Flexibility in Financial Accounting Income Strategies and Earnings Management in the Netherlands
van Rooijen, J.G.

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Chapter 6

Detecting managerial influence over accounting income

6.1 Introduction

In the past decades a great number of accounting researchers have investigated whether managers exert influence over accounting income. Because this phenomenon is not directly observable, the empirical tests are based on the examination of proxy variables. The aim of this section is to give an overview and discuss the methods to detect managerial influence over accounting income used in prior research. On the basis of this overview and on the basis of the detailed overview of financial accounting flexibility provided in chapter 5, a new proxy to measure financial accounting discretion and to detect managerial influence over accounting income is developed in the next chapter. By providing an overview of previous detection methods, this chapter addresses a part of the second research question of this study, namely: How can financial accounting flexibility be observed and its use for income strategies and earnings management be detected and analyzed?

Watts and Zimmerman (1990, p. 143) state that one of the main research questions involved in earnings management research is the tests' lack of power. Power is the ability of the approach to detect managerial influence over accounting income among all other influences present in the research data. Tests lack power for several reasons: problems with model specification, problems specifying the left-hand-side variables, right-hand-side variables and omitted variables. The reason under review in this section is the problem of properly specifying the left-hand-side variables or the problem of specifying the variables that measure managerial influence over accounting income (i.e. the proxy for managerial influence over accounting income).

\[80\] The left-hand-side variable is the dependent variable and the right-hand-side variable is the independent variable.

\[81\] See Watts and Zimmerman (1990, p. 143-146) for a discussion of the reasons that reduce the power of tests.
International differences in the accounting environment, including the flexibility and disclosure requirements of the accounting system, may limit the possibility to transpose research methods to detect managerial influence used in other countries. This may especially hold for the measurement variable used. When a measurement variable is used which results in powerful tests in a certain country, this will not automatically imply that this measurement variable will result in the same explanatory power in other countries because essential elements of the institutional setting on which the variable is based may be different\textsuperscript{82}.

In other cases measurement variables simply cannot be transposed because the relevant data to calculate the variable are not available in other countries. Kasanen et al. (1996) for example developed a very powerful measurement variable in the Finnish accounting setting based on the difference between Finnish GAAP accounting income and accounting income based on IAS. This measurement variable is however only applicable because a large sample of firms in Finland voluntary disclose two sets of financial statements.

\begin{center}
\begin{tikzpicture}

\node (a) at (0,0) {Managerial influence over accounting income as an unobservable phenomenon};
\node (b) at (0,-1) {Proxy variable for managerial influence over accounting income};
\node (c) at (-2,-2) {Single accounting item};
\node (d) at (0,-2) {Portfolio of accounting items};
\node (e) at (-2,-3) {Direct approach};
\node (f) at (0,-3) {Indirect approach};
\node (g) at (2,-2) {Direct approach};
\node (h) at (2,-3) {Indirect approach};
\node (i) at (0,-4) {Figure 6.1 Detecting managerial influence over accounting income.};

\draw [->] (a) -- (b);
\draw [->] (b) -- (c);
\draw [->] (b) -- (d);
\draw [->] (c) -- (e);
\draw [->] (c) -- (f);
\draw [->] (d) -- (g);
\draw [->] (d) -- (h);

\end{tikzpicture}
\end{center}

There are a number of different ways available for specifying the variable used as a proxy for managerial influence over accounting income. First, it is possible to explain managerial influence over a single accounting item. Managerial influence is detected by directly

\textsuperscript{82} A study based on changes in accounting methods may for example be effective in a setting where accounting changes are frequently used to influence accounting income, but far less effective in a setting where accounting standards prevent the (mis-)use of accounting method changes in this respect.
observing accounting method choice regarding this single accounting item or indirectly by observing accounting accruals regarding this single accounting item. Secondly, it is possible to explain managerial influence over a combination, or portfolio of accounting items. Regarding this portfolio approach it is possible to detect managerial influence by means of directly observing accounting method choice and through an indirect observation of accounting method choice and estimates. The last is usually referred to as an accrual approach. In this approach accounting accruals aggregate into a single measure the net effect of total managerial influence over accounting income.

Specifying the proxy variables of managerial influence over accounting income by means of directly observing accounting method choice has the advantage that the researcher can focus on that part of the firm’s accounting decisions that seem highly discretionary. Focussing on these highly discretionary items does not however mean that there is a causal relationship between the observed accounting decisions of a specific firm and certain incentives to exert managerial influence over accounting income. The researcher can only conclude from tests based on these data that management behaved as if they were biasing accounting income. Researchers use an indirect observation of managerial influence over accounting income if they specify the proxy variable without observing accounting decisions for individual accounting items. An indirect observation always relates to managerial discretion regarding accounting method choice together with accounting estimates.

In the next paragraph the single item approach to proxy for managerial influence is discussed in more detail. Although a number of publications are discussed which use a single item proxy it is not the intention to provide a complete overview of this research approach. In paragraph 6.3 the portfolio proxy to managerial influence is discussed in more detail. Again a number of approaches are discussed, but it is not the intention to provide a complete overview of publications that have used a portfolio proxy to managerial influence over accounting income. Finally, in paragraph 6.4 the different approaches in detecting managerial influence over accounting income are evaluated.
6.2 A single accounting item as proxy variable

Most of the early earnings management studies use a single accounting item or accounting feature to proxy for managerial influence over accounting income. Examples are accounting changes, the choice of depreciation method and the use of provisions. Influencing this single accounting item is viewed as one of several ways to manage earnings and the aim is to explain managerial influence over this single accounting item or accounting feature. Apart from the McNichols and Wilson (1988) study, which explicitly models for the different components, it is implicit in this approach that each revenue and expense item in accounting income has a discretionary and non-discretionary component.

