The Effect of Cross Listing on Management Forecast Specificity and Accuracy in the Netherlands*

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Abstract

We investigate management forecasts by Dutch firms in relation to cross listings by these firms in the US or the UK. Cross listings are associated with legal and reputational bonding, since firms with a cross listing in the US or the UK face greater legal liability exposure and closer scrutiny by financial intermediaries than do non-cross-listed firms. As a result, after obtaining the cross listing, these firms face greater potential costs of misrepresenting information. Our findings suggest that cross listing in a stricter environment influences management forecasts in terms of management forecast specificity, accuracy, and conservativeness in two opposite directions: although cross-listed firms make smaller forecast errors, their forecasts are less precise and more conservative. Our analysis of shareholder wealth effects shows that the net effect of the cross listing is positive upon the announcement of a management forecast.

1. Introduction

We provide evidence on how cross listings by Dutch firms in the US or UK affect their voluntary disclosure decisions. Our theoretical premise is that firms voluntarily engage in bonding by cross listing in countries with better governance and disclosure regimes, such as the US or UK (see La Porta *et al.*, 1998; 2000 and Saudagaran and Biddle, 1995), thus reducing their agency and information costs, and hence, their cost of external financing (Coffee, 1999, 2002; Stulz, 1999). We investigate whether the more demanding environment in the US and UK influences Dutch firms' disclosure policies in terms of management forecast specificity, accuracy, and conservativeness. In addition, we measure shareholder responses to forecast announcements.

The bonding literature distinguishes between legal and reputational bonding. Legal bonding presumes that firms in countries with weaker institutions and investor protection voluntarily list their shares abroad to subject themselves to stricter enforcement rules and higher regulatory required disclosure, thereby obtaining access to outside finance at a lower cost (Coffee, 1999, 2002; Stulz, 1999). In addition to stricter public enforcement, firms face stricter private enforcement, as they expose themselves to additional scrutiny and monitoring from 'reputational intermediaries', such as securities analysts and debt rating agencies (Coffee, 2002). According to Siegel (2005), market-based incentives induce reputational bonding, under which 'firms can show over time, through good insider behaviour, that they deserve a reputational asset in the market for outside capital' (Siegel, 2005, p. 349). Those firms with better reputations can gain privileged access to external capital.

We have chosen to study the Dutch setting, because a relatively large number of companies have a cross listing in the US or UK. Both legal and reputational bonding can explain this large number of Dutch firms with a cross listing. We argue that the greater legal liability exposure, as associated with legal bonding, and relatively close scrutiny and monitoring by financial intermediaries, as associated with reputational bonding, affect a firm's

voluntary disclosure policies in general, and in particular its management forecast specificity, accuracy, and conservativeness. Moreover, financial markets assess these firm policies in their price reactions to forecasts announcements.

Managers voluntarily disclose earnings forecasts to adjust investors' expectations towards their own expectations (Ajinkya and Gift, 1984; Hassell and Jennings, 1986). However, when investors suspect misrepresentation, the firm and its management might suffer reputation damage and might also experience legal actions. We argue that the legal environment and additional scrutiny of Dutch firms cross listed in the US or the UK increases the potential costs of misrepresenting information.

To examine the influence of cross listings on management forecast decisions, we study 1,896 press releases in which 168 Dutch firms disclose 2,781 earnings forecasts. Of these 168 firms, 21.4% have a cross listing in the US and/or the UK. We make two distinctions in cross listings. The first is between exchange cross listings (i.e., US ADR Level 2 or 3 listings and UK listings on the London Stock Exchange (LSE) or the Alternative Investment Market (AIM)) and cross listings on the US and UK over-the-counter (OTC) markets, because the regulatory exposure is more stringent for exchange listings. The second distinction is between cross listings in the US and the UK, because, among other considerations, mandatory disclosure levels for listed firms in the US are higher compared to those in the UK (Saudagaran and Biddle, 1995; Bianconi and Tan, 2008).

Our results demonstrate that management forecasts disclosed by cross-listed firms are strongly influenced by the potential legal and reputational penalties. Managers of cross-listed firms use two strategies. First, we find that the forecast specificity is significantly lower, indicating that managers are less precise in their forecasts. Second, that the forecasts have smaller errors and are more conservative (i.e., less optimistic). Further, although the reduced forecast errors demonstrate improved forecasts, this conservative approach introduces a bias. Overall, we conclude that because of the management's anticipation on legal and reputational

penalties, the management forecasts are influenced by a cross listing in two opposite directions. In order to measure the net effect of the cross listing we analyze shareholder wealth effects upon the announcements of management forecasts and find that cross listed firms on a US exchange are significantly more positive.

The contribution of our paper is twofold. First, our study enhances the understanding of managers' decisions on earnings forecasts in relation to the bonding literature, which typically emphasizes the motivations for cross listings from the *ex ante* positive effects of bonding and capital market perceptions of cross-listed firms. Our evidence on managerial decision making shows that the stricter environment associated with bonding also has two opposite effects on the informativeness of forecasts. However, the net effect remains positive. Second, while most empirical studies examine management forecasts by US firms, we add international evidence on forecasts.[1]

The paper is organised as follows. In Section 2 we review the literature cross listings and management forecasts. In Section 3 we formalize our three hypotheses and in Section 4 we discuss the institutional background of Dutch firms. In Section 5 we present the data set, define the variables, and describe the models. In Section 6 we discuss the results of our tests on forecast specificity and accuracy. In Section 7 we analyse the effects of cross listings on announcement effects. Section 8 concludes.

2. Literature review

2.1. Cross listings

Previous research documents the benefits for firms with cross listings.[2] For example, Miller (1999) and Foerster and Karolyi (1999) find that the announcement of a cross listing in the US

[1] See Hirst, Koonce, and Venkataraman (2008) for an extensive survey of the management forecasts literature.

[2] See Karolyi (1998; 2006) for extensive reviews of the cross-listing literature.

yields an average abnormal announcement return of 1%. Foerster and Karolyi (2000) find that firms from countries with low accounting standards that cross list on a major (US) stock exchange outperform their local market over the three years after cross listing. Sami and Zhou (2008) show that Chinese firms with a cross-listing on the Hong Kong stock exchange have a lower cost of capital and higher firm value. Bianconi and Tan (2008) not only examine the cross-listing premium of US cross listings, but also that of UK cross listings. Their results indicate that firms that originate in Asia-Pacific countries and cross list in either the US or the UK trade at a premium.

Two of the commonest motivations for the cross-listing premium are market segmentation and liquidity. Studies such as those by Foerster and Karolyi (1999, 2000) and Miller (1999) find that in segmented markets, a cross listing makes the shares available to a larger investor base, which allows risk sharing and reduces capital costs. Domowitz *et al.* (1998) find that liquidity benefits arise from lower trading costs.

Bonding is a more recently documented motivation for firms to cross list their shares (Coffee, 1999, 2002; Stulz, 1999). Its premise is that weaker shareholder protection and enforcement in the home country provides capital market participants with limited assurance that managers and controlling shareholders will not appropriate funds. As a result, these firms have difficulties raising capital at reasonable prices. To provide a higher level of assurance to capital markets, controlling insiders seek to credibly commit to reducing agency costs and the risks of appropriation by cross listing their shares in countries with stricter governance regimes. Controlling insiders are willing to give up their private benefits if the value of having access to cheaper external capital compensates for their loss of private benefits.

The bonding literature distinguishes between legal and reputational bonding. Legal bonding, which is introduced by Coffee (1999, 2002) and Stulz (1999), assumes that companies in countries with weak institutions and investor protections can use cross listing to voluntarily subject themselves to stricter enforcement and higher mandatory disclosure.

However, Siegel (2005) shows that cross-listed firms' compliance with US laws can be low, and that investors and regulators often hold back from taking enforcement actions. Siegel argues that reputational bonding, rather than legal bonding, explains firms' motivation to cross list. Following Diamond's (1991) model, Siegel suggests that firms can show that through good insider behaviour over time, they deserve a reputational asset in the financial market among parties such as investors, security analysts, and the business press. Even though Siegel (2005) challenges the legal bonding motivation, both Siegel (2005) and Coffee (2002) allow for bonding through 'reputational' intermediaries, such as securities analysts, debt-rating agencies, or auditors.

Several empirical studies support the bonding arguments. For instance, Reese and Weisbach (2002) show that after cross listing in the US, firms from countries with weak investor protection issue more equity in their home country. Doidge *et al.* (2004) show that firms with a cross listing in the US trade at a premium relative to firms without such a cross listing, and that this premium is negatively related to the level of investor protection in the firm's home country. Doidge (2004) confirms the arguments that the controlling insiders of US cross-listed firms have lower private benefits of control by showing that these firms have lower voting premia than do firms without a cross listing in the US, and that the difference is greater for firms from countries with poorer investor protection. Finally, Doidge *et al.* (2009) show that the number of cross listings in the US and UK have increased from 1990 until 1997 to reach a stable level until 2001; as of 2002 the delistings outnumber new listings. The authors find a value premium in all years for US listings, but not for UK listings on the main market. Noteworthy is also the finding that delistings as of 2002 are not driven by Sarbanes-Oxley act, but by changes in firm characteristics.

