

# Properties of Financial Accounting Earnings

## Some Recent Insights

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### 1 Introduction

What explains the empirical properties of accrual accounting earnings<sup>2</sup>? In this article we describe an attempt to provide a costly contracting information asymmetry based explanation. We will attempt to show how familiar financial accounting principles translate into empirical properties of accrual accounting earnings in an efficient capital markets context.

Recent financial accounting research, most of which is still only available in working paper form, has been looking in a novel way at the question that opens this article. The answers are interesting. Relevant papers are Basu (1997), Ball, Kothari and Robin (1999), Ball, Robin and Wu (1999), Pope and Walker (1999a)<sup>3</sup>, Lubberink (1999) and Lubberink and Huijgen (2000).

The first objective of this article is to provide an introduction (i) to the background of this research, which goes back to Ball and Brown (1968) in terms of empirical work and the use of the notion of capital market efficiency and to Watts and Zimmerman's (1986) positive accounting theory, (ii) to the models (empirical specifications) used, as well as (iii) to provide an overview of the results so far. A second objective<sup>4</sup> is (i) to add empirical results for The Netherlands to the available results (from Lubberink (1999)), and (ii) to suggest what we think to be a fruitful step forward. Research undertaking that step forward is suggested and carried out in a recent paper, of which the second author of this article (Lubberink and Huijgen (2000)) is co-author.

In section 2 we introduce the two empirical properties of accrual accounting earnings that are the object of this new research, timeliness and conservatism, and we explain how these properties are measured empirically in the above-mentioned papers.

We then show, also in section 2, how the timeliness and conservatism properties can be fruitfully viewed as empirical manifestations of the way the familiar financial accounting principles of realization, matching and conservatism (or prudence) are used in financial statements by managers, and the external auditors, in a costly contracting and efficient capital markets world.

In section 3 we then sketch in some detail the history of the empirical modelling used.

What the research discussed in this article has shown so far, is that there are predictable differences (i) across countries and (ii) over time within countries, in timeliness and conservatism of accounting earnings. The results are presented and discussed in a next section (section 4). The differences are the predicted consequences of institutional differences between countries and institutional changes within a country over time. These institutional differences and changes affect the way in which financial accounting principles are used in practice in a world characterized by costly contracting and efficient capital markets.

Section 5 briefly addresses some potential difficulties with the approach taken in the papers discussed here.

Section 6 provides a number of concluding remarks.

### 2 Empirical Properties of Accrual Accounting Earnings

#### *2.1 Analysing the Empirical Properties of Accrual Accounting Earnings*

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In the papers referenced in the introduction, the researchers are interested in two empirical properties of financial accounting income: (i) its degree of timeliness and (ii) its degree of conservatism.

Degree of timeliness of accounting earnings refers to the extent to which accounting income of a firm incorporates that firm's economic income, i.e. the stock return to the firm's shareholders. Degree of conservatism refers to the extent to which accounting income incorporates an economic loss (negative stock return) more than an economic gain (positive stock return). Both properties were first defined in this manner in Basu (1997). Both of these empirical properties of accounting earnings can change in time, and can be different between countries and between individual firms. The central purpose in the papers discussed here is to investigate why that is the case.

Note that these papers assume that a firm's current stock return reflects all publicly available information concerning its future cash flows, i.e. the stock market is efficient. Hence, a firm's current annual stock return measures the firm's economic income for that year.

It is also important to note, and this explains the title of this article, that timeliness and conservatism of accounting earnings can be seen as the empirical manifestations of the application by a firm's management of three familiar basic principles of accrual financial accounting: (i) the realization principle, (ii) the matching principle and (iii) the principle of conservatism. Realization and matching create accrual accounting earnings that are less timely than a firm's economic income. The third feature creates asymmetric timeliness, more timeliness for losses, i.e. conservatism. In section 2.2, we will provide more explanation, focusing on internal contracting problems in a firm, for the existence and use of these three accounting principles.