For many of these items, management can influence accounting income through changes in accounting methods, accounting method choice, accounting estimates for a given accounting method and through real decisions regarding these accounting items. Regarding tangible fixed assets for example the following elements are discretionary and may be used as a proxy for managerial influence over accounting income in the Netherlands:

1. Depreciation may for example be based on an accelerated or straight-line depreciation method. A change from the first method to the latter typically increases accounting income and is an example of financial accounting discretion due to possible changes in accounting methods. This is an example of financial accounting discretion as a result of accounting method choice;

2. Assets may be valued at historical cost or current value. In general valuation at historical cost will result in a lower depreciation charge and higher accounting income in the current period. This is also an example of financial accounting discretion due to accounting method choice;

3. The determination of the useful economic life and residual value of assets is often subjective. In general, the longer the useful economic life and the higher the residual value, the lower the depreciation charge and the higher current accounting income. This is an example of financial accounting discretion due to accounting estimates;

4. The (timing of the) disposal of assets is often subjective and may influence current accounting income. This is an example of financial accounting discretion due to real decisions.
Changes in accounting methods

A number of papers in the past 30 years have used changes in accounting methods to proxy for managerial influence over accounting income. Cushing (1969) for example studied various accounting method changes and found, although the evidence offers little insight into the motives of accounting method changes, that management timed accounting method changes to report favorable effects on current earnings per share. Gosman (1973) found that size and audit firm differences appeared to be closely associated with accounting changes by 100 Fortune 500 firms during the 1959-1968 period and Moore (1973) found evidence that the proportion of income reducing discretionary accounting method changes were relatively more prevailing for companies with management changes. Healy (1985) investigated the effect of bonus schemes on accounting decisions and used two proxy variables for managerial influence over accounting income. Next to the accrual proxy that gave the paper its seminal character, Healy also used the effect of voluntary changes in accounting methods on accounting income. Healy found that bonus schemes create incentives for managers to select specific accounting methods and more specifically that there is a high incidence of voluntary changes in accounting methods during years following the adoption or modification of a bonus plan. Healy et al. (1987) examined the effect of accounting method changes on cash salary and bonus compensation to CEOs. They focused on inventory valuation and depreciation methods and found that after accounting method changes the payments are still based on accounting income and no correction is made for the accounting method change. Further they find that the potential compensation effect of the accounting method changes is relatively small. LaSalle et al. (1993) used discretionary accounting method changes to study managerial influence over accounting income around executive succession. Their paper reports evidence that is inconsistent with the conjecture that new management exploits accounting method changes to blame their predecessor for poor performance and establish a lower benchmark for future performance evaluation. Sweeney (1994) examined accounting method changes of firms prior to violating accounting based restrictions in debt agreements. The results indicate that managers of firms approaching violations of accounting based restrictions are more likely to make income-increasing discretionary accounting method changes and adopt income-increasing mandatory accounting method changes earlier than control firms.
In the Netherlands Hoogendoorn (1990) examined whether firms use accounting method changes to influence key accounting values. The results indicate that there is a clear relationship between income-increasing accounting method changes and the financial situation of the firm. Further, the results indicate that changes in accounting methods that influence accounting income correspond to a strategy of income smoothing. Mertens (1997) used accounting method changes to test whether the implementation of regulatory changes in the Netherlands had an impact on management’s choice of accounting methods. The results indicate that accounting method changes were used more during the implementation of regulatory changes, that accounting method changes were not significantly higher after implementation of regulatory changes and that the impact of regulatory changes on accounting method changes related to firm size, firm leverage and industry.

*Accounting method choice*\(^{83}\)

A number of papers in the past decades have used accounting method choice as a proxy variable for managerial influence over accounting income. The first relevant study in this respect is Hagerman and Zmijewski (1979). Prior to their portfolio study (see paragraph 6.3) Hagerman and Zmijewski studied the cross-sectional variation in depreciation method (i.e. accelerated versus straight line), inventory valuation method (i.e. LIFO versus FIFO), investment tax credit (deferral versus flow-through) and the amortization period of past service costs to test for the bonus plan and size hypotheses. Bowen et al. (1981) investigated manager’s choice between capitalizing and not capitalizing interest costs associated with capital projects. Their results indicate an association between these choice and debt contract variables, especially leverage. Their results also confirm the association between this accounting method choice and size for the oil industry. Regarding the oil and gas industry, a number of papers try to explain the industry specific accounting choice between the use of full cost versus successful efforts method\(^ {84}\). Dhaliwal et al. (1982) compared the depreciation method used by a sample of management and owner controlled firms and found significant differences in the adopted depreciation methods and also found that management controlled

\(^{83}\) A number of empirical studies that use a single accounting procedures are also discussed by Watts and Zimmerman (1986, p. 257-262 and p. 269-283).

\(^{84}\) For example Deakin (1979), Dhaliwal (1980) and Lilien and Pastena (1982).
firms are more likely to adopt a straight-line (i.e. accounting income increasing\textsuperscript{85}) depreciation method. Daley and Vigeland (1983) examined the effects of debt covenants and political costs on the choice of R&D accounting method\textsuperscript{86}. The results suggest that firms which capitalized R&D costs were more highly leveraged, used more public debt, were closer to dividend restrictions and were smaller than firms which expensed R&D costs. Lee and Hsieh (1985) examined systematic differences in characteristics between LIFO and FIFO firms. They conclude that inventory method choices are more likely to reflect differences in production and investment characteristics of firms than differences in incentives structures. Niehaus (1989) examined the relation between inventory method choice and both managerial ownership and outside ownership concentration. He found evidence that when managerial ownership is low, it is less likely that management chooses LIFO because LIFO results in lower accounting income\textsuperscript{87}.