The stricter legal environment, greater disclosure requirements, and additional scrutiny that go with US or UK cross listings influence firms' information environment. The empirical evidence of Lang *et al.* (2003a) indicates that non-US firms with a US exchange listing have

greater analyst coverage and increased analyst forecast accuracy. Baker *et al.* (2002) show that firms that cross list in the US or UK enhance their visibility, which these authors measure by the increase in media and analyst coverage. According to Fernandes and Ferreira (2008), the additional disclosure requirements and scrutiny enhances the price informativeness of firms with their primary listing in a developed market. However, the evidence of its consequences for accounting quality is mixed. Lang *et al.* (2003b) find that firms with a cross listing in the US are more conservative in reporting earnings than is a matched sample of non-US firms without such a cross listing. This result also applies to UK firms with a cross listing in the US, which indicates that the US regime is stricter and more demanding than the UK regime (Huijgen and Lubberink, 2005). Nevertheless, despite the fact that all firms that cross list in the US are required to follow the same disclosure standards as US firms, Lang *et al.* (2006) find that the accounting data of cross-listed firms are of lower quality than US firms' accounting data. The lower quality is even more apparent for cross-listed firms incorporated in countries with weaker investor protection.

2.2. Forecast specificity and accuracy

By disclosing earnings forecasts, managers can align investors' expectations with their own expectations (Ajinkya and Gift, 1984; Hassell and Jennings, 1986). With hindsight, investors can assess whether the forecast was credible by comparing the forecasted earnings with the actual earnings. In the case of *ex post* forecast errors, investors might believe that managers disclosed a misleading forecast, resulting in reputation damage and greater potential legal costs.

Managers can adjust the probability of making forecast errors by optimally choosing their forecast specificity level, i.e., they can choose between point, range, open-ended (both minimum and maximum), and qualitative forecasts. Less precise forecasts decrease the likelihood of making forecast errors (Skinner, 1994; Bamber and Cheon, 1998). Empirical evidence shows that firms in a more litigious environment disclose forecasts less often, and

that their forecasts are less precise and have smaller forecast horizons compared to firms in less litigious environments (Baginski *et al.*, 2002; Frost, 2004).

Forecast accuracy and conservatism concern the *ex post* reliability of management forecasts. Previous US studies show that, on average, actual earnings fall short of earnings forecasts.[3] Several other studies provide evidence that the legal environment influences firms' disclosure incentives. Skinner (1994) and Kasznik and Lev (1995) find that firms that experience a large drop in share price around an earnings announcement face a greater litigation threat. With respect to disclosing forward-looking information, Francis *et al*. (1994) show that shareholders are not likely to sue firms that disclose pessimistic earnings forecasts or fail to disclose favourable earnings forecasts. Rogers and Stocken (2005) find that when managers of US firms face a higher litigation threat, they release less optimistic forecasts (Rogers and Stocken, 2005). For UK firms, Steele (1982) reports that non-quantified forecasts reduce uncertainty about future earnings. Steele finds that the least biased forecasts are predictions of an earnings decrease. Brennan (2000) finds that actual results are correct or exceed management forecasts disclosed by UK takeover bidders.

3. Hypotheses

We expect to find that cross-listed firms have more exposure to potential legal-liability costs, which can bring about incentives to disclose less precise forecasts. In a similar vein, the additional scrutiny and monitoring by financial intermediaries decreases the likelihood that managers exercise discretion in their forecast decisions. Thus, our first hypothesis is: (H1): *Firms with a cross listing in the US or UK disclose less precise forecasts*.

[3] See for example Pownall et al. (1993), Bamber and Cheon (1998), and Irani (2001). However, McNichols (1989) finds optimism in only one year in the period 1979-1983 and Cao et al. (2006) find optimism only in ambiguous cash flow forecasts.

We expect to find that Dutch firms with a cross listing in the US or UK that release inaccurate forecasts not only experience a stronger litigation threat, but also higher reputation costs, which would provide these firms' managers with incentives to avoid misleading investors. Firms mitigate the probability of misleading investors by making fewer and smaller forecast errors. We also expect that Dutch firms with a cross listing in the US or UK make more conservative earnings forecasts and smaller forecast errors than do firms without such a cross listing. We define more conservative forecasts as forecasts that are less optimistic. These assumptions lead to the following two hypotheses: (H2): *The forecast error is smaller for firms cross-listed in the US or UK*; and (H3): *The forecast errors are more conservative for firms cross-listed in the US or UK*.

From our three hypotheses on the specificity and accuracy of forecasts by cross-listed firms, it can be derived that cross listings can have negative effects (lower precision) and positive effects (smaller errors and conservatism) on the informativeness of forecasts. The obvious analysis to investigate the potential wealth effects of forecasts is to examine the price reaction by shareholders on the firm's announcements. The latter will indicate the anticipated wealth effect of the news. Several studies report significant abnormal returns surrounding management forecasts (e.g. Ajinkya and Gift, 1984; Waymire, 1984; McNichols, 1989; Pownall *et al.*, 1993; Skinner, 1994; Hutton *et al.*, 2003; Rogers and Stocken, 2005). We argue that managers take into account potential litigation costs, while investors, on their part, also take into account potential litigation costs of firms disclosing forecasts. We expect that the market response will be more positive for cross-listed firms, because of the higher potential litigation effects in case managers present news that is disappointing to shareholders. As a null-hypothesis we start with this positive effect of cross-listings, which has been documented in the empirical literature: (H4): *Management forecasts have higher abnormal returns for firms cross-listed in the US or UK*.

4. Forward-looking disclosure requirements in the Netherlands, US, and UK

Because we analyse management forecasts disclosed by Dutch firms, in this section we describe the relevant requirements for forward-looking disclosures in the Netherlands, the US, and the UK. We study Dutch firms in the period 1997-2001 mainly for the following reasons. First, before 1997 the number of Dutch cross-listing in the US and UK has been increasing to reach a stable level of about 20%, hence we would have an insufficiently large sample prior to this year (for trends in US and UK listings, see Doidge *et al.*, 2009). Second, after 2001 the number of cross delistings exceeds the new cross listings both in the US and the UK (Doidge *et al.*, 2009), which would also decrease our sample size. Thus, we are investigating the effects of Dutch cross listings in the years in which these listings are most prevalent.

According to Dutch law, firms are not required to disclose earnings forecasts. Section 391, subsection 2, book II of the Civil Code states that firms should write a statement in their annual reports concerning their business outlook. Unless there are compelling reasons for not doing so, firms should pay particular attention to investments, financing, and personnel, and to the circumstances that affect future turnover and profitability. In addition, the Dutch Accounting Standards Board (*Raad voor de Jaarverslaggeving*) issues non-compulsory guidelines for financial reporting. Guideline 4.01.108 requires firms to provide statements regarding information on investments, financing, personnel, and the circumstances that affect future turnover and profitability (Dutch Accounting Standards Board, 2005).

The listing rules on the Dutch Stock Exchange, Euronext Amsterdam, include the recommendation that firms announce their expected turnover or results. Euronext also requires listed firms to immediately announce publicly, via a press release, ‘every fact or circumstance which is assumed to have significant influence on the share price’ (article 28h

Listing Requirements).[4] If there is a case of malpractice, then Euronext can give a warning or a serious warning to the firm. Moreover, investors can start a civil lawsuit against firms and charge them on the basis of committing a wrongful act. If there is a case of serious misrepresentation, then investors can also appeal at the Enterprise Chamber (*Ondernemingskamer*), which is a special court and part of the Amsterdam court of law (Klaassen and Schreuder, 1980).[5] Given the legal requirements and the listing contract, most firms listed on Euronext Amsterdam voluntarily disclose earnings forecasts.

In the US, Form 10-K, which is a firm's annual report, provides forward-looking information. This forward-looking information was made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995, implying that this information is not a guarantee of future performance and involves certain risks and uncertainties, which are difficult to predict. Therefore, actual future results and trends may differ materially from what is forecasted in forward-looking statements. Despite the safe harbor rule, management can be exposed to penalties under the antifraud provisions of Section 10(b) of the Securities Exchange Act of 1934 and SEC Rule 10b-5 if a plaintiff can establish that a management forecast was made with actual knowledge that it was false or misleading.

The US Securities and Exchange Commission (SEC) is widely viewed as the most stringent and most insistent on full and accurate disclosure to protect investors (Saudagaran and Biddle, 1995; Frost, 2004). US exchange cross listings typically consist of Levels 2 and 3 ADR programmes, which are the ADR issues connected with a listing on the AMEX or NYSE, or a quotation on the Nasdaq of either existing shares in the US (i.e., Level 2), or a US

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[4] As of October 1, 2005, this is referred to as article 47 of the Market abuse Act (*Besluit Marktmisbruik)* of the *Autoriteit Financiële Markten*, i.e., the Dutch Financial Markets Authority that is responsible for regulating behaviour on the financial markets in the Netherlands (*Wet Toezicht Effectenverkeer*, 2005).