Here we focus, for the moment, on the empirical measurement of timeliness and conservatism. We will use the specification used by Ball, Kothari and Robin (BKR) (1999) (adapted from Basu (1997)) to explain how empirically measurement of timeliness and conservatism takes place. BKR's specification is formulated on a per share basis. The specification (as a regression model, hence the error term  $\epsilon$ ) is as follows:

$$X_{it} - P_{it-1} = \beta_0 + \beta_1 D_{it} + \beta_2 R_{it} + \beta_3 R_{it} D_{it} + \epsilon_{it} \quad (1)$$

Specification (1) derives directly from the more obvious earnings/return (accounting income/economic income) relationship,

$$X_{it} - P_{it-1} = \alpha_0 + \alpha_1 R_{it} + \epsilon_{it} \quad (2)$$

In (1) and (2) the  $i$  and  $t$  subscripts refer to firms and period (years), respectively, in a given country. In (1) and (2)  $X_{it}$  is earnings before extraordinary items per share scaled by share price at time  $t-1$ :  $P_{it-1}$ .  $R_{it}$  is defined as change in share price, inclusive of dividends per share ( $d_{it}$ ), i.e. as  $P_{it} - P_{it-1} + d_{it}$  scaled by  $P_{it-1}$ . Specification (2) provides the basis for specification (1).

Note that in (1) and (2) current period accounting income ( $X$ ) is regressed on economic income ( $R$ , current period buy-and-hold market return). That is, the idea is to find out how well economic income explains accounting income, i.e. how well, or timely, accounting income is incorporated in economic income. An obvious measure of timeliness of accounting income in specifications (1) and (2) is  $R^2$ .

In (1)  $D_{it}$  is a dummy variable that partitions the observations into those with negative economic income ( $D = 1$ ) and those with positive economic income ( $D = 0$ ). The slope coefficients from (1),  $\beta_2$  and  $\beta_3$ , can be used to characterise the degree of conservatism in accounting income. An obvious<sup>5</sup> measure for the degree of conservatism of accounting income is  $(\beta_2 + \beta_3)/\beta_2$ .

In section 3 we will focus on specification (2), and therefore implicitly also on specification (1), and sketch its history, or pedigree, in some detail.

## 2.2 Accounting Earnings, its Alternatives and Economic Income in a Costly Contracting World

The purpose of this section is to provide more background to the modelling efforts described in the previous section.

A perennial issue in financial accounting is the relationship between the economic income of a firm, its market value change, and its accrual financial accounting income, for intervals shorter than a firm's lifetime (i.e. years). Specification (2) above provides a simple description of this relationship in a particular fashion.

Accrual accounting is one of two approaches available for the determination of period income. There is an alternative approach, which is cash flow accounting. Cash flow financial accounting builds directly on the incoming and outflowing firm's cash flows. As is well known, accrual financial accounting income is 'constructed' using a number of principles, basically re-aligning cash flows, incoming, outflowing and net cash flow, across time periods.

Of course, over a firm's lifetime total economic income, change in market value of equity must

be identical to its total accrual accounting income and also to its total net cash flow. But over shorter periods this is not the case because the asset (shares) pricing underlying periodic economic income evidently incorporates all expectations of future cash flows, i.e. the expected effects of the future activities of a firm. Both periodic accrual financial accounting income and periodic cash flow do so only to a more limited extent or not at all.

Eventually, however, the future activities of the firm will materialise and will be incorporated in both accounting income and cash flow. In this particular sense a firm's economic income is more timely than, i.e. leads, both accounting income (recall specification (2)) and cash flow. Both accrual accounting income and cash flow are therefore less 'timely' than economic income.

This raises the question why it is that management measuring accrual accounting income and cash flow for a period, does not somehow incorporate expectations of the effects of future activities. The problem that prevents that from happening is the information asymmetry between the managers and the shareholders regarding the outcome of plans for future activities. That is, there is a problem of verifiability. It is this information asymmetry that leads to a demand for income information other than economic income in the form of accounting income and cash flow on the part of the shareholders. This verifiable 'other' income measure can then be used for contracting purposes, e.g. in dividend determination, in management compensation contracts and in debt covenants.

Empirically, the use of accrual accounting income in contracting can be observed<sup>6</sup> and far less the use of cash flow. Two defining principles of accrual accounting, recognition and matching, create the difference between period cash flow and accounting earnings<sup>7</sup>. These principles incorporate some anticipation of future events in period accounting earnings in a way that cash flow accounting does not. BKR provides the following example: '... if managers pay an account for inventory early, then there is a decrease in current period operating cash flow and ... an offsetting increase in the subsequent period operating cash flow. Accrual accounting rules [matching in this example] attempt to insulate [accounting] income from the effect of prepayment, by expensing an amount in both periods that is based on inventory usage, not payments'. Note that this increases the timeliness of accrual accounting earnings relative to cash flow. It is this, verifiable, increase in timeliness that facilitates the use of accrual accounting earnings in contracting, i.e. it explains its popularity.

In fact, how timely accrual accounting actually

is, can be seen by comparing it with economic income. This is the reasoning that underlies specifications (1) and (2). Also, in specification (2) cash flow can replace accrual accounting earnings to measure the timeliness of cash flow relative to economic income. In section 3.2 below we will discuss an empirical comparison of the timeliness of accrual accounting income with that of cash flow, doing just this.

