POLICY PAPER

The value relevance of IFRS earnings totals and subtotals and non-GAAP performance measures

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Executive Summary

Our study investigates the usefulness of non-GAAP performance measures presented by companies that prepare accounts in accordance with International Financial Reporting Standards (IFRS). The release of alternative earnings measures (GAAP earnings with items added back or taken away, which may be referred to as proforma, non-GAAP, or non-IFRS earnings) is widespread. However, there is debate about the comparability and clarity of these performance measures and the need for more guidance from standard setters regarding the format of the income statement, particularly in relation to subtotals (CFA 2016a, 2016b). In particular, regulators have raised questions about the quality of earnings when highlighted performance measures do not reflect IFRS recognition and measurement rules (CESR 2005; International Organization of Securities Commissions 2014).

In our study, we explore the specific measures disclosed by companies and examine the association of non-GAAP earnings measures and share price. We do so by using models based on Ohlson (1995) to provide evidence about the usefulness of a range of earnings measures. We obtain data from annual reports of 400 listed companies from eight IFRS adopting countries (Australia, France, Germany, Hong Kong, Italy, Singapore, Sweden and the UK) during the years 2005, 2008, 2011 and 2013. Our dataset differs from prior studies (which often use data from databases or firms' press releases) because we gather data about a number of earnings measures directly from firms' annual reports, which are the actual measures provided by managers and are of primary interest to investors, analysts and others.

In relation to our first research question (whether the association of price and earnings differs for firms that disclose non-GAAP earnings and those that do not), we find no significant differences in the price-earnings association for the two groups of firms. In relation to our second research question (for companies disclosing non-GAAP earnings, whether the association of price and earnings differs between the GAAP and non-GAAP measures) we observe different results based on whether a firm discloses underlying earnings based on operating earnings (or EBIT and EBITDA) or on net profit.

For the first group, measures of underlying operating profit are strongly associated with price suggesting the disclosure is useful to market participants. In addition, the adjusting items (i.e., exclusions) are not associated with price, consistent with them not being relevant to determining price. In contrast, for the second group of companies disclosing underlying profit,

no significant difference between the three test coefficients indicates the disclosure of underlying profit does not add additional information to that available from GAAP earnings. Our findings extend the evidence about the informative nature of non-GAAP earnings and add to the literature by pointing to differences between groups of firms based on the type of underlying performance measure they present.

In additional analysis, we show that the items 'adjusted out' by firms with low (high) analyst following are (are not) associated with price. Thus we suggest that greater analyst following may improve the quality of the adjustments, that is, firms with more analysts following are more likely to make more informative rather than opportunistic adjustments to earnings. Finally we provide evidence that the association of non-GAAP earnings and price is enhanced by more complete reconciliations.

Our findings enhance the current literature because they are drawn from IFRS adopting firms from several countries. The evidence about variation in value relevance based on the measures provided (underlying operating profit subtotals compared to underlying net profit) and the benefits of high quality reconciliation statements may be useful to the International Accounting Standards Board (IASB) in relation to the Disclosure Initiative and Primary Financial Statement projects. The IASB is seeking to develop principles for disclosure that promote improvements in standard setting and financial reporting (IASB 2013). An understanding of how non-GAAP measures are presented and their usefulness is key information that will be helpful for the IASB as it deliberates disclosure principles and any changes to individual standards in relation to presentation and disclosure

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Abstract

We explore the association between earnings and price for 400 IFRS adopting firms from eight countries (Australia, France, Germany, Hong Kong, Italy, Singapore, Sweden and the UK) in their annual reports for the years 2005, 2008, 2011 and 2013 (1,577 firm-years). We find no difference in the earnings/price association for firms that present non-GAAP earnings and those that do not. However, we find significant differences based on the non-GAAP measures presented. The disclosure of non-GAAP earnings provides value relevant information for firms that provide underlying operating (or EBIT or EBITDA) earnings but not for firms disclosing underlying net profit. For the first group the adjusting items are not associated with price, providing support for their exclusion by managers. The evidence points to non-GAAP earnings being informative, but only for firms basing adjustments and reconciliations on operating profit.

Keywords: IFRS, IASB, performance reporting, underlying earnings, pro forma earnings, street earnings, non-GAAP earnings, alternative performance measures.

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1. Introduction

The aim of our study is to investigate the usefulness of non-GAAP performance measures presented by companies that prepare accounts in accordance with International Financial Reporting Standards (IFRS), a question which is not addressed in a cross-country study of IFRS adopting firms in the current literature. The release of alternative earnings measures (GAAP earnings with items added back or taken away, which may be referred to as proforma, non-GAAP, or non-IFRS earnings) is widespread.1 However, there is debate about the comparability and clarity of these performance measures and the need for more guidance from standard setters regarding the format of the income statement, particularly in relation to subtotals (CFA 2016b, a). Regulators have raised questions about the quality of earnings when highlighted performance measures do not reflect IFRS recognition and measurement rules (CESR 2005; International Organization of Securities Commissions 2014). Their concerns relate to the quality and usefulness of the output of the IFRS-based financial reporting system given the common practice of departing from IFRS requirements when presenting and discussing financial results. The IASB is considering these issue in its Disclosure Initiative and Primary Financial Statements projects (IASB 2017b, a).

Some argue that non-GAAP earnings are necessary to assist investors to better understand an entity's performance and to make more informed investment decisions (IFAC 2014; CFA UK 2015). There is a large stream of predominantly US based literature that explores issues related to disclosure of non-GAAP earnings, including their persistence, value relevance and usefulness for forecasting. Studies have found non-GAAP earnings are useful for investors (Bradshaw & Sloan 2002; Brown & Sivakumar 2003). Nevertheless there is also evidence of opportunism in their release, particularly in relation to meeting or beating analyst forecasts and the removal of recurring expense items (Doyle et al. 2003; Bhattacharya et al. 2007; Barth et al. 2012). Black et al. (2017) conclude that, particularly with regulatory intervention by the US Securities and Exchange Commission (SEC), recent US research indicates the quality of non-GAAP disclosure has improved and that non-GAAP disclosures are providing useful information to market participants.

In contrast to the US literature, there are few studies of non-GAAP reporting in IFRS adopting countries despite the practice increasing in many countries since 2005. Studies have investigated the motivations for and impact of non-GAAP earnings disclosures in national settings (e.g., Hitz (2010) in Germany; Malone *et al.* (2016) in Australia). Choi and Young (2015) conclude there are opportunistic and informative motives for non-GAAP disclosure by UK listed firms.

[1] IOSCO refers to adjusted earnings measures as 'non-GAAP' (International Organization of Securities Commissions 2014) and IFAC calls them supplementary financial measures (IFAC 2014). In both cases, the reference is to measures such as EBITDA, underlying earnings, cash earnings and so forth, that is, adjusted earnings are numbers derived from IFRS; they represent subtotals other than profit or loss, other comprehensive income and total comprehensive income. ASIC (2011) refers to adjusted earnings as 'non-IFRS'. Thus several terms are used interchangeably in the literature. We refer to adjusted earnings measures as non-GAAP earnings.

The authors find non-GAAP earnings are used to meet benchmarks, however they also report that the exclusion of transitory items provides a better measure of core earnings. Isidro and Marques (2015) study 500 EU listed companies and report opportunistic practices in the use of non-GAAP earnings in relation to executive compensation.

Outside the US, there is scant evidence about the value relevance of non-GAAP earnings. Prior studies report that non-GAAP earnings were more value relevant than GAAP earnings for French listed companies in the period 1996-2006 (Aubert 2010) and for South African companies in 2002-2009 (Venter *et al.* 2014). Given the importance of the issues associated with non-GAAP disclosure, evidence from a cross-country setting is needed because IFRS is applied across national boundaries and non-GAAP reporting appears to be influenced by variation in national institutional elements as well as firm level determinants (Isidro & Marques 2015). We cannot assume that the evidence of US firms applies in other countries, where the institutional settings for financial reporting have different features to the US, in particular the involvement of the SEC in regulating registrants' non-GAAP disclosures.

We also explore the specific measures disclosed by companies, because this has implications for standard setting projects of the IASB. Analysts have called for more subtotals to be defined in IFRS, to provide greater comparability in firms' disclosures (CFA 2016a). Thus we examine the association of non-GAAP earnings measures and share price, using models based on Ohlson (1995) to provide evidence about the usefulness of a range of earnings measures. We obtain data from annual reports of 400 listed companies from eight IFRS adopting countries (Australia, France, Germany, Hong Kong, Italy, Singapore, Sweden and the UK) during the years 2005, 2008, 2011 and 2013[2] Our sample and years are restricted because of the time intensive nature of hand collected data. However, we have included eight countries from a range of regions, accounting families and institutional settings (Nobes 1998, 2013) to enhance the informativeness of our findings. The data is drawn from 2005 onwards, thus providing evidence from approximately nine years of use of IFRS.

