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Transparency, Disclosure and the Pricing of Future Earnings

Abstract: The present study examines the role of disclosure in assisting market participants to form expectations of future earnings from the accrual content of reported earnings. Using the Transparency and Disclosure ratings prepared by Standard and Poor's, we show how disclosure and accruals jointly affect the earnings expectations that are incorporated in current stock returns, depending not only on the magnitude, but also on their duration, i.e. whether they affect current or non-current operations, and their sign, i.e. whether they increase net operating assets (a positive net accrual) or decrease net operating assets (a negative net accrual).

Keywords: corporate disclosure, accruals, share price anticipation of earnings.

1. INTRODUCTION

The present study examines the role of disclosure in assisting market participants to form expectations of future earnings from the accrual content of reported earnings. Previous research (Schleicher and Walker, 1999; Lundholm and Myers, 2002; Gelb and Zarowin, 2002; Hussainey, Schleicher and Walker, 2003; Ettredge, Kwon, Smith and Zarowin, 2005; Schleicher, Hussainey and Walker, 2007; Hope, Kang, Thomas and Vasvari, 2008) has shown that, in general, disclosure is able to enhance future earnings information in current stock returns, an effect which has also been investigated in a number of more specific contexts (e.g. income smoothing practices by Tucker and Zarowin, 2006; R&D expenditures by Oswald and Zarowin, 2007; dividend payments by Hanlon, Myers and Shevlin, 2007, and Hussainey and Walker, 2009; cash flow reporting by Orpurt and Zang, 2009). To the extent that these effects have generally been estimated without also taking the firm's overall level of disclosure into account, it is clear that inferences about the likely market impact of disclosure can only be drawn directly from prior research results for the case where disclosure is at the average level. Here, we show that such conclusions will change significantly when the level of disclosure varies. Conversely, the role of disclosure in revealing relevant information on the prospects of the firm is also shown here to depend on the nature of the accruals appearing in the financial statements. In this respect, therefore, the present study addresses a significant gap in our understanding of accruals by providing an insight into the strength of the interaction between reported accounting numbers and further information made available by the firm, and we do so in an international context relevant to the contemporary setting of integrating capital markets.

In examining whether the information about future earnings in current returns is conditional upon disclosure, we acknowledge at the outset that accrual-based financial statements and other disclosed material may interact in conveying useful information about the future cash flows that outside investors may require for valuation. Christensen and Demski (2003, chapter 17) also maintain that these two features of financial reporting (disclosure and accrual) should be considered jointly in this context, and not separately. In a similar vein, Gietzmann and Trombetta (2003) demonstrate how investors condition their investment decisions upon disclosure and the accounting policies that govern the calculation of accounting results, and specifically in their case whether such policies are either conservative or aggressive.[1] Instead of accounting policies *per se*, the present study focuses on the underlying nature of accrual accounting and the complementary role of disclosure in revealing the relevance and reliability of accruals for the prediction of future earnings and cash flows. We also follow on therefore from Pope (2003), who points out that, holding economic uncertainty constant, there would be two primary aspects of accounting systems that affect the predictability of earnings: (1) the accruals measurement rules themselves, and (2) the degree of disclosure regarding the nature of the accruals, each of which can enhance or reduce the predictability of earnings and the components of earnings. The present study contributes by providing empirical evidence on this interplay between disclosure levels and accruals, insofar as it may assist market participants to anticipate future earnings, emphasizing

- the *sign* of accruals, i.e. whether operating asset changes and operating liability changes together result in an increase in net operating assets (a

[1] In a related study, Gietzmann and Ireland (2005) find that different combinations of aggressive and conservative accounting, as suggested by the use of discretionary accruals, will affect the impact of disclosure on the cost of equity capital.

positive net accrual) or a decrease in net operating assets (a negative net accrual), and

- the *duration* of accruals, knowing that current accruals will address matching and timing issues more speedily than non-current accruals.

Much accounting research has already investigated the role of accruals as a means of improving the relevance, usefulness and quality of financial statement information (Dechow and Dichev, 2002; Francis, LaFond, Olsson and Schipper, 2005) and even the overall information quality of the firms involved (Ecker, Francis, Kim, Olsson and Schipper, 2006).[2] Yet the ensuing studies by Core, Guay and Verdi (2008), Hribar and Nichols (2007), Liu and Wysocki (2007) and Wysocki (2007) have provided evidence that challenges the ability of accruals to reflect a firm's earnings quality. Indeed, following Lev, Li and Sougiannis (2009), we should accept that the extensive use of accrual accounting as a means of improving the relevance of financial information may be jeopardized by the increasing difficulty of making reliable forecasts in fast-changing economies, and also by the frequent managerial misuse of estimates to manipulate financial data.

Thus, in this study, we emphasize the importance of the role of disclosure for the interpretation of accruals, even when these accruals may be misguided, or open to manipulation. We argue that adequate disclosure is necessary for market participants not only to be able to deal with the information contained in accruals in a timely manner, but also to assess the reliability of the future earnings and cash flow expectations arising from these accruals. In other words, the present study also

[2] More specifically, Dechow and Dichev (2002) and Francis at al. (2005) use the relation between a firm's cash flow and its working capital accruals to measure earnings quality.

investigates the ability of disclosure to have a further corrective influence by preventing the formation of over-optimistic or over-pessimistic earnings expectations associated with the accrual signal.

A further innovation in this research study is to make use of a 'global measure' as a proxy for disclosure across a sample of firms drawn from a number of different jurisdictions. Most of the prior related research which discusses the impact of disclosure on share price anticipation employs samples drawn from just one specific jurisdiction (principally, either the US or the UK), providing evidence that is relevant only in the light of the characteristic features of the particular accounting environment. Such research tends to employ disclosure measures whose design and measurement are inevitably constrained by their own 'jurisdiction-specific' context. On the other hand, with internationally integrating markets, it has become increasingly important to understand economic consequences not only insofar as these may be determined by legal provisions and best practices within a specific jurisdiction, but additionally from the perspective of investors who diversify not only across domestic equities but also internationally.[3] Thus, whilst there is strong evidence from the two well-researched jurisdictions mentioned above on the ability of disclosure to enhance the share price anticipation of earnings and cash flows, it is difficult to extrapolate from such country-specific evidence in order to evaluate the efforts of accounting standard setters and regulators towards harmonising accounting and disclosure on an international scale. In other words, it has yet to be made clear whether, when and how more disclosure, defined from the perspective of an

[3] The revision of the IASB constitution in February 2009 puts considerable emphasis on the global character of IFRS (IASCF, 2009). Whilst the task of harmonising accounting and disclosure standards across the EU has been largely delegated to the one standard setter (IASB), the Commission still maintains a strong interest in internationalisation (e.g. EC Directives 2004/109/EC and 2007/14/EC 'on the harmonisation of transparency requirements in relation to information about issuers whose securities are admitted to trading on a regulated market').

international user of financial reports, may contribute to the share price anticipation of future earnings in a multi-jurisdictional setting, consistent with the aspirations of the international accounting standard setters and regulators.[4] The use of Standard and Poor's 'global measure' of transparency and disclosure in this paper, together with a cross-national sample of firms, offers a suitable means of addressing such concerns, at least in a European context.

The remainder of the paper is organised as follows. Section 2 develops the arguments on how accruals and disclosure affect market participants' expectations of future earnings. Section 3 discusses the disclosure metric employed here, and Section 4 presents the data employed in the study. Section 5 discusses the methodology and the related empirical results, and Section 6 concludes the study.

2. ACCRUALS, DISCLOSURE AND PRICE ANTICIPATION OF EARNINGS

(i) The Role of Accruals

The examination of share price anticipation of future earnings begins with Collins et al. (1994), who attribute the low association between returns and contemporaneous earnings to the lack of timeliness in accounting earnings in measuring value relevant events.[6] By adding future earnings into the regression of current returns on current

[4] This research question remains timely even after the IFRS implementation across Europe, as variation in the institutional and regulatory influences continues to affect financial reporting. There is ample evidence that financial reporting practices across Europe are still deeply rooted in their local traditions despite extensive harmonization efforts, including the IFRS implementation in 2005 (Nobes and Kvaal, 2008; Beuselinck, Joos and Van der Meulen, 2007). This is not surprising, given the evidence in Daske et al. (2008b) of the considerable discretion that firms have in implementing one set of uniform standards (IFRS) internationally, and how their adoption gives rise to heterogeneous economic consequences.

[6] The (lack of) timeliness and the asymmetric timeliness of accounting earnings has been investigated in detail in numerous studies in empirical financial accounting (e.g. Basu, 1997; Pope and Walker, 1999) either in an international context considering different sets of institutional arrangements (e.g. Ball et al., 2000; Giner and Rees, 2001; Ball et al., 2003; Dargenidou et al. 2007) or considering a set

earnings, they find that returns contain significant information on future earnings, with the future earnings response coefficient (FERC) in this context eventually 'catching up' with the information in current earnings and other sources of current information about expected future earnings.[7]

In this study, we consider accrual accounting to be the principal tool employed in communicating information about future cash flows and future earnings. Pope (2003) argues that accruals that are based on the realization and matching principles reduce the variance of earnings relative to cash flows and create more permanent, predictable earnings components. Evidence in Dechow (1994) suggests that the increased use of accruals enhances the role of earnings as a measure of short-term performance, which better reflects expected cash flows, and particularly so with regards to working capital accruals relative to longer-term operating accruals[8]. Here, we adopt the usual convention in the research literature of referring to these two categories as current and non-current accruals. Current accruals, in particular, are seen to be more successful in mitigating matching and timing problems than non-current accruals, as confirmed by Guay and Sidhu (2001). Nevertheless, as these authors argue, non-current accruals will still reconcile timing and matching differences, but over longer intervals.[9] As the latter implies a slower pace and higher uncertainty in establishing the economic benefits associated with non-current accruals, it is to be expected that the share price anticipation of information related to non-current

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of firm level characteristics including disclosure (e.g. Raonic et al., 2004; Garcia Lara, 2005; Barth et al., 2008) or as an important attribute of accounting earnings quality (Francis et al., 2004).

[7] Collins et al. (1994) argue that inclusion *ex post* of the actual figure for future earnings in the regression of current returns on current and future earnings introduces an error in variables problem, as the theoretically correct regressor would be the unobservable expected future earnings. This measurement error problem biases estimates of the future earnings coefficients downwards. Collins et al. (1994) address this problem by including the future return as a control variable.

[8] Dechow (1994) examines the association between current earnings with returns across quintiles of operating accruals which are decomposed into their working capital and long-term components.

[9] Barth et al. (2001) argue that each accrual component reflects different information about future cash flows, and that aggregating all accrual components masks this information.

accruals would be slower than the share price anticipation associated with current accruals.