Indeed, previous research (see below) (i) has explored the question whether and to what extent economic income indeed 'leads' accounting income, i.e. is more timely, and (ii) has explored the relative timeliness of accounting income and cash flow. The findings are (i) that economic income is indeed more timely than accounting income and (ii) that accounting income is more timely than cash flow.

In section 3 we will provide some more background on the research that established that economic income leads accounting income and that accrual accounting income aligns more with economic income than cash flows. This research is important in the context of this article. It leads in a sequence of steps to BKR's (1999) specification (1). It is also fascinating in its own right.

Additionally, the accrual accounting principle of conservatism will empirically create asymmetric timeliness. Conservatism causes losses to be incorporated more quickly into accrual accounting income than gains. An example of conservatism and its effects is the 'lower of cost or market' inventory rule. This property of accounting earnings can also be motivated given the contracting context in which accounting earnings are used. In such a context shareholders, et cetera, will distrust managerial optimism because of information asymmetry, hence conservatism. Therefore, negative economic income will be incorporated more quickly in accounting income than positive economic income; positive economic income will be incorporated, but more gradually. This is the reasoning that leads to empirical specification (1).

Asymmetric timeliness was first measured in Basu (1997) using a variant of specification (1). He indeed found asymmetric timeliness in accounting earnings.

The explanation so far in this section is the costly contracting-based explanation referred to earlier. It explains the use of the familiar financial accounting principles of realisation, matching and conservatism in financial reporting within management/outside parties contracting. It goes back to Watts and Zimmerman (1986).

In the recent Ball, Robin and Wu (1999) paper, the authors use 'transparency' of accrual account-

ing earnings, combining the notions of timeliness and conservatism.

Note that, applying the logic sketched here, management can make accounting earnings more transparent by (i) making earnings more timely, through the use of the realization and matching principles and by (ii) using the conservatism principle to make earnings more asymmetrically timely (i.e. conservative). Managers, or their auditors, may or may not have the incentives to do this. The research in the papers that are central in this article investigates the effect of these incentives on the financial reporting behavior, in terms of transparency and its elements, of firms in time in a country, cross-sectionally within a country and cross-sectionally across countries.

The costly contracting-based theoretical expectation in these papers is that transparency, timeliness and conservatism, will allways be a feature of financial statements everywhere. Institutions, and changes in institutions, will influence the *level* of transparency.

### 3 Research in the Background

#### 3.1 Economic Income leads Accounting Income: Specification Issues and Results

##### 3.1.1 Specification Issues

The empirical specification (2) above has a long pedigree. The story of its development is also interesting in its own right. We will provide a concise sketch of that development<sup>8</sup>. There are a number of important notions and variable definitions.

These are:

- $P$  = share price;
- $X$  = accounting earnings (often before extraordinary items) per share;
- $UX$  = unexpected accounting earnings, the difference between some prediction of earnings and actual earnings, in the literature several prediction methods have been used;
- $d$  = net dividends per share, i.e. corrected for capital contributions, if any;
- $R$  = stock market return; in detail,  $R_{it} = (P_{it} - P_{it-1}) / P_{it-1}$ , (firm  $i$ , period  $t$  or  $t-1$ ), also with  $P_{it} - P_{it-1} + d_{it}$  as the numerator;
- $UR$  = excess (unexpected) stock return (difference between some measure of market-wide return and the stock return);
  - to provide focus: think, in our explanation below, of period  $t$  as one fiscal year;
  - to provide focus: think of the research described below in terms of a series of annual cross-sectional regressions or of a firm-year based pooled cross-section/

time-series regression.

- note that in the empirical parts of the papers discussed below, often different specifications are tested; we will only occasionally provide detail.

The classical paper investigating the relationship between share prices and accounting earnings is Ball and Brown (1968). Ball and Brown look at the relationship between unexpected accounting earnings ( $UX$ ) at the end of year  $t$  and excess returns ( $UR$ ) from one year before to several months after, accounting earnings announcements (and hence the announcement of  $UX$ ). They distinguish between negative and positive  $UX$  and  $UR$ , hypothesizing that negative (positive)  $UX$  and  $UR$  will occur together. They do not specify a functional relationship between earnings and returns and use the  $\chi^2$  test for each month upto and including the announcement month of earnings and several months after to see whether their hypothesis holds. They conclude that the unexpected part of earnings has information content for the stock market. They *also* note that the  $UR$  change predates in a large part the  $UX$  announcement, i.e. that apparently ‘prices lead earnings’ (see also, Ball and Kothari (1994, p.5)).