Our dataset differs from prior studies (which often use data from databases or firms' press releases) because we gather data about a number of earnings measures directly from firms' annual reports, which are the actual measures provided by managers and are of primary interest to investors, analysts and others. In addition, by studying data in annual reports we include the impact of regulation, accounting standards and audit on the non-GAAP earnings disclosures although these elements are not the primary focus of our tests.

In relation to our first research question (whether the association of price and earnings differs for firms that disclose non-GAAP earnings and those that do not) we find no significant differences in the price-earnings association for the two groups of firms.

[2] Singapore uses national standards that are substantially the same as IFRS (IFRS 2017). We include this country in our sample because most IFRS Standards have been adopted and academic studies regularly classify Singapore as an IFRS adopting country (Daske *et al.* 2008; Byard *et al.* 2011; Preiato *et al.* 2015).

In relation to our second research question (for companies disclosing non-GAAP earnings, whether the association of price and earnings differs between the GAAP and non-GAAP measures) we observe different results based on whether a firm discloses underlying earnings based on operating earnings (or EBIT and EBITDA) or on net profit. For the first group, measures of underlying operating profit are strongly associated with price suggesting the disclosure is useful to market participants. In addition, the adjusting items (i.e., exclusions) are not associated with price, consistent with them not being relevant to determining price. In contrast, for the second group of companies disclosing underlying profit, no significant difference between the three test coefficients indicates the disclosure of underlying profit does not add additional information to that available from GAAP earnings. Our findings extend the evidence about the informative nature of non-GAAP earnings and add to the literature by pointing to differences between groups of firms based on the type of underlying performance measure they present.

In the pooled sample, we show that underlying earnings conveys useful information to investors. We further show that the items 'adjusted out' by firms with low (high) analyst following are (are not) associated with price. Thus we suggest that greater analyst following may improve the quality of the adjustments, that is, firms with more analysts following are more likely to make more informative rather than opportunistic adjustments to earnings. Finally we provide evidence that the association of non-GAAP earnings and price is enhanced by more complete reconciliations. Our finding is consistent with prior research that has pointed to the important role of high quality reconciliations of GAAP and non-GAAP earnings.

Our findings enhance the current literature because they are drawn from IFRS adopting firms from several countries. The evidence about variation in value relevance based on the measures provided (underlying operating profit subtotals compared to underlying net profit) and the benefits of high quality reconciliation statements may be useful to the IASB in relation to the Disclosure Initiative and Primary Financial Statement projects. The IASB is seeking to develop principles for disclosure that promote improvements in standard setting and financial reporting (IASB 2013). An understanding of how non-GAAP measures are presented and their usefulness is key information that will be helpful for the IASB as it deliberates disclosure principles and any changes to individual standards in relation to presentation and disclosure.

2. Theory and hypotheses

The disclosure of non-GAAP earnings is observed in many countries and is generally considered to be a voluntary disclosure in IFRS adopting countries (Hitz 2010; Isidro & Marques 2013). Theories underpinning voluntary disclosure suggest several motivations for these additional disclosures. They may serve to reduce information asymmetry between firms and capital providers, thus reducing the agency problem (Jensen & Meckling 1976). They may improve the credibility of information provided to reduce the 'lemons' problem (Ackerlof 1970). Healy and Palepu (2001) provide a range of motivations for voluntary disclosure (including improving share price, protecting the firm from takeovers, increasing managerial remuneration and promoting managers' reputations) relating to managing perceptions about the firms and its managers.

In terms of non-GAAP disclosure, preparers may disclose adjusted earnings measures (with specific line items removed from or added to net income or various subtotals such as operating earnings, EBIT and EBITDA) to assist investors to better understand the entity's performance and to more accurately predict future cash flows. Investors have indicated they find additional earnings measures useful for investment decisions, particularly the non-GAAP measures management uses to run the business (PricewaterhouseCoopers 2007).

Analysts and companies regularly make adjustments to earnings for non-recurring or non-operating items (CFA 2016b). In addition, some analysts and companies maintain that the adjustments to GAAP earnings are necessary to modify the effects of accounting entries (required by accounting standards) that do not relate to business operations or accurately reflect the underlying business reality, and are therefore less relevant to investors (FINSIA & AICD 2008, 2009; Hitz 2010). Building on these views, we expect that firms disclosing non-GAAP earnings are providing additional information that is necessary to better understand their GAAP earnings. Thus we may observe these firms to have a weaker association between GAAP earnings and share price. Our first research question can be stated as: Is there a difference in the association between earnings and share price for companies that disclose non-GAAP earnings and those that do not?

Lougee and Marquardt (2004) provide evidence relevant to this question. In a US setting, they find that firms with less informative earnings are more likely to disclose non-GAAP earnings. Many studies investigate the informative and the opportunistic motivations for non-GAAP disclosures (see Coulton *et al.* (2016) for a comprehensive summary). Several papers have concluded that adjustments are opportunistic because they permit firms to meet or beat analyst forecasts (Bhattacharya *et al.* (2003) and Black and Christensen (2009) in the US setting; Entwistle *et al.* (2010) in the US and Canada; Walker and Louvari (2003) and Choi and Young (2015) in the UK; and Isidro and Marques (2015) for EU companies). Opportunistic behaviour could be relevant to our first research question. If investors view non-GAAP disclosures negatively, leading to questions about the quality of the firm's earnings, then there may be a weaker association between GAAP earnings and share price. There is mixed evidence about whether investors are misled by non-GAAP disclosure. Doyle *et al.* (2013), Doyle *et al.* (2003) and Landsman *et al.* (2007) point to market mispricing in relation to non-GAAP disclosures. Bowen *et al.* (2005) report that investors overact to non-GAAP disclosures, when they are emphasized by managers. In contrast, Johnson and Schwartz (2005) report no return or price premium associated with non-GAAP earnings and they conclude that investors understand non-GAAP disclosures.

Other studies conclude non-GAAP earnings are useful for investors, because non-GAAP earnings are more strongly associated with returns, share price and future earnings than GAAP earnings (Coulton *et al.* 2016). Bradshaw and Sloan (2002) report that 'street earnings' (earnings forecast by analysts) are more strongly associated with returns than US GAAP earnings. Similarly, Brown and Sivakumar (2003) find operating earnings are more strongly associated with share price than GAAP net income. The authors suggest GAAP net income contains many non-operating items that reduce its usefulness for forecasting, compared to operating earnings. We follow this line of reasoning, exploring the association of both earnings subtotals and totals presented by IFRS adopting firms.

Our second research question is: To what extent are non-GAAP earnings (underlying net profit totals and subtotals) associated with share price?

Based on prior literature, we expect the non-GAAP earnings measures to be associated with share price. Considering studies of firms outside the US, there is some evidence in support of this expectation. Using data from press releases for 116 French listed firms in the period 1996-2006, Aubert (2010) finds non-GAAP earnings are more value relevant than GAAP earnings. Venter *et al.* (2014) examine on-GAAP earning reported in press releases for 424 firms in South Africa in the period 2002-2009. They find non-GAAP earnings to be more value relevant. Choi and Young (2015) study UK listed firms and find that non-GAAP earnings are used to beat benchmarks. However, the also conclude that managers' non-GAAP earnings provide a better measure of core earnings by excluding transitory items.

In our study we also investigate the usefulness of the non-GAAP subtotals presented. Based on the reasoning in Brown and Sivakumar (2003), we could expect that the adjusted subtotals (in our study these are the underlying operating profit, EBIT or EBITDA) to provide useful information because they include fewer non-operating items (than net profit) and the subtotals are key elements in analysts' prediction models. However, adjusted net profit can also be constructed to exclude non-recurring items so this measure may also be associated with price.

We do not have a basis for predicting that the totals will be more value relevant that the subtotals, or vice versa. However, there is an important difference between the subtotals and totals to which the non-GAAP earnings are linked. Net profit is defined by IFRS but the subtotals (operating profit, EBIT and EBITDA) are not.[3] CFA (2016b) explained that analysts may have difficulty understanding and comparing the undefined non-GAAP measures because the subtotals to which they are related are not constructed in the same way by all companies. In contrast, net profit is defined by IFRS and comparable between companies.

The focus of our tests are the measures presented by IFRS adopting firms in pooled cross country sample. However, the extent to which non-GAAP earnings disclosures are provided and their usefulness may vary between countries. CFA (2016a) lists many factors that may influence the supply and demand of non-GAAP measures and these factors may vary by country. Specifically, the demand of investors for non-GAAP earnings and thus the incentives for companies to provide these measures may differ between countries because of variations in the extent of analyst coverage and the influence of analysts, and the importance of equity markets as a source of finance.