\textit{Accounting estimates}

A number of papers in the past decade have used accounting estimates to proxy for managerial influence over accounting income. Strong and Meyer (1987) for example used discretionary asset write-downs as a proxy for managerial influence over accounting income. In contrast to the papers discussed above this research does not relate to accounting method choice but to financial accounting discretion due to accounting estimates. They found that there are incentives for senior management, especially when a new CEO comes from outside the firm, to take a large write-down now against as many eventualities as possible in the conviction that later reversal and higher accounting income will strengthen the perceived managerial effectiveness. The financial community has coined the phrase “big bath” as a generic label that highlights the magnitude of some of these write-downs and a purported cleansing of the financial statements. Elliot and Shaw (1988) examined these “big baths” and their findings indicate that firms disclosing large discretionary write-downs are larger and more highly leveraged than other firms in their industries are. Further, their results indicate that these firms under perform in their industries in the period before and after the write-down. Francis et al. (1996) also used discretionary asset write-downs as a proxy for

\textsuperscript{85} This assumes that in any given year firms maintain their level of depreciable assets.

\textsuperscript{86} In the US until 1974, firms could capitalize or expense all or part of their research and development costs.

\textsuperscript{87} This assumes that in a given input prices are rising and firms on LIFO do not liquidate layers.
managerial influence over accounting income. They also produced evidence that write-downs are more frequent and larger in magnitude if there has been a recent change in management and if the firm and/or its industry has taken write-downs in the past. The proxy variables used in the papers mentioned above do not separate between the discretionary and the non-discretionary component of asset write-downs. If (the timing of) an asset write-down is very subjective this may be the right approach since in that case the non-discretionary component will be negligible small. However, when there is a non-discretionary component the proxy will measure managerial influence over accounting income with error. McNichols and Wilson (1988) examined whether managers exert influence over accounting income by modeling how a specific accounting number, the provision for bad debts, would be reported in the absence of earnings management. Their approach differs from the studies mentioned above because their indirect approach to proxy for managerial influence over accounting income uses a specific model to separate the discretionary component from the non-discretionary component. The use of a specific model seems logic since the estimates for the provisions for bad debt, including the timing aspect, are less subjective than asset write-downs because the provision for bad debt will be partly determined by a mechanical estimation procedure such as a fixed percentage of credit sales or receivables of a given age. To control for the provision’s non-discretionary component, they projected it into the beginning balance of the bad debt account, current write-downs and write-downs for the next period. The residual provision is interpreted as a proxy for the provision’s discretionary component. Using this proxy they found evidence that firms manage their earnings by choosing income-decreasing accruals when income is relatively high or low.

In the Netherlands Overboorn and Vergoossen (1997) examined the relation between provision accounting and income smoothing, “big bath” accounting and CEO changes. Their results indicate that provision accounting results in a smoother income stream. Further, their results indicate that the frequency and the level of provisions relate to the level of accounting

88 A similar approach is followed by Beaver and Engel (1996). They examine bank’s discretionary behavior with respect to allowance for loan losses (i.e. a single item accrual) and the behavior of bank’s security prices. The non-discretionary portion of the allowance is modeled as a linear function of loans outstanding, non-performing assets and net loan charge-offs.
89 Technically speaking a single item accrual approach is used (see paragraph 6.3). Rather than using an estimate of total discretionary accruals, the discretionary part of the provisions for bad debt is used as the proxy variable.
income as well as to CEO turnaround. Ter Hoeven (1997) examined, among other things, the relation between the financial effects of reorganizations and income smoothing. He found that the number of smoothing firms was twice as large as the number of non-smoothing firms. Further, the results indicate that there is a relation between income smoothing and the industry sector. Especially, the income decreasing reorganization effects could be marked as income smoothing, indicating that those effects particularly appeared in years of income increases.

Real decisions

A number of papers in the past decade have used real accounting decisions as a proxy variable for managerial influence over accounting income. DeFeo et al. (1989) for example, examined accounting gains produced by equity-for-debt swaps. Their results suggest, among other things, that the CEOs of firms completing a swap transaction experience an increase in cash compensation. Hand (1989) examined why firms undertake debt-for-equity swaps. The results indicate that firms used the accounting gain to smooth an unexpected and transitory decrease in their earnings per share. Thomas (1989) examined why firms terminate their overfunded pension plans. The results indicate that the reversion of excess assets from terminations of overfunded pension plans are apparently motivated by cash needs, rather than tax or agency considerations. Further, the results indicate that terminations appear to be a costly source of funds because firms first seek funds from numerous other sources before resorting to terminations of overfunded pension plans. Murphy and Zimmerman (1993) examined turnover-related changes in R&D, advertising and capital expenditures, next to accounting accruals, around CEO turnover and found that these changes are due mostly to poor financial performance. For strong performing firms there is no evidence that managerial influence over accounting income is part of the normal CEO turnover process. Bartov (1993) examined managerial influence over accounting income by looking at the timing of asset sales. The findings are consistent with the timing of asset sales by managers so that the recognized income from these sales smooth inter-temporal accounting income changes and mitigates accounting-based restrictions in bond covenants.