Beaver, Clarke and Wright (1979) also look at the relationship between unexpected earnings ( $UX$ ) at the end of each fiscal year and excess returns ( $UR$ ). They group the results in 25 ‘magnitude of unexpected earnings’ portfolios and then compute the rank correlation between average portfolio  $UX$  and  $UR$ . They find a significant positive correlation. This way of analysing the strength of the relationship between  $UR$  and  $UX$  is suggestive of a functional relationship:  $UR = f(UX)$ .

Beaver, Lambert and Morse (1980) (BLM), building on previous findings, do three things. First, they provide a functional specification between  $R$  and  $X$ <sup>9</sup>, after conceptually modelling the relationship. Their functional specification is:

$$R_{it} = \alpha_0 + \alpha_1 (X_{it} - X_{it-1}) / X_{it-1} + \epsilon_{it} \quad (3)$$

Later research has begun to call  $\alpha_1$  the earnings response coefficient  $ERC$ , although often using various variants of specification (3). BLM estimate (3) using  $R_{it}$  with and without dividends in the numerator and also with  $UR$  as the dependent variable. Using specification (3) BLM again find, as did Ball and Brown (1968), that earnings have information content, looking at the  $ERC$  and the  $R^2$ .

Second, BLM were also the first to explicitly use the notion that in an efficient stock market prices should lead earnings, i.e. current prices will

explain subsequent accrual accounting earnings. They therefore expected to find information in current prices about future earnings that could be used to obtain more precision in the determination of unexpected earnings. One variant of (3) that they used was (BLM, table 3):

$$(X_{it-1} - X_{it}) / X_{it} = \alpha_0 + \alpha_1 R_{it} + \varepsilon_{it} \quad (4)$$

Here, earnings changes one year out is the dependent variable. In a related subsequent paper Beaver, Lambert and Ryan (1987) (BLR), specification (4) was revisited. They logically concluded that (4) can also be written in the form of a contemporaneous relation between earnings and returns:

$$(X_{it} + X_{it-1}) / X_{it-1} = \alpha_0 + \alpha_1 R_{it} + \varepsilon_{it} \quad (5)$$

Both in BLM, using (4), and in BLR, using (5), the results show that prices lead earnings.

BLR called a regression of the form (5), the 'reverse regression', a name that survives in the literature. It is still used in Basu (1997), for instance, for (2) and (1). The 'original regression' of which (5) is the reverse, is (3). Note that if it is thought that prices lead earnings, it would be more appropriate to call (3) the 'reverse' regression. BLR also make this point. Note also, as BLR explain, that in a bi-variate context the original and the reverse regression are econometrically 'close', having the same  $R^2$ , for instance.

Thirdly, BLM, and BLR, no longer use the event study setting, the event being the announcement of the period accounting earnings, that Ball and Brown (1968) en Beaver, Clarke and Wright (1979) used. The current research mode is a study of the contemporaneous association between earnings changes and returns, i.e. an association study (see Collins and Kothari (1989, p.144, for this terminology).

A subsequent methodological step was taken in Christie (1987). Christie argued persuasively that the correct deflator, denominator, for the earnings change in (3) and a fortiori in (5) had to be leading share price  $P_{it-1}$  (see, Kothari (1992, p.189, for a clear summary of Christie's econometrical argumentation; one practical problem with earnings as deflator is that earnings can be negative).

Focusing for the moment on (3), Christie suggested:

$$R_{it} = \alpha_0 + \alpha_1 (X_{it} - X_{it-1}) / P_{it-1} + \varepsilon_{it} \quad (6)$$

Easton and Harris (1991) provided support for Christie (1987) with regard to the use of begin-

ning period share price as deflator for earnings change, although they came in from a different angle. Easton and Harris argued on the basis of an earnings valuation model due to Ohlson (see, Easton and Harris (1991, section 2.2) for details) that two theoretically more correct specifications for the earnings/returns relationship would be, with  $R_{it}$  detailed:

$$(P_{it} - P_{it-1} + d) / P_{it-1} = \alpha_0 + \alpha_1 (X_{it} - X_{it-1}) / P_{it-1} + \varepsilon_{it} \quad (7)$$

and,

$$(P_{it} + d) / P_{it-1} = \alpha_0 + \alpha_1 X_{it} / P_{it-1} + \varepsilon_{it} \quad (8)$$

In (7) and (8) the inclusion of dividends in the returns variable follows from the use of the earnings valuation model. Note that (7) differs from (6) only if in (6) dividends are excluded from  $R_{it}$ . Note also that in (8)  $X_{it} / P_{it-1}$  is commonly called the earnings yield and  $(P_{it} + d) / P_{it-1}$  the price relative.