[3] IAS 1 *Presentation of Financial Statements* requires the presentation of earnings totals for profit or loss, total other comprehensive income and comprehensive income (IAS1:81A). IAS 1 also states that an entity shall present additional line items, headings and subtotals in the statement(s) of profit or loss and other comprehensive income when such presentation is relevant to an understanding of the entity's financial performance (IAS 1:85) (IASB 2009). In many IFRS jurisdictions additional line items, headings and subtotals are included in the financial statements, either on the face of the statement(s) of profit or loss and other comprehensive income or elsewhere in the financial statements (e.g., segment footnote) or in the annual report (e.g., management commentary).

Isidro and Marques (2015) examine the disclosure of non-GAAP earnings by firms in 18 European countries during 2003-2007. They concluded that non-GAAP disclosures were more likely in countries where there was more pressure to achieve earnings benchmarks and less opportunity to manipulate GAAP earnings. Thus we expect there may be differences between countries in the extent to which firms provide non-GAAP earnings disclosures and whether they are associated with share price.

Given their non-mandatory status, non-GAAP disclosures may vary between years in response to changes in firms' operating conditions and information environment. For example, earnings may be more difficult to predict in periods of uncertainty such as the global financial crisis. Malone *et al.* (2016) compare GAAP earnings, managers' adjusted earnings and analysts' adjusted earnings in the years 2008, 2009 and 2010 and find the differences in the three measures are largest in 2009, which they assume reflects the impact of the financial crisis. In general, studies show an increase in the disclosure of non-GAAP measures over time (see Coulton *et al.* 2016).

Finally, the activities of national regulators are likely to impact on non-GAAP disclosures.[4] There is some supra national guidance from standard setters (IFAC 2014) and regulators such as ESMA (2014) and IOSCO (2002, 2014) but the extent to which firms within a country follow this guidance will vary. In addition, national regulators can influence non-GAAP reporting practices, leading to another reason for differences between countries.[5]

Regulators have also required firms to provide reconciliations between non-GAAP and GAAP earnings (CESR, 2005; ESMA, 2015), which could affect the quality of the information presented. Prior studies suggest that non-GAAP disclosures are enhanced by the quality of reconciliations between non-GAAP and GAAP earnings provided by firms. Zhang and Zheng (2011) show that market mispricing is less for US companies with higher quality reconciliation statements.[6] Similarly, Aubert and Grudnitski (2014) study Eurostoxx companies and conclude market mispricing is only prevalent when non-GAAP reconciliations are of poor quality.

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[4] See Coulton *et al.* (2016) for a summary of studies of the impact of SEC regulation on non-GAAP disclosure in the US.

[5] In France and Australia, securities market regulators have on several occasions released guidance for the release and reconciliation of non- GAAP earnings. In Italy, the regulator has confirmed the application of CESR and ESMA guidance in 2001 and 2015. In Germany non-GAAP disclosures are largely unregulated at a national level, although there is a general requirement that prohibits misleading information (Hitz 2010). In the UK the disclosure of non-GAAP measures is well established (Choi & Young 2015) and the regulator has challenged companies with poor disclosure practices. We are not aware of guidance from national regulators in Sweden, Hong Kong and Singapore.

[6] Some US studies point to market mispricing, in relation to non-GAAP adjustments (i.e., exclusions). Burgstahler *et al.* (2002) conclude prices do not fully reflect the implications of excluded items (Compustat's special items) for future earnings. Doyle *et al.* (2003) also conclude investors underreact to the excluded components, indicating market mispricing. Landsman *et al.* (2007) examine both forecasting and value relevance implications of excluded items (i.e., Compustat's total items, special items and other exclusions). They find the items are relevant for forecasting but significant coefficients without the predicted sign for the excluded items lead the authors to conclude the items are mispriced.

3. Data and method

3.1 Sample selection

We collected data for a sample of fifty listed companies (that prepare consolidated accounts) from the largest 200 companies in eight countries, namely Australia, France, Germany, Hong Kong, Italy, Singapore, Sweden, and the United Kingdom for the years 2005, 2008, 2011 and 2013. The sample includes 200 firm-years for each country. The sample for six of the eight countries were reduced due to missing data. In total 1,577 firm-years are included (Table 1 Panel A). These countries were chosen because they have economically important capital markets and firms are required to use IFRS. To ensure a representative sample, firms were randomly selected in each country from each industry group, based on the industry sector concentration in each country. Four years (from an eight year period) were selected to provide an indication of trends over time.

Table 1 shows the distribution of firms by industry in each country. Overall the largest count of firms is in the industrials sector (27%), followed by financials (20%), consumer discretionary (17%) and information technology (11%) (Panel A). In the sample of firms with non-GAAP earnings, the incidence of non-GAAP earnings disclosure does not vary significantly across the different sectors. This is evidenced by the similar proportion shown in the last column in Panels A and B. On average, about one third of the firms in each sector disclose one or more non-GAAP earnings measures. The only sector that has a higher incidence of non-GAAP earnings is in the telecommunication services sector (19 of 32 firms).

3.2 Data collection

Data about earnings and the adjustments made by firms to arrive at non-GAAP earnings was hand collected from firms' annual reports. Non-GAAP earnings were disclosed in the narrative sections, management commentary reports, the statement of profit or loss and other comprehensive income and the notes to the financial statements, depending on firms' preferences and country specific guidance, if any. The data were hand collected because they are not available from databases. Consequently only a sample of firms was included. Other firm financial data was collected from the Compustat Global database.

Prior US studies make use of adjusted earnings sourced from IBES (Bradshaw & Sloan 2002), operating earnings from Compustat (Brown & Sivakumar 2003) and managers' non-GAAP earning from press releases (Entwistle *et al.* 2010). Hand collection of data has generally focused on press releases. However, we hand collect data from annual reports to ensure we are using the non-GAAP totals and subtotals presented as additional information by firms in, or accompanying, their audited financial statements.

We collected the non-GAAP earnings disclosed by firms and recorded the names used by the firms. Based on the names used, the non-GAAP earnings were allocated to one of four main categories:

a. Adjusted EBIT (*U_EBIT*)
b. Adjusted EBITDA (*U_EBITDA*)
c. Adjusted operating profit (*U_OPRO*)
d. Adjusted profit (*U_PRO*).

The non-GAAP earnings were classified into one of these four categories to provide information about firms' disclosure practices regarding adjusted earnings, which may be of interest to the IASB for the Disclosure Project. All non-GAAP earnings listed by a firm were recorded in our dataset, that is, a firm may provide one or more non-GAAP earnings from the categories (a)-(d) above. However, in the result section, we refer to the non-GAAP earnings that is reported in the firm's reconciliation of the non-GAAP earnings and the related IFRS measure.

Many (but not all) firms provide information about the items that have been added back to (taken away from) IFRS earnings to arrive at the non-GAAP earnings. In some jurisdictions the listing of these reconciling items is recommended best practice. We collect data about the adjusting items when they are disclosed by firms. Firms with reconciliations n = 535 (92% of firms with non-GAAP disclosure). We create a variable QREC to proxy for the quality of a firm's reconciliation and test whether firms with higher quality reconciliation have a stronger association between earnings and price. QREC = (OTHER/UND_DIFF) where OTHER is the amount of adjusting items that have not been specified in the reconciliation. Therefore, QREC measures whether the transparency of the adjusting items (i.e., do the adjusting items in the reconciliation fully explain the difference between GAAP and non-GAAP earnings).

3.3 Models

We use Ordinary Least Squares (OLS) panel regression models to explore the association of price and earnings, including the non-GAAP earnings subtotals and totals. The focus of our models is adjusted earnings (UND) (i.e., the non-GAAP earnings)[7] and statutory consolidated IFRS earnings (NI) and the difference between the two. UND is the underlying earnings disclosed by the firm; it relates to an IFRS earnings measure (EM) presented by the firm. For example, firms may report underlying EBIT which can be compared to EBIT based on IFRS.

We calculate the difference between IFRS earnings measures (EM) and the non-GAAP earnings measures (UND) and call this amount DIFF_UND. DIFF_UND is measured in the following way: Adjusted profit (U_PRO) is compared to profit for the year; adjusted operating profit (U_OPRO) is compared to operating profit; adjusted EBITDA (U_EBITDA) is compared to EBITDA; and adjusted EBIT (U_EBIT) is compared to EBIT.