\footnote{Within the sub-populations the smoothing percentages of industrial firms were the highest and those of the most profitable firms the lowest.}
All studies mentioned above have investigated managerial influence over a single accounting item rather than managerial influence over all accounting items. Focusing on a single accounting item reduces the power of the tests when managers are concerned with the effect of the overall income strategy instead of the effect of just one accounting method, accounting estimate or real transaction (Watts and Zimmerman, 1986, p. 257). This holds both for the single item direct approaches used in the different studies as well as the indirect, or single item accrual approach, used in the McNichols and Wilson (1988) study. This may for example explain why Strong and Meyer (1987) found evidence of managers “taking a bath” around CEO changes while LaSalle et al. (1993) reported evidence which is inconsistent with this hypothesis. In many cases there is a trade-off between different incentives and different discretionary accounting items and it may be the case that managers are more likely to “take a bath” by write-downs than by changes in accounting methods because the former is more effective or because the latter is more costly and cannot be reversed that easily. A more powerful test would try to explain the firms’ portfolio of accounting methods, estimates and real transactions because managerial influence over accounting income relates to strategic choice among alternatives rather than a sequence of independent binary choices.

6.3 A portfolio of accounting items as proxy variable

Accounting income results among other things from the firm’s income strategy. Given the firm’s financial situation different income strategies will result in a range of accounting income numbers. In some cases managers may choose an extreme income strategy, where all possible accounting choices, estimates and real transactions are aimed at increasing or decreasing current accounting income. In many cases, however, it is more likely that managers will not choose to maximize or minimize accounting income, but report income somewhere in between, for example because maximizing income will result in an income figure above the upper boundaries of the bonus scheme or because minimizing income will result in stakeholders loosing faith in the firm. Given the firm’s financial situation there may be a number of ways to influence accounting income to the level set by the firm’s income strategy. As stated in the previous section, a single item approach to managerial influence will
not result in a very powerful test and a more powerful test would try to explain the firm’s portfolio of accounting choice, estimates and real transactions. Regarding this portfolio approach it is possible to detect managerial influence over accounting income by means of direct observing accounting method choice and through an indirect observation of accounting method choice and estimates.

Direct approaches using a portfolio of accounting items
Zmijewski and Hagerman (1981) directly observed accounting method choice regarding sets of accounting items and assumed that firms adopt an overall income strategy approach in earnings management. This means that the level of accounting income is set by the firm’s income strategy and is executed by purposeful interventions in the financial accounting process. The optimal strategy trades off the different incentives managers face. As a result of this trade-off any combination of the accounting items may be optimal for a given firm. The accounting procedures investigated by Zmijewski and Hagerman are:

1. Inventory procedures (i.e. LIFO or FIFO)
2. Depreciation procedures (i.e. accelerated versus straight line)
3. Investment tax credit (deferral versus flow through)
4. Amortization of pension past service costs (<30 years or >30 years).

Given 2 choices for each of the four procedures, there are 16 portfolios that firms can use. In order to assess the income effects of different portfolios they make three different assumptions about the relative effect of each of the 4 particular procedures:

1. All four procedures have the same impact on accounting income
2. The effect of procedures 3 and 4 are assumed to be half the effect of 1 and 2
3. The effect of procedures 3 and 4 are assumed to be less than half the effect of 1 and 2.

The results from Zmijewski and Hagerman (1981) provide strong evidence that the manager’s choice of a portfolio of accounting procedures varies with the presence of an accounting income based compensation plan, the firm’s debt/equity ratio, the firm’s size and the concentration ratio in its industry. However, the findings remain weak because the ranking of
the effects of different items on accounting income is based on very rough assumptions that induce error in their proxy for managerial influence over accounting income\textsuperscript{91}. 

Although the Zmijewski and Hagerman study is quoted quite often it does not have many successors. Presumably this is for reasons stated in the last paragraph of the paper: “further refinements must be made (e.g., testing for the actual dollar effects on net income and considering all accounting policy decisions)” (Zmijewski and Hagerman, 1981, p. 148). These refinements implicate that this type of research moves researchers away from the use of large-scale databases towards a detailed analysis of financial statements. Other studies that used a portfolio approach based on direct observations of accounting method choice are Christie and Zimmerman (1994), Bowen et al. (1995), Dechow et al. (1996)\textsuperscript{92} and Pierce-Brown and Steele (1999).

Christie and Zimmerman (1994) studied three well understood and visible accounting method choices in order to examine whether managers of takeover targets make accounting choices to maximize firm value, or opportunistically to make the manager better off at the expense of some other contracting party. They study depreciation, inventory and investment tax credit (ITC) accounting method choices. Each accounting method choice is coded “1” if the income increasing method is selected (straight-line depreciation, FIFO and flow through for ITC) and coded “0” if the income-decreasing method is chosen (accelerated depreciation, LIFO and deferral for ITC). The dependent variable M (i.e. the proxy for earnings management) is calculated as the sum of the accounting method codes less the industry average for the accounting method choice. The results of this study indicate that efficiency is more important than opportunism in explaining accounting method choice.

Bowen et al. (1995) studied the relationship between incentives from stakeholders’ implicit claims and accounting method choice. Their dependent variable, the accounting method score,

\textsuperscript{91} Other possible problems with this research are discussed by Watts and Zimmerman (1986), but mainly relate to the lack of contract details and adequate political cost measures.

\textsuperscript{92} This research will be discussed at the end of this chapter because the portfolio approach based on direct observations is only complementary in this study. Dechow et al. (1996) examine inventory, depreciation and investment tax credits. The results indicate that the proportion of SEC firms using income-increasing accounting method choices gradually increases as the manipulation year (i.e. the year of the SEC investigation) approaches.
is based on firms’ inventory and depreciation method choices. Regarding inventory valuation FIFO (LIFO) is classified as an accounting income increasing (decreasing) choice and the use of average costs as an intermediate choice because its effect on earnings falls between those of FIFO and LIFO.