[5] To appeal, investors must own at least €250,000 of the firm's nominal capital or 10% of the firm's shares.

public offering of the underlying shares (i.e., Level 3). Both Levels 2 and 3 require full SEC disclosure with Form 20-F. US cross-listed firms are exposed to legal liability under the US federal securities laws.

In the UK, The Financial Services and Markets Act 2000 (FSM Act) comprises a wide range of provisions concerning the regulation of financial markets and listing of firms in the UK.[6] Under both the old Financial Services Act and the new FSM Act 2000, investors who suffer from incorrect or misleading statements can hold liable those persons that are responsible for listing particulars or prospectuses. The legal liability exposure of cross-listed firms depends on the market in which they are cross listed. We distinguish between the LSE and the Alternative Investment Market (AIM). Firms with a listing on the LSE must comply with the listing rules from the FSA. The FSA has published listing rules that contain detailed instructions for disclosing profit forecasts. If listed firms publish a forecast, they must either update or repeat the statement in the listing particulars (Section 81 FSM Act 2000). Particularly relevant for management forecasts is Section 47(2) of the Financial Services Act 1986 (superseded by section 397 of the FSM Act 2000), which states that anyone who provides false or misleading information to the market, especially regarding the price or value of an investment, is guilty of an offence (Section 397(3), FSMA; formerly section 47(2), FSA 1986). Apart from providing relevant information that is neither misleading nor inaccurate, it is a fundamental principle of the UK Listing Rules that the market should be informed without delay of all relevant information or any new developments that may affect the value of the securities.[7]

The Alternative Investment Market (AIM) is a sub-market of the LSE that has a more

[6] http://www.opsi.gov.uk/acts/acts2000/ukpga_20000008_en_1

[7] http://www.fsa.gov.uk

flexible regulatory system compared to the main market.[8] Firms listed on the AIM are not bound to the full disclosure and listing rules of the FSA, although AIM firms must also comply with the AIM Rules that contain extensive disclosure requirements. An AIM firm must take reasonable care to ensure that any information it conveys is not misleading, false, or deceptive, and that it does not omit anything likely to affect the import of such information (AIM Rule 10). Under the AIM rules, firms must also promptly issue a notification of price-sensitive information which, if made public, would be likely to lead to a substantial movement in the price of its AIM securities (AIM Rule 11).

Both the US and UK security markets distinguish a separate section of the market, the non-regulated over-the-counter (OTC) market. The unregistered transactions on both OTCs do not require the firm to meet the aforementioned specific disclosure and financial statement requirements. In the US, firms can trade Level 1 ADRs in an OTC market, where they have to meet a minimum amount of legal requirements.[9] For trading securities in a non-regulated UK market, such as in the International Order Book (IOB), the FSA leaves the legal responsibility with the home countries. Hence, the OTC markets in the US and the UK require less disclosure and are not subjected to the more stringent legal requirements that apply to main markets.

Based on the description of the main characteristics of forward-looking disclosure requirements in the Netherlands, the US, and the UK, we expect to find differences in

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[8] The AIM, which replaced the Unlisted Securities Market (USM) in June 1995, is regulated by the London Stock Exchange (LSE).

[9] In the US, OTC listings can be on the Bulletin Board or Pink Sheet. On January 4, 1999 the SEC approved an eligibility rule as an amendment to NASD rules 6530 and 6540, which stipulates that Bulletin Board firms have to file annual and current reports, as US exchange listed firms. The implementation schedule allowed firms with a Bulletin Board listing between 6 and 18 months to start filing with the SEC. See for example Bushee and Leuz (2005), who investigate the effects of these new disclosure requirements.

management forecasts by Dutch firms that depend on whether the firms are cross listed in the US or UK, since these cross-listed firms expose themselves to stricter legal and regulatory regimes.

For our empirical analysis, we make the following distinctions. First, we differentiate between exchange cross listings and OTC listings, since the latter have less-specific disclosure requirements. Therefore, cross-listings on the US or the UK OTC market are likely to have a weaker impact on management forecasts compared to exchange listings. Coffee (2002) argues that in spite of not exposing themselves to stricter legal requirements, OTC-listed firms still bond themselves by their presence in the market, although to a lesser extent than exchange-listed firms. Moreover, and similar to exchange-listed firms, OTC-listed firms experience the additional scrutiny by 'reputational intermediaries'.

Second, the listing and disclosure requirements in the US are more stringent in comparison to the UK (Saudagaran and Biddle, 1995). Consistent with this distinction, Bianconi and Tan (2008) find that US listings are more valuable than UK listings. Therefore, we expect cross listings in the US to have a stronger impact on forecast decisions than UK cross listings, and that the impact of an exchange cross listing outweighs the impact of an OTC cross listing.

5. Data and variables

5.1. Data

We obtain management forecasts for the period from 1997 until 2001, which we collect from the press releases disclosed by 193 firms listed on Euronext Amsterdam. We perform a keyword search and read the title of each press release. We consider each press release that includes a forecast that is attributable to the management of the forecasting firm. We find that 180 firms issued at least one forecast. We include all annual forecasts of EPS, net income, EBIT, EBITA, EBITDA, and sales that firms disclosed between the start of the fiscal year and

the annual earnings announcement. We remove three firms from the sample because they have no annual forecasts. If one press release contains multiple management forecasts, we record all of them. Further, we analyze forecast specificity levels, i.e., point, range, open-ended, and qualitative forecasts. This procedure provides us with a sample of 2,951 management forecasts disclosed in 2,014 press releases by 177 firms.

Throughout this paper our level of analysis is the press release. If a press release contains more than one forecast for the same period, we select a forecast using the following ordering: EPS, net income, EBIT, EBITA, EBITDA, and sales. In 46 press releases, firms disclose a preannouncement for the current year and an initial forecast for the next year. Since both forecasts apply to different fiscal years, we treat these forecasts as two observations. Our results do not change if we include only the preannouncements or only the initial forecasts.

For each firm we obtain information on cross listings from the yearly *Gids bij de Officiële Prijscourant.* We obtain accounting data from the REACH database (Review and Analysis of Companies in Holland) and WorldScope. We first extract prior-period results and final results from press releases. For the results that firms do not report in press releases, we use REACH or WorldScope. We derive analyst information from IBES and stock returns from Datastream. We obtain ownership data from yearly handbooks of Dutch listed firms (*Handboek Nederlandse Beursfondsen*).

5.2. Variables

Table 1 provides an overview of the definitions and sources of our cross-listing dummies and our forecast specificity classification variables, and also defines the other variables in our study.

We use a dummy variable *Cross listing in US or UK*, which takes the value of one when firms are cross listed in the US and/or the UK, and zero otherwise. As noted earlier, we expect that cross listings in the US have a stronger impact on forecast decisions than UK cross listings, and that the impact of an exchange cross listing outweighs the impact of an OTC

cross listing. Based on these differences, we define four additional dummy variables. First, we define the dummy variable *US Exchange listing* to have a value of one when the firm has an ADR 2 or 3 listing in the US, and zero otherwise. Second, we assign a value of one to the dummy variable *UK Exchange listing* when the firm is listed in the UK on the LSE or AIM market but does not have a US exchange cross listing, and zero otherwise. Third, the dummy *US OTC listing* has a value of one if the firm has a Level 1 ADR listing but does not have a UK exchange listing, and zero otherwise.[10] Fourth, the dummy *UK OTC listing* has a value of one if a firm is listed on the OTC market in the UK but has no other cross listings in the UK or US, and zero otherwise.

[Please insert Table 1 here]

When defining the variable *Specificity type*, we must account for the Mock Scale, which is a unique feature of the Dutch setting. In 1984, Dutch investor relations advisor Harry Mock defined a scale of qualitative words and corresponding percentages. Within several years after its publication, the scale became a generally accepted standard in the Netherlands (*Algemeen Dagblad* of 29 March 1997 and *Het Financieele Dagblad* of 28 August 1999). CFOs, investor relations managers, analysts, and investors use the scale to translate adjectives into percentages. An English version of the scale appeared in 1997 (Mock, 1999).

The Mock Scale consists of eight qualitative statements, such as 'limited' and 'significant', and allocates exact percentages to these statements. Appendix 1 shows the Mock Scale. For example, according to the Mock Scale, a prediction of 'significantly' higher net

[10] The sample of US OTC firms includes all Pink Sheet quotations. Because during our research window regulations have changed for Bulletin Board firms, in which the implementation schedule allowed different transition dates, we have chosen to trace actual filings with the SEC. We define Bulletin Board firms as OTC firms, until they file Form 20-F's with the SEC. As of this date, the firms are considered exchange-listed.

earnings is equivalent to a forecast of an earnings increase of 12 to 20%. An investor who is not aware of the Mock Scale would interpret this adjective as an open-ended forecast predicting that the firm's earnings will be higher. However, Dutch investors know that managers are likely to refer to the Mock Scale and that they will interpret the prediction as a range forecast in which the earnings will increase 12% to 20%.