[7] The non-GAAP earnings measures include *U_EBITDA, U_EBIT, U_OPRO and U_PRO.*

We also include the difference between the firm's reported earnings measure (i.e., EBITDA, EBIT, operating profit or net profit) and the firm's profit based on GAAP statutory consolidated earnings (called DIFF_CON), if any. The following table shows how these measures relate to each other. In Example 1 we would expect DIFF_CON to comprise interest, tax, amortisation and depreciation and other expenses, as appropriate. In Example 2, DIFF_CON will often be zero because IFRS profit equals net income.[8]

	Example 1		Example 2	
Description	**Measures**	**CU**	**Measures**	**CU**
Adjusted earnings measure (UND)	U_EBITDA	17	U_PRO	23
plus Adjustments (DIFF_UND[9])	DIFF_UND	(-4)	DIFF_UND	(-6)
IFRS earning measure (EM)	EBITDA	13	PRO	17
plus Difference between EM and NI (DIFF_CON)	DIFF_CON	(-3)	DIFF_CON	0
IFRS consolidated profit (NI[10])	NI	10	NI	17

The Ohlson model has been used to demonstrate an association between book value of equity and price and earnings and price. Building on this approach, the non-GAAP literature shows that alternative measures of earnings are value relevant. We test whether the adjustments to operating profit (or EBIT or EBITDA) and adjustments to net profit are associated with prices (i.e., are incrementally value relevant). Thus we extend prior studies by considering IFRS adopting firms from a range of countries (with various institutional settings) instead of US firms and by considering adjusted earnings sub-totals and totals disclosed by firms in their statutory annual reports and/or audited financial statements. The non-GAAP earnings measures are direct measures and they are not inferred from databases (such as I/B/E/S). They are measures that companies are prepared to submit to the scrutiny of auditors and regulators, albeit that such scrutiny varies with the location of disclosures in annual reports and the practices of national regulators.

[8] In cases where profit does not equal net income, the difference relates to profit attributable to minority interests.

[9] *EM = UND+ DIFF_UND.*

[10] *NI = EM + DIFF_CON = (UND + DIFF_UND) + DIFF_CON.*

We use the price level model adopted in prior studies (Barth & Clinch 1996; Goodwin *et al.* 2008; Chalmers *et al.* 2011; Barth *et al.* 2014), which is derived from Ohlson (1995) (Equation 1). We use pooled models and also fit models for each country. The pooled models include country and year fixed effects. Cj is an indicator variable that equals one for firm i domiciled in country j, and zero otherwise. Ik is an indicator variable that equals one for observations from year k.

Based on prior research, we predict the book value of equity and earnings to be associated with share price, and we expect positive coefficients on BVE and EPS. To examine the relevance of BVE and EPS for firms that disclose non-GAAP earnings versus those that do not, we include an indicator variable, DumNon-GAAP in Equation 1 and interact this variable with both BVE and EPS. This indicator variable equals one for firm i if the firm discloses one or more non-GAAP measures, and zero otherwise. To explore whether informativeness of earnings differs for firms providing non-GAAP earnings and those that do not, we examine the coefficient on the interaction term with earnings, i.e., β_5 = 0.

$$PRICE_i = \sum_i \beta_{0j} C_{ji} + \sum_k \beta_{0k} I_{ki} + \beta_1 BVE_i + \beta_2 EPS_i + \beta_3 DumNon-GAAP_i + \beta_4 DumNon-GAAP_i \times BVE_i + \beta_5 DumNon-GAAP_i \times EPS_i + \varepsilon_i$$

...(Eq 1)

where

PRICE = a firm's share price three months after end of year t;

BVE = book value of equity per share, at year end t;

EPS = earnings per share, for year t;

Consistent with the approach of Goodwin *et al.* (2008), Barth *et al.* (2012) and Barth *et al.* (2014), we decompose EPS into the three components, UND, DIFF_UND and DIFF_CON in Equation 1.

$$PRICE_i = \sum_i \delta_{0j} C_{ji} + \sum_k \delta_{0k} I_{ki} + \delta_1 BVE_i + \delta_2 UND_i + \delta_3 DIFF\_UND_i + \delta_4 DIFF\_CON_i + \varepsilon_i$$

...(Eq 2)

where

UND = the firm's adjusted earnings measure, for year t.

DIFF_UND = difference between the firm's adjusted earnings measure and the corresponding IFRS earnings measure, for year t.

DIFF_CON = difference between the firm's corresponding IFRS earnings measure and the firm's statutory IFRS consolidated profit or loss, for year t.

All other values as defined above.

If non-IFRS earnings are informative, we expect δ_2 to be significantly different from δ_3. Because adjusted earnings (UND) equals EM plus DIFF_UND, rejecting the hypothesis that $\delta_2 = \delta_3$ would suggest that the adjusted earnings provides explanatory power incremental to the unadjusted earnings.

We also test if δ_2 and δ_3 differ for the pooled sample and in each of the eight countries to explore if the information content of the components of earnings (i.e., underlying earnings, the difference from the corresponding IFRS earnings measure and the difference from IFRS consolidated profit or loss) differs. We also examine the information content of the non-GAAP earnings (UND) and the IFRS earnings measure (NI) by testing if δ_2 is significantly different from δ_4. A significant difference would suggest the choice of non-GAAP earnings is relevant information (e.g., U_EBIT versus U_PRO). Equation 3 is also used in the tests to explore whether quality of reconciliation (QREC) is associated with value relevance of UND, DIFF_UND and DIFF_CON for the two groups U_EBIT and U_PRO).

4. Descriptive statistics

Table 2 provides descriptive statistics for underlying earnings (UND) and the difference from IFRS earnings (UND_DIFF) and IFRS consolidated profit or loss (UND_CON) by country. Mean UND is largest in the UK (US$ 2,675.99) followed by Germany (US$ 2,261.9) then Italy (US$ 1,379.29). Median UND is largest in Germany (US$ 599.11) followed by Hong Kong (US$ 390.86) then France (US$ 309.08). Considering the difference between firms' underlying earnings (UND) and the associated IFRS earnings measure (UND_DIFF), the largest average difference is in Italy (US$ 641.77) and the smallest is in Singapore (US$ 69.92). Median values are smaller, indicating skewness in the underlying data. Considering the difference between the firms' selected IFRS earnings measure and IFRS consolidated profit or loss (UND_CON), the largest mean value is in Germany (US$ -1,078.92) and the smallest is in Australian (US$ -58.56) (Median values Germany US$ -53.67, Australia 0).

Table 3 provides descriptive statistic for firms that disclose non-GAAP earnings and those that do not, by country in a pooled year sample (2005-2013). In all countries except the UK the firms that disclose Non-GAAP earnings are larger than the non-disclosing firms. Mean and median book value (BVE) and market value (MVE) are larger for non-GAAP earnings firms in seven of the eight countries. Mean (median) EPS is larger for non-GAAP earnings firms in four (four) countries. Mean and median EPS are smaller for non- GAAP earnings firms compared to others in France, Italy, Sweden and the UK, and larger in the other four countries.

5. Results

5.1 Comparing firms with non-GAAP disclosure and others

Table 4, Panel A presents results based on the pooled sample relating to research question RQ1 – whether the association between price and GAAP earnings differs for firms that report non-GAAP performance measures and those that do not. This question focuses on all firms (whether they do or do not report a non-GAAP performance measure), and investigates the association between price and reported GAAP earnings.

There is no evidence for a difference in association between firms that do and do not report non-GAAP earnings, based on the pooled sample. The coefficient estimate EPS is 5.053 (t = 2.87), indicating that for firms not reporting non-GAAP performance measures there is a significant association between price and EPS. However, the coefficient estimates on EPS *DumNon-GAAP of -0.908 is not significantly different from zero (t = -0.47). Thus firms reporting non-GAAP performance measures do not exhibit significantly different price-earnings associations to firms that do not provide non-GAAP measures.

Panel B of Table 4 presents results for research question RQ1 estimated separately for each of the eight countries in our sample. There is little consistency in results across countries. In four countries – France, Hong Kong, Sweden, and Singapore – there is no evidence of a different price association with EPS for firms that report non-GAAP performance measures. For four countries – Australia, Germany, Italy, and the United Kingdom - there is a difference in the association between price and EPS, but the direction of difference differs across countries. Italian and UK (Australian and German) firms which report non-GAAP performance measures exhibit a higher (lower) coefficient associating price to EPS. Overall, although the numbers of observations for each country are relatively small, the results suggest the possibility that there are cross-country differences relating to research question RQ1. We discuss possible reasons for these differences in the last section of our paper.

Panel C of Table 4 presents results for research question RQ1 estimated separately for each of the four years in our sample – 2005, 2008, 2011, and 2013. In 2005, the year of IFRS adoption, there is no evidence of a difference in the price-earnings association for firms that do and do not report non-GAAP performance measures. In contrast, there is a statistically significant difference in each of the other three years. However, the sign of the difference in the price-earnings association coefficient is positive in 2008, while it is negative in 2011 and 2013.[11]

[11] Because 2008 includes the effects of the global financial crisis, it is possible that the 2008 results are an unreliable reflection of the relation between non-GAAP reporting and the price-earnings association. Consistent with this possibility, note that the coefficient on EPS for firms that do not report non-GAAP performance measures is also significantly lower in 2008 than in any of the other three years in the sample.