However, neither Dechow (1994) nor Guay and Sidhu (2001) take into account the conservative nature of accounting. Ball and Shivakumar (2006) and Dechow and Ge (2006) show that accruals are likely to provide more timely information in the case of a loss of future economic benefits, with negative non-current accruals being especially relevant in this respect (e.g. restructuring charges, goodwill impairments, and asset write-downs). Therefore, it is also argued that information on future earnings in current returns is likely to be more pronounced for accruals that increase operating liabilities or decrease operating assets, especially in cases where accounting conservatism already forces a more timely recognition of economic losses.

Up until this point, accruals have been considered as a means of communicating information on future earnings and future cash flows. However, as the extensive research findings on earnings management suggest, accruals can also be the subject of management's discretion. Earnings may be managed through accruals either for opportunistic reasons or for the purposes of communicating a sustainable level of future earnings, or, as noted earlier, because managers face increasing difficulty in a fast-changing economic environment when it comes to making reliable forecasts (Lev, Li and Sougiannis, 2009). A more detailed approach to explaining accruals behavior is taken by Richardson, Sloan, Soliman and Tuna (2005), who find that the less reliable categories of accruals lead to lower earnings persistence, and also that investors do not fully anticipate this lower earnings persistence. Hirschleifer, Hou, Teoh and Zhang (2004) find that, for firms with 'bloated balance sheets' (i.e. firms with high net operating assets, where growing earnings are followed by

declining earnings), investors fail to predict lower future earnings in these circumstances and tend to overvalue such firms as a result. Here, we argue in turn that the extreme magnitudes of the net accrual (whether a positive or negative change in net operating assets) are more prone to be unreliable and, hence, more susceptible to over-optimistic or over-pessimistic future earnings expectations. Due to timing effects, we argue also that this is more likely to happen with respect to current accruals rather than non-current accruals, as future economic benefits potentially take longer to be realised in future earnings. However, even with respect to non-current accruals, this may also happen when managers employ conservative accounting, accelerating and therefore shortening the timing of the recognition of economic losses (as in Dechow and Ge, 2006).

On the other hand, market participants not only use the accounting numbers on the face of the financial statements to predict future earnings but they also draw on a number of other sources, including qualitative information. Here it is argued that assessing the impact of accounting practices on the share price anticipation of earnings without taking into account other sources of information that also shape returns will produce an estimate of this impact only at the *average* level of such additional disclosure. The estimated relationship will not hold for all firms and might lead to erroneous conclusions, e.g. on the efficiency of a particular accounting practice to communicate relevant information. For instance, Oswald and Zarowin (2007) find that, relative to expensing, the capitalization of R&D is associated with a higher FERC, which is consistent with the view that the capitalisation decision sends a stronger signal concerning the future economic benefits arising from this asset. However, while this result holds under an average level of disclosure, it is unclear whether the investors would still attribute a higher value to recognised R&D as

opposed to expensed R&D if the capitalisation decision had not been sufficiently explained to market participants and, consequently, if the associated future economic benefits could not be adequately assessed by outsider investors. Therefore, in order to have a better understanding of the impact of accounting practices on market participants' expectations, we need to consider the incremental and interaction effects of varying levels of disclosure.

(ii) The Role of Disclosure

Hope (2003) shows how a firm's disclosure is useful in reducing uncertainty about future earnings and especially so in circumstances where alternative mechanisms are not available to improve the transparency of accounting numbers. In the same spirit, Barth (2004) notes that, if the primary objective of financial reporting is to provide users with information relating to the uncertainty and timing of future cash flows, disclosure is a key to complete reporting as it addresses the very issue of information uncertainty.

The above points firmly towards a combined role for disclosure, firstly to reveal economic gains or losses and secondly to mitigate the uncertainty surrounding the accounting numbers reported in the financial statements. That is, where accounting information is not transparent, disclosure may act to prevent this information from misleading future earnings expectations. There is only limited evidence available in this respect to date; for instance, Louis, Robinson and Sbaraglia (2008) and Drake, Myers and Myers (2008) each find that accruals-related mispricing tends not to take place among firms with adequate disclosure.

As mentioned in the Introduction, the implications of increased disclosure for the share price anticipation of earnings have been investigated for samples of UK and

US companies in Schleicher and Walker (1999), Gelb and Zarowin (2002), Lundholm and Myers (2002), Hussainey et al. (2003) and Schleicher et al. (2007), all of whom show that better and more informative disclosure introduces more information on future earnings in current returns.[11] Nevertheless, across both jurisdictions, the findings of the studies cited above, if taken at face value, could lead us to infer erroneously that more disclosure would necessarily increase information on future earnings in current returns, even inadvertently. Here, we need to acknowledge that current earnings already contain components that inform market participants about future earnings and cash flows, i.e. accruals, and that the different properties of these accruals might affect the ability of disclosure to communicate additional information on the future prospects of the firm. A first attempt to address the impact of the interaction between disclosure and the components of financial reporting on share price anticipation of future earnings is Orpurt and Zang (2009), albeit with a very narrow focus on the benefits of the 'direct method' cash flow statement.[13] Considering the information in this statement as a form of supplementary voluntary disclosure over and above the information in the mandatory 'indirect method' statement, the authors find that the direct method components provide investors with

[11] Schleicher and Walker (1999) employ a measure of disclosure which focuses on the assessment of the management's discussion of operational and financial aspects based on the detailed guidance section included in the ASB statement 'Operating and Financial Review', as well as the recommendations of other local professional bodies (ICAS, ASSC). Gelb and Zarowin (2002) and Lundholm and Myers (2002) measure disclosure in terms of the quality of a firm's information environment as perceived by financial analysts, with disclosure scores based on AIMR-FAF ratings. Hussainey et al. (2003) and Schleicher et al. (2007) produce their own disclosure scores by extracting forward-looking topics and statements from firm's annual reports narratives. Another recent approach is the disclosure index constructed by Banghøj and Plenborg (2008), which involves 62 voluntary information indicators (across subcategories such as strategy, competition and outlook, production, sales and marketing and human capital), building on the Jenkins (1994) report, Botosan (1997), Pricewaterhouse-Coopers (1999) and the Nørby (2001) report, excluding any matters which are a statutory disclosure requirement under the Danish Financial Statement Act.

[13] According to SFAS No.95, a firm may choose between producing only an indirect method statement or, alternatively, a direct method statement which must be supplemented with indirect method disclosures. It follows that firms should provide the indirect method cash flow information in all cases and that the direct method information is in the form of a voluntary disclosure.

information for estimating a company's future performance that is incremental to that available from indirect method statements.

As noted previously, the present study also addresses this interplay between disclosure and financial reporting in communicating future earnings expectations, but does so in a more explicit manner whereby the relevant aspect of financial reporting that is investigated is not the current cash flow, or its components, but instead is the usual means by which expectations of future cash flows are communicated in accounting, i.e. accruals.

While disclosure is already known to help unravel some of the implications of financial reporting for the future, we expect that an evaluation of the differential ability of current and non-current accruals to resolve matching and timing issues will be able to shed further light on how this disentangling of the accounts and associated disclosures is achieved. Self-serving manipulation and other considerations set aside, it is well established that current accruals are designed to address the matching and timing problems inherent in cash flows (Dechow, 1994) and that current accruals provide useful information regarding the continued persistence of earnings, or 'earnings power', at least for the short term. In this context, we argue that disclosure is not likely to contribute further in assisting the share price anticipation of earnings for those firms that already communicate relevant information to investors by means of current accruals. Therefore, disclosure may be expected to play a more important role when it comes to the longer duration in which only non-current accruals can resolve the timing problems, especially given the inherent uncertainty which that involves. Hence, we formulate the following hypothesis:

H1: At a minimum level of disclosure, the information revealed by current accruals enhances share price anticipation of earnings more than the information revealed by non-current accruals

It follows that disclosure is deemed to be a necessary ingredient in enhancing the informativeness of financial reporting when matching and timing issues are not promptly addressed by means of the accounting numbers that are reported in financial statements. This is less likely to happen when reported accounting numbers are indeed performing their matching role. For example, the capitalisation of research and development expenses is likely to be more meaningful for investors as long as the firm provides adequate disclosure regarding its plans and also about the mechanisms that are in place to ensure that the related future economic benefits will eventually be generated from such R&D activities. On the other hand, current accruals, such as changes in receivables from customers and changes in payables to suppliers, are more able to provide information on the earnings power of the firm without further disclosure, although some additional information might be necessary even in these cases, if only to assess the reliability of current accruals.

Recent research on accruals mispricing has also suggested a role for disclosure in enabling investors to correctly price the information in accruals concerning earnings persistence, even, as noted earlier, when accruals are less than transparent (e.g. Louis, Robinson and Sbaraglia, 2008 and Drake, Myers and Myers, 2008). Further evidence on mispricing related to accruals is also available with respect to the broader definition of total accruals that underlies the present study (e.g. Fairfield, Whisenant and Yohn, 2003; Richardson et al., 2005). However, we consider that the corrective influence of disclosure for non-current accruals may not be the same as for current accruals due to the differences between the two in their ability to deal with

uncertainty (see hypothesis H1). For instance, prior evidence suggests that, when the firm reports negative non-current accruals, such as impairment or restructuring charges, which reduce net operating assets, investors cannot readily assess the persistence of earnings and appear to overweigh the probability that the firm will be unsuccessful (Dechow and Ge, 2006). That is to say, the accelerated recognition of economic losses in reported earnings reduces earnings predictability.[16] This issue is particularly pertinent with respect to information about increases in long-term liabilities and decreases in long-term assets, with the uncertainty surrounding their longer duration being compounded by the fact that they may not be transitory but may instead signal a reduction in permanent income, especially as a higher degree of verifiability may be demanded by shareholders in such cases. We already argue that disclosure exerts a corrective influence where higher levels of uncertainty impede investors from assessing the persistence of earnings. As a result, it is only in the presence of high levels of relevant disclosure that negative non-current accruals can contribute effectively to the share price anticipation of earnings. This argument leads to the second hypothesis, as follows:

> **H2:** Disclosure enhances the share price anticipation of earnings when the information implied by accruals involves a high level of uncertainty; this is likely to be more pronounced in the cases where uncertainty triggers an accelerated recognition of economic losses, i.e. in the case of non-current accruals.

On the other hand, in the case of current accruals, which tend to involve considerably less uncertainty, the role of disclosure in promoting share price

16 Watts and LaFond (2008) show how increases in accounting conservatism tend to follow increases in information asymmetries between insiders and outsiders.

anticipation is not obvious. Conjectures from research on the mispricing of accruals (including discretionary accruals) suggest that disclosure might mitigate the investors' naïve fixation on reported earnings when accruals (either positive or negative) are very high, and particularly when the current accruals are extreme (e.g. Sloan 1996). In these cases, it might appear that disclosure acts by counteracting biases in the price anticipation of earnings, and it can be argued therefore that disclosure has a useful corrective role in preventing over-stated earnings expectations by over-confident investors who are fixated on the information provided by extreme magnitudes of current accruals. Thus, our third hypothesis is as follows:

> **H3:** With respect to current accruals, disclosure adjusts the share price anticipation of earnings as it curbs over-stated expectations arising from the extreme magnitudes of accruals.