Applying the Mock Scale can alter the specificity of forecasts in two ways: it may turn an open-ended forecast into a range forecast; or open-ended forecasts remain open-ended, but become more informative. For example, 'a modest increase' in EPS relative to last year's EPS would normally mean an open-ended minimum forecast (i.e., a minimum increase with last year's EPS as lower bound), but if the investor applies the Mock Scale, then the open-ended forecast converts into a range forecast, indicating a 2% to 4% increase relative to last year's EPS. Alternatively, 'a sharp increase' in EPS relative to last year's EPS is an open-ended forecast, regardless of applying the Mock Scale (i.e., last year's EPS as lower bound of the forecast and an increase of more than 45% relative to last year's EPS). In all instances, the inclusion of Mock interpretations makes forecasts more informative. At the same time, the use of Mock Scale words is less informative than explicitly mentioning the percentages related to the words. As we order the variable *Specificity type* on informativeness, it takes a value of one for qualitative forecasts, two for open-ended forecasts (minimum and maximum), three for open-ended forecasts that include words from the Mock Scale, four for range forecasts that include words from the Mock Scale, five for range forecasts, and six for point forecasts. [11]

[11] We find that nine firms explicitly refer to the Mock Scale in 44 forecasts. In our analysis we consider forecasts with the qualitative Mock adjectives and without any reference to the Mock Scale as a separate group. It is not clear whether the forecasts where managers explicitly refer to the scale of Mock must be divided into this separate group of Mock forecasts or into the group range forecasts, as the percentage increase/decrease in predicted earnings is already established by explicitly referring to the Mock scale. Therefore, we exclude these observations.

The requirement that all information on firm and forecast characteristics should be available reduces our sample by 98 press releases. Our sample also has one firm with an extreme value in its earnings variance (i.e., earnings variance equals 119.6) and four firms with an extreme Tobin's *q* in a forecast year (i.e., a Tobin's *q* greater than 7, which is a deviation of more than four standard deviations from the average Tobin's *q*). We exclude 20 press releases for which we observe the extreme values. After excluding these observations, our final sample consists of 2,781 forecasts disclosed in 1,896 press releases by 168 firms.

6. Results for forecast specificity and accuracy

6.1. Statistics

Table 2 shows the distribution of the number of forecasting firms per type of cross listing. We note that because 11 out of the 168 firms change their type of cross listing during our sample period, this table provides the cross-listing status of firms only when they first occur in the sample period.

[Please insert Table 2 here]

Out of the 168 firms in our sample, 36 firms have a cross listing. Sixteen firms are exchange listed in the US. Eight of these US-exchange-listed firms are also listed in the UK. Six of these firms have a UK exchange listing and two others have a UK OTC listing (not tabulated). Our sample includes another two firms with a UK exchange listing, 11 firms with only a US OTC listing, and seven with only a UK OTC listing.

The distribution of press releases with management forecasts per type of cross listing shows a slightly higher percentage (26.3%) of press releases disclosed by cross-listed firms relative to the percentage (21.4%) of cross-listed firms in our sample. This finding implies

that cross-listed firms use relatively more press releases with forecasts than do non-cross-listed firms.

Panel A of Table 3 provides statistics per press release for the samples of firms with and without cross listings.

[Please insert Table 3 here]

On average, non-cross-listed firms disclose 1.453 forecasts in each press release. We note that the average number of forecasts is higher than one, because some firms disclose more than one forecast in a press release. For instance, if a firm discloses an EBIT forecast and an EPS forecast, we count two forecasts.

Firms in our sample often use the Mock Scale. On average, each press release contains 0.21 forecasts with a word from the scale. This result indicates that firms use a Mock adjective in about one out of seven forecasts. The forecast horizons are similar for cross-listed and non-cross-listed firms, about 170 days before the firm's fiscal year end. Information on firm size and number of analysts show that cross-listed firms are larger than other firms and have greater analyst coverage. The median number of analysts that follow a firm is 38 for cross-listed firms and only nine for the firms without a US or UK listing. The average Tobin's *q* of 1.7 and 1.6, respectively, indicates that the Tobin's *q*'s do not differ strongly between the two samples. On average, the cross-listed firms have lower blockholdings, 25% compared to 40% for the other firms. Panel A also shows that the earnings variability and the fraction of firms with a declining earnings trend do not differ strongly between the two samples. The announcement effects of the cross-listed firms are on average -1.3%, whereas the average in the other sample is -0.4%. It should be noted that these results are based on slighter smaller samples, because we removed outliers (observations with values more than four times the

standard devation different from the mean). We will discuss these effects in more detail in Section 7.

Panel B of Table 3 shows the frequencies of forecast characteristics in the press releases. The highest degree of forecast specificity is a point forecast, which is issued in 29% of the press releases of firms without a cross listing and 24% of the press releases of cross-listed firms. We do not find strong differences in specificity in the bivariate analysis. Our observations are almost evenly split between good and bad news for both sets of firms.

We also find that 35% of the forecasts from non-cross-listed firms are initial forecasts, 56% are revisions, and 9% are preannouncements. Cross-listed firms disclose initial forecasts less often than do non-cross-listed firms, but provide updates more often in terms of maintaining or revising their previous forecasts. This result might explain the relatively larger number of press releases with forecasts disclosed by cross-listed firms relative to non-cross-listed firms. Potential litigation costs and greater scrutiny can induce these firms to disclose updates more often. In untabulated analyses we split the sample of cross-listed firms into the four different types of cross listings. We find that in 67% of all cross listings, US exchange-listed firms disclose most updates, and 56% of UK OTC-listed firms disclose the least updates.

6.2. Determinants of forecast specificity

Table 4 reports summary statistics of the explanatory variables for the full sample and by forecast specificity type. The results show that cross-listed firms disclose relatively more range, open-ended, and qualitative forecasts than point and Mock (open-ended and range) forecasts.

[Please insert Table 4 here]

The distribution is similar in all four groups of cross-listed firms. Range forecasts occur most frequently among US exchange-listed firms, followed by UK exchange-listed firms and UK OTC-listed firms.

We also see that firms disclosing preannouncements provide the most precise forecasts, followed by firms that revise or maintain their previous forecast. Firms that release an initial forecast disclose the least precise forecasts. This finding is consistent with Baginski and Hassell's (1997) result that more precise forecasts tend to be issued later in the period. The average forecast horizon is 170 days, indicating that firms disclose their average forecast during the third quarter of the fiscal year. Consistent with more uncertainty earlier in the fiscal year, the average forecast horizon appears to be longer for less specific forecasts: 216 days for qualitative forecasts decreases to 104 days for point forecasts.

We do not find any pattern in the relations between the sign of the news or firm size and specificity. Firms that disclose range-Mock forecasts have a remarkably higher Tobin's *q* than do firms that disclose other forecast specificity types. Firms that disclose range forecasts have higher average analyst coverage compared to firms that disclose point, open-ended, or qualitative forecasts. The relation between block holdings and forecast specificity is most evident in the open-ended-Mock, range-Mock, and qualitative forecasts, in which the average block holding is greater than 40%, compared to 36% in the full sample. Earnings variance and declining earnings trends are both lowest for Mock-range forecasts.

To test our hypotheses, we use a multivariate setting to examine the factors that might influence managers' choice for forecast specificity. Since the forecast specificity type is an ordinal variable, we estimate an ordered-response probit regression. The model is defined as:

$$g(\Pr[\text{Specificity} < i \mid X]) = \alpha_i + \beta_1 \text{ Cross listing US/UK} + \beta_2 \text{ Initial forecast} + \beta_3 \text{ Revision/maintenance} + \beta_4 \text{ Horizon} + \beta_5 \text{ Sign of news} + \beta_6 \text{ Ln(Firm size)} + \beta_7 \text{ Tobin's } q + \beta_8$$

Analyst following + β_9 Percentage block shareholders + β_{10} Earnings variance + β_{11} Declining earnings trend + $\gamma_{1..5}$ Year + $\varphi_{1..7}$ Industry + ε_i (1)

The dependent variable *Specificity* is in ascending order of forecast specificity and X constitutes the vector of independent values discussed in the previous section. The forecast specificity probit estimation fits the probability that the forecast is from forecast specificity type category i or lower, given the vector of explanatory variables. A positive (negative) coefficient indicates that higher values of the independent variables are associated with more (less) specific forecasts. We base the industry groups on the major groups of the two-digit SIC industry codes. We estimate five different regression specifications and present the results in Table 5.

[Please insert Table 5 here]

We estimate equation (1) for the full sample of forecasts with and without an indicator variable for cross-listed firms in regression models (1) and (2), respectively. Model (1) indicates that managers provide more precise forecasts when they receive new information. A revision or maintenance of previous forecasts and initial forecasts are significantly less precise compared to preannouncements. The results also show that a longer forecast horizon results in far less specific forecasts.