Regarding depreciation the use of straight-line (accelerated) depreciation is classified as an accounting income increasing (decreasing) choice and the use of a combination of straight-line and accelerated depreciation methods as an intermediate choice. Consistent with Zmijewski and Hagerman (1981) it is assumed that management chooses an optimal income strategy based on a combination of accounting method choices. Further, the values 0, 0.5 and 1 are assigned to income decreasing, intermediate and, increasing methods, respectively. The mean of these values is calculated to aggregate a firm’s inventory and depreciation method choices into a composite accounting method score with possible values of 0, 0.25, 0.50, 0.75 and 1. The results indicate that ongoing implicit claims between a firm and its stakeholders create incentives for long-run income increasing accounting methods (see also the general stakeholder relationship in paragraph 3.2).

Pierce-Brown and Steele (1999) revisited the analysis of Terry Smith’s Accounting for Growth (1992) in the context of the economics of accounting method choice. Smith was the head of UK company research at UBS Philips and Drew and analyzed the largest 208 UK firms in a “Major Firm Accounting Health Check”. Smith identified the most important “creative” accounting methods and the companies that were employing them. UBS Philips and Drew tried to suppress the publication and ultimately the publication led to the dismissal of Smith. The “Major Firm Accounting Health Check” identified twelve “creative” accounting methods and the degree of “creativity” in the firms’ accounts was measured by a zero to twelve scale by awarding a point for each technique. Smith advised readers to avoid firms with a high score. The “creative” accounting methods were:

1. Pre-acquisition accounting by using provisions to cover fair value adjustments;
2. Disposals above the line or deconsolidation (i.e. disclosure of disposal profits);
3. Deferred consideration when acquiring another firm (i.e. earn-out arrangements);
4. Mis-classification of extraordinary items;
5. Off balance-sheet financing;
6. Contingent liabilities;
7. Capitalization of interest and other costs;
8. Brand accounting;
9. Changes in depreciation method;
10. The use of convertible stock with put options or variable rate preference stocks;
11. Accounting for pension fund surpluses;
12. Currency mismatching;

Pierce-Brown and Steele (1999) used two models to predict accounting method choice. The first model treats each accounting choice (i.e. the items 1 to 12 mentioned above) as if it was an independent decision. The second model followed a portfolio approach and derives an aggregate measure of managerial influence over accounting income from the accumulated method choices (i.e. is based on the “Major Firm Accounting Health Check” score). The results indicate that in particular size, gearing, the presence of an industry regulator and industry classification are good predictors of accounting method choices. The results are stronger for the whole set of accounting methods than for each individual method choice, which is consistent with accounting method choice being a strategic and comprehensive selection from interactive methods rather than a series of independent decisions.

Although all studies mentioned above refer to the portfolio approach of Zmijewski and Hagerman (1981) none of the studies refined the study as proposed by Zmijewski and Hagerman. Christie and Zimmerman (1994) did not use the amortization period of pension past service costs and Bowen et al. (1995) further limited the scope by leaving out the investment tax credit method choice. Pierce-Brown and Steele (1999) consider more accounting method decisions, but their study combines methods that are potentially income-increasing with those that are potentially income-decreasing. The effect of aggregating income-increasing and income-decreasing accounting methods that may act in opposite directions, is that the explanatory power of the model is reduced. Further, none of the studies measures for the absolute or relative impact of each accounting method and equal weight is given to the alternatives.
Indirect approaches using a portfolio of accounting items

Instead of refining the direct approaches of accounting items, researchers tried to increase the power of their tests by using an indirect observation of accounting method choice and accounting estimates. This indirect observation relies on sophisticated statistical techniques that are applied to large databases.

Researchers use an indirect observation of managerial influence over accounting income if they specify the proxy variable without observing accounting method choice and estimates of individual accounting items. Generally, these methods use accounting accruals as earnings management variable. Total, or net, accruals may be interpreted as the net effect of all recorded operating events during the year other than cash flows. To put it differently, total accruals are the difference between operational cash flow and accounting income from operations. Changes in accounts receivable and payable are accruals, as are changes in inventories. The depreciation expense is a negative accrual, being that portion of the cost of property, plant and equipment that is written off in a year.

Healy (1985) tested the bonus plan hypothesis and found evidence that managers use total accruals to maximize their expected bonuses. Total accruals generally are a noisy measure of the net accruals managed by firm’s managers because part of the total accruals is beyond the manager’s discretion. Total accruals thus include a discretionary and a non-discretionary component. The non-discretionary component is determined by the firm’s business activities, prior accounting decisions and accounting constraints. By using total accruals, measurement error is introduced into the discretionary accrual variable, which makes it more difficult to detect earnings management among other influences present in the research data. In order to increase the power of the test used by Healy (1985) researchers attempt to separate total accruals into a discretionary and a non-discretionary part. A major difficulty is that

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93 Total accruals = net income from operations – cash flow from operations.
94 Healy also used voluntary changes in accounting methods (see paragraph 6.2).
95 Watts and Zimmerman (1990, p. 144) state that ideally, accruals used as an accounting choice variable should measure the difference between the actual total accruals and the total accruals in absence of earnings management.
96 Total accruals = non-discretionary accruals + discretionary accruals.
discretionary accruals cannot be observed. Measuring discretionary accruals became an important part of much earnings management research.

The usual starting point for measuring discretionary accruals is total accruals. A particular model is then used in order to estimate the non-discretionary part of total accruals. The following models are the most prominent accrual models in the literature:

1. The Healy model. Healy (1985) measures non-discretionary accruals by measuring the mean total accruals from an estimation period. The model measures discretionary accruals as the difference between actual accruals and the mean total accruals. This model assumes that total accruals do not change in response to changes in economic conditions compared to the estimation period and that all accruals are substantially subject to managerial discretion.

2. The DeAngelo model. DeAngelo (1986) measures non-discretionary accruals by assuming that non-discretionary accruals equal the last period’s total accruals. The random walk model is used to estimate the expectations for accruals and discretionary accruals are defined as total actual accruals minus total expected accruals (i.e. last period’s total accruals). This model assumes that total accruals do not change in response to changes in economic conditions compared to the previous year.