5.2 Comparing underlying and IFRS earnings

Table 5 presents results relating to research question RQ2 – whether, for firms that disclose non-GAAP performance measures, the price association differs between the non-GAAP and GAAP measures. This question focuses on the sub-sample of firms that report non-GAAP measures, and investigates the difference between non-GAAP and GAAP measures.

Panel A of Table 5 presents results for the full sample of non-GAAP disclosing firms. The estimated coefficient on UND (non-GAAP/underlying earnings) is 6.049 (t = 7.02), indicating that underlying earnings is strongly associated with price. In contrast, the coefficient on DIFF_UND (the difference between underlying earnings and the corresponding GAAP-based earnings measure) is much smaller: 1.321 (t = 2.01).[12] The difference between the two coefficients is significantly different at conventional levels (t = 4.58). That is, the component of the GAAP-based earnings performance measure that is not in underlying (non-GAAP) earnings exhibits less association with price than does underlying (non-GAAP) earnings. This is consistent with firms employing the non-GAAP earnings measure to better inform investors, rather than as an opportunistic decision. Interestingly, the estimated coefficient on the remaining component of reported earnings (i.e., DIFF_CON) is 6.813 (t = 8.30), which is similar to, though statistically significantly higher than (t = 4.00), the coefficient on UND. Thus, the portion of reported GAAP earnings that is not included in either UND or DIFF_UND also reflects information that is incorporated in price.

One aspect of the setting we investigate that potentially influences the results discussed above is that firms in our sample that report non-GAAP earnings differ in the GAAP-based performance measure they choose as the basis of their reported underlying earnings. For example, some firms choose to report underlying EBIT, while others choose to report underlying net income. For our sample, firms choose four bases for their reported underlying earnings: EBIT (9%), EBITDA (7%), operating profit (34%), and net income before minority interest (50%). Each of these excludes different components of net income from the calculation of both underlying profit (UND) and the corresponding GAAP-based measure to which the firms provide a reconciliation (UND + DIFF_UND). Thus, the basis for measuring each of UND, DIFF_UND and DIFF_CON differs across firms in our sample, potentially influencing the results reported when all observations are pooled.

To investigate this further we divide the pooled sample into two groups. The first group comprises firms using net income after tax but before minority interest, which we refer to as UPRO firms. This group represents firms where the basis of the performance measure reconciled to is close to the "bottom line" net income figure. For these firms, measurement requirements are comparable across firms (because they are based on GAAP requirements for measuring net income before minority interest).

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[12] Recall that we decompose reported GAAP *EPS* into three components: *EPS = UND + DIFF_UND + DIFF_CON*. *DIFF_UND* represents the difference between the reported underlying/non-GAAP performance measure (*e.g.,* underlying EBIT), and the corresponding GAAP-based measure (*e.g.,* EBIT) to which the firm provides a reconciliation. *DIFF_CON* represents any remaining difference between the reported *EPS* and *UND + DIFF_UND.*

The second group (UOTH firms) comprises firms that use EBIT, EBITDA, or operating profit as the basis for their underlying earnings measure. For this group, the basis of the performance measure is chosen by each firm, and may not be comparable across firms. For example, one firm may define EBIT differently to another firm. Also, for UOTH firms, more items in the calculation of net income are excluded from the basis for the underlying performance measure (e.g., interest and tax expense in the case of EBIT).

Panel A of Table 5 reports separate results for research question RQ2 for UPRO and UOTH firms. For UPRO firms, there is no evidence that the coefficients for UND, DIFF_UND, and DIFF_CON are different. This means that the adjustments that UPRO firms make to arrive at their reported underlying earnings measure (captured in DIFF_UND) contain information that is reflected in price similarly to the underlying earnings measure. This is consistent with an opportunistic motivation for firms to report underlying (non-GAAP) earnings. Specifically, because there is no evidence of a difference in coefficients, separate reporting of underlying earnings provides no relevant information for explaining variation in price beyond that already available from the reported (GAAP-based) net profit figure.

In contrast, for UOTH firms, the coefficients on UND and DIFF_UND (6.463 and 0.607) are significantly different (t = 4.50), indicating that reporting underlying earnings conveys additional information to investors beyond that available from the GAAP-based measure. Interestingly, the estimated coefficient on DIFF_UND is not statistically distinguishable from zero (t = 0.83), indicating that there is no evidence that the GAAP components of the performance measure (e.g., EBIT) that are excluded from underlying earnings (e.g., underlying EBIT) convey useful information in explaining price. This is consistent with UOTH firms reporting non-GAAP underlying earnings to provide useful information to investors.

Table 5, Panel B reports results for research question RQ2 for each country separately for the full sample of non-GAAP disclosing firms.[13] In four countries (Australia, France, Sweden, and the United Kingdom) the coefficients on UND and DIFF_UND are significantly different, consistent with firms in those countries reporting non-GAAP underlying earnings to provide additional useful information beyond that provided by GAAP performance measures. In the other four countries (Germany, Hong Kong, Italy, and Singapore), the coefficients are not statistically different, consistent with either an opportunistic motive for reporting non-GAAP underlying earnings, and/or a lack of experimental power due to the low numbers of observations.[14]

[13] Because the number of observations for each country is small, it is not possible to reliably estimate the regressions by country separately for UPRO and UOTH firms.

[14] Note that the four countries exhibiting no significant difference in the *UND* and *DIFF_UND* coefficients are those with the smallest number of observations.

Table 5, Panel C reports results for research question RQ2 separately for 2005, 2008, 2011, and 2013 for the full sample of non-GAAP disclosing firms.[15] The results are generally consistent across the four years. Specifically, the coefficients on UND, DIFF_UND, and DIFF_CON are positive and significantly different from zero in all four years, except for 2011 where the coefficient on DIFF_UND is negative but not significantly different from zero. Also, in each year, the coefficient on DIFF_UND is significantly different from the coefficient on UND. Thus there is consistent evidence across the years that underlying earnings conveys useful information to investors beyond that provided by GAAP-based earnings.

5.3 Additional analysis

The discussion above indicates that there is no persuasive evidence of a difference between firms that do and do not report non-GAAP earnings measures in the association between price and (GAAP) EPS for the pooled sample, although there are indications of differences across country subsamples (research question RQ1). For firms that do report non-GAAP earnings measures, there is evidence that reported underlying (non-GAAP) earnings conveys additional price-useful information to investors beyond that conveyed by GAAP-based earnings measures (research question RQ2). However, this result appears to be driven by the subsample of firms who choose an "above the line" basis (e.g., EBIT or EBITDA) for their underlying earnings measure. In this subsection, we discuss three additional analyses extending the investigation of research question RQ2:

1. Whether the results differ based on reported underlying earnings being greater (less) than the related GAAP-based measure;
2. Whether the results differ across firms based on a measure of the quality of the reconciliation (between non-GAAP and GAAP earnings) information provided by firms; and
3. Whether the results differ across firms based on analyst following.

5.3.1 Positive and negative non-GAAP versus GAAP differences

It is possible that the information conveyed to investors by non-GAAP earnings measures differs depending on whether the non-GAAP earnings reported is greater than or less than the related GAAP-based earnings measure. For example, if non-GAAP earnings is greater than GAAP earnings, investors may suspect managers are opportunistically motivated to draw attention away from the lower GAAP-based number and towards the more favourable non-GAAP number. Alternatively, if non-GAAP earnings is lower than GAAP earnings, investors may give more credence to the non-GAAP number. To investigate this possibility we separate DIFF_UND into two components: DIFF_UND(+) – equal to DIFF_UND if it is positive and zero otherwise, and DIFF_UND(-) – equal to DIFF_UND if it is negative and zero otherwise.[16] The results are reported in table 6.

[15] Because the number of observations for each year is small, it is not possible to reliably estimate the regressions by year separately for UPRO and UOTH firms.

[16] We similarly decompose DIFF_CON.

Table 6 indicates that for the full sample of firms that report a non-GAAP earnings number neither DIFF_UND(+) nor DIFF_UND(-) is significantly associated with price (coefficient estimates: 1.295 and 1.344; t = 0.77 and 1.09). Nor is there a significant difference between the two coefficients (t = -0.01, untabulated). Moreover each coefficient is significantly different from the coefficient on UND (t = 2.49 and 3.23). Thus, there is no evidence for the full sample that information conveyed to investors by non-GAAP earnings differs depending on whether non-GAAP earnings is greater than or less than GAAP-based earnings.