It can now be seen that BKR's (1999) specification (2) is a mixture of specification (7) and (8), with earnings yield and in a 'reversed' formulation, i.e. specification (2) is the reverse of the following specification:

$$(P_{it} - P_{it-1} + d) / P_{it-1} = \alpha_0 + \alpha_1 X_{it} / P_{it-1} + \varepsilon_{it} \quad (9)$$

Note that two of the papers that are central in this article (BKR (1999) and Ball, Robin and Wu (1999)) have dividends in the return variable, i.e. use the reverse of (9). The other papers measure return exclusive of dividends.

The aim of this section was to provide background to BKR's (1999) specification of the earnings/returns relationship. We also wanted to provide background to the use of terminology such as 'reversed regression' and 'prices lead earnings' in BKR (1999) and in the other papers.

### 3.1.2 Results

As noted, Beaver, Lambert and Morse (1980), following Ball and Brown (1968), already provided empirical results that prices lead earnings. A relevant, more recent contribution in this area is Kothari and Sloan (1992). They provide an analysis in a time-series context. They use a specification similar to (8), with the deflator  $P_{it-n}$  in the dependent and independent variables measured for  $n = 1, 2$  and 3 periods (in the past). They show that the  $R^2$  rises with increasing  $n$ , i.e. the 'correlation' between current earnings and stock return increases as the measurement period for the stock

return gets longer. This indicates that prices indeed lead earnings, as they should in an efficient capital market.

### 3.2 Accounting Earnings are More Timely than Cash Flow

Another important building stone in the search for the determinants of fundamental properties of accounting is Dechow (1994). Dechow (1994) uses the following empirical specifications on a per-share basis:

$$R_{it} = \alpha_0 + \alpha_1 X_{it} / P_{it-1} + \varepsilon_{it} \quad (10)$$

$$R_{it} = \alpha_0 + \alpha_1 CFO_{it} / P_{it-1} + \varepsilon_{it} \quad (11)$$

$$R_{it} = \alpha_0 + \alpha_1 NCF_{it} / P_{it-1} + \varepsilon_{it} \quad (12)$$

in which, again,  $R_{it} = (P_{it} - P_{it-1} + d) / P_{it-1}$  and CFO is net cash flow from operations and NCF is total net cash flow. Note that Dechow also uses (9) given earlier, as a basis for (10), (11) and (12).

She finds for 28.647 firm-years of data for US industrial firms for the 1960 - 1989 period that the adjusted  $R^2$  for specification is (period = year; measurement interval is fiscal year for all variables) 16.20%, 3.18% and 2.47% for models (10), (11), and (12), respectively, concluding that this finding is '... consistent with the hypothesis that earnings are more strongly associated with stock returns [economic income] than cash flows' (Dechow (1994, p.23))<sup>10</sup>.

Dechow goes on to investigate determinants of the association of accounting earnings with returns. She looks, for instance, at the effect on operating cycle length (day of accounts receivables + days of inventory). She expects and finds that length of operating cycle strengthens (weakens) the link between earnings (cash flow) and returns.

### 3.3 Recapitulation

The research sketched in 3.1 and 3.2 sets the stage for the papers that are the subject of this article, starting with Basu (1997). Each of the papers uses a specification in which economic income 'leads' accounting income, using previous empirical results to motivate this. Section 3.1 also sketches the pedigree of BKR's (1999) version of Basu's (1997) earnings/returns specification which all papers use. All papers use accrual accounting earnings, not cash flow, as dependent variable, using previous empirical results, i.e. Dechow (1994), as motivation. Additionally, all also investigate asymmetric timeliness: using Basu's (1997) idea.

## 4 Findings

### 4.1 Country Effects: Differences in Timeliness and Conservatism between Countries

Recall that in section 2.2 we explained that management of firms can make accounting earnings more transparent by making earnings more timely, through the use of the realization and matching principles and by using the conservatism principle to make earnings more asymmetrically timely.

However, managers, or their auditors, may not have the incentives to do this.

The research in the papers discussed here can be used to investigate the effect of such incentives on the financial reporting behavior, in terms of transparency and its elements, of firms in time in a country, cross-sectionally within a country and cross-sectionally across countries.