The results from Table 5 also show that firm size is positively related with forecast specificity, indicating that larger firms disclose more precise forecasts. Because firm size is highly correlated with analyst coverage (0.86), we first orthogonalise analyst coverage on firm

size.[12] This method makes it possible for us to examine the impact of analyst coverage in addition to firm size. The results indicate that analyst following does add to the effect of firm size on forecast specificity. The coefficient of orthogonalised analysts yields a small negative effect on specificity. We find no significant coefficients for the sign of the news, *q*, blockholders, earnings variance, and the earnings trend.

Model (2) tests our first hypothesis, which states that firms with a cross listing in the US or UK disclose less precise forecasts. In line with our first hypothesis, the variable cross listing has a negative relation with forecast specificity. We further investigate H1 in models (3) to (5), in which we differentiate between exchange listings and OTC listings in the US and UK. In all three models, we use the same sample of non-cross-listed firms as a basis. We add one specific type of cross listing per model: in model (3) we add firms with a US exchange listing, in model (4) we add the sample of firms with a US OTC listing, and in model (5) we add firms with a UK OTC listing. Due to the low number of observations for UK exchange-listed firms (see Table 2), we do not estimate the regression for this subsample.

Our results indicate that in each alternative specification, cross-listed firms provide less precise forecasts. Firms with a listing on a US stock exchange, firms with an OTC listing in the US, and firms with an OTC listing in the UK appear to have incentives to disclose less precise information.[13] As noted earlier, forecasts that are less precise will decrease the

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[12] In particular, we first regress analyst coverage on firm size. Second, we use the difference between the fitted and actual values of this regression (the residuals) as a new measure of analyst coverage. By construction, the new measure is uncorrelated with firm size. It should be noted that this approach alters the interpretation of the coefficients of firm size and analyst coverage in Table 5. We fully attribute the size effect in analyst coverage to the size variable. In other words, the new measure for analyst coverage captures the coverage in excess of the part explained by firm size.

[13] A regression for non-cross-listed firms and firms with a UK listing, independent of whether the firm is also listed in the US, provides a negative, but nonsignificant, cross-listing coefficient that equals -0.242, and a *p*-value

likelihood of investors being misled. Since legal bonding is more likely to apply to firms with an exchange listing and reputational bonding applies to both OTC and exchange listings, our results suggest that reputational bonding is relevant in our sample. If our results had mainly been driven by greater legal liability exposure, as associated with legal bonding, we would have expected to find a different effect for exchange and OTC listings.

6.3. Accuracy of management forecasts

We calculate the management forecast errors as follows:

$$Management\ \ forecast\ error = \frac{Actual\ earnings - Forecasted\ earnings}{\left|Forecasted\ earnings\right|} \qquad (2)$$

A positive forecast error indicates that the forecast underestimates actual earnings. Similar to forecast specificity, we assume that managers are familiar with the Mock Scale. Hence, we use the percentages equal to the scale to calculate the forecasted amount of range-Mock forecasts and open-ended-Mock forecasts. When a range forecast is incorrect, we take the lower (upper) bound of the minimum (maximum) forecasted amount as forecast value.

Our forecast error analysis is based on a sample of 1,756 press releases instead of 1,896 press releases because it is not possible to calculate forecast errors for the 110 qualitative forecasts. In addition, we have missing values for 22 forecasts and we exclude eight forecasts with extreme forecast errors for which values deviate more than four standard deviations from the average forecast errors. Table 6 projects the frequencies of observations with no forecast errors, overestimated forecasts, and underestimated forecasts for the full sample and per forecast specificity type. We present a Pearson χ^2 statistic (and *p*-value) in

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of 0.12. However, the two firms that are only listed in the UK drive this nonsignificant result. When we exclude these two firms from the regression, we find a negative and significant cross-listing coefficient of -0.415, and a *p*-value of 0.018.

order to test the null hypothesis that the distributions for cross-listed and non-cross-listed firms are independent.

[Please insert Table 6 here]

The results for the full sample show that non-cross-listed firms disclose forecasts that are correct in 51% of the cases. In 21% of the cases, the forecasts overestimate realisations, and in 28% of the forecasts we find an underestimation. For cross-listed firms, the statistics are similar, at 50%, 22%, and 28%, respectively. In both groups, the percentage of underestimations is higher than overestimations for most forecast specificity types. The χ^2 of 0.228, with a *p*-value of 0.892 indicates that the null hypothesis of independence cannot be rejected. In other words, the distribution over the three forecast error classes does not differ significantly between cross-listed and other firms. We note that most open-ended forecasts are minimum forecasts; managers can only overestimate earnings if they release minimum forecasts.

The distribution of range forecasts indicates that the probability that cross-listed firms will overestimate earnings is lower than that of non-cross-listed firms. Sixteen percent of the range forecasts by cross-listed firms are overestimations, compared to 31% of the range forecasts by non-cross-listed firms. In this sub-sample, the χ^2 test rejects the hypothesis of independence, at the 1% significance level. The point forecasts show a slightly different picture. Even though both cross-listed and non-cross-listed firms show that they are conservative by underestimating future earnings more often, cross-listed firms disclose more overestimations (36%) than do non-cross-listed firms (26%).

Table 7 shows the magnitude of the forecast errors for the sample of firms with and without a cross listing. In addition, we split the forecasts into a group of overestimations and underestimations and provide the *p*-values for the difference in forecast errors between cross-

listed and non-cross-listed firms. We exclude the open-ended-Mock forecasts from the table, because the number of observations is not sufficient to make comparisons.

[Please insert Table 7 here]

The results suggest that at -3.1%, the mean forecast error of cross-listed firms is smaller and more conservative than that of non-cross-listed firms (-10.6%, *p*-value of difference equals 0.012). Non-cross-listed firms overestimate earnings by 7.5% more than do their cross-listed peers. The smaller difference between the forecast and outcome is particularly apparent for the subsample of overestimations. We consider this finding as evidence that cross-listed firms are more conservative compared to non-cross-listed firms.

Because the lower forecast errors of cross-listed firms may be caused by their less precise forecasts, Table 7 also provides the forecast errors per specificity type. Our results remain robust. The forecast error of non-cross-listed firms is larger than that of cross-listed firms for all specificity types. The findings accord with the premise that a stricter legal environment and greater scrutiny and monitoring induce firms to become more conservative in their forecasts and make smaller forecast errors.

7. Results for shareholder wealth effects

The outcomes of the analyses for specificity and accuracy are indecisive with respect to the effects of cross listings, because forecasts become less specific on the one hand and more accurate on the other hand. In order to determine the net effect, from the perspective of financial markets, we conduct an event study analysis in which we measure the cumulative abnormal returns (CARs) over three days around the forecast via the market model as described by MacKinlay (1997). The estimation period starts 120 days prior to the forecast until 20 days prior to the forecast. We use the market index of Euronext Amsterdam to estimate the market returns. The results are presented in Table 8.

[Please insert Table 8 here]

In Panel A we describe the CARs for the sub samples. For the sample of firms without a cross listing the average effect is -0.04%. Interestingly, the US exchange-listed firms show an average positive CAR of 0.31%. The UK exchange-listed firms yield a small sample of 16 announcements, with a negative return of -2.52% on average. The OTC listings are negative both for the US and UK, respectively -0.78% and -0.32%. In all sub samples we find relatively high standard deviations, which indicate a large variation in the CARs. In subsequent regression analysis, we aim to exploit this variation.

In Panel B we perform an OLS regression explaining the three-day CARs by a set of control variables and cross-listing indicators. In each regression we include indicators for years and industries (results not reported). In model (1) we introduce a set of control variables, based on existing literature. First, we include initial forecasts and revision/maintenance dummy variable, while omitting preannouncements, because the phase in the timeline is found to influence the market response towards earnings forecasts. The abnormal returns are significantly larger for revisions than for initial forecasts (Pownall *et al.*, 1993). Managers possess most information during the last phase of the timeline, i.e. when they release a preliminary earnings estimate. Baginski *et al.* (1994) document significantly negative abnormal returns associated with preannouncements. The high certainty level makes these forecasts more credible than the first two phases in the timeline. Second, we include the forecast horizon, because a longer horizon leads to more uncertainty about future earnings, indicating that investors perceive forecasts as less credible when disclosed earlier in the fiscal year. Third, we control for firm size, number of analyst following and blockholding as measures for the information asymmetry between firms and investors (Lang *et al.*, 2003a). Investors may therefore better anticipate the information released in management forecasts by

firms with greater analysts following and blockholdings, while larger firms may be more complex and less transparent. Fourth, firms with higher growth opportunities experience higher proprietary information costs when releasing management forecasts. Gigler (1994) provides evidence that investors conceive the release of proprietary information as more credible. Hence, we expect that the market reaction is stronger towards forecasts from firms with higher growth opportunities. Fifth, investors respond stronger to forecasts with a higher unexpected component (see Ajinkya and Gift, 1984; Waymire, 1984; Skinner, 1994) and they have more difficulties predicting future earnings when earnings are more volatile. As a result, the unexpected component of forecasts increases with the firms' earnings volatility and hence magnifies the market response. Finally, we include a measure for declining earnings trends.