In section 3.2 (Table 5), different results were exhibited by firms that used net income before minority interest as the basis for their underlying earnings (UPRO firms), compared to firms that used EBIT, EBITDA, or operating profit as the basis (UOTH). Table 6 also provides results separately for UPRO and UOTH firms. Again, the two types of firms exhibit different results. For UPRO firms neither the coefficient on DIFF_UND(+) nor DIFF_UND(-) is significantly different from the coefficient on UND. Nor are they significantly different from each other (untabulated). Thus, for UPRO firms the reported non-GAAP earnings measure conveys no additional useful information (for explaining price) beyond the GAAP earnings measure, whether or not reported underlying earnings is greater or less than GAAP-based earnings.[17] In contrast, for UOTH firms both the coefficient on DIFF_UND(+) and DIFF_UND(-) are significantly different from the coefficient on UND (and not significantly different from zero). However they are not significantly different from each other (untabulated). Thus, consistent with the results in Table 5, non-GAAP earnings for UOTH firms conveys useful information to investors, irrespective of whether non-GAAP earnings is greater or less than GAAP earnings.

5.3.2 The quality of reconciliation information

In our data, most firms reporting non-GAAP earnings measures also provide information that reconciles the non-GAAP earnings number to the associated GAAP-based earnings number. However, often the reconciliation is not complete. That is, the reconciliation typically lists the major items of reconciliation and their dollar amounts, but also includes a catch-all "other items" which makes up the balance of the difference between reported non-GAAP and GAAP earnings. It is possible that where other items (i.e., unexplained items) represent a large portion of the total difference between reported non-GAAP and GAAP earnings, investors may view the reported non-GAAP earnings as less useful information. We investigate this possibility by constructing a measure, QREC, based on the magnitude of other items relative to the total difference being reconciled for each firm year. We then divided the sample into firm years where QREC is high (greater than 0.05) and low (less than 0.05) and estimated results for these two subsamples.[18] The results are reported in Table 7.

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[17] Note that for UPRO firms in Table 6 the estimated coefficient on *DIFF_UND(-)* is significantly different from zero, while the coefficient on *DIFF_UND(+)* is not. This is despite there being no significant difference between the two coefficients. Thus there is some weak evidence that negative but not positive differences between non-GAAP and GAAP-based earnings are associated with price, consistent with investors only trusting negative differences.

[18] The choice of 0.05 as the cutoff was an arbitrary one based on inspection of the empirical distribution of *QREC* for our sample, plus a need to ensure sufficient observations in each sub-sample. The bulk of *QREC* values were low. Only 90 out of 535 firm years had a *QREC* value greater than 0.05. We also checked other possible cutoffs with similar results to those we report in Table 7.

Table 7 indicates that the results differ for low and high QREC firms. When quality of reconciliation is high (QREC is low) (i.e., when other items represent less than 5 percent of the total difference between non-GAAP and GAAP earnings) the results are similar to those reported for the full sample.

The coefficient on DIFF_UND is significantly less than the coefficient on UND – consistent with non-GAAP earnings conveying useful information to investors beyond that provided by GAAP earnings. In contrast, when reconciliation quality is low (QREC is high), the estimated coefficient on UND is not significantly different from zero (coeff = 1.899, t = 1.17), and the coefficient on DIFF_UND is negative and significant (coeff = -3.510, t = -4.71). Thus, there is no evidence that underlying earnings conveys useful information itself to investors for low quality reconciliation firms.[19] Our findings suggest that the quality of reconciliations is a factor that affects how investors view non-GAAP information. The result is consistent with prior research that has pointed to the important role of high quality reconciliations of GAAP and non-GAAP earnings.

5.3.3 Analyst following

The extent to which reported underlying earnings might provide information useful to investors could be related to the number of "sophisticated" users (e.g., analysts) existing for a firm. For example, if there is a limited number of sophisticated investors firms may have more incentive to act opportunistically when reporting non-GAAP performance measures. We investigate this possibility by estimating results for subsamples based on analyst following.[20] Specifically, we divided sample firm years into firms with low analyst following (less than or equal to the sample median of 12 analysts) and firms with high analyst following (greater than the sample median) subsamples. The results are presented in Table 8.

For firms with low analyst following the estimated coefficients for UND and DIFF_UND are both significantly greater than zero (coeff = 5.771 and 2.673, t = 10.50 and 3.67), and significantly different from each other (t = 3.96). This indicates that reported underlying earnings conveys information useful to investors beyond the GAAP-based number. However, because the coefficient on DIFF_UND is positive and significant, it also indicates that for firms with low analyst following there is some value relevant information in the adjusting items. In contrast, for firms with high analyst following the coefficient on DIFF_UND is not significantly different from zero (coeff = -0.687, t = -0.49), the coefficient on UND is significantly positive (coeff = 6.442, t = 2.87), and the difference is significant (t = 4.12). Thus, underlying earnings for these firms conveys useful information to investors, and the items 'adjusted out' by firms with high analyst following are not associated with price. Thus the evidence suggests that greater analyst following may improve the quality of the adjustments, that is, firms are more likely to make more informative rather than opportunistic adjustments to earnings.

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[19] Because the coefficients on *UND* and *DIFF_UND* are significantly different, underlying earnings does convey useful information to investors in conjunction with GAAP-based earnings because it enables investors to remove *UND* (which has no informational value itself) from *GAAP*-based earnings.

[20] We obtained analyst following data from I/B/E/S.

6. Conclusions

The aim of our study is to investigate the association of price and earnings for IFRS firms disclosing non-GAAP earnings. Our sample includes firms from eight countries during the years 2005, 2008, 2011 and 2013. We find no difference in the earnings/price association for firms that present non-GAAP earnings and those that do not. However, we find significant differences based on the non-GAAP measures presented. The disclosure of non-GAAP earnings provides incremental information for firms that provide underlying operating (or EBIT or EBITDA) earnings but not for firms disclosing underlying net profit. Also, for the first group the adjusting items are not associated with price, providing support for their exclusion by managers. The results point to non-GAAP earnings being informative, but only for firms basing adjustments and reconciliations on operating profit.

Our evidence about the variation in impact of non-GAAP disclosures is likely to be of interest to standard setters and regulators who have been concerned about the quality and comparability of non-GAAP measures. However, an important caveat is that our evidence relates to firms that have freely selected the underlying earnings measured they have disclosed. If a particular performance measure was mandated for all firms, the association of price and earnings may not be the same as for the selected sample in our study.

We also find variation in the association of price and earnings for non-GAAP disclosing firms varies between countries and over time. We do not have sufficient observations in each country to test for explanatory factors for the differences we observe. However, this presents an opportunity for future research. Possible explanatory factors include: the importance of national capital markets as a source of finance and the role of firm insiders in providing finance; the extent of analyst following and the role of security market analysts in demanding additional information from companies; and the extent of regulatory guidance or intervention by national market regulators in non-GAAP reporting. In addition, future research could look into explanatory factors for the choice made by firms regarding the type of underlying performance measure disclosed.

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Table 1 Sample selection by country and industry

	AUS	FRA	GER	HK	ITA	SWE	SING	UK	All	%
Panel A: Count of firms in industry										
Energy	19	12	0	8	12	8	12	12	83	5%
Materials	31	12	12	8	16	16	12	23	130	8%
Industrials	41	52	52	39	36	72	54	72	418	27%
Consumer Discretionary	36	44	36	36	40	16	20	35	263	17%
Consumer Staples	12	12	4	0	4	4	20	8	64	4%
Health Care	12	8	23	4	8	7	4	4	70	4%
Financials	32	36	16	92	28	40	32	36	312	20%
Information Technology	5	20	43	4	32	24	31	8	167	11%
Telecommunication Services	4	4	4	0	8	8	4	0	32	2%
Utilities	0	0	8	3	16	4	7	0	38	2%
All	192	200	198	194	200	199	196	198	1,577	
Panel B: Count of firms with Non-GAAP										
Energy	5	5	0	0	6	4	0	2	22	4%
Materials	7	8	9	2	7	6	2	10	51	9%
Industrials	13	23	12	7	7	25	9	51	147	27%
Consumer Discretionary	16	12	7	2	2	12	3	27	81	15%
Consumer Staples	6	9	0	0	0	3	2	7	27	5%
Health Care	1	6	8	0	3	2	0	3	23	4%
Financials	5	26	1	37	7	4	13	19	112	20%
Information Technology	4	17	4	0	12	4	6	7	54	10%
Telecommunication Services	0	2	4	0	5	6	0	0	17	3%
Utilities	0	0	8	0	3	2	0	0	13	2%
All	57	108	53	48	52	68	35	126	547	

This table shows sample firms by country and industry. Panel A shows all sample firms. Panel B shows the number of sample firms providing one or more alternative performance measures (APMs) in their annual report. The countries are: AUS = Australia, FRA = France, GER = Germany, HK = Hong Kong, ITA = Italy, SING = Singapore, SWE = Sweden, UK = United Kingdom.