Basu (1997) provides results for the USA; Ball, Kothari and Robin (1999) for Australia, Canada, France, Germany, Japan, the UK and the US; Pope and Walker (1999a) revisits the USA and the UK; Ball, Robin and Wu (1999) give results for Thailand, Malaysia, Singapore and Hong Kong, and Lubberink (1999) for The Netherlands.

All papers use versions of specification (1) to measure timeliness and conservatism of accrual accounting earnings. All relate economic income to accounting income. Often also, economic earnings is studied comparing it with cash flow, basically replicating, and extending them for conservatism, the Dechow (1994) results. We will not discuss those results here; the focus here is on timeliness and conservatism of accrual accounting earnings.

Basu (1997) presents results for the USA only. He also looks at the changes over time in timeliness and conservatism in that country (see section 4.2. below) in function of changes in relevant USA institutions.

Ball, Kothari and Robin (1999) (BKR), replicate Basu (1997) for the USA and give results for many more countries. They also 'broaden' the Basu hypothesis on the impact of institutions. They expect that differences in institutions surrounding financial reporting and differences in enforcement mechanisms in different countries create differences in incentives for managers and their auditors regarding the use of the realization, matching and conservatism principles. BKR make the familiar distinction in international financial accounting research between common-law countries and code-law countries and a not-so-familiar distinction between countries with strong and countries with weak enforcement mechanisms in the context of financial reporting regulations<sup>11</sup>.

Basic hypotheses in BKR are that (i) accounting earnings in code-law countries will be less timely and less conservative than in common-law countries and that (ii) among common-law countries laxer enforcement will lead to, relatively, less timeliness and conservatism. BKR single out the UK as being in that situation among the common-law countries. In other words, laxness in enforcement will make the UK drift towards the code-law country group in terms of timeliness and conservatism.

Pope and Walker (1999a), in a critical review of the BKR paper, replicate it for the UK and the USA. Their quarrel is not with BKR's reasoning *per se*. Their aim is to provide insight in the role of the accounting income variable used in BKR. BKR use accounting income before extraordinary items. Recall that BKR argued that accounting income would be less timely and conservative in the UK than in the USA. Pope and Walker in turn argue that if earnings after extraordinary items is used, bringing the UK earnings definition closer to the US definition, where extraordinary item possibilities are very restricted, this difference will disappear. Below, in table 1, however, we will not focus on this particular conjecture, which turns out to be valid, but simply give Pope and Walker's result for UK earnings before extraordinary items.

Ball, Robin and Wu (1999) also use the hypothesis that differences in institutions surrounding financial reporting and differences in enforcement mechanisms in different countries create differences in incentives for managers and their auditors regarding the use of the realization, matching and conservatism principles. They study four Asian countries. Thailand, Singapore, Malaysia and Hong Kong (part of China of course). They expect to find transparency levels in Thailand similar to those in code-law countries. But they also expect that in the three former UK colonies, and in thus common-law countries, institutions such as strict auditor liability are absent, so that empirical transparency levels of accounting earnings will not reach 'real' common-law country levels.

Lubberink (1999) provides conservatism and timeliness levels of accounting earnings for The Netherlands. He characterizes The Netherlands as having (i) loose enforcement of accounting standards and (ii) low legal liability exposure related to financial reporting issues. Also, (iii) in terms of the financial accounting measurement approach of its financial accounting standards setters The Netherlands is close to Anglo-Saxon, common-law, countries, while of course The Netherlands is a code-law country in the sense of BKR. The prediction from this characterisation of The Netherlands, much like Ball, Robin and Wu

(1999) for their Asian countries, is that common-law type financial accounting standards will make the code-law country The Netherlands drift, in terms of timeliness and conservatism, towards the common-law country group. However, the relative laxness of the enforcement of accounting standards and of the legal liability regime in The Netherlands, Lubberink expects, will provide an even larger opposite pressure to keep it in the code-law country camp.

Comparable results from all five papers discussed so far are presented in table 1. Table 1 provides details for each country about (i) overall timeliness, and (ii) the degree of conservatism measured as  $(\beta_2 + \beta_3) / \beta_2$  from specification<sup>12</sup> (1). All papers use specifications (1) and (2), in a pooled cross-sectional regression. Also given are time period and # of observations. We only give the results for fiscal year measurement intervals for both earnings and returns (see also the first footnote below the table).