While both H2 and H3 imply a corrective influence of disclosure stemming from its ability to reveal future earnings, reduce uncertainty and assist investors in unravelling the implications of accruals for future earnings, the hypotheses point to a role for disclosure that differs substantially across accruals of shorter and longer duration, which can be attributed mainly to the inherent differences in the degree of uncertainty.

In sum, with respect to current accruals, disclosure enables investors to 'fine tune' their expectations and reduce exaggerated earnings predictions, and thus it exerts a mitigating role. On the other hand, in the context of non-current accruals, disclosure is a necessary complement in the process of creating accurate future earnings expectations that otherwise – in the absence of disclosure, or at the average level of disclosure – would be difficult for investors to interpret correctly.

Finally, we note that a test of the impact of disclosure on share price anticipation is effectively a joint test of the proxy of disclosure that is employed. Prior research has revealed how the association with share price anticipation can vary across different measures of disclosure. For example, Hussainey et al. (2003) find little evidence that forward-looking statements in the discussion section of annual reports can improve the market's ability to predict a firm's future earnings, that is until they narrow down their definition of forward-looking information to forward-looking profit statements. These findings are sufficiently robust to suggest that a test of share price anticipation of future earnings involving disclosure is also a test of a particular set of disclosures. In the context of the present study, we use a more broadly-based 'global measure', as discussed below, so that we may draw inferences about the ability of the set of disclosures involved to bring forward information about future earnings regardless of where the firms are located.

3. THE MEASUREMENT OF DISCLOSURE

We have seen above that the main objective of this study is to examine the interplay between accounting and disclosure in informing investors' expectations, and to carry this out in an international setting using a suitably 'global' measure of disclosure. Existing published research on disclosure (see Leuz and Wysocki, 2008) makes it clear that, in addition to mandated accounting items, investors also find the voluntary non-financial information released by companies useful for assessing a firm's future performance. The available evidence in this case is based mainly on self-constructed measures of non-financial disclosure (i.e. Scheicher et al., 2007; Hussainey et al., 2003) or on financial analysts' ratings of disclosure (Lundholm and Myers, 2002;

Gelb and Zarowin, 2007[17]), and the scores typically are with respect to large firms only, and mostly in the US. Prior research that addresses disclosure in a broader international context (e.g. Bushman, Piotroski and Smith, 2004; Hope, 2003a; Hope, 2003b; Chang, Khanna and Palepu, 2000) generally uses the Centre for International Financial Analysis and Research (CIFAR) index, which is constructed by examining annual reports for the omission or inclusion of a wide range of accounting items. Whilst the measure employed in our own study is similar in some respects to CIFAR, to the extent that it gives consideration to a set of variables relevant to firms operating in an international setting, the T&D index was designed by Standard and Poor's specifically for their own international comparative study of the leading European firms that are constituents of the S&P Europe 350 index.[19]

Ninety eight disclosure variables are used by Standard and Poor's to construct the overall transparency and disclosure scores. They include financial, non-financial, mandatory and voluntary disclosures, and are divided into three broad categories: (a) financial transparency and information disclosure, (b) board and management structure and process, and (c) ownership structures and investor rights. By its nature, Standard and Poor's T&D index may be compared directly with CIFAR, given that they are each designed with international comparison in mind. According to Salter (1998) and Hope (2003b), the main strengths of the CIFAR index are that it is based on actual annual reports, that the data is audited by external parties, that the

[17] Other studies include forms of voluntary disclosure activity such as conference calls with analysts that may either complement or substitute for financial reporting by revealing useful information to outside market participants (e.g. Frankel, Johnson and Skinner; 1999; Bushee, Matsumoto and Miller, 2003). For further details on other researcher-constructed rankings, and AIMR, see also Botosan (1997), Hail (2002), Barton and Waymire (2004), Guo, Lev and Zhou (2004) and Lee, Shen and Petroni (2006).

[19] Although Khanna, Palepu, Srinivasan (2004) argue that the index measures corporate disclosure against an implicit US benchmark, Bushee (2004) finds that Standard and Poor's T&D score covers a set of voluntary disclosures that are uncommon among US firms, but present in annual reports of firms from other countries, inferring that the T&D score recognizes that US practices are *not* necessarily the best possible standard.

information is clearly provided and that it covers three periods. By comparison, Standard and Poor's T&D index relies on audited annual reports for just one fiscal year (2001/2), but its advantages are that it covers in greater detail voluntary non-financial forward-looking information (i.e. future investment plans, management forecasts) and corporate governance data relating to the directors and owners, that it places more emphasis on narrative information in management analyses and forecasts (e.g. investment plans, industry trends), that it takes specific steps to reflect the complexity of the international setting in which the firms operate,[23] and finally that it is more recent (CIFAR is discontinued).[24]

4. DATA

Standard and Poor's Financial Transparency and Disclosure Survey of 2002 was conducted in 17 European countries and provides an initial sample of large and liquid European firms whose equity securities make up the S&P Europe 350.[28] It should be noted that the Europe 350 is an index that is commonly used by US institutional investors with overseas holdings (Amromin et al., 2008), and therefore, while the evidence and inferences in this paper might not be generalizable to *all* European firms, this particular dataset nevertheless serves the main purpose of the present study,

[23] For example, in the case of France, in addition to gathering information from regulators, investors and companies, Standard and Poor's recognized that the annual report is not the single main corporate disclosure document. In France, the *Document de Referénce* is extensively used as a key source of company information in addition to annual reports. Thus, the T&D index includes the information disclosed in the *Document de Referénce* for French companies. Similarly, for European companies that issue ADRs in the US, disclosures in the 20F forms that are filed with the SEC are considered and included in the companies' scores.

[24] In order to additionally test the validity of the index, we compare the T&D and CIFAR scores by country (see Appendix). The correlation coefficient between CIFAR and the Standard and Poor's scores is 0.627 (with a p-value = 0.007). We further break down the T&D scores across the three sub categories and compare each index separately with the CIFAR index. We find significant correlations between CIFAR and the Financial Transparency and Information Disclosure index of 0.533 (p-value = 0.027) and the Ownership Structure and Investor Rights index of 0.623 (p-value = 0.007).

[28] Amromin, Harrison and Sharpe (2008) claim that the firms in the S&P 350 represent about 70% of European capitalisation, and they also note that the index itself is available for trading in the US.

which is to examine the share price anticipation of earnings in a context where firms address an international shareholder base. A further advantage of the focus on internationally visible firms is that it alleviates the problem of non-synchronicity of returns which can affect empirical inference in tests of share price anticipation when smaller firms with illiquid securities are sampled.

We have excluded all of the Europe 350 constituents that are classified as financials (banking, investment, insurance), and, together with 2 other firms in the index that were omitted by Standard and Poor's in their original Transparency and Disclosure Survey, the available initial sample is reduced to 268 firms. Further filters have also been applied, firstly by omitting firms for which the required accounting data items are not available, and then by performing the Hadi (1994) procedure for the detection of multivariate outliers, leading to a working sample of 238 firms and 683 firm-year observations in the period 2000-2002. This three year time frame is chosen because it is contiguous with Standard and Poor's survey period, as the corporate reports studied by the rating agency were those published for the fiscal year ending either in 2001 or in 2002, depending on the fiscal year-end month.[29] As a measure of firm-level disclosure practices, Standard and Poor's own T&D survey scores are used as the appropriate indicator of disclosure coverage in the key public documents released by the sampled companies, as discussed in the previous section.

The annual financial statement data source is Worldscope, and Datastream for stock returns and market capitalization. Earnings are defined as net income before extraordinary items available to common shareholders, collected at accounting year-end dates. A fiscal year-end restriction is not applied, and therefore companies are

[29] Consistent with a survey conducted by Graham, Campbell and Rajgopal (2005), which shows that managers are likely to avoid setting a precedent in disclosure that is difficult to maintain, it is assumed here that disclosure levels are not likely to change dramatically from year to year,

included that have reporting periods other than for the calendar year, together with those companies that changed the reporting-year end one or more times during the period. The observed stock price dates are matched to three months after the corresponding accounting year-ends and the return figures annualized to a standard 52-week-year accordingly.

The concept of accruals employed here builds on the approach taken by Richardson, Sloan, Soliman and Tuna (2005), who define the total net accrual as the sum of the changes in all assets and liabilities on the balance sheet. Their definition of the total accrual is given as

$$\text{Total Accrual} = \Delta CO + \Delta NCO + \Delta NF \qquad (1)$$

where ΔCO is the change in current operating items on the balance sheet (current assets *less* current liabilities, excluding cash, short-term investments and short-term debt), ΔNCO is the change in non-current operating items (long-term assets less long-term liabilities, excluding long-term debt, advances and non-equity investments), and ΔNF is the change in net financial assets.[30] However, as the ability to generate profits is mainly driven by operating items, our study focuses strictly on the operating accrual components ΔCO and ΔNCO.[31] Finally, as this study is concerned to

[30] More specifically, ΔNCO is the change in net non-current operating assets $NCO_t - NCO_{t-1}$, where NCO is non-current operating assets (NCOA) *less* non-current operating liabilities (NCOL). NCOA, non-current operating assets, is equal to total assets *less* current assets *less* long-term other non-operating investments; NCOL, non-current operating liabilities, is equal to total liabilities *less* current liabilities *less* long-term debt excluding capitalized leases. ΔCO, the change in current accruals is defined as $CO_t - CO_{t-1}$. CO is calculated as current operating assets (COA) *less* current operating liabilities (COL) where current operating assets is equal to current assets *less* cash and short term investments, and current operating liabilities is equal to current liabilities *less* short-term debt and the current portion of long-term debt.

[31] Richardson, Sloan, Soliman and Tuna (2005) demonstrate how the computation of the net operating accrual as operating asset increases *less* operating liability increases is equivalent in total to earnings *less* operating cash flow (see also Penman and Yehuda, 2009). This approach implies that there are two components to earnings: operating cash flow *plus* operating accruals. However, this contrasts with the perspective taken in some other studies (e.g. Dechow, Richardson and Tuna, 2003) where accruals are described as operating cash flow *less* income. Logically, the former leads to positive accruals that are asset-increasing, the convention that we adopt in this paper, whereas the sign switch implicit in the latter would imply that it is liability-increasing accruals that take the positive sign. Note also that the term accruals typically refers in this context to both accruals and deferrals, with the accrual of revenues

understand how disclosure interacts with the uncertainty inherent in accruals of increasing magnitude, regardless whether they reflect an increase or decrease in net operating assets, we base much of the analysis below on the absolute values |ΔCO| and |ΔNCO|.

