no non-discretionary accruals in the estimation period. In his study, he has identified that total accruals (TA) include both discretionary and non-discretionary components ($TA = NA + DA$). However, he cannot measure the amount of non-discretionary components and assumes that non-discretionary components are not observable.

DeAngelo (1986) Model

DeAngelo (1986) is based on Healy (1985) model and includes prior period accruals as a measure of normal accruals (scaled by lagged total assets). The abnormal accrual is measured as a difference between current accruals and prior period normal accruals.

The DeAngelo (1986) Model is specified as follows:

$$DA_t = AC_t - NA_{t-1} \qquad (2)$$

Where DA_t = abnormal accruals in year t; AC_t is current accruals in year t; NA_{t-1} is normal accruals in year t−1.

As the model assumes abnormal accrual (DA_t) is the difference between current accruals (AC_t) and prior period normal accruals (NA_{t-1}), it does not allow for change in the amount of non-discretionary portions that reflect the current firm's economic condition and changes in the company's operational activities and the discretionary portions that are induced by managerial discretion.

Jones (1991) Model

The Jones (1991) Model is based on earlier work by Healy (1985) and DeAngelo (1986). The expectation model is developed to measure the non-discretionary portion of accruals that are caused by changes in economic conditions.

The Jones (1991) Model is specified as followed:

$$NDA_t / T_{t-1} = \beta_{0i}(1/T_{t-1}) + \beta_{1i}(\Delta REVt / T_{t-1}) + \beta_{2i}(PPE_t / T_{t-1}) \qquad (3)$$

Where NDA_t = non-discretionary accruals in event year, T_{t-1} = lagged total assets in year t−1, ΔREV_t = revenues in years t less revenue in year t−1 scaled by total assets in year t−1, PPE_t = gross

property, plant, and equipment in year t scaled by total assets in year t−1.

First, firm-specific parameters (β_{0i}, β_{1i}, and β_{2i}) are estimated using the same model in the estimation period.

$$TA_t / T_{t-1} \quad = \quad \beta_{0i}(1 / T_{t-1}) + \beta_{1i}(\Delta REV_t / T_{t-1})$$
$$+ \beta_{2i}(PPE_t / T_{t-1}) + \varepsilon \qquad (4)$$

The coefficient values (β_0, β_1, and β_2) are obtained from regression in equation (4) are used in equation (3) to calculate non-discretionary accruals (NDA).

Then, non-discretionary accruals are calculated from in estimation period using equation (3).

The major concern of this model is an inclusion of changes in sale revenues one of the control variable in the estimation of non-discretionary accruals. That is, the model assumes that changes in sale revenues are occurred solely based on the firm performance and the amount is not affected by managers' manipulations of sale revenues. However, the effect of management's discretion in decreasing of sale revenues on accruals is of particular importance in this study because firms in industries facing rising imports can be expected to have declining revenues.

Modified Jones Model

The original Jones model was modified by Dechow et. al. (1995), which is known as the Modified Jones Model, to eliminate an error in the measurement of discretionary accruals from the standard Jones model.

The Modified Jones Model is specified as followed:

$$NDA_t / T_{t-1} \quad = \quad \beta0i(1 / Tt-1)$$
$$+ \beta_{1i}(\Delta REV_t - \Delta REC_t / T_{t-1})$$
$$+ \beta_{2i}(PPE_t / T_{t-1}) \qquad (5)$$

Where NDA_t = non-discretionary accruals in event year, T_{t-1} = lagged total assets in event year (t−1), ΔREV_t = revenues in year t less revenue in year t−1 scaled by total asset in year t−1, ΔREC_t = account receivable in years t less account receivable in year t−1 scaled by total assets in year t−1, PPE_t = gross property, plant, and equipment in year t scaled by total assets in year t−1.

First, firm-specific parameters (β_{0i}, β_{1i}, and β_{2i}) are estimated using the same model in the estimation period.

$$TA_t / T_{t-1} \quad = \quad \beta_{0i}(1 / T_{t-1})$$
$$+ \beta_{1i}(\Delta REV_t - \Delta REC_t / T_{t-1})$$
$$+ \beta_{2i}(PPE_t / T_{t-1}) + \varepsilon \qquad (6)$$

The coefficient values (β_0, β_1, and β_2) are obtained from regression in equation (6) are used in equation (5) to calculate non-discretionary accruals (NDA).