Table 1 shows that by and large: (i) common-law, i.e. Anglo Saxon, countries show higher accounting earnings timeliness levels,  $R^2$ 's, than do code-law countries in Europe and Asian countries (although the timeliness of French, Dutch and Hong Kong accounting earnings is quite high); (ii) for countries for which the conservatism index can be computed the results show the same pattern more clearly, in that conservatism levels in France, The Netherlands and Hong Kong are now similar to those in code-law countries in general; (iii) (this follows from (i) and (ii)), absence of relevant institutions in common-law tradition countries such as Hong Kong, Malaysia and Singapore impacts transparency levels of accounting earnings adversely; (iv) results for The Netherlands indeed show a code-law country transparency level, especially in terms of the conservatism index; (v) results are relatively stable under replication (where relevant).

#### 4.2 Period Effects

Basu (1997) looks at the change of one feature of the US enforcement mechanism with regard to financial reporting regulation: the increase in auditor liability in the US in the time period for which he has data. He hypothesizes that this increase will affect transparency of accrual accounting earnings, especially conservatism (cause that to increase) for obvious reasons.

After introducing time-period dummies in specification (1), he cautiously remarks that there is '... a correlation between changes in auditor liability exposure and changes in conservatism',



**Table 1: Timeliness and Conservatism of Accounting Earnings<sup>#</sup> in Various Countries**

Country (period, # firm-years)	Timeliness: total timeliness ( $R^2$ s)	Conservatism index <sup>##</sup> ( $b_2 + b_3$ ) / $b_2$ (see, specification (1))
USA <sup>a</sup> (1963-1990,43118)	11,5%	3,21
USA <sup>b</sup> (1985-1995,21225)	14,7%	10,66
USA <sup>c</sup> (1976-1996,18380)	12,9%	10,33
UK <sup>b</sup> (1985-1995,785)	13,8%	4,75
UK <sup>c</sup> (1976-1996,7189)	19,3%	2,39
Australia <sup>b</sup> (1985-1995,1321)	9,1%	-
Canada <sup>b</sup> (1985-1995,2901)	17,0%	-
<b>All Common</b> <sup>b</sup> (1985-1995, 25447)	14,4%	16,5
France <sup>b</sup> (1985-1995,1054)	12,6%	1,88
Germany <sup>b</sup> (1985-1995,1245)	5,4%	3
Japan <sup>b</sup> (1985-1995,6855)	4,2%	2
<b>All code</b> <sup>b</sup> (1985-1995, 9154)	5,2%	1,25
Thailand <sup>d</sup> (code) (1984-1996,476)	1,0%	-
Hong Kong <sup>d</sup> (common) (1984-1996,867)	11,9%	1,57
Malaysia <sup>d</sup> (common) (1984-1996,768)	9,2%	-
Singapore <sup>d</sup> (common) (1984-1996,615)	7,2%	2
<b>All Asia</b> (1984 - 1996, 2726)	4,5%	-
Netherlands <sup>e</sup> (1983-1995,1168)	18,2%	1,71

<sup>#</sup> Accounting earnings before extraordinary items everywhere; financial statements not necessarily consolidated; both accounting earnings and return measured over fiscal year everywhere; outliers (various procedures) removed; pooled time-series/cross-section results.

<sup>##</sup> Conservatism only when both  $\beta_1$  and  $\beta_2$  different from zero, or  $\beta_1$  different from zero.

<sup>a</sup> Basu (1997, table 1, panel C).

<sup>b</sup> Ball, Kothari, Robin (1999, table 2, panel A)

<sup>c</sup> Pope, Walker (1999a, table 1 and 2)

<sup>d</sup> Ball, Robin, Wu (1999, table 2, panel A)

<sup>e</sup> Lubberink (1999, table 2)

(Basu (1999, p.29), and the ‘correlation’ has the correct sign.

#### 4.3 Between Company Differences

Interestingly, Lubberink and Huijgen (2000) have recently argued for an investigation of causes of cross-sectional transparency differences between firms within a country, a question with which the five papers discussed so far have not dealt. In their paper they develop hypotheses about the effect of risk attitudes of managers on the transparency, especially conservatism, of accrual accounting earnings of Dutch firms. They do this using the idea that financial reporting is a managerial action (see Watts and Zimmerman (1986)). In their paper they document such an effect. Full results can be found there.

#### 5 Stock Market returns as Economic Income: a Problem?

A potential criticism of the approach used in the papers discussed here is that there are likely to be

differences in information disclosure ‘depth’ and liquidity between the stock markets studied. Hence stock market returns may not fully capture economic income.

The argument against this criticism is that returns, i.e. economic income, is measured in each case over an annual period which (i) gives the information that there is sufficient time to be impounded in share prices and which (ii) should alleviate the effects of infrequent trading.