Table 1 reports summary statistics for the sample. Panel A gives the mean, median, standard deviation, minimum and maximum of the market return and the accounting income variables employed in the study, together with similar descriptives for the absolute values of the current net accrual and the non-current net accrual, and for the disclosure scores.[32] Panel B reports the correlations between these variables. As expected, current return R_t is significantly associated with current earnings X_t and future earnings X_{t+1}; similarly, future returns R_{t+1} are also associated with future earnings X_{t+1}. However, one concern is the significant negative correlation between current and future returns at -0.39. Similar findings are reported in related studies whose sample time frames include the period examined in the present study, e.g. Orpurt and Zang (2009) who examine the period from 1989-2002 in the US, and Schleicher et al. (2007) whose data cover the period between 1996 to 2002 in the UK, and who also report a significant negative correlation between R_t and R_{t+2}, at -0.212. Orpurt and Zang (2009) believe that, under these circumstances, future returns may influence the regression results beyond their role as a measurement error proxy. However, a prediction in this respect could only be speculative. More importantly, it can be seen that more disclosure is associated positively with higher magnitudes of

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and the deferral of costs each increasing net operating assets, and the accrual of expenses and the deferral of revenues each decreasing net operating assets. We note, for future reference, that this appears to be an area where researchers should undertake to define terms very carefully, especially to avoid ambiguity with regard to usages in practice, as it is not unusual to find notes to financial accounts that may make use of terms such as 'accruals and deferred income' (amongst liabilities) and 'prepayments and deferred costs' (amongst assets), which in this case would imply that accruals are liability increasing.

[32] Note that (i) absolute accruals and (ii) the T&D disclosure score are each transformed into decile rankings for the regression fits reported in the next section of the paper.

the net non-current accrual (0.13), whereas the association is in the opposite direction with respect to the net current accrual (-0.19), which is consistent with managers' attempts to address the uncertainty surrounding non-current accruals. Note also the strong correlations between the non-current accrual and earnings - it seems that during a difficult period characterised by negative returns (as can be seen in the descriptive statistics), non-current accruals have taken on the task of introducing bad news into earnings, a point to which we return in the analysis that is discussed in the next section of this paper.[33]

5. EMPIRICAL ANALYSIS

(i) Effects of Disclosure on the Price Anticipation of Earnings

In this section, we develop the empirical models with which we may examine the interplay between levels of corporate disclosure and the different properties of accruals that we have highlighted earlier. The approach here is based on a multiple regression model proposed by Collins et al. (1994) and further employed in Schleicher and Walker (1999), Lundholm and Myers (2002), Gelb and Zarowin (2002) and other subsequent studies that investigate the differential influence of the disclosure level on the association between contemporaneous returns and future earnings, after removing the effects of current earnings, prior earnings and future returns. The linear model may be presented schematically so that the first row highlights the kernel of the future earnings response conditional on disclosure, with the earnings-returns displacement effects and their corresponding interactions with disclosure being set out underneath, as follows:

[33] The Lundholm and Myers (2002) study on the other hand, has been conducted in a period characterised by high returns (mean: 0.18 and median 0.13). According to the present study's findings it seems that disclosure brings the future forward in any of these cases.

$$
\begin{aligned}
R_{i,t} = \alpha_0 + \alpha_1 DIS_i + \alpha_{01} X_{i,t+1} + \alpha_{11} DIS_i * X_{i,t+1} \\
+ \alpha_{02} X_{i,t} + \alpha_{12} DIS_i * X_{i,t} \\
+ \alpha_{03} X_{i,t-1} + \alpha_{13} DIS_i * X_{i,t-1} \\
+ \alpha_{04} R_{i,t+1} + \alpha_{14} DIS_i * R_{i,t+1} + u_{i,t} \qquad (2)
\end{aligned}
$$

where $R_{i,t}$ is the stock return of the i^{th} firm for year t measured over the 12 month period ending three months after the fiscal year end, DIS_i is the decile rank for firm i with regard to Standard and Poor's Financial Transparency and Disclosure (T&D) Score, and $X_{i,t+1}$ is the firm's earnings before extraordinary items in year t+1 scaled by the market capitalization of the firm three months after the year t fiscal year end. The remaining variables are scaled current earnings $X_{i,t}$, scaled prior earnings $X_{i,t-1}$ and future returns $R_{i,t+1}$. Note that all regressions in the current study include a control for firm panels and a further control for country effects, which is employed here to proxy for cross-jurisdiction differences in institutional arrangements.

The coefficients on X_t and $X_{t\text{-}1}$ are expected to be positive and negative respectively, reflecting the mean-reverting nature of earnings. This is consistent with prior findings, including those reported by Collins et al. (1994), who point out that using the actual future earnings introduces an error in variables problem in the regression of current returns on current earnings and future earnings as the theoretically correct regressor is the unobservable expected future earnings. This measurement error problem biases estimates of the future earnings coefficients downward, which is addressed by including future share price returns R_{t+1} as a control variable, whose coefficient is expected to be negative.[34]

[34] Collins et al. (1994) and Hussainey and Walker (2009) use realized changes in current (X_t) and future earnings (X_{t+1}) to proxy for unexpected earnings in current period and for current changes in expectations about future earnings. They also include the prior year's earnings/price ratio and growth in

It is the coefficient on X_{t+1}, the future earnings response coefficient (FERC), that captures share price anticipation of earnings. It follows that the coefficient on $DIS*X_{t+1}$ measures the extent to which this price anticipation of future earnings is greater for higher levels of disclosure. In the first two columns in Panel A of Table 2, the results for the estimation of regression (2) suggest that, for the firm with minimum disclosure, current returns appear to be strongly associated with current earnings (the coefficient on X_t is 1.348, p-value<0.01) and to a lesser degree with future earnings, the main variable of interest in this study (the coefficient on X_{t+1} is 0.208 with a p-value=0.03). On the other hand, the negative and significant interaction $DIS*X_t$ (-0.128, p-value<0.01) suggests that the relevance of current earnings declines as disclosure activity reveals more earnings news relevant to the future, the significant and positive coefficient on $DIS*X_{t+1}$ (0.077, p-value<0.01) reinforcing the inference that disclosure reveals value-relevant information which enhances the association between current returns and future earnings, in line with the prior evidence (e.g. Gelb and Zarowin, 2002; Lundholm and Myers, 2002; Hussainey and Walker, 2009).[35] Furthermore, in the context of the present study, it is evident that our global measure of disclosure is strongly associated with an enhancement of the share price anticipation of future earnings, even for firms that originate and operate across different jurisdictions.

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book value of assets at the beginning of the year to control for measurement errors in current and future earnings growth. These measurement errors concern earnings growth in the current period and the future that was anticipated at *t*-1. In contrast to Collins et al. (1994) and Hussainey and Walker (2009), Lundholm and Myers' (2002) use the level of X_t and X_{t-1} to proxy for unexpected current earnings, arguing that this allows the regression to find the best representation of the prior expectation for current earnings, whereas the approach in Collins et al., of using changes in earnings, implies that earnings follow a random walk process. Lundholm and Myers (2002) also observe that using the level of earnings in the past, present and future years is equivalent to using the level of past earnings and the changes in current and future earnings (footnote 5, p.814).

[35] This finding is consistent also with Francis, Shipper and Vincent (2002), who demonstrate how increases in the market value attached to earnings announcements are mainly explained by greater concurrent disclosure rather than through bottom-line earnings.

(ii) Interaction Effects of Disclosure and Accruals on Price Anticipation

As indicated, the aim of our empirical analysis is not only to examine disclosure effects but also to investigate the extent to which accrual estimates in current financial statements contribute to the price anticipation, in terms of the information they reveal about future earnings expectations. Moreover, we consider three different aspects of accruals - their magnitude, their duration (i.e. whether they are current or non-current) and the sign of the net accrual (i.e. whether operating asset increases are greater than or less than operating liability increases) - in examining the impact of different levels of corporate disclosure on these different dimensions of accrual accounting.

In this respect, we develop a measure of accrual magnitude that is defined by the decile rankings of sample observations, based on the absolute value of the net accrual at time *t*, where observations within the lowest (highest) 10% of absolute value of the net accrual are assigned the rank of 1 (10), with $ACC_{i,t}$ therefore denoting the decile ranking for firm *i* in period *t*. As mentioned earlier, we carry out this procedure separately for both current accruals and non-current accruals, and we extend the model in (2) by incorporating these decile ranks of accruals and interacting them with each of the explanatory variables, as follows:

$$\begin{aligned} R_{i,t} = {} & \alpha_0 + \alpha_1 DIS_i + \alpha_2 ACC_{i,t} + \alpha_{01} X_{i,t+1} + \alpha_{11} DIS_i * X_{i,t+1} + \alpha_{21} ACC_{i,t} * X_{i,t+1} + \alpha_{31} DIS_i * ACC_{i,t} * X_{i,t+1} \\ & + \alpha_{02} X_{i,t} + \alpha_{12} DIS_i * X_{i,t} + \alpha_{22} ACC_{i,t} * X_{i,t} + \alpha_{32} DIS_i * ACC_{i,t} * X_{i,t} \\ & + \alpha_{03} X_{i,t-1} + \alpha_{13} DIS_i * X_{i,t-1} + \alpha_{23} ACC_{i,t} * X_{i,t-1} + \alpha_{33} DIS_i * ACC_{i,t} * X_{i,t-1} \\ & + \alpha_{04} R_{i,t+1} + \alpha_{14} DIS_i * R_{i,t+1} + \alpha_{24} ACC_{i,t} * R_{i,t+1} + \alpha_{34} DIS_i * ACC_{i,t} * R_{i,t+1} + u_{i,t} \end{aligned} \quad (3).$$

The estimated effects attributable to the *magnitude* of accruals are set out for varying levels of corporate disclosure (*DIS*) in the columns on the right hand side of Panel A in Table 2, firstly with respect to the current net accrual and secondly the non-current net accrual. For current accruals, the coefficient on $ACC_t * X_{t+1}$ is positive

and significant (0.302, p-value<0.01), suggesting that current accruals contribute in providing timely information on future earnings even for firms with the minimum level of corporate disclosure. This evidence is in line with the empirical findings documented in Dechow (1994) and the arguments in Pope (2003) regarding the role of accruals in enhancing the predictability of earnings components. Given that the variables are deflated for firm size, the greater magnitudes of the scaled current net accrual may simply entail the incorporation of more accrual components, and we suspect that these additional components may be inherently more unreliable, and that in turn they are likely to generate over-optimistic expectations of future profits or over-pessimistic expectations of future losses (Hirschleifer et al., 2004; Richardson et al., 2005). Here, corporate transparency and disclosure – achieved either through the application of good quality accounting standards (e.g. US GAAP or IFRS) or through the provision of voluntary narrative information (e.g. management earnings forecasts, investment plans) – can be seen to mitigate such exaggerated earnings expectations in current returns. That is, hypothesis H3 is confirmed by a negative and significant interaction coefficient (-0.026, p-value<0.01) on $DIS*ACC_t* X_{t+1}$.[36]

In addition, the results regarding the effects of the non-current net accrual (ΔNCO) on the price anticipation of earnings, suggest that, for low disclosers, the incorporation of information on future earnings into current prices has a significantly smaller effect relative to current accruals, as indicated by the coefficient on

[36] Hussainey and Walker (2009) also apply this type of interaction and interpret the coefficient by arguing that when this is positive it implies complementary information and when this is negative, substitute information from accruals and disclosure The negative interaction coefficient $DIS*ACC* X_{t+1}$ denotes also substitution as discussed in Hussainey and Walker (2009). While we know that extended disclosure curbs overstated expectations and mispricing arising from extreme accruals (e.g. Louis et al., 2008; Drake et al., 2008), we may attribute the ability of disclosure to curb over-stated expectations by substituting the current accruals' information in investors' share price anticipation of earnings (e.g. extreme positive changes in receivables are less likely to initiate unreasonably optimistic earnings expectation when the management plans are also disclosed and the corporate governance arrangements are sufficiently explained so that investors are able to assess the extent to which the managers are likely to engage with earnings management).