3. The Jones model. Jones (1991) measures non-discretionary accruals using a prediction approach. The model predicts the non-discretionary part of total accruals by the change in revenues and the fixed asset balance. The model assumes that sales and fixed assets are not managed and that they determine the part of total accruals that are least under management’s discretion. The model is an attempt to control for the effect of changes in the firm’s economic circumstances.

4. The industry model. The industry model (Decho w and Sloan, 1991) assumes that the variation in the determinants of non-discretionary accruals are common across firms in the same industry. The model estimates non-discretionary accruals within industries.

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98 This approach is, among others, also followed by Pourciau (1983).
99 This approach is, in addition to an earnings expectations approach, also followed by Liberty and Zimmerman (1986).
100 See Bernard and Skinner (1996) for a critical discussion of the Jones Model.
5. The modified Jones model. The Jones model measures with error when discretion is exercised over revenues. The modified Jones model (Dechow et al., 1995) adjusts the change in revenues for the change in receivables in the event period. Since Dechow et al. (1995) a great number of earnings management studies have used a modified Jones model to estimate the non-discretionary component of accruals.

Apart from a total accrual approach, accruals can also be used for single accounting items. McNichols and Wilson (1988) and Beaver and Engel (1996) used this approach (see paragraph 6.2). By using a single item accrual as proxy variable it may be possible to isolate the discretionary component of the item's accrual more precise\textsuperscript{101}. Further, it is possible to use an accrual approach for a number of accounting items. DeFond and Jiambalvo (1994) for example used working capital accruals (i.e. the sum of changes in inventory, accounts receivable, and other current assets, less the sum of changes in accounts payable, income taxes payable and other current liabilities). The disadvantage of using a subset of total accruals is of course that manipulation of accruals other than specified in the model is not detected.

A quite different accrual approach is taken by Kasanen et al. (1996). Their model also divides total accruals into a discretionary and a non-discretionary part, but they estimate the non-discretionary part, by using IAS income. Their method thus estimates all adjustments from Finnish net income to IAS income that are tractable from the financial statements. Since some Finnish companies disclosed IAS income it was possible to check the validity of their measure. Kasanen et al. (1996) provided evidence of dividend-based earnings management in the Finish accounting setting\textsuperscript{102}.

\textsuperscript{101} The McNichols and Wilson paper is critically discussed by DeAngelo (1988).

\textsuperscript{102} Other constructs that have been used as proxy variable to detect managerial influence over accounting income that will not be discussed in detail include components of discretionary cash flows (Dechow and Sloan 1991), time-series properties of earnings (Liberty and Zimmerman 1986), SEC enforcement actions (Dechow et al. 1996) and accounting errors (DeFond and Jiambalvo 1991).
Dechow et al. (1995) evaluated the alternative accrual models mentioned above by assessing the general ability of different models to detect discretionary accruals. They concluded that the modified Jones model exhibits the most power in detecting earnings management, but that all models generate tests of low power for earnings management. Evaluating the use of accounting accruals as earnings management variable leads to the conclusion that accruals are an imperfect and incomplete proxy variable because:

- Discretionary measures with a direct influence on cash flow are not included (i.e. the category “real” decisions);
- The separation methods for discretionary and non-discretionary accruals at best measure with error. At best because mismeasurement of discretionary accruals will at best lower the power of the research design to detect earnings management, and at worse cause the researcher to conclude that there is earnings management when non actually exists (Bernard and Skinner, 1996). This may be the case because the methods do not model for the impact of economic circumstances or because the models consider items to be discretionary when they are not or consider items non-discretionary when they are discretionary. Thus, use of accruals as a summary measure of accounting choice (still) suffers from a lack of control of what accruals would be without managerial accounting discretion (Watts and Zimmerman, 1990);
- The definition of cash flows and thus accruals can have a significant effect on the outcome of the analysis. If cash flows are derived from accounting numbers, cash flows are at best proxies for real cash flows (Mertens, 1997).

6.4 Evaluation of proxy variables

As stated in paragraph 6.1, the main research question involved in managerial influence over accounting income is the tests’ lack of power and from the research since it may be concluded that this is still an important issue (Watts and Zimmerman, 1990). This especially holds if

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103 Guay et al. (1996) also evaluated the discretionary accrual models mentioned using market based tests. They conclude that only the Jones and modified Jones models appear to have the potential to provide reliable estimates of discretionary accruals.

104 Dopuch (1996) concluded that earnings management studies based on accrual methodology are not likely to be successful unless there is some a priori basis for selecting firms which have a high probability of earnings management.
there is no a priori basis for selecting firms having a high probability of earnings management (Dopuch, 1996). Tests of managerial influence over accounting income lack power, among other things because of problems specifying the proxy variable for managerial influence as discussed in the previous chapter.

Zmijewski and Hagerman (1981, p. 147-148) stated that their portfolio approach may be improved by using actual in stead of estimated monetary effects. However, I am not aware of studies who tried to do so. In case actual monetary effects are not available, estimation of the effect should be based on actual firm circumstances in order to improve the impact of each accounting policy in the portfolio. More recent papers (Bernard and Skinner, 1996 and Langendijk, 1998) also suggest an alternative approach in detecting managerial influence over accounting income. These papers state that more reliable proxy variables are needed and suggest that a potentially fruitful alternative may be to analyze financial statements in more detail. Further, the portfolio of accounting items as a proxy variable for managerial influence over accounting income may be improved by taking into account more individual discretionary accounting items because managers implement a comprehensive income strategy. Although it is obvious that a portfolio of accounting items is preferable over a single accounting item when explaining the general use of financial accounting flexibility for income strategies and earnings management, this is less obvious for the choice between a direct or indirect approach.