Then, non-discretionary accruals are calculated from in estimation period using equation (5).

The Jones (1991) Model implicitly assumes that discretion is not exercised over revenue in either the estimation period or the event period. In contrast, the reasoning of the Modified Jones Model is that all changes in credit sales in the event period result from earnings management.

Performance-Adjusted Modified-Jones (1991) Model

$$NDA_t / T_{t-1} = \beta_{0i}(1/T_{t-1})$$
$$+ \beta_{1i}(\Delta REV_t - \Delta REC_t / T_{t-1})$$
$$+ \beta_{2i}(PPE_t / T_{t-1}) + \beta_{3i}[ROA_t] \quad (7)$$

Where NDA_t = expected non-discretionary accruals in event year, T_{t-1} = Lagged total assets in event year (t−1), ΔREV_t = Revenues in years t less revenue in year t−1 scaled by total assets in year t−1, ΔREC_t = account receivable in years t less account receivable in year t−1 scaled by total assets in year t−1, PPE_t = gross property, plant, and equipment in year t scaled by total assets in year t−1. ROA_t is measured as earnings before interest and taxes expenses divided by total assets at the beginning of the year and is included as a proxy for performance of the firm's operations.

First, firm-specific parameters (β_{0i}, β_{1i}, and β_{2i}) are estimated using the same model in the estimation period.

$$TA_t / T_{t-1} = \beta_{0i}(1/T_{t-1})$$
$$+ \beta_{1i}(\Delta REV_t - \Delta REC_t / T_{t-1})$$
$$+ \beta_{2i}(PPE_t / T_{t-1})$$
$$+ \beta_{3i}[ROA_t] + \epsilon \quad (8)$$

The coefficient values (β_0, β_1, β_2, and β_3) are obtained from regression in equation (8) are used in equation (7) to calculate non-discretionary accruals (NDA).

Then, non-discretionary accruals are calculated from in estimation period using equation (7).

Kothari et al. (2005) has considered comments made by Dechow (1994) that all existing accruals models in earning management may lead to serious inference problems because all of them reject the null hypothesis of no earnings management at rates exceeding the specified test levels when applied to samples of firms with extreme financial performance. Hence, it is likely that relying on existing accruals models to solve the problem of multiple method choices may result in serious inference problems.

Kothari et al. (2005) use ROA as an accounting based measure to control for firm's performance in earnings management studies. They suggest that tests related to accounting discretion that do not control for performance are often mis-specified. ROA is an indicator of the management's ability to efficiently utilize corporate resources that ultimately belong to shareholders.

Kothari et al. (2005) show that matching on current year ROA produces less misspecified tests because the performance-related error in estimating the discretionary accruals of a treatment firms affect the treatment firm's current year ROA, which is matched with a control firm's current year ROA. Thus, the impact of performance-related accruals on the properties of subsequent period's estimated discretionary accruals of the treatment firm is better controlled for when matching is on current year ROA.

However, Dechow et al. (2010) argue that the models generate the residuals explain only 10–12% of the variation in accruals, is likely to add

noise to the measure of discretionary accruals, and it is best applied when correlated performance is an important concern.

Conclusion

The purpose paper is to discuss on role of accruals in financial accounting and how it is defined in academic research. The role of accruals in accounting is to make financial reports informative for wide range of users. Accruals based accounting recognizes economic events on a timely basis, regardless the timing of cash flows, which allow firm to measure earnings that closely reflect its performance.

On the other hand, accruals involve management's judgment as they require estimations about future events that are not considered in current cash flows. The degree of subjectivity and verifiability of information used for estimates of accruals are of concerned by market participant as manager can exercise their discretion over accruals to alter financial reports that either to mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting number.

Paper contains review of accounting modeling in detecting earnings management which includes development of the model from the early period until the present period. Two primary concerns in study of earnings management are whether constructing the earnings management model developed is both well specified and powerful at estimating discretionary accruals.

In most of the accounting models in earnings management study, concerns are focused on issues that models cannot adequately control the changes in discretionary accruals deriving from economic conditions. However, it is difficult to fully solve this problem, as no operational model will probably be able to control observable and non-observable economic factors that influence the accruals' behavior. Therefore, this problem can be considered a matter of degree.