Table 2 Descriptive statistics – Non-GAAP earnings and adjustments

		Mean			Median		
	n	UND	UND_DIFF	UND_CON	UND	UND_DIFF	UND_CON
Panel A: All							
AUS	57	351.73	-127.24	-62.56	67.81	-8.58	0.00
FRA	108	725.60	-138.20	-274.51	247.75	-19.66	-50.51
GER	53	1716.53	-293.56	-1086.24	434.80	-26.10	-53.67
HK	48	6643.18	262.77	-152.68	3029.75	28.93	-1.40
ITA	52	1050.57	-641.77	-590.20	70.98	-4.87	-14.46
SWE	68	3838.97	-73.80	-114.57	1607.00	-23.26	-23.22
SING	35	998.53	-69.92	-90.45	56.22	-8.84	-0.98
UK	126	2570.73	-484.00	-1468.40	79.10	-18.22	-0.28
Panel B: Non-GAAP earnings Type = UOTH							
AUS	9	1159.23	-326.63	-422.02	40.90	-7.00	-19.84
FRA	74	590.20	-64.19	-368.80	153.00	-15.98	-72.20
GER	36	1876.94	-113.59	-1574.17	344.05	-17.78	-220.26
HK	31	7823.62	244.22	-241.21	2964.49	1.22	-14.50
ITA	28	586.12	-1015.78	-1080.63	68.68	-4.61	-42.87
SWE	53	4172.03	-41.49	-147.27	1490.00	-19.91	-81.76
SING	9	2375.77	-223.39	-342.84	3200.30	-218.37	-328.52
UK	49	5929.88	-1066.67	-3682.45	99.60	-23.70	-28.91
Panel C: Non-GAAP earnings Type = UPRO							
AUS	48	200.33	-89.85	4.84	78.00	-10.23	0.00
FRA	34	1020.30	-299.27	-49.42	479.60	-50.96	-0.01
GER	17	1376.85	-674.68	11.61	979.30	-30.79	0.00
HK	17	4490.61	296.61	8.76	3095.00	51.12	-0.01
ITA	24	1592.43	-205.42	-18.04	162.25	-6.91	0.00
SWE	15	2662.17	-187.94	0.96	1724.00	-145.61	0.00
SING	26	521.80	-16.79	-9.68	42.50	-3.57	-0.02
UK	77	433.09	-113.21	-59.47	72.26	-16.55	-0.02

This table shows the summary statistics of the alternative performance measures and adjustments presented by firms in eight countries in the years 2005, 2008, 2011 and 2013 (pooled sample, currency $US). The performance measures include the firm's adjusted earnings measure (UND), difference between the firm's adjusted earnings measure and the corresponding IFRS earnings measure (DIFF_UND) and the difference between the firm's corresponding IFRS earnings measure and the firm's statutory IFRS consolidated profit or loss (DIFF_CON). Panel A presents the summary statistics for firms that have reported a non-GAAP earnings measure, Panel B presents the summary statistics for firms that reported U_OTH (i.e., U_OPRO, U_EBITDA or U_EBIT), and Panel C presents the summary statistics for firms that reported U_PRO. The countries are: AUS = Australia, FRA = France, GER = Germany, HK = Hong Kong, ITA = Italy, SING = Singapore, SWE = Sweden, UK = United Kingdom.

Table 3 Comparison of GAAP earnings, equity book and market values between firms with and without non-GAAP earnings

Country	Non-GAAP	N	Panel A Mean				Panel B Median			
			BVEF (USD'000)	*BVE* (USD)	*MVE* (USD'000)	*EPS* (USD)	*BVEF* (USD'000)	*BVE* (USD)	*MVE* (USD'000)	*EPS* (USD)
AUS	No	135	1,433	2.27	2,205	0.26	222	1.15	350	0.13
	Yes	57	1,740	3.01	3,534	0.34	571	1.92	697	0.16
FRA	No	92	5,831	40.18	7,999	4.04	2,044	28.93	3,334	3.69
	Yes	108	6,614	41.21	8,898	3.70	2,006	32.81	2,440	2.53
GER	No	145	4,674	23.09	7,273	2.57	238	13.89	428	1.83
	Yes	53	8,883	23.50	15,473	2.82	2,042	20.87	4,244	2.26
HK	No	146	2,761	1.03	3,293	0.06	271	0.29	186	0.01
	Yes	48	9,619	4.00	8,629	0.38	5,000	2.49	5,579	0.25
ITA	No	148	1,837	7.12	1,901	0.42	279	4.71	381	0.35
	Yes	52	10,298	7.64	12,621	0.40	409	5.09	820	0.34
SWE	No	131	2,712	6.42	4,303	0.86	349	4.68	747	0.68
	Yes	68	2,716	8.06	4,581	0.81	1,241	5.55	1,946	0.54
SING	No	161	432	0.67	581	0.06	107	0.25	104	0.03
	Yes	35	5,287	3.18	7,986	0.34	445	1.75	1,792	0.21
UK	No	72	6,951	14.80	11,961	1.45	496	2.67	834	0.32
	Yes	126	6,256	4.27	9,761	0.53	505	2.63	1,331	0.32

This table shows the incidence of non-GAAP earnings measures disclosed by firms in eight countries in the pooled sample (2005, 2008, 2011 and 2013). No = firm does not disclose one or more non-GAAP earnings measures. Yes = firm discloses one or more non-GAAP earnings measures. Panel A (Panel B) shows the mean (median) values of: BVEF = book value of equity, BVE = book value of equity per share, MVE = market value of equity, EPS = earnings per share for firms in the No group and firms in the Yes group. USD = US dollar. The countries are: AUS = Australia, FRA = France, GER = Germany, HK = Hong Kong, ITA = Italy, SING = Singapore, SWE = Sweden, UK = United Kingdom.

Table 4 Price regression of share price on book value of equity and GAAP earnings

	BVE		EPS		DumNon-GAAP		BVE *DumNon-GAAP		EPS * DumNon-GAAP		n	Adj R2
Panel A Pooled sample												
Pooled	0.605	***	5.053	***	-1.443		0.089		-0.908		1,548	0.659
	(3.88)		(2.87)		(-1.04)		(0.3)		(-0.47)			
Panel B By country												
AUS	-0.012		17.457	**	-0.519		1.058	**	-6.075	**	191	0.871
	(-0.09)		(5.63)		(-0.93)		(3.84)		(-4.16)			
FRA	0.554	*	4.125		-21.034	**	0.085		0.593		193	0.534
	(2.67)		(1.7)		(-4.83)		(0.43)		(0.32)			
GER	0.152		10.627	**	-8.861		1.424		-7.841	*	194	0.672
	(0.32)		(3.98)		(-1.27)		(1.90)		(-2.59)			
HK	0.762	***	0.409		0.636		-0.058		-1.573		193	0.841
	(18.29)		(1.52)		(2.18)		(-0.42)		(-0.93)			
ITA	1.790	***	0.510		4.336	*	-0.949	**	4.053	**	199	0.613
	(9.62)		(0.6)		(2.47)		(-3.57)		(3.61)			
SWE	0.930	***	1.455		0.042		0.083		-1.501		198	0.510
	(7.41)		(2.04)		(0.03)		(0.38)		(-0.78)			
SIN	0.738	**	2.412		0.101		0.259		-0.379		184	0.898
	(5.35)		(1.82)		(0.35)		(0.63)		(-0.11)			
UK	0.459	**	3.503	*	-2.310		0.243		3.562	***	196	0.802
	(5.65)		(2.43)		(-2.05)		(0.69)		(7.30)			
Panel C By year												
2005	0.409		8.423	**	0.820		0.171		-3.111		383	0.766
	(1.04)		(2.65)		(0.60)		(0.39)		(-1.10)			
2008	0.502	***	1.062	**	-1.213		-0.170	**	2.633	**	386	0.686
	(6.07)		(2.50)		(-1.64)		(-2.97)		(3.17)			
2011	0.379		7.902	***	1.630		0.056		-3.019	***	390	0.677
	(1.23)		(8.99)		(0.69)		(0.26)		(-3.68)			
2013	-0.513		16.018	***	-3.774		1.556	**	-12.076	***	389	0.776
	(-1.74)		(12.32)		(-1.55)		(2.68)		(-5.81)			

This table reports the results of the OLS regression models of share price on book value of equity (BVE) and earnings per share (EPS). Panel A presents the results of the model for the pooled sample (i.e., companies from eight countries and financial years of 2005, 2008, 2011 and 2013). The model includes the indicator variable DumNon-GAAP which takes on the value of one for firms that disclose one or more non-GAAP earnings measures, zero otherwise, and the interaction terms. We also include but do not report the intercept, year and country dummy variables. Panel B shows the regression models for the eight countries. Panel C shows the regression models for the following four financial year ends separately. The standard errors in the models are clustered by country-year. The t-statistics for the coefficients are presented in the parenthesis. ***, **, * indicate significance at the 1 percent, 5 percent, and 10 percent, respectively.