A direct or indirect approach to detecting managerial influence

As stated in the previous paragraphs, it is possible to detect managerial influence over accounting income by means of direct observing accounting method choice and through an indirect observation of accounting method choice. This last approach is usually referred to as an accrual approach. Although mainstream accounting research on managerial influence over accounting income follows an approach based on total accruals\textsuperscript{105}, this approach is not followed in this study for four reasons. First, because the number of firms whose shares are publicly traded is relatively small in the Netherlands. Therefore it is very difficult to select a meaningful sample that a priori has a high probability of earnings management, making it unlikely that an accrual approach will result in powerful tests in the Netherlands. Second,

\textsuperscript{105}With a specific method to partition the discretionary and the non-discretionary component.
managers who want to influence accounting income may use real transactions as well to influence accounting income. Although material real transactions such as the disposal of assets are often disclosed as extraordinary items they are not taken into account in an accrual approach in detecting managerial influence over accounting income. In a direct approach it is possible to take these material real transactions into account, potentially improving the power of the tests. Thirdly, a direct approach to detecting managerial influence requires a detailed analysis of financial statements. The relatively small number of listed firms makes it attractive to analyze financial statements in detail as opposed to the use of large-scale databases frequently used in mainstream accounting research outside the Netherlands. Directly observing accounting method choice, accounting estimates and real transactions is more reliable than an indirect approach when it is difficult to partition the discretionary and the non-discretionary component of total accruals.

Finally, one could question the effectiveness of an indirect approach in the accounting context in the Netherlands. Although the number of earnings management, and more specific accrual, studies in the Netherlands is too limited to document this with facts, it seems that at least accrual methods should be developed that are more specifically aimed at the accounting environment in the Netherlands. For example because there is ample evidence of large differences between financial accounting flexibility in the US and the Netherlands\textsuperscript{106}.

According to Bernard and Stober (1989) accounting income can be decomposed as follows:

\[
\text{Cash Flow from Operations} \\
\quad +/\text{-Current Accruals} \\
\quad =\text{Working Capital from Operations} \\
\quad +/\text{-Non-current Accruals} \\
\quad =\text{Accounting Income}
\]

\textsuperscript{106} See for example Vergoossen (1991) and Vergoossen and Polman (1995).
Current accruals include items as changes in inventories, accounts receivable, other current assets, accounts payable and other current liabilities. Non-current accruals include depreciation of intangible and tangible assets, changes in deferred taxation, pension provisions and other provisions. In the US traditionally, current or working capital accruals are viewed as more susceptible to managerial influence than non-current or non-working capital accruals because errors in relation to working capital accruals are among the most frequently detected (DeFond and Jiambalvo, 1994, p. 158). In the Netherlands there is no evidence that working capital accruals are among the most frequently detected accounting errors and in general one could question whether working capital accruals are also more susceptible to managerial influence in the Netherlands than non-working capital accruals. The question whether working capital accruals are also more susceptible to managerial influence in the Netherlands than non-working capital accruals is quite essential because it determines whether dependent variable measurement approaches used in the US can be transposed to accounting research in the Netherlands.

Current accruals versus non-current accruals

Without any doubt there is a large difference in flexibility between the US accounting system and the accounting system in the Netherlands. Vergoossen (1997) for example states that “a special feature of Dutch accounting standards is their conceptual and interpretational nature. Accounting standards in the Netherlands are broadly formulated in contrast to the more descriptive and explicitly detailed formulation of accounting standards in some other countries, such as the US”. In my opinion the difference in flexibility is fundamental in the relative weight on working capital and non-working capital accruals in relation to earnings management sensitivity. Paragraph 5.3 gives a detailed overview of flexibility in the Netherlands and from this overview it can be concluded that there are a great number of accounting alternatives and areas of judgment, but that less than twenty percent of the alternatives and areas of judgment relate to working capital accruals. Given this flexibility in non-working capital accruals the question arises whether management prefers working capital or non-working capital accounting interventions to implement their income strategy. When deciding on specific accounting interventions three relevant aspects that determine the effectiveness of the intervention can be identified:
I. The possibility that the auditor opposes to the intervention;

II. The visibility of the intervention, and

III. The reversal effect of the intervention.

I. The possibility that the auditor opposes to the intervention

From an auditing perspective, the possibility that the auditor opposes to the current accrual accounting interventions compared to non-current accrual accounting interventions depends on the possibility to audit the accounting interventions. Although it is unlikely that the auditor will oppose to a permitted choice among accounting alternatives, this may be different in areas of judgement. If the judgement relates to frequently arising accounting issues such as the provisions for non-saleable stock and bad debt, the auditor can use a mechanical procedure as an aid in these areas of judgement. Widespread use of such mechanical procedures by managers and auditors could severely constrain managerial discretion over these accruals (DeAngelo, 1988)\textsuperscript{107}. This holds for both the US as well as the accounting environment in the Netherlands. For less frequent accounting issues such as impairment of fixed assets, the recognition of profits on construction contracts in proportion to the stage of completion and reorganization provisions the possibility to use a mechanical procedure is harder and judgment plays a more important role. Further, the information asymmetry between auditors and managers is likely to be larger for less frequent accounting issues and the auditor is more likely to use a marginal test\textsuperscript{108} for these accounting issues in order to obtain evidence that the estimate is reasonable. From the above it may be concluded that non-working capital accruals are more likely to be used to influence accounting income since these are more difficult to audit due to the more subjective characteristics and the larger information disadvantage of auditors in this area.