We find that the two timeline variables have negative effects, whereas the coefficients are measured relative to preannouncements. This implies that earlier announcements have more negative effects. Longer forecasts horizons are appreciated by investors, as horizon has a significantly positive effect on the CARs. Larger firms tend to have more negative effects and blockholders positively influence the returns. Finally, a declining earnings trend with a management forecast induces a reduction in stock prices. The fit of the model is acceptable, given the R^2 of 9.89%.

In model (2) we add four indicator variables for cross listing and thus compare the announcement effects of cross-listed firms with non-cross-listed peers. We find that the coefficient for US exchange listings is positive and significant at the 1% level. Furthermore, the economic effect is also meaningful: US-listed firms have 2.7% higher announcement returns, after controlling for other firm and forecast characteristics. The indicators for other cross listings do not yield significant effects.

From the analysis of forecast specificity and accuracy we learn that firm disclosure policies are affected by cross listings. Therefore, in model (3) we control for specificity and accuracy. We have to omit a set of observations with qualitative forecasts, because we cannot

measure the accuracy of these announcements. The benchmark for specificity is the point forecast. We find that all four specificity indicators yield negative coefficients, while three out of four are significant. This result implies that investors find point forecasts more valuable than other announcements. We also find that investors do not react based on the (anticipated) forecast error. Our results demonstrate that our control for specificity is relevant, because cross-listed firms both have less specific forecasts and higher announcement effects. Given this result, it is important to notice that the positive effect of a US listing remains unaffected. This result demonstrates that the overall effect on the value of the information provided is positive, despite the fact that managers of Dutch firms with a cross listing in the US present less specific (but more accurate) forecasts, .

8. Conclusion

In this study we analyse the influence of cross listings in the UK or US on the characteristics of management earnings forecasts by Dutch firms. Because the UK and the US have higher regulatory disclosure and stricter enforcement rules regimes than the Netherlands, Dutch firms that cross list in these countries voluntarily expose themselves to these stricter regimes. In addition, these cross listings also lead to greater scrutiny and monitoring by financial intermediaries.

By using these cross listings on forecast specificity and *ex post* forecast errors, the relatively large number (21%) of Dutch firms with a cross listing provides a unique setting in which to study the impact of stricter legal regimes and enhanced scrutiny. Our empirical results show that cross-listed firms disclose less specific forecasts; the average forecast error of firms with a cross listing is lower than that of non-cross-listed firms; and that cross-listed firms are more conservative (i.e., less optimistic) in their forecasts than are non-cross-listed firms. In addition, we find that management forecasts by firm listed on US exchanges have significantly higher announcement returns.

To determine the consequences of these results for disclosure policies, we demonstrate that managers of Dutch cross-listed firms exhibit lower specificity in their forecasts. Additionally, their forecasts errors are smaller and more conservative. The reduced specificity and the conservatism bias make the forecasts less informative about the management's predictions of future profits, while the smaller forecast errors have the opposite effect. In all, we conclude from our empirical analyses that a firm's management anticipates legal and reputational penalties and adjusts their forecasts accordingly. Because we find that financial markets react positively to the management's anticipation, we conclude that the net effect of cross listing (i.e. bonding) is positive.

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Appendix 1: The frequency of the use of words from the Mock Scale

Qualitative words		% increase		
Dutch	English	or decrease	N	Percentage
Fractioneel	Marginal	0 - 2%	0	0%
Gering	Modest	2 - 4%	15	4%
Licht	Limited	4 - 7%	40 [+]	10%
Duidelijk	Marked	7 - 12%	59 [++]	16%
Belangrijk	Significant	12 - 20%	107	28%
Sterk	Strong	20 - 30%	52	17%
Aanzienlijk	Considerable	30 - 45%	59	15%
Fors	Sharp	45% or more	34	10%
Total			366	100%

[+] Including two forecasts in which a firm mentions 'between modest and limited'
[++] Including one forecast in which a firm mentions 'between limited and marked'

Table 1
Explanation of variables

Variable	Explanation
Cross listing in US or UK	Dummy variable equals one when the firm has a cross listing in the US or UK, zero otherwise. With a cross listing, we refer to ADR Level 1, 2, and 3 listings, LSE listings, AIM listings, and the UK OTC listings. *Source: 'Gids bij de Officiële Prijscourant 1997/1998-2001/2002'*
US exchange listing	Dummy equals one if the Dutch listed firm has an exchange cross listing in the US. With an exchange cross listing, we refer to the ADR 2 and ADR 3 listings. If the firm has an exchange listing or OTC listing in the UK in addition to the exchange listing in the US, the dummy remains one. OTC Bulletin Board firms have a value of one as of the date of their SEC registration of an a Form 20-F. In all other cases, the dummy equals zero. *Source: see cross listing in US and UK.*
UK exchange listing	Dummy equals one if the Dutch listed firm has an exchange cross listing in the UK. With an exchange cross listing, we refer to a listing on LSE and AIM. If the firm also has an OTC listing in the US, the dummy remains one. However, if the firm also has an exchange listing in the US, the dummy becomes zero. In all other cases, the dummy equals zero. *Source: see cross listing in US and UK.*
US OTC listing	Dummy equals one if the Dutch listed firm has an OTC listing in the US via an ADR 1 listing. If the firm has an exchange listing in the UK, the dummy becomes zero. In all other cases, the dummy equals zero. *Source: see cross-listing in US and UK.*
UK OTC listing	Dummy equals one if the Dutch listed firm has an OTC listing in the UK. If the firm has an exchange listing or OTC listing in the US, the dummy becomes zero. In all other cases, the dummy equals zero. *Source: see cross-listing in US and UK.*
Specificity type	Forecast specificity type equals one for qualitative forecasts, two for open-ended forecasts, three for open-ended forecasts that contain Mock words, four for range forecasts with Mock words, five for the other range forecasts, and six for point forecasts.
Management forecast error	(Realised earnings - forecasted earnings)/absolute (forecasted earnings). We can only measure forecast errors of point, range, and open-ended forecasts. When an open-ended forecast is incorrect, we take the lower bound (upper bound) of the minimum (maximum) forecast as forecast value. *Source: Press releases as provided by Euronext, Worldscope, and REACH.*
Declining earnings trend	Dummy variable equals one when the firm's earnings decline in the year of the forecast relative to the previous year. The dummy equals zero otherwise. *Source: Worldscope and REACH*
Earnings variability	Variance of a firm's net income standardised by its market capitalisation over a period of four years prior to the fiscal year to which the forecast pertains. If the firm's net income is not available for the previous four years, we move the period one year forward or use three years instead. *Source: Worldscope and REACH*
Firm size	Natural log of the beginning of the year market capitalisation. *Source: Worldscope*
Horizon	The number of days between the management forecast disclosure and the fiscal year end to which the forecast pertains.

Number of analysts following	The number of analysts that follow a firm during the fiscal year of the forecast. *Source: I/B/E/S.*
Cumulative abnormal return	The cumulative abnormal returns (CARs) over three days around the forecast via the market model as described by MacKinlay (1997). The estimation period starts 120 days prior to the forecast until 20 days prior to the forecast. We use the market index of Euronext Amsterdam to estimate the market returns. *Source: Datastream*
Sign of the news	Dummy variable that equals one if the forecast is good news and zero in case of bad news. As Baginski et al., 1994; Baginski and Hassell, 1997), we classify news as good (bad) news when the cumulative abnormal returns (CARs) over three days around the forecast are positive (negative). *Source: Datastream*
Timeline of the forecast	The timeline of the forecast equals one for initial forecasts, two for maintenance or revisions of previous forecasts, and three for preliminary earnings estimates. Preliminary earnings estimates are forecasts that firms disclose after the fiscal period end, but before the official disclosure of the annual results.
Percentage block shareholders	The total percentage of a firm's shares that outside shareholders hold in a block of at least five percent. We exclude block holdings of directors of the firm. *Source: 'Handboek Nederlandse Beursfondsen 1996-2002'*
Tobin's *q*	We use Tobin's *q* as our proxy for a firm's growth opportunities. We calculate Tobin's *q* as the market value of a firm divided by the book value of the firm, as defined by Perfect and Wiles (1994). In the Netherlands, firms base the value of their assets either on its replacement value or on its historical costs. In case of the replacement value, no change is necessary. However, in case of historical costs, we adjust this value towards its replacement value as described in the study of De Jong (2002). *Source: Worldscope and REACH.*

Table 2
Distribution of cross-listed firms

The table presents the number and percentage of firms and press releases per group of firms with and without a cross listing in the US or UK. We subdivide the cross-listings group into US exchange-listed firms, UK exchange-listed firms, US OTC-listed firms, and UK OTC-listed firms. The percentages represent the percentage of (press releases from) the subsample of firms relative to the total number of (press releases from) firms in our sample. We report cross-listing status of firms when they first occur in the sample period.