ACC_t*X_{t+1}, which is lower in magnitude (-0.097) and in statistical significance (p-value=0.08) than the corresponding coefficient for the current net accrual (0.302, as indicated above). The difference between these two coefficients on ACC_t*X_{t+1} is statistically significant (p-value<0.01), as shown in the last column of this panel of results. In sum, the findings presented here, which are consistent with Guay and Sidhu (2001), lend support to hypothesis H1 that matching and timing is slower and less-pronounced for non-current accruals.

As argued at the outset, this can be expected in the case of non-current accruals, whose economic impact affects the income statement at a slower pace and with a higher level of uncertainty. More specifically, the findings in Table 2 suggest that the information provided by disclosure and by non-current accruals are complements in the share price anticipation of earnings.[37] Both signs on the coefficients on the interaction between X_{t+1} and each of ACC_t and *DIS* are negative (albeit weakly significant and insignificant, respectively), and the coefficient of the three-way interaction $DIS*ACC_t*X_{t+1}$ is significant and positive (0.016, p-value=0.04). This finding confirms hypothesis H2, suggesting that neither non-current accruals nor disclosure can provide adequate information regarding future earnings by themselves, but instead it is their interaction that makes the information in each of them more valuable.

Of course, it is not surprising that the coefficient on the net non-current accrual is only weakly significant, as the economic benefits of non-current accruals are likely to take a longer time to materialise.[38] Overall, it can be seen that the interaction between accruals and disclosure differs in nature between current and non-

[37] The interpretation of the findings in this case builds on Hussainey and Walker (2009).
[38] This interpretation is tested further, and confirmed, by means of robustness checks assessing price anticipation over three years ahead instead of just one year ahead, as described in greater detail later in the paper.

current items, with disclosure enhancing the share price anticipation of earnings mainly when the information implied by accruals involves a high level of uncertainty. This is demonstrated clearly in Figure 1. For example, it is evident how current accruals are typically included in investors' expectations of future earnings at all levels of disclosure (see the positive slope of FERC with respect to accruals in the first graph), with high levels of disclosure exerting a mitigating role by curbing the over-statement of earnings expectations. On the other hand, with respect to non-current accruals, it is only at maximum levels of disclosure that investors are able to form any expectations of future earnings on the basis of the figures that are reported. Moreover, the findings reported in Panel A of Table 2 and demonstrated in Figure 1 suggest that, when disclosure is of the highest standard, the contributions of current and non-current accruals to the share price anticipation of earnings are in fact quite similar.

The analysis is continued by fitting the regression in (3) separately for firm-years where there is either a positive net accrual (i.e. an increase in net operating assets) or a negative net accrual (i.e. a decrease in net operating assets), as accounting conservatism suggests that increasing liabilities and falling asset values should give rise to more timely information than in the opposite case where liabilities decline and/or assets increase, especially in the case of non-current accruals. These results are set out in Panels B and C of Table 2.

Consider first the effects when the net accrual is **negative,** when liability accruals exceed asset accruals. We again focus on the earnings interactions with ACC_{it}, the measure that is ranked from 1 to 10 with increasing accruals magnitude. For current items, the coefficient on ACC_t*X_{t+1} is positive and statistically significant (0.176, p-value<0.01), consistent with the value-enhancing role of current accruals

discussed earlier. However, in contrast to the above, in the case of non-current items, the coefficient on ACC_t*X_{t+1} is negative and statistically significant (-0.312, p-value<0.01). Accounting conservatism forces an accelerated recognition of economic losses (for example, asset write-downs, restructuring charges) and, when this takes place, disclosure becomes a necessary complement in unravelling the related uncertainty. An important point to note here is that extreme levels of negative non-current accruals may induce over-pessimistic future earnings anticipation in current prices, compromising the market participants' ability to predict future earnings. We find evidence that increased levels of disclosure mitigate over-pessimistic earnings expectations and enhance price anticipation in this respect. This is indicated by the positive and significant coefficient on $DIS*ACC_t*X_{t+1}$ (0.036, p-value<0.01) when the net non-current accrual is negative.

For **positive** net accruals, where operating assets increase by more than operating liabilities (or alternatively where the operating liabilities fall by more than the operating assets), we find that the coefficient ACC_t*X_{t+1} is positive and statistically significant for current items (0.178, p-value=0.01) and insignificant for non-current items (0.081, p-value=0.22). Thus, on balance, we may infer that positive current accruals improve the market's ability to anticipate future short-term earnings performance, whereas positive non-current accruals are less successful in anticipating one year ahead earnings. This is not surprising, considering that non-current accruals are likely to be useful in resolving matching and timing problems over longer time horizons, in line with the prior evidence in Guay and Sidhu (2001).

(iii) Cash-flow Effects of Accruals and Disclosure

In this section, we reappraise the significant findings reported above by examining the association between disclosure levels and the pricing of future cash flows, rather than future earnings. Recent work on the price anticipation of future cash flows is included in the study by Tucker and Zarowin (2006) into the effect of discretionary accruals, on the grounds that, ultimately, equity valuation is said to rely on predictions of cash flows and not on earnings.[39] In the context of the present study, where the focus is on the timing issues inherent in accrual accounting, a similar argument may be put forward in that, if the share price anticipation of earnings is likely to have a significant cash flow content, then it follows that disclosure should assist the price anticipation of the cash flow component of future earnings.

Accordingly, the future earnings variable X_{t+1} in (2) above is decomposed into its cash and accrual components as follows:

$$\begin{aligned} R_{i,t} = \alpha_0 + \alpha_1 DIS_i &+ \alpha_{01} CFX_{i,t+1} + \alpha_{11} DIS_i * CFX_{i,t+1} \\ &+ \alpha_{02} AX_{i,t+1} + \alpha_{12} DIS_i * AX_{i,t+1} \\ &+ \alpha_{03} X_{i,t} + \alpha_{13} DIS_i * X_{i,t} \\ &+ \alpha_{04} X_{i,t-1} + \alpha_{14} DIS_i * X_{i,t-1} \\ &+ \alpha_{05} R_{i,t+1} + \alpha_{15} DIS_i * R_{i,t+1} + u_{i,t} \qquad (4) \end{aligned}$$

where CFX_{t+1} is the cash flow component of future earnings and AX_{t+1} is the operating accrual component. Unlike others, we do not decompose past and current earnings as well, as the aim now is solely to establish the contribution of accruals at time t to the share price anticipation of the future cash flow at time t+1. Therefore, the only coefficients of interest here are CFX_{t+1} and $DIS*CFX_{t+1}$. If disclosure assists the market in anticipating future cash flows, we would expect to see a positive coefficient on $DIS*CFX_{t+1}$. The results from regression (4) are reported in the first two columns in Panel A of Table 3. The findings suggest that, under minimum disclosure, there is

[39] Similar estimations are also reported by Orpurt and Zang (2009), and a more general discussion of the economic consequences of disclosure with respect to cash flow estimates can be found in Lambert, Leuz and Verrecchia (2007).

weak evidence of cash flow effects (coefficient on CFX_{t+1} is 0.154, p-value=0.10). On the other hand, the interaction $DIS*CFX_{t+1}$ is significantly positive (0.082 with a p-value<0.01) suggesting that disclosure improves the market's anticipation of the cash flow component of future earnings.

Estimates with regard to the interaction between accruals and disclosure are obtained by extending (3) above in the same way, as follows:

$$\begin{aligned} R_{i,t} = \alpha_0 + \alpha_1 DIS_i + \alpha_2 ACC_{i,t} + \alpha_{01} CFX_{i,t+1} + \alpha_{11} DIS_i * CFX_{i,t+1} + \alpha_{21} ACC_{i,t} * CFX_{i,t+1} + \alpha_{31} DIS_i * ACC_{i,t} * CFX_{i,t+1} \\ + \alpha_{02} AX_{i,t+1} + \alpha_{12} DIS_i * AX_{i,t+1} + \alpha_{22} ACC_{i,t} * AX_{i,t+1} + \alpha_{32} DIS_i * ACC_{i,t} * AX_{i,t+1} \\ + \alpha_{03} X_{i,t} + \alpha_{13} DIS_i * X_{i,t} + \alpha_{23} ACC_{i,t} * X_{i,t} + \alpha_{33} DIS_i * ACC_{i,t} * X_{i,t} \\ + \alpha_{04} X_{i,t-1} + \alpha_{14} DIS_i * X_{i,t-1} + \alpha_{24} ACC_{i,t} * X_{i,t-1} + \alpha_{34} DIS_i * ACC_{i,t} * X_{i,t-1} \\ + \alpha_{05} R_{i,t+1} + \alpha_{15} DIS_i * R_{i,t+1} + \alpha_{25} ACC_{i,t} * R_{i,t+1} + \alpha_{35} DIS_i * ACC_{i,t} * R_{i,t+1} + u_{i,t} \end{aligned} \quad (5).$$

The coefficients of interest here are now $DIS*CFX_{t+1,}$ ACC_t*CFX_{t+1} and $DIS*ACC_t*CFX_{t+1.}$ The remaining columns in Panel A of Table 3 report on the effects of accrual magnitude, and Panels B and C set out the results when (5) is fitted separately for negative net accruals and positive net accruals. The evidence corroborates the earlier findings in Table 2, showing that the share price anticipation of earnings is largely attributable to the cash flow component of future earnings. Furthermore, it can be seen that the information revealed by current accruals contributes more to price anticipation of future cash flow than the information revealed by non-current accruals (the coefficient on $ACC*CFX_{t+1}$ is significantly higher for the current net accrual at 0.272 than it is for non-current net accrual at -0.094, and the likelihood that these coefficients may be equal is less than 0.01). It is also evident that disclosure continues to mitigate overstatements arising from higher levels of the current net accrual, in this case specifically with respect to expected future cash flows (there is a significant coefficient of -0.023 on $DIS*ACC_t*CFX_{t+1}$). Finally, we can see that disclosure again complements non-current accruals in the

price anticipation of the cash flow component of future earnings, such that jointly they have a positive effect (the coefficient on $DIS*ACC_t*CFX_{t+1}$ is significant at 0.021 for the non-current net accrual). These results are in line with the notion that investors focus on predicting cash flows when interpreting accruals and incorporating related information into their equity valuations.