II. The visibility of the intervention

The objectives of accounting interventions may be to provide better information, be opportunistically motivated or motivated for efficiency reasons. The relevance of the visibility

\textsuperscript{107} For more frequent accounting issues it is possible to audit the accounting estimate by using an independent estimate prepared by the auditor for comparison with that prepared by management or to review subsequent events which confirm the estimate made by management.

\textsuperscript{108} Auditors are likely to audit the estimate by reviewing and testing the process used by management to develop the estimate in stead of making their own independent estimate (NSA 540, 10).
of the accounting intervention depends on these objectives. When an accounting intervention represents a highly visible accounting choice, outsiders who would be affected by the intervention have a differential ability to adjust reported accounting numbers and "undo" the intervention, relative to their ability to "undo" more subtle accounting interventions. Although it is not clear if outsiders "undo" accounting interventions, it seems likely that when accounting interventions are opportunistically motivated management will prefer subtle accounting interventions and when accounting interventions are motivated to provide better information more visible accounting interventions will be more effective and thus preferred.

The level of disclosure is an important determinant of the visibility of accounting interventions. In general disclosure in the US is of a higher level than disclosure in the Netherlands. Further, accounting interventions relating to accounting alternatives are in general more visible than interventions in relation to accounting estimates. Working capital accruals more often relate to accounting estimates that are not disclosed. For example the provision for bad debt and non-saleable stock is normally netted with the receivables, respectively the stock itself. Non-working capital accruals relate to both accounting policy choice and accounting estimates but accounting estimates are more often disclosed for non-working capital accruals than they are for working capital accruals. Regarding visibility it may be concluded that working capital accruals are more likely to be used to influence accounting income in an accounting environment with a high level of disclosure such as the US. This especially holds when the interventions are opportunistically motivated.

III. The reversal effect of the intervention

The effectiveness of the accounting intervention will also depend on the reversal of it. The reversal of accounting interventions was briefly discussed in paragraph 5.2. The reversal of working capital accruals is quite obvious because working capital items are short-term items. Under normal circumstances working capital accruals reverse in the subsequent period. Since next years financial situation is an uncertainty this may be an undesired effect of the accounting intervention. For example, if income is short of the desired level from an income smoothing perspective a positive working capital accrual (for example higher stock level or lower bad debt estimate) may bring accounting income to the desired level by biasing income
upwards. But when accounting income falls short again the next year additional accounting interventions are needed to bias accounting income upwards to the desired level due to the reversal of the accruals. The reversal of non-working capital accruals is less obvious since it may be that there is no reversal effect because the accounting intervention relates to a direct movement in equity or it may be that the intervention results in a bias over a longer period and the reversal effect is only due in the long run. The central idea is that accounting interventions relating to current accruals cannot be maintained in the near future, where accounting interventions relating to non-current accruals can be maintained over a longer period or might even be permanent. The relevance of the reversal effect is mainly determined by the incentive structure, but in the absence of incidental short term perspectives such as a CEO change, it is very likely that management in general chooses accounting interventions with a long term (positive) effect on accounting income (Bowen et al., 1995).

From the above it may be concluded that in the Netherlands, compared to the US, it is likely that non-current accounting interventions are more effective than current accounting interventions because:

I. There is more financial accounting flexibility for especially non-current accruals in the Netherlands;

II. The higher general level of disclosure in the US makes current accruals more effective in the US;

III. Non-current accruals are more subjective and therefore less likely to be opposed to by the auditor in the US as well as in the Netherlands, and

IV. Accounting interventions relating to non-current accruals can be maintained over a longer period or might even be permanent in the Netherlands.

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\[109\] The provision for doubtful accounts for example. When the provision is estimated to low in order to bias accounting income upwards this year, this will have to be compensated in the near future (either by a loss on accounts receivable or an increase of the provision). This compensation is necessary because the accounting intervention reverses in the subsequent period. When accounting income in the subsequent period falls short again, accounting interventions will have to compensate for the reversal of the previous bias as well as the shortfall in the current period.
Since non-current accounting interventions are more effective than current accounting interventions the dependent variable measurement should concentrate on non-current accounting items in the Netherlands.

6.5 Summary and implications for this study

In the second main research question of this study the question is addressed how financial accounting discretion can be observed and the use for income strategies and earnings management be detected and analyzed. One aspect of this question is how previous studies on financial accounting discretion and managerial influence over accounting income specified the dependent variable. This chapter provides an overview of proxy variables used in previous research.

There are a number of different ways available for specifying the variable used as a proxy for managerial influence over accounting income. First, it is possible to explain managerial influence over a single accounting item. Secondly, it is possible to explain managerial influence over a combination, or portfolio, of accounting items. Regarding both approaches it is possible to detect managerial influence by means of directly observing accounting method choice and through an indirect observation of accounting method choice and estimates. The last is usually referred to as an accrual approach.

From the overview it can be concluded that the previous methods have some major disadvantages that reduce the explanatory power of the tests. Focusing on a single accounting item reduces the power of the tests when managers are concerned with the effect of the overall income strategy instead of the effect of just one accounting method, accounting estimate or real transaction. Focus on a portfolio of accounting decisions overcomes this problem, but brings about other problems. When using a direct portfolio approach the problem is the relative impact of each accounting method and when using an indirect approach the most important problem is related to measuring the non-discretionary part of total accruals. The problems of previous proxy variables leave room for the development of
alternative proxy variables. Based on the considerations mentioned in this chapter, the alternative proxy will concentrate on non-current accounting items.

On the basis of the overview provided in this chapter and on the basis of the detailed overview of flexibility in financial accounting in the Netherlands provided in the previous chapter, a new proxy to measure financial accounting discretion and detect managerial influence over accounting income is developed in chapter 7. Finally, in chapter 8, the new proxy variable will be used in the empirical analysis of this study.