Table 5 Price regressions - decomposing net income

									t-test					
	BVE		UND (1)		DIFF_UND (2)		DIFF_CON (3)		Coeff (1)=(2)		Coeff (1)=(3)		n	Adj R2
Panel A Pooled														
All	0.646	***	6.049	***	1.321	*	6.813	***	4.58	***	-4.00	***	535	0.7797
	(3.26)		(7.02)		(2.01)		(8.30)							
UOTH	0.565	***	6.839	***	-0.070		7.679	***	3.76	***	-2.13	**	272	0.7731
	(3.37)		(5.68)		(-0.05)		(6.13)							
UPRO	0.666	***	4.175	**	3.543	***	2.291		0.37		0.69		263	0.8275
	(3.13)		(2.63)		(5.08)		(0.69)							
Panel B By country														
AUS	0.609	**	13.241	**	5.651	***	19.223	*	2.70	*	-1.37		57	0.8964
	(3.25)		(3.75)		(7.07)		(2.44)							
FRA	0.520		6.434	***	2.386	***	7.141	***	3.23	**	-4.80	**	104	0.7369
	(2.25)		(6.90)		(6.17)		(8.43)							
GER	1.293	*	4.172		2.164		3.687	*	0.78		0.30		52	0.7774
	(2.37)		(2.04)		(1.35)		(2.86)							
HK	0.543	**	2.051		-1.336		0.932		1.15		1.12		47	0.7508
	(5.80)		(1.36)		(-0.73)		(0.74)							
ITA	0.405	*	7.504		-1.489		5.367		1.71		1.43		52	0.6234
	(2.38)		(2.30)		(-0.63)		(2.25)							
SWE	0.519	***	6.234	*	-1.390	**	1.354		3.48	**	2.32		68	0.7285
	(6.56)		(2.46)		(-3.90)		(1.81)							
SIN	1.066	**	0.247		-1.197		-8.526	*	1.26		4.95	**	29	0.9509
	(4.73)		(0.14)		(-0.50)		(-2.74)							
UK	-0.262		13.289	**	0.698		16.693	**	3.47	**	-4.48	**	126	0.7399
	(-0.56)		(3.53)		(0.92)		(3.96)							

	BVE		UND (1)		DIFF_UND (2)		DIFF_CON (3)		t-test Coeff (1)=(2)		Coeff (1)=(3)		n	Adj R2
Panel C By year														
2005	0.724	***	5.838	***	2.891	**	6.992	***	4.19	***	-2.77	**	108	0.7904
	(17.12)		(8.49)		(2.93)		(15.97)							
2008	0.124	*	5.508	***	0.950	***	5.893	***	31.03	***	-4.52	***	132	0.8242
	(2.09)		(28.64)		(10.78)		(23.19)							
2011	0.149		10.189	***	-0.214		10.746	***	6.57	***	-1.14		148	0.8396
	(0.77)		(6.49)		(-0.49)		(5.89)							
2013	0.880	***	6.484	***	2.053	***	4.655	***	4.99	***	1.62		147	0.8759
	(5.77)		(8.31)		(4.16)		(4.66)							

This table reports the results of the OLS regression models of share price on book value of equity (BVE) and the components of net income (NI). Net income (NI) is decomposed into the underlying earnings (UND), the difference between the underlying earnings and statutory earnings (DIFF_UND), and the difference between statutory earnings and the Net Income reported (DIFF_CON). We include in the models but do not report the intercept, year and country dummy variables. This table shows the results for the pooled sample and by non-GAAP earnings measure type, UOTH and UPRO (Panel A), by country (Panel B) and by year (Panel C). For the country and year models, we exclude the year and country dummy variables, respectively. The standard errors in the models are clustered by country-year. The t-statistics for the coefficients are presented in the parenthesis. The table also reports the t-test for the differences in the coefficients. ***, **, * indicate significance at the 1 percent, 5 percent, and 10 percent, respectively.

Table 6 Price regressions - decomposing net income into positive and negative components

	BE		UND		DIFF_UND(+)		DIFF_UND(-)		DIFF_CON(+)		DIFF_CON(-)		n	Adj R2
All	0.645	***	6.076	***	1.295		1.334		5.348	***	6.888	***	535	0.7800
	(3.16)		(7.12)		(0.77)		(1.09)		(3.09)		(8.54)			
t-test of coeff agst coeff on UND					2.49	**	3.23	***	0.45		-4.74	***		
UOTH	0.539	***	7.100	***	0.219		-0.202		0.066		8.016	***	272	0.7762
	(3.50)		(5.37)		(0.32)		(-0.11)		(0.03)		(5.59)			
t-test of coeff agst coeff on UND					7.48	***	2.96	***	2.27	**	-2.06	**		
UPRO	0.711	***	4.197	**	1.949		4.128	***	3.240		0.487		263	0.8288
	(3.05)		(2.50)		(1.15)		(3.80)		(1.53)		(0.07)			
t-test of coeff agst coeff on UND					1.01		0.04		0.62		0.56			

This table reports the results of the OLS regression models of share price on book value of equity (BVE) and the components of net income (NI). Net income (NI) is decomposed into the underlying earnings (UND), the difference between the underlying earnings and statutory earnings (DIFF_UND), and the difference between statutory earnings and the Net Income reported (DIFF_CON). The latter two components, DIFF_UND and DIFF_CON are further decomposed into the positive and negative components. We include in the models but do not report the intercept, year and country dummy variables. This table shows the results for the pooled sample and by non-GAAP earnings measure type, UOTH and UPRO. The standard errors in the models are clustered by country-year. The t-statistics for the coefficients are presented in the parenthesis. The table also reports the t-test for the differences in the coefficients. ***, **, * indicate significance at the 1 percent, 5 percent, and 10 percent, respectively.

Table 7 Price regressions - decomposing net income for subsample based on quality of reconciliation

									t-test				
	BVE		UND (1)		DIFF_UND (2)		DIFF_CON (3)		Coeff (1)=(2)		Coeff (1)=(3)	n	Adj R2
High QREC	0.557	***	6.585	***	2.833	***	6.962	***	3.19	***	-1.40	445	0.7754
	(3.42)		(8.57)		(3.14)		(9.72)						
Low QREC	1.431	***	1.899		-3.510	***	3.765		2.59	**	-1.43	90	0.9006
	(5.71)		(1.17)		(-4.71)		(1.44)						

This table reports the results of the OLS regression models of share price on book value of equity (BVE) and the components of net income (NI). Net income (NI) is decomposed into the underlying earnings (UND), the difference between the underlying earnings and statutory earnings (DIFF_UND), and the difference between statutory earnings and the Net Income reported (DIFF_CON). The subsamples are formed based on the quality of the reconciliation. High quality reconciliation = QREC<5%. Low quality reconciliation = QREC>5%. QREC = OTHER/UND_DIFF where OTHER measures unreconciled items. The standard errors in the models are clustered by country-year. The t-statistics for the coefficients are presented in the parenthesis. The table also reports the t-test for the differences in the coefficients. ***, **, * indicate significance at the 1 percent, 5 percent, and 10 percent, respectively.

Table 8 Price regressions - decomposing net income for subsample based on analyst following

									t-test on				
	BVE		UND (1)		DIFF_UND (2)		DIFF_CON (3)		Coeff (1)=(2)		Coeff (1)=(3)	n	Adj R2
Analyst<Median	0.561	***	5.771	***	2.673	***	5.945	***	3.96	***	-0.50	286	0.8212
	(3.44)		(10.50)		(3.67)		(15.78)						
Analyst>Median	0.779	***	6.442	***	-0.687		7.614	***	4.12	***	-0.80	249	0.7791
	(2.88)		(2.87)		(-0.49)		(3.09)						

This table reports the results of the OLS regression models of share price on book value of equity (BVE) and the components of net income (NI). Net income (NI) is decomposed into the underlying earnings (UND), the difference between the underlying earnings and statutory earnings (DIFF_UND), and the difference between statutory earnings and the Net Income reported (DIFF_CON). The sample firm years are divided into low analyst following (less than or equal to the sample median of 12 analysts) and high analyst following (greater than the sample median). The standard errors in the models are clustered by country-year. The t-statistics for the coefficients are presented in the parenthesis. The table also reports the t-test for the differences in the coefficients. ***, **, * indicate significance at the 1 percent, 5 percent, and 10 percent, respectively.