	Firms		**Press releases**	
	N	**(%)**	**N**	**(%)**
Non-cross listed	132	(78.6%)	1398	(73.7%)
Cross listed	36	(21.4%)	498	(26.3%)
US exchange listing	16	(9.5%)	287	(15.1%)
UK exchange listing	2	(1.2%)	16	(0.8%)
US OTC listing	11	(6.5%)	106	(5.6%)
UK OTC listing	7	(4.2%)	89	(4.7%)
Total	168		1896	

Table 3
Descriptive statistics and distribution of management forecasts

Panel A presents the mean, median, minimum, maximum, standard deviation, and the number of observations of the variables per press release for the sample of firms with cross listing in the US or UK, and for the sample of firms without such a cross listing. If press releases contain forecasts for two different timelines (e.g., initial forecast and preannouncement), we document both forecasts. Mock words are words from the Mock Scale as reported in Appendix 1. We provide full definitions of the variables in Table 1. For the cumulative abnormal returns we omit observations with returns that differ more than four standard deviations from the mean. In this table, Panel B provides the distribution of press releases with forecasts from cross-listed and non-cross-listed firms per forecast specificity group, message type, phase in the timeline, and sign of the news.

Panel A: descriptive statistics per press release

	Not cross listed			**Cross listed**		
	Mean (Median)	**St.dev.**	**N**	**Mean (Median)**	**St.dev.**	**N**
Number of forecasts	1.453 (1.000)	0.670	1398	1.506 (1.000)	0.729	498
Number of forecasts with Mock words	0.211 (0.000)	0.507	1398	0.143 (0.000)	0.428	498
Forecast horizon	170 (146)	112	1398	171 (153)	107	498
Firm size	18.683 (18.737)	1.521	1398	22.288 (22.580)	1.609	498
Tobin's *q*	1.722 (1.261)	1.276	1398	1.648 (1.340)	0.922	498
Number of analysts following	11.476 (9.000)	9.639	1398	34.974 (38.000)	13.407	498
Percentage block shareholders	39.924 (38.240)	27.772	1398	24.877 (23.000)	17.596	498
Earnings variability	0.029 (0.001)	0.187	1398	0.042 (0.000)	0.412	498
Declining earnings trend	0.320 (0.000)	0.467	1398	0.329 (0.000)	0.470	498
Cumulative abnormal returns	-0.0004 (0.0003)	0.075	1383	-0.0013 (0.0025)	0.067	494

Table 3 (continued)

Panel B: distribution per press release

	Not cross listed		Cross listed	
	Observations	**(%)**	**Observations**	**(%)**
Total amount	1398		498	
Forecast specificity				
Point	406	(29%)	119	(24%)
Range	100	(7%)	69	(14%)
Range Mock	188	(13%)	46	(9%)
Open ended Mock	28	(2%)	7	(1%)
Open ended	597	(43%)	226	(45%)
Qualitative	79	(6%)	31	(6%)
Total	1398	(100%)	498	(100%)
Sign of the news				
Good news forecasts	695	(50%)	242	(49%)
Bad news forecasts	703	(50%)	256	(51%)
Total	1398	(100%)	498	(100%)
Timeline of the forecast				
Initial management forecast	491	(35%)	146	(29%)
Maintenance or revision	777	(56%)	316	(63%)
Preliminary earnings estimate	130	(9%)	36	(7%)
Total	1398	(100%)	498	(100%)

Table 4
Descriptive statistics for forecast specificity choice

This table presents the mean, median, and standard deviation of all explanatory variables in the forecast specificity regression for the total sample and per forecast specificity type. We provide full definitions of the variables in Table 1. The number of observations reflects the number of observations available per subsample.

		Full sample	Point	Range	Range Mock	Open-ended Mock	Open ended	Qualitative
Cross listing in US/UK	Mean	0.263	0.227	0.408	0.197	0.200	0.275	0.282
	Median	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	St.dev.	0.440	0.419	0.493	0.398	0.406	0.447	0.452
- US exchange listing	Mean	0.151	0.137	0.272	0.137	0.143	0.143	0.127
	Median	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	St.dev.	0.359	0.344	0.446	0.344	0.355	0.350	0.335
- UK exchange listing	Mean	0.008	0.006	0.047	0.000	0.000	0.006	0.000
	Median	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	St.dev.	0.091	0.075	0.213	0.000	0.000	0.078	0.000
- US OTC listing	Mean	0.056	0.053	0.030	0.034	0.000	0.070	0.064
	Median	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	St.dev.	0.230	0.225	0.170	0.182	0.000	0.256	0.245
- UK OTC listing	Mean	0.047	0.030	0.059	0.026	0.057	0.055	0.091
	Median	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	St.dev.	0.212	0.172	0.237	0.158	0.236	0.227	0.289
Timeline: initial forecast	Mean	0.336	0.185	0.207	0.274	0.314	0.454	0.509
	Median	0.000	0.000	0.000	0.000	0.000	0.000	1.000
	St.dev.	0.472	0.388	0.406	0.447	0.471	0.498	0.502
Timeline: revision/maintenance	Mean	0.576	0.560	0.781	0.688	0.600	0.525	0.482
	Median	1.000	1.000	1.000	1.000	1.000	1.000	0.000
	St.dev.	0.494	0.497	0.415	0.464	0.497	0.500	0.502
Timeline: preannouncement	Mean	0.088	0.255	0.012	0.038	0.086	0.021	0.009
	Median	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	St.dev.	0.283	0.436	0.108	0.193	0.284	0.142	0.095
Forecast horizon	Mean	170	104	173	176	141	204	216
	Median	148	111	149	153	123	230	253
	St.dev.	111	112	94	98	105	99	98
Sign of the news	Mean	0.506	0.501	0.408	0.594	0.400	0.513	0.473
	Median	1.000	1.000	0.000	1.000	0.000	1.000	0.000
	St.dev.	0.500	0.500	0.493	0.492	0.497	0.500	0.502
Ln(firm size)	Mean	19.630	19.754	20.776	19.257	18.716	19.548	18.975
	Median	19.454	19.674	20.387	18.928	17.676	19.337	18.540
	St.dev.	2.214	2.034	2.301	1.998	2.341	2.233	2.479

Table 4 (continued)

		Full sample	Point	Range	Range Mock	Open-ended Mock	Open ended	Qualitative
Tobin's *q*	Mean	1.702	1.691	1.617	1.877	1.698	1.702	1.515
	Median	1.297	1.324	1.127	1.386	1.104	1.296	1.350
	St.dev.	1.193	1.107	1.189	1.293	1.560	1.229	0.922
Number of analysts following	Mean	17.648	18.219	21.254	15.718	13.857	17.527	15.591
	Median	14.000	16.000	16.000	11.000	8.000	15.000	10.000
	St.dev.	14.920	14.296	16.608	15.117	18.263	14.534	15.445
Percentage block shareholders	Mean	35.972	34.384	32.199	41.720	42.587	35.239	40.496
	Median	32.000	29.980	26.000	37.445	47.750	30.690	39.835
	St.dev.	26.337	24.533	26.291	29.414	20.072	25.950	30.050
Earnings variance	Mean	0.033	0.018	0.128	0.005	0.038	0.031	0.023
	Median	0.001	0.000	0.000	0.000	0.001	0.001	0.001
	St.dev.	0.265	0.150	0.719	0.020	0.164	0.194	0.096
Declining earnings trend	Mean	0.322	0.314	0.266	0.256	0.457	0.344	0.382
	Median	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	St.dev.	0.467	0.465	0.443	0.438	0.505	0.475	0.488
Cumulative abnormal returns	Mean	-0.001	0.003	-0.013	0.006	-0.030	-0.001	0.001
	Median	0.001	0.001	-0.003	0.009	-0.014	0.001	-0.005
	St.dev.	0.072	0.073	0.061	0.066	0.088	0.077	0.063
Number of observations		1896	525	169	234	35	823	110

Table 5
Regression analysis for forecast specificity choice

This table reports ordered response regressions in which the dependent variable is forecast specificity. The variable takes the value of one for qualitative, two for open-ended, three for open-ended-Mock, four for range-Mock, five for range, and six for point forecasts. Regressions (1) and (2) contain the full sample. Regression (3) comprises firms without a cross listing in the US and/or UK and firms with a US exchange listing. Regression (4) contains firms without a cross listing in the US and/or UK and firms with a US OTC listing. Regression (5) covers firms without a cross listing in the US and/or UK and firms with a UK OTC listing. Each regression controls for the forecast year and the major industry groups based on two-digit SIC industry codes. We provide full definitions of the variables in Table 1 We orthogonalise the variable Number of analyst following on Ln(firm size). We use Huber/White standard errors (Huber, 1967; White, 1980) for calculating the significance. We present *p*-values in parentheses.