Another concern is that the variables used to control the economic environment can be contaminated by earnings management. In fact, the variables used in the models and measured by the accounting process itself can be contaminated by accruals management, as this fact derives from the dynamics of the accounting measurement process. The only way to solve this problem is that the research must be able to identify the cause of potential misspecification and include control variable to mitigate the misspecification to reduce the likelihood of incorrect inferences.

In summary, the main research results are that the predictive power of the operational models to estimate discretionary accruals in current literature is low, independently of the economic environment under analysis. Some variables lead to the identification of discretionary accruals, even if this practice does not occur as Dechow (1994) point out that all earnings management models that are developed reject the null hypothesis of no earnings management at rates exceeding the specified test levels when applied to samples of firms with extreme financial performance. In

response to this research question, the models are developed to identify the potential measurement error and employ control variable to mitigate the problem (i.e. Kothari et al., 2005), but introducing an additional control variable can reduce power of test and the variable should be apply only when sample involve a potential issue identified by researcher (Dechow et al., 2010).

References

Ball, R. and Brown, P. (1968). An empirical evaluation of accounting income numbers. *Journal of Accounting Research, 6*, 159–178.

Ball, R. (1989). The firm as a specialist contracting intermediary: application to accounting and auditing. Unpublished, University of Rochester.

Ball, R. and Shivakumar, L. (2005). The role of accruals in asymmetrically timely gain and loss recognition. *Journal of Accounting Research*. Forthcoming.

DeAngelo, L. E. (1986). Accounting numbers as market valuation substitutes: a study of management buyouts of public stockholders. *The Accounting Review, 61* (3), 400–420.

Dechow, P. (1994). Accounting earnings and cash flows as measures of firm performance: the role of accounting accruals. *Journal of Accounting and Economics, 18*, 3–42.

Dechow, P., Sloan, R., and Sweeney, A. (1995). Detecting earnings management. *The Accounting Review, 70* (2), 193–225.

Dechow, P. M., Sloan, R. G., and Sweeney, A. P. (1996). Causes and consequences of earnings manipulation: an analysis of firms subject to enforcement actions by the SEC. *Contemporary Accounting Research, 13* (1), 1–36.

Dechow, P. W., Ge, and Schrand, C. (2010). Understanding earnings quality: a review of the proxies, their determinants and their consequences. *Journal of Accounting and Economics, 50* (2–3), 344–401.

Fields, T., Lys, T., and Vincent, L. (2001). Empirical research on accounting choice. *Journal of Accounting and Economics, 31* (1/3), 255–307.

Hribar, P., Collins, D. (2002). Errors in estimating accruals: implications for empirical research. *Journal of Accounting Research, 40*, 105–134.

Healy, P. M. (1985). The impact of bonus schemes on the selection of accounting principles. *Journal of Accounting and Economics, 7*, 85–107.

Healy, P. M., and Wahlen, J. (1999). A review of the earnings management literature and its implications for standard setting. *Accounting Horizons, 13* (4), 365–384.

Jones, J. (1991). Earnings management during import relief investigations. *Journal of Accounting Research, 29*, 193–228.

Kothari, S. P., Lcone, A. J., and Wasley, C. E. (2005). Performance-matched discretionary accruals. *Journal of Accounting and Economics, 39*, 163–197.

McNichols, M. (2000). Research design issues in earnings management studies. *Journal of Accounting and Public Policy, 19*, 313–345.

Richardson, S., Sloan, R., Soliman, M., and Tuna, I. (2005). Accrual reliability, earnings persistence and stock prices. *Journal of Accounting and Economics, 39*, 437–485.

Schipper, K. (1989). Commentary on earnings management. Accounting Horizons, 3, 91-102.

Sloan, R. (1996). Do stock prices fully reflect information in accruals and cash flows about future earnings?. *The Accounting Review, 71*, 289–315.

Subramanyam, K. (1996). The pricing of discretionary accruals. *Journal of Accounting and Economics, 22*, 249–281.

Wilson, G. P. (1986). The relative information content of accruals and cash flows: combined evidence at the earnings announcement and annual report release date. *Journal of Accounting Research*, 1986 Supplement, 165–200.

Wilson, G. P. (1987). The incremental information content of the accrual and funds component of earnings after controlling for earnings. *The Accounting Review, 62(2)*, 293–322.