6. ROBUSTNESS CHECKS

(i) Extending the Expectations Window from One to Three Years Ahead

The tests reported above in 5(i) and 5(ii) have been repeated here using a longer future earnings stream, specifically for three years ahead, which appears to be the standard practice in share price anticipation studies. The choice of *three* years arises from the findings by Collins et al. (1994), who demonstrate that there is no statistically significant association between current stock returns and future earnings beyond that time. An examination of future earnings aggregated over a three year period would lead in the present study to the inclusion of earnings figures reported under IFRS in 2005, which could introduce unnecessary complications in the interpretation of the results, so we conduct the robustness test in its standard form for the years 2000 and 2001 only, extending the investigation window to take into account the sum of future earnings over the three years 2001-2003 and 2002-2004 respectively.

The robustness tests of H1 to H3 are reported in Panel A of Table 4. As explained above, X_{t+1} is substituted by $X_{t+1}+X_{t+2}+X_{t+3}$, and for convenience we denote these cumulative earnings over the next three years as $X3_{t+3}$. It may be noted that the control for one year ahead share price returns R_{t+1} is also replaced in the estimation,

by three-year buy and hold returns (again for the period ending three months after the accounting year end). The results in Table 4 reveal the short-lived impact of the influence of current accruals, with an insignificant coefficient on ACC_t*X3_{t+3} (0.011 for the rank of all net accruals, p-value: 0.41; 0.017 for the rank of negative net accruals, p-value: 0.22; 0.044 for the rank of positive net accruals, p-value: 0.13). This is in contrast to the findings reported in Table 2 with respect to the larger and statistically significant coefficients on ACC_t*X_{t+1}. Nevertheless, disclosure continues to exert its corrective influence when accruals are large, as shown by the significantly negative coefficients on $DIS*ACC_t*X3_{t+3}$ (-0.008 for the rank of negative net accruals, p-value: <0.01; -0.010 for the rank of positive net accruals, p-value: <0.01).

On the other hand, it is the information regarding non-current accruals that is found to be particularly important in this longer window, given the strongly significant positive coefficients with respect to both the magnitude of the non-current net accrual (0.015 for the rank of all accruals, p-value: <0.01) and with respect to either sign (0.050 for the rank of negative net accruals, p-value: <0.01; 0.018 for the rank of positive net accruals, p-value: <0.01).

Taking together the evidence in Tables 2 and 4, it appears that the share price anticipation of earnings in the longer term is mainly attributable to the non-current component of total operating accruals, while the share price anticipation of earnings in the shorter term is mainly determined by the current component. Not only does this test confirm the hypothesis with respect to the different roles of current and non-current accruals in the share price anticipation of earnings, but also it confirms the complementary role of disclosure, and reveals it to be more pervasive, as it was mostly inferred beforehand only with respect to negative non-current accruals, where accounting conservatism accelerates the recognition of economic losses.

(iii) Controlling for Potentially Omitted Correlated Variables

Since it is well established that disclosure is positively associated with firm size, it might be asked whether the findings of this study are driven by size rather than disclosure; however, since the sample examined by Standard and Poor's includes only the largest firms in Europe, we do not expect the variation in company size to affect significantly the empirical evidence here. On the other hand, an important determinant of the level of disclosure is likely to be the exposure of such firms to the US market and, if they are cross-listed in the US, their compliance with the increased levels of disclosure required by SEC. A second point to consider is that other studies of the share price anticipation of future earnings (e.g. Schleicher et al. 2007; Hussainey and Walker, 2009) also account for firm growth, as it is only high growth firms that are likely to derive much of their value from future earnings. Finally, we give consideration to the proviso in Schleicher et al. (2007) that, in the case of loss-making firms, current income is not a good guide to the longer-term earnings of the firm.

The tests in Panel B of Table 4 re-examine hypotheses H1 to H3 by taking into account the size of each firm in the sample (based on market capitalisation), their growth (by means of the rate of change in total assets), their exposure to the US capital market (by using a binary variable to indicate cross-listing), and the sign of earnings (by using another binary variable to distinguish profit-making from loss-making firms). The findings confirm that, whilst exposure to the US enhances share price anticipation of future earnings, albeit mainly when the net accrual is positive (0.530, p-value <0.01 for the net current accrual; 0.482, p-value<0.01 for the net non-current accrual), the main effect of disclosure is unaffected by this interaction, which

again establishes that the proxy *DIS* is useful as a global measure of disclosure. Also, consistent with previous research, the asset base growth is again associated with more future earnings information in current returns, and share price anticipation is seen to become more difficult for loss-making firms, as predicted by Scheicher et al. (2007). These last two controls are evidently particularly important, with statistically significant coefficients in the predicted direction, i.e. significantly positive for growing firms (0.553, p-value<0.01 for the net current accrual; 0.483, p-value<0.01 for the net non-current accrual) and significantly negative for loss-makers (-0.374, p-value<0.01 for the net current accrual; -0.419, p-value<0.01 for the net non-current accrual). Finally, we note that size variation is not important, as predicted, since the T&D sample represents the largest firms in Europe. Chiefly, Table 4 shows that our earlier inferences still hold, after implementing the above controls.

7. CONCLUSION

Previous research has shown that disclosure enhances the inclusion of future earnings news in current returns. Others have examined the inclusion of these earnings expectations in share pricing with respect to the actual accounting numbers that are reported by firms, the accounting practices that are employed in drawing up the financial statements, and the financial decisions that ensue. The present study contributes by showing in greater detail how the impact of accruals on market participants' future earnings expectations is conditional upon disclosure, and dependent also on the type of accrual involved. More specifically, by making clear the difference between current and non-current accruals, and pointing to their ability to resolve timing issues, we provide evidence that disclosure has differential incremental effects which depend on the duration of the accruals.

The evidence here is relevant and timely in the post-IFRS era, as there is initial evidence elsewhere that managers still apply recognition principles in a manner that is influenced by local institutional features, with financial reports at the same time becoming accessible to a more international base of investors who assess equity investments based on the common denominator of disclosure requirements set down in IFRS. Here, it is shown that, even in the period immediately prior to mandated IFRS, the market's share price anticipation of earnings across Europe was already conditioned by the disclosure level, as captured by the global T&D measure used here. This is new evidence that would be difficult to extrapolate from other jurisdiction-specific research.[41]

The findings in this study have implications also for our understanding, and interpretation, of a great number of accounting research studies which claim that market participants can be misled by accruals manipulation. The results show that this prior evidence depends critically upon the level of additional disclosure concerning the accounting numbers reported in statutory financial statements, and must be interpreted accordingly.

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[41] One limitation of this study is that it investigates only highly visible firms, although we note that they account for the majority of European market capitalization. Further research could shed light on market participants' price anticipation across smaller firms. To the extent that their shareholder base is likely to be confined within their jurisdiction of origin, other sources of information might also be relevant other than corporate disclosures by firms themselves.

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TABLE 1

Panel A: Descriptive Statistics

	-----Returns-----		*--------Earnings--------*			*Accruals Magnitudes*		*Disclosure*
	Current Returns	Future Returns	Prior Earnings	Current Earnings	Future Earnings	Absolute Current Accruals	Absolute Non-current Accruals	Standard and Poor's Transparency and Disclosure Score
	R_t	R_{t-1}	X_{t-1}	X_t	X_{t+1}	|ΔCO|	|ΔNCO|	*DIS*
Mean	-0.1264	0.0231	0.0491	0.0311	0.0201	0.0338	0.1172	64.697
Median	-0.1188	-0.0091	0.0491	0.0440	0.0478	0.0232	0.0695	66.670
Standard deviation	0.3244	0.5053	0.0705	0.1045	0.1260	0.0376	0.1494	11.138
Minimum	-0.9320	-0.9320	-0.5631	-0.9530	-0.9530	0.0001	0.0001	32.980
Maximum	1.7709	4.0333	0.4936	0.4420	0.2871	0.4030	0.9725	88.780

Panel B: Correlations (*p-values*)

	R_t	R_{t+1}	X_{t-1}	X_t	X_{t+1}	|ΔCO|	|ΔNCO|
R_{t+1}	-0.3902						
	0.000						
X_{t-1}	0.2498	-0.1607					
	0.000	*0.000*					
X_t	0.3285	-0.1864	0.4639				
	0.000	*0.000*	*0.000*				
X_{t+1}	0.3020	0.1167	0.2338	0.3729			
	0.000	*0.002*	*0.000*	*0.000*			
|ΔCO|	-0.0053	-0.0523	-0.0482	-0.0117	-0.0121		
	0.891	*0.172*	*0.208*	*0.759*	*0.752*		
|ΔNCO|	-0.0370	0.0208	-0.1271	-0.1788	-0.1560	0.1059	
	0.334	*0.587*	*0.001*	*0.000*	*0.000*	*0.006*	
DIS	-0.0147	-0.0102	-0.0629	-0.1256	-0.1226	-0.1859	0.1309
	0.702	*0.791*	*0.101*	*0.001*	*0.001*	*0.000*	*0.001*

Notes: Current returns R_t for year t are annual buy-and-hold returns for the 12-month period starting three months after the year t-1 fiscal year end. Future returns R_{t+1} are the annual buy-and-hold returns for the year starting three months after the current fiscal year-end. Current earnings X_t for year t are the income before extraordinary items available to common shareholders, scaled by market value (closing price multiplied by the number of shares outstanding, three months after the year t-1 fiscal year end). Future earnings X_{t+1} (prior earnings X_{t-1}) are the income before extraordinary items available to ordinary shareholders for the year following (preceding) the current year, scaled by market value three months after the year t fiscal year end. |ΔCO| and |ΔNCO| are the absolute values of current and non-current operating accruals, scaled by the average of total assets at the beginning and end of the fiscal year. *DIS* is the decile rank of disclosure, where disclosure is measured by Standard and Poor's Composite T&D score (see Appendix for further details).