	(1)	**(2)**	**(3)**	**(4)**	**(5)**
Cross listing in US/UK		-0.3925***			
		(0.000)			
US exchange listing			-0.3137**		
			(0.005)		
US OTC listing				-0.5081***	
				(0.001)	
UK OTC listing					-0.7043***
					(0.000)
Timeline: initial forecast	-1.1361***	-1.1056***	-1.0869***	-1.1082***	-1.1470***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Timeline: revision/maintenance	-0.9930***	-0.9740***	-0.9337***	-0.9839***	-1.0182***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Forecast horizon	-0.0024***	-0.0025***	-0.0025***	-0.0026***	-0.0026***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Sign of the news	0.0413	0.0556	0.1099**	0.0691	0.0580
	(0.432)	(0.289)	(0.049)	(0.249)	(0.334)
Ln(firm size)	0.0323**	0.0886***	0.0724***	0.1112***	0.0979***
	(0.016)	(0.000)	(0.001)	(0.000)	(0.000)
Tobin's *q*	-0.0013	-0.0057	-0.0133	-0.0112	-0.0094
	(0.958)	(0.813)	(0.603)	(0.656)	(0.725)
Number of analysts following	-0.0064*	-0.0038	-0.0049	-0.0060	-0.0062
	(0.084)	(0.285)	(0.264)	(0.187)	(0.223)
Percentage block shareholders	-0.0010	-0.0013	-0.0017	-0.0024**	-0.0021*
	(0.317)	(0.205)	(0.118)	(0.032)	(0.051)
Earnings variance	0.0164	0.0450	0.0225	-0.1916	-0.1870
	(0.797)	(0.503)	(0.742)	(0.231)	(0.250)
Declining earnings trend	-0.0677	-0.0558	-0.0525	-0.0440	-0.0596
	(0.266)	(0.358)	(0.420)	(0.520)	(0.394)
N	1896	1896	1685	1504	1487
Pseudo R^2	0.078	0.082	0.083	0.077	0.093

***: p < 1% ; **: p < 5% ; *: p < 10%

Table 6
Distribution of management forecast errors

This table reports the distribution of management forecast errors of the sample of firms with a cross listing in the US and/or UK and the sample of firms without such a cross listing. We provide the number of observations of correct forecasts, underestimations, and overestimations. We calculate management forecast errors as realised earnings less management forecast divided by the absolute value of the forecast. Underestimations are forecasts that fall short of the earnings outcome. Overestimations are forecasts that are higher than the final outcome. We consider forecast errors that deviate more than four standard deviations from the mean as outliers and exclude these observations from our sample. In parentheses we include the Pearson's χ^2 statistic to test the hypotheses of independence of the distribution and the accompanying *p*-value.

		Not cross listed		Cross listed	
Forecast specificity type		**N**	**(%)**	**N**	**(%)**
Total sample	Correct	657	(51%)	232	(50%)
(χ^2=0.228, *p*-value=0.892)	Overestimation	273	(21%)	103	(22%)
	Underestimation	361	(28%)	130	(28%)
	Total	1291	(100%)	465	(100%)
Open ended	Correct	471	(81%)	190	(84%)
(χ^2=1.373, *p*-value=0.503)	Overestimation	101	(17%)	32	(14%)
	Underestimation	8	(1%)	4	(2%)
	Total	580	(100%)	226	(100%)
Open ended-Mock	Correct	26	(93%)	4	(57%)
(χ^2=13.333, *p*-value=0.001)	Overestimation	0	(0%)	3	(43%)
	Underestimation	2	(7%)	0	(0%)
	Total	28	(100%)	7	(100%)
Range Mock	Correct	68	(37%)	8	(18%)
(χ^2=7.024, *p*-value=0.030)	Overestimation	37	(20%)	15	(33%)
	Underestimation	81	(44%)	22	(49%)
	Total	186	(100%)	45	(100%)
Range	Correct	44	(44%)	19	(28%)
(χ^2=18.240, *p*-value=0.000)	Overestimation	31	(31%)	11	(16%)
	Underestimation	24	(24%)	39	(57%)
	Total	99	(100%)	69	(100%)
Point	Correct	48	(12%)	11	(9%)
(χ^2=4.160, *p*-value=0.125)	Overestimation	104	(26%)	42	(36%)
	Underestimation	246	(62%)	65	(55%)
	Total	398	(100%)	118	(100%)

Table 7
Management forecast errors

The table presents means, medians, standard deviations, and mean and median differences of management forecast errors for cross-listed and non-cross-listed firms per forecast specificity type. We calculate management forecast errors as realised earnings less management forecast divided by the absolute value of the forecast. Underestimations (i.e., underest.) are forecasts that fall short of the earnings outcome and overestimations (i.e., overest.) are forecasts that are higher than the final outcome. We consider forecast errors that deviate more than four standard deviations from the mean as outliers and exclude these observations from our sample.

		Not cross listed			**Cross listed**			***P*-value difference**		
		All	**Overest.**	**Underest.**	**All**	**Overest.**	**Underest.**	**All**	**Overest.**	**Underest.**
Forecast specificity type		**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(1) - (4)**	**(2) - (5)**	**(3) - (6)**
Total sample	Mean	-0.106	-0.647	0.109	-0.031	-0.233	0.075	***0.012***	***0.001***	0.241
	Median	0.000	-0.225	0.036	0.000	-0.123	0.029	0.918	***0.000***	***0.092***
	St.dev.	0.633	1.172	0.329	0.229	0.400	0.128			
Open ended	Mean	-0.150	-0.862	0.041	-0.044	-0.333	0.180	***0.017***	***0.032***	0.166
	Median	0.000	-0.368	0.014	0.000	-0.139	0.046	0.163	***0.017***	0.230
	St.dev.	0.646	1.340	0.047	0.256	0.602	0.269			
Range mock	Mean	-0.139	-1.024	0.149	0.005	-0.186	0.137	0.286	***0.067***	0.849
	Median	0.000	-0.460	0.089	0.004	-0.179	0.076	0.847	***0.008***	0.579
	St.dev.	0.897	1.717	0.267	0.217	0.201	0.165			
Range	Mean	-0.115	-0.421	0.069	0.019	-0.142	0.073	***0.016***	0.198	0.904
	Median	0.000	-0.121	0.032	0.007	-0.081	0.025	***0.000***	0.742	0.404
	St.dev.	0.440	0.694	0.086	0.146	0.188	0.136			
Point	Mean	-0.033	-0.370	0.102	-0.042	-0.193	0.048	0.852	0.130	0.236
	Median	0.005	-0.130	0.029	0.003	-0.021	0.016	***0.082***	***0.006***	***0.090***
	St.dev.	0.511	0.726	0.367	0.218	0.298	0.082			

Table 8
Shareholder wealth effects

Panel A presents the cumulative abnormal returns per group of firms with and without a cross listing in the US or UK. We subdivide the cross-listings group into US exchange-listed firms, UK exchange-listed firms, US OTC-listed firms, and UK OTC-listed firms. Panel B reports OLS regressions in which the dependent variable is the CAR. Each regression controls for the forecast year and the major industry groups based on two-digit SIC industry codes (results unreported). We provide full definitions of the variables in Table 1. We orthogonalise the variable Number of analyst following on Ln(firm size). We use White standard errors (White, 1980) for calculating the significance. We present *p*-values in parentheses.

Panel A: descriptive statistics abnormal returns

	Mean	**Median**	**Standard deviation**	**N**
Non-cross listed	-0.04%	0.03%	7.49%	1383
Cross listed				
US exchange listing	0.31%	0.29%	6.52%	285
UK exchange listing	-2.52%	-1.62%	5.79%	16
US OTC listing	-0.78%	-056%	7.07%	105
UK OTC listing	-0.32%	0.60%	7.12%	88

Panel B: regression analysis abnormal returns

	(1)	(2)	(3)
US exchange listing		0.027***	0.030***
		(0.000)	(0.000)
UK exchange listing		-0.010	-0.006
		(0.507)	(0.715)
US OTC listing		0.014	0.013
		(0.100)	(0.128)
UK OTC listing		0.011	0.013
		(0.209)	(0.154)
Range			-0.009*
			(0.059)
Range Mock			-0.038**
			(0.015)
Open ended			-0.003
			(0.567)
Open ended Mock			-0.018***
			(0.003)
Mean forecast error			-0.002
			(0.562)
Timeline: initial forecast	-0.019*	-0.018*	-0.017*
	(0.066)	(0.069)	(0.096)
Timeline: revision/maintenance	-0.025***	-0.025***	-0.020**
	(0.002)	(0.002)	(0.012)
Forecast horizon	0.001***	0.001***	0.001***
	(0.005)	(0.005)	(0.003)
Ln(firm size)	-0.002*	-0.005***	-0.006***
	(0.041)	(0.000)	(0.000)
Number of analysts following	0.000	0.000	0.000
	(0.632)	(0.920)	(0.873)
Percentage block shareholders	0.001*	0.001*	0.001*
	(0.053)	(0.060)	(0.079)
Tobin's *q*	0.000	0.000	0.000
	(0.984)	(0.922)	(0.855)
Earnings variance	-0.010	-0.012	-0.011
	(0.338)	(0.281)	(0.342)
Declining earnings trend	-0.031***	-0.032***	-0.034***
	(0.000)	(0.000)	(0.000)
N	1877	1877	1739
Adjusted R^2	0.0989	0.1071	0.1191

***: p < 1% ; **: p < 5% ; *: p < 10%