Also, if this argument is not wholly convincing, Basu (1997) develops an alternative testing approach that focuses on the time-series properties of accounting earnings directly to detect transparency (timeliness and conservatism). We will not elaborate here. Basu (1997, section 4.3) and BRW (1999, section 4), give details and, importantly, results that corroborate the returns based findings.

Another potential criticism is that both stock market returns and earnings are affected by some third variable, e.g. the business cycle. That would affect the relationship between earnings and returns. So far, the literature in the area has not addressed this criticism.



## 6 Concluding Remarks

The importance of the Basu (1997) (and Basu clearly built on Dechow (1994)) and subsequent papers is that they provide an empirical 'machine-ry' to observe the effects, so far elusive but fundamental, of financial accounting concepts (principles) such as realization, matching and conservatism. It makes the effects of these concepts very much tangible. That is new and exiting.

All this is not just a 'methodological' breakthrough. Happily, substantive conclusions are also possible.

One very important substantive insight, empirically illustrated, is that financial accounting regulation itself, say the EU 4th Directive rules or the IASC standards or local GAAPs, do not create accrual accounting earnings transparency. Transparency is the predictable result of incentives, i.e. the enforcement mechanisms such as corporate governance structures, that influence the financial accounting decisions of managers and the auditors.

One important consequence relevant for the IASC of this insight is, as developed in Ball, Robin and Wu (1999, p.5), that, 'Complete comparability of financial statements prepared under IAS would require a uniform set of manager and auditor incentives internationally, which in turn would require a complete integration of world-wide economic legal and political systems'. This is unlikely of course.

Another potentially important insight is that of Lubberink and Huijgen (2000). Managerial characteristics may create incentives that directly and measurably influence reported accrual accounting earnings of the firms they work for.

Finally, in our view, a positive characteristic of the papers discussed, and other that will follow in this line of research, is that they form a continuation of the earlier contracting theory ('costly contracting') based literature on accounting method choice, this time in a capital markets setting, i.e. as capital markets research. But the objective is the same: to explain financial accounting practice<sup>13</sup>.

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## NOTES

1 This paper was written while the first author was a visitor at the Center for Economic Studies, KU Leuven, Belgium. We thank the editors of this special issue for helpful comments.

2 We will use accounting earnings and accounting income interchangeably in what follows.

3 Pope and Walker (1999a) was very recently published as Pope and Walker (1999b). Throughout we will refer to the working paper version.

4 Both papers mentioned in this section are available on [www.mediaport.org/~martien/papers.html](http://www.mediaport.org/~martien/papers.html).

5 Note that  $\beta_2 + \beta_3$  gives the slope for bad news and  $\beta_2$  the slope for good news. Other conservatism measure are possible using specification (1), see Pope and Walker (1999a, section 4.7).

6 Dividends are determined using a company statutes based formula on the basis of accrual accounting income. The use of accrual accounting income in top-management performance is documented and explained in e.g. Sloan (1993). The use of accrual accounting income in debt covenants was documented in Leftwich (1983).

7 Klaassen and Bak (1996, section 4.5) provide a discussion in Dutch of the realization ('realisatie') and matching ('matching') principles and of the conservatism principle ('voorzichtigheidsbeginsel').

8 Ball, Robin and Wu (1999) also very briefly 'list' this pedigree in their footnote 16.

9 Note the shift here, the focus now is on the contemporaneous relationship between R and X and no longer on the relation between UR and UX, although in their paper BLM do discuss that relation as well. This also means that the event-study settings of Ball and Brown (1968) and Beaver, Clarke and Wright (1979) is no longer used. This point is amplified in the text.

10 Note that (10), (11) and (12) are non-nested hypotheses; the dependent variable is the same and

the explanatory variables are different in each specification. Dechow (1994) uses a statistical test, the Vuong test, to determine more formally which periodic income measure, earnings or cash flow has relatively more explanatory power. The X variable is found to explain significantly more of the variation in returns than CFO and NCF. For more background on tests for non-nested hypotheses, see Maddala (1992, ch. 12).

11 BKR's classification of countries in terms of enforcement mechanisms is similar, but arrived at independently, to the La Porta, et.al., (1998) classification. However, since the La Porta, et.al. classification is more detailed, it can be expected to affect future accounting research in this area.

12 In table 1 the degree of conservatism is given when (i) both  $\beta_2$  and  $\beta_3$  are significantly different from zero, or when (ii) this is the case for  $\beta_2$  alone, in which case the degree of conservatism is 1.

13 Two remarks: (i) we know that there are other ways of characterising conservatism in financial accounting. (ii) the objective to explain accounting appears to us as absent, at least not central, in the recent valuation based research of which Easton and Harris (1991) is an early example.