TABLE 2

The joint effects of accruals and disclosure on the share price anticipation of earnings

	A. All Firm-Year Observations							**B. Liability Accruals > Asset Accruals (net accruals are income-decreasing)**					**C. Liability Accruals < Asset Accruals (net accruals are income-increasing)**				
	Total Accruals **|ΔCO+ΔNCO|**		***Current Accruals*** **|ΔCO|**		***Non-current Accruals*** **|ΔNCO|**		***Diff.***	***Current Accruals*** **|ΔCO|**		***Non-current Accruals*** **|ΔNCO|**		***Diff.***	***Current Accruals*** **|ΔCO|**		***Non-current Accruals*** **|ΔNCO|**		***Diff.***
	Coeff.	t	Coeff.	t	Coeff.	t	*p-value*	Coeff.	t	Coeff.	t	*p-value*	Coeff.	t	Coeff.	t	*p-value*
X_{t+1}	**0.208**	**0.03**	**-1.278**	**0.00**	**0.925**	**0.01**	***0.00***	**-0.548**	**0.13**	**2.314**	**0.00**	***0.01***	**-0.396**	**0.33**	**0.133**	**0.77**	***0.29***
X_t	1.348	0.00	2.103	0.00	0.693	0.11		1.867	0.00	-0.126	0.64		2.345	0.00	2.800	0.00	
X_{t-1}	0.716	0.00	1.806	0.00	0.741	0.21		1.199	0.08	0.862	0.22		0.785	0.23	-1.143	0.16	
R_{t+1}	-0.391	0.00	-0.411	0.00	-0.487	0.00		-0.463	0.00	-0.489	0.00		-0.223	0.00	-0.481	0.00	
DIS	0.001	0.60	0.001	0.48	0.000	0.87		0.001	0.10	0.002	0.02		0.002	0.10	-0.002	0.02	
DIS* X_{t+1}	**0.077**	**0.00**	**0.198**	**0.00**	**-0.049**	**0.33**	***0.00***	**0.077**	**0.23**	**-0.195**	**0.00**	***0.04***	**0.133**	**0.03**	**-0.008**	**0.91**	***0.04***
DIS* X_t	-0.128	0.00	-0.221	0.00	0.056	0.38		-0.218	0.01	0.127	0.00		-0.269	0.00	-0.130	0.37	
DIS* X_{t-1}	-0.063	0.02	-0.157	0.01	-0.074	0.33		-0.061	0.61	-0.101	0.30		-0.058	0.48	0.229	0.06	
DIS* R_{t+1}	0.015	0.00	0.019	0.05	0.010	0.28		0.010	0.49	0.003	0.74		0.004	0.64	0.020	0.05	
ACC_t			0.006	0.04	0.000	0.94		0.014	0.00	0.000	0.96		-0.004	0.17	-0.002	0.02	
ACC_t* X_{t+1}			**0.302**	**0.00**	**-0.097**	**0.08**	***0.00***	**0.176**	**0.00**	**-0.312**	**0.00**	***0.00***	**0.178**	**0.01**	**0.081**	**0.22**	***0.23***
ACC_t* X_t			-0.145	0.01	0.080	0.26		-0.029	0.69	0.135	0.01		-0.230	0.00	-0.045	0.74	
ACC_t* X_{t-1}			-0.187	0.01	0.000	1.00		-0.116	0.22	-0.028	0.79		0.064	0.53	0.104	0.41	
ACC_t* R_{t+1}			0.002	0.86	0.024	0.02		0.017	0.19	0.026	0.00		-0.021	0.04	0.022	0.08	
DIS*ACC_t* X_{t+1}			**-0.026**	**0.00**	**0.016**	**0.04**	***0.00***	**-0.007**	**0.48**	**0.036**	**0.00**	***0.05***	**-0.010**	**0.32**	**0.005**	**0.65**	***0.16***
DIS*ACC_t* X_t			0.019	0.03	-0.020	0.04		0.010	0.41	-0.027	0.00		0.026	0.03	-0.002	0.93	
DIS*ACC_t* X_{t-1}			0.015	0.12	0.006	0.61		-0.007	0.66	0.003	0.81		-0.004	0.75	-0.013	0.44	
DIS*ACC_t* R_{t+1}			-0.001	0.71	0.000	0.88		0.000	0.95	0.000	0.98		0.001	0.75	0.000	0.87	
Intercept	-0.133	0.03	-0.151	0.02	-0.121	0.09		-0.265	0.00	-0.516	0.00		-0.310	0.00	-0.027	0.75	
Observations	683		683		683			330		418			353		265		
Wald chi-square (*p-value*)							*< 0.001*					*< 0.001*					*< 0.001*

Notes: The first two columns report regression results regarding the estimation of Equation (2), and the remaining columns report on Equation (3). The dependent variable $R_{t,}$ (current returns), and predictor variables X_{t-1} (prior earnings) X_t (current earnings), X_{t+1} (future earnings), R_{t+1} (future returns) and *DIS* (decile rank of disclosure) are defined in the notes to Table 1. ACC_t is the decile rank of the absolute value of operating accruals. The three panels to the right present regression results with regard to the overall magnitude of accruals, negative accruals and positive accruals, in each case firstly for |ΔCO| (absolute current accruals) and secondly for |ΔNCO| (absolute non-current accruals). The estimation is feasible generalized least squares regression, designed to control for the presence of heteroskedasticity and for observations that belong to the same company (i.e. firm effects) or the same country (i.e. country effects). The Hadi (1994) multivariate outlier detection procedure has been applied. The difference (Diff.) columns set out the Wald test of statistically significant differences in coefficients between current and non-current accruals, using a seemingly unrelated regression model.

TABLE 3

The joint effects of accruals and disclosure on the share price anticipation of cash flows

	A. All Firm-Year Observations							**B. Liability Accruals > Asset Accruals (net accruals are income-decreasing)**					**C. Liability Accruals < Asset Accruals (net accruals are income-increasing)**				
	Total Accruals **|ΔCO+ΔNCO |**		***Current Accruals*** **|ΔCO|**		***Non-current Accruals*** **|ΔNCO|**		***Diff.***	***Current Accruals*** **|ΔCO|**		***Non-current Accruals*** **|ΔNCO|**		***Diff.***	***Current Accruals*** **|ΔCO|**		***Non-current Accruals*** **|ΔNCO|**		***Diff.***
	Coeff.	t	Coeff.	t	Coeff.	t	*p-value*	Coeff.	t	Coeff.	t	*p-value*	Coeff.	t	Coeff.	t	*p-value*
***CFX*$_{t+1}$**	**0.154**	**0.10**	**-1.193**	**0.00**	**0.794**	**0.02**	***0.00***	**-0.336**	**0.29**	**1.447**	**0.00**	***0.00***	**-0.906**	**0.03**	**-0.575**	**0.26**	***0.57***
***AX*$_{t+1}$**	0.342	0.00	-0.733	0.02	0.970	0.01		0.230	0.53	1.980	0.00		0.036	0.94	-0.570	0.30	
***X*$_t$**	1.245	0.00	1.829	0.00	0.693	0.13		1.777	0.00	-0.325	0.50		2.829	0.00	2.210	0.02	
***X*$_{t-1}$**	0.681	0.00	2.027	0.00	0.740	0.22		1.501	0.01	1.857	0.03		1.307	0.05	-0.392	0.64	
***R*$_{t+1}$**	-0.338	0.00	-0.320	0.00	-0.466	0.00		-0.430	0.00	-0.286	0.01		-0.108	0.11	-0.439	0.00	
DIS	-0.001	0.60	-0.001	0.40	-0.001	0.32		0.000	0.88	0.000	0.77		0.001	0.19	-0.002	0.09	
***DIS* CFX*$_{t+1}$**	**0.082**	**0.00**	**0.187**	**0.00**	**-0.035**	**0.50**	***0.01***	**0.057**	**0.36**	**-0.064**	**0.22**	***0.21***	**0.139**	**0.04**	**0.077**	**0.33**	***0.38***
***DIS* AX*$_{t+1}$**	0.060	0.00	0.129	0.00	-0.051	0.31		-0.058	0.39	-0.166	0.00		0.156	0.03	0.127	0.16	
***DIS* X*$_t$**	-0.115	0.00	-0.188	0.00	0.056	0.41		-0.178	0.01	0.159	0.01		-0.312	0.00	-0.065	0.66	
***DIS* X*$_{t-1}$**	-0.059	0.03	-0.186	0.01	-0.073	0.38		-0.144	0.19	-0.240	0.03		-0.086	0.38	0.154	0.20	
***DIS* R*$_{t+1}$**	0.009	0.05	0.007	0.55	0.007	0.58		-0.001	0.95	-0.026	0.09		0.000	0.99	0.023	0.08	
***ACC*$_t$**			0.004	0.28	0.000	0.99		0.016	0.00	0.002	0.43		-0.013	0.00	-0.009	0.03	
***ACC*$_t$**CFX*$_{t+1}$**			**0.272**	**0.00**	**-0.094**	**0.08**	***0.00***	**0.108**	**0.03**	**-0.208**	**0.00**	***0.00***	**0.200**	**0.00**	**0.162**	**0.03**	***0.65***
***ACC*$_t$**A X*$_{t+1}$**			0.235	0.00	-0.085	0.11		0.053	0.32	-0.243	0.00		0.104	0.16	0.182	0.02	
***ACC*$_t$** X*$_t$**			-0.124	0.05	0.066	0.36		-0.058	0.38	0.156	0.02		-0.300	0.00	0.038	0.78	
***ACC*$_t$** X*$_{t-1}$**			-0.220	0.01	-0.001	1.00		-0.162	0.05	-0.150	0.20		0.014	0.90	-0.005	0.97	
***ACC*$_t$** R*$_{t+1}$**			-0.003	0.73	0.027	0.03		0.017	0.16	0.006	0.69		-0.025	0.01	0.013	0.36	
***DIS*ACC*$_t$** CFX*$_{t+1}$**			**-0.023**	**0.00**	**0.015**	**0.05**	***0.00***	**0.000**	**0.98**	**0.021**	**0.00**	***0.23***	**-0.005**	**0.64**	**-0.005**	**0.63**	***0.84***
***DIS*ACC*$_t$** AX*$_{t+1}$**			-0.018	0.02	0.015	0.05		0.016	0.12	0.029	0.00		-0.009	0.43	-0.013	0.30	
***DIS*ACC*$_t$** X*$_t$**			0.017	0.06	-0.019	0.06		0.009	0.41	-0.031	0.00		0.032	0.01	-0.011	0.59	
***DIS*ACC*$_t$** X*$_{t-1}$**			0.020	0.07	0.007	0.57		0.004	0.78	0.020	0.19		-0.002	0.89	-0.002	0.91	
***DIS*ACC*$_t$** R*$_{t+1}$**			0.000	0.81	0.000	0.84		0.001	0.55	0.003	0.15		0.000	0.88	0.000	0.87	
Intercept	-0.046	0.46	-0.026	0.75	-0.031	0.67		-0.132	0.09	-0.309	0.21		-0.093	0.41	0.034	0.72	
Observations	683		683		683			352		265			331		418		
Wald chi-square (*p-value*)							*< 0.001*					*< 0.001*					*< 0.001*

Notes: The dependent variable R_t, (current returns), and predictor variables X_{t-1} (prior earnings) X_t (current earnings), X_{t+1} (future earnings), R_{t+1} (future returns), *DIS* (decile rank of disclosure) and ACC_t (decile rank of absolute accruals) are defined in the notes to Tables 1 and 2. Future earnings X_{t+1} are replaced in this table by the corresponding accrual and cash flow components, AX_{t+1} and CFX_{t+1} respectively. The first two columns report on the estimation of Equation (4), and the remaining columns on Equation (5), where the three panels present regression results with regard to the overall magnitude of accruals, negative accruals and positive accruals, in each case firstly for |ΔCO| (absolute current accruals) and secondly for |ΔNCO| (absolute non-current accruals). The estimation is feasible generalized least squares regression, designed to control for the presence of heteroskedasticity and for observations that belong to the same company (i.e. firm effects) or the same country (i.e. country effects). The Hadi (1994) multivariate outlier detection procedure has been applied. The difference (Diff.) columns set out the Wald test of statistically significant differences in coefficients between current and non-current accruals, using a seemingly unrelated regression model.

TABLE 4

Robustness checks

	A. All Firm-Year Observations					B. Liability Accruals > Asset Accruals (net accruals are income-decreasing)					C. Liability Accruals < Asset Accruals (net accruals are income-increasing)				
	Current Accruals |ΔCO|		*Non-current Accruals* |ΔNCO|		*Diff.*	*Current Accruals* |ΔCO|		*Non-current Accruals* |ΔNCO|		*Diff.*	*Current Accruals* |ΔCO|		*Non-current Accruals* |ΔNCO|		*Diff.*
	Coeff.	t	Coeff.	t	*p-value*	Coeff.	t	Coeff.	t	*p-value*	Coeff.	t	Coeff.	t	*p-value*
Panel A. Extending the investigation window (from one year to three years)															
$X3_{t+3}$	-0.131	0.25	0.359	0.00	*0.27*	-0.118	0.33	2.235	0.00	*0.00*	-0.115	0.56	0.356	0.00	*0.38*
$DIS* X3_{t+3}$	0.061	0.00	-0.069	0.00	*0.02*	0.065	0.00	-0.293	0.00	*0.00*	0.073	0.00	-0.097	0.00	*0.04*
$ACC_t* X3_{t+3}$	0.011	0.41	-0.068	0.00	*0.07*	0.017	0.22	-0.330	0.00	*0.01*	0.044	0.13	-0.068	0.00	*0.27*
$DIS*ACC_t* X3_{t+3}$	-0.005	0.03	0.015	0.00	*0.01*	-0.008	0.00	0.050	0.00	*0.00*	-0.010	0.00	0.018	0.00	*0.05*
Number of observations	443		443			212		110			231		333		
Wald chi-square (*p-value*)					*< 0.001*					*< 0.001*					*< 0.001*
Panel B. Testing for omitted variables															
X_{t+1}	-0.820	0.11	1.092	0.03	*0.00*	-0.948	0.08	1.171	0.02	*0.03*	-1.574	0.08	0.178	0.82	*0.08*
$DIS* X_{t+1}$	0.171	0.00	-0.054	0.22	*0.01*	0.191	0.00	-0.156	0.01	*0.03*	0.165	0.00	0.031	0.60	*0.19*
$ACC_t* X_{t+1}$	0.229	0.00	-0.122	0.01	*0.00*	0.221	0.00	-0.287	0.00	*0.00*	0.226	0.00	0.083	0.25	*0.17*
$DIS*ACC_t* X_{t+1}$	-0.016	0.05	0.021	0.00	*0.00*	-0.011	0.19	0.038	0.00	*0.07*	-0.028	0.01	0.005	0.64	*0.08*
$SIZE* X_{t+1}$	-0.022	0.69	-0.017	0.74		-0.002	0.96	0.097	0.10		0.108	0.19	-0.092	0.28	
$GROWTH* X_{t+1}$	0.553	0.00	0.483	0.00		1.554	0.00	-0.642	0.26		0.330	0.00	0.267	0.02	
$LOSS* X_{t+1}$	-0.374	0.00	-0.419	0.00		-0.472	0.00	-0.605	0.00		-0.628	0.00	-0.007	0.97	
$ADR* X_{t+1}$	0.216	0.11	0.216	0.10		-0.165	0.18	0.204	0.15		0.530	0.00	0.482	0.01	
Number of observations	670		670			347		259			323		411		
Wald chi-square (*p-value*)					*< 0.001*					*< 0.001*					*< 0.001*

Notes: The dependent variable in all estimations is the current return, R_t, (see notes to Table 1 for further details). In Panel A of Table 5, $X3_{t+3}$ is a three-year sum of reported annual earnings, obtained by adding together the income before extraordinary items that is available to ordinary shareholders for each of the three years after the end of year *t*, scaled by market value three months after the end of year *t*. Interactions are reported for rank disclosure *DIS* (see notes to Table 1 for further details) and rank absolute accruals ACC_t (see notes to Table 3 for further details). For the test for omitted variables reported in Panel B of Table 5, *SIZE* is the natural logarithm of market capitalisation, *GROWTH* is the annual growth rate in total assets, *LOSS* is a binary variable that indicates either a loss (1) or a profit (0), and *ADR* a binary variable based on ADR cross-listing that indicates either exposure to the US financial market (1) or no US exposure (0). Further explanation of the estimation procedure and table layout can be found in the notes to Table 2.

APPENDIX

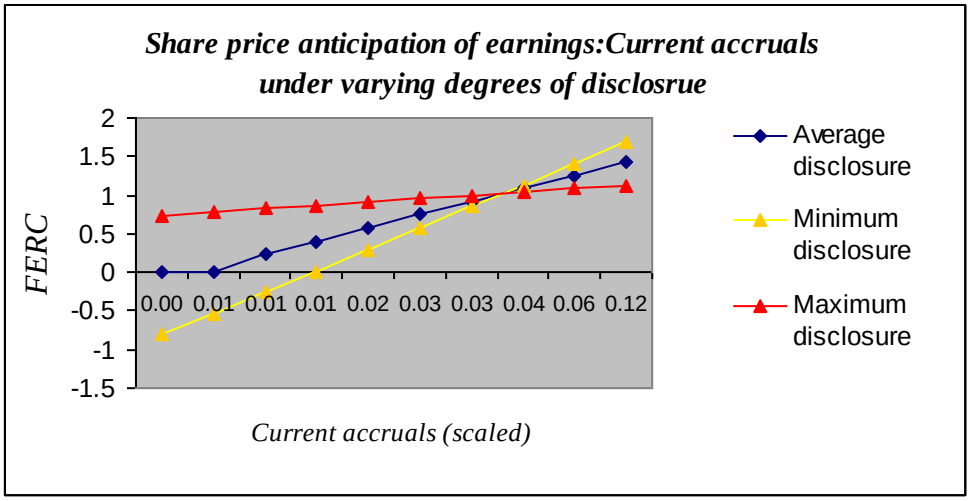
Country	CIFAR		Composite T&D Index		Financial Transparency and Information Disclosure		Board and Management Structure and Process		Ownership Structure and Investor Rights	
	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank
Finland	78.2	4	8.3	1	8.0	1	8.5	2.5	7.8	2
Ireland	79.1	3	8.0	2	7.0	2	8.8	1	7.4	3
United Kingdom	82.1	1	7.6	3	6.1	5	8.4	4	7.8	1
France	75.8	5	7.2	4	6.8	3	7.7	9	7.1	4
Greece	59.8	15	7.0	5	5.5	9	8.5	2.5	6.5	6
Netherlands	71.4	8	6.9	6	6.1	6	7.4	12	6.9	5
Sweden	81.8	2	6.7	7	5.7	8	7.7	10.5	6.1	8
Belgium	67.8	12	6.3	8.5	5.0	10.5	6.9	15	6.1	7
Norway	75.4	6	6.3	8.5	6.0	7	8.0	6.5	5.0	12
Switzerland	75.0	7	6.2	10	4.9	12	7.8	8	5.8	9
Portugal	53.7	17	6.1	11	6.7	4	6.9	16	4.7	14
Germany	66.0	13	6.1	12	5.0	10.5	8.0	5	4.8	13
Italy	65.4	14	6.0	13	4.8	14	7.2	13	5.5	10
Spain	68.2	10	5.9	14	4.8	13	7.1	14	5.3	11
Denmark	70.6	9	5.5	15.5	4.5	15	7.7	10.5	4.3	16
Austria	59.7	16	5.5	15.5	3.5	17	8.0	6.5	4.5	15
Luxembourg	68.0	11	4.0	17	4.0	16	5.0	17	4.0	17

Notes: The country-average CIFAR scores are reported in Hope (2003b), which provides annual report disclosure levels for 1993 and 1995. The country-mean T&D scores are obtained from Standard and Poor's, and are available from their web site: www.standardandpoors.com. The composite T&D score can be broken down into three different categories: (i) Financial Transparency and Information Disclosure, (ii) Board and Management Structure and Process, and (iii) Ownership Structure and Investors Relations. The scores are available for fiscal years 2001 and 2002.

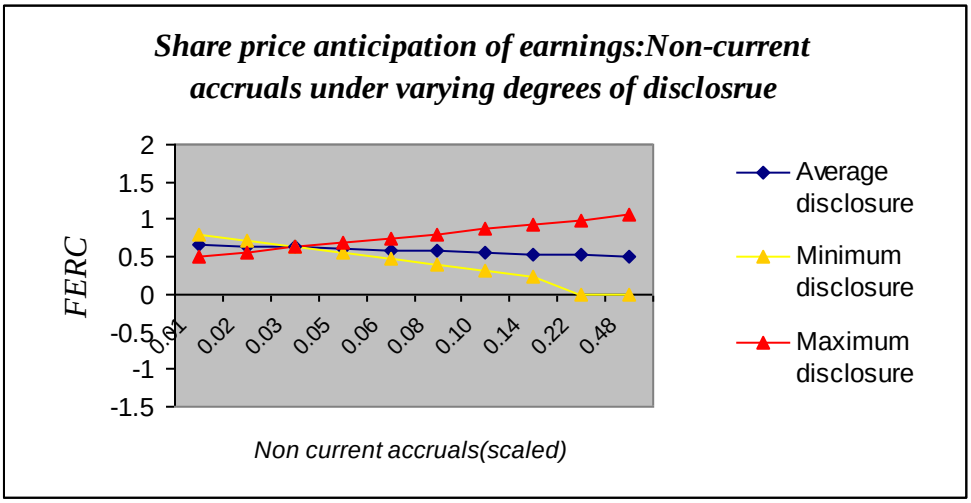
Figure 1

The effect of accruals and disclosure on the share price anticipation of future earnings

Current accruals



Non-current accruals



Notes: FERC, the future earnings response coefficient, may refer in this case to the coefficients on ACC_t*X_{t+1} regarding the information contributed by accruals alone, and on the main effects and interaction effects ACC_t*X_{t+1} , $DIS*X_{t+1}$ and ACC_t* $DIS*X_{t+1}$ when assessing the information jointly contributed by both accruals and disclosure. Average disclosure relates to the fifth decile of the disclosure metric; maximum disclosure by the tenth and minimum disclosure by the first. The level of accruals is represented here by the median scaled accruals per decile.