Targeted Communication and Investor Attention

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In the spirit of Merton (1987) we find that targeted communication by firms raises investor attention. Continental European firms using English-language commercial press wires to disseminate corporate press releases exhibit less drift and more trading volume after their earnings announcements than firms that do not, consistent with communication on English-speaking wires raising investor attention. Continental European firms using English-language commercial press wires also receive more press coverage from the English-language business press, and attract more foreign institutional investors. Our results are robust to self-selection and other endogeneity concerns. Our findings are consistent with the idea that a targeted communication strategy helps firms improve recognition from investors.

In his seminal article on market equilibrium with incomplete information, Merton (1987) argues that "the cost [for firms] of transmitting […] information to investors so that they will use it efficiently can be considerable." His model "provides a rationale for expenditures on advertising about the firm that is targeted for investors and on public relations designed to generate stories about the firm in the financial press." Our study directly investigates the stock price consequences of investor targeting by firms' communication policy. We focus on European firms based in non-English speaking countries, and we examine the consequences of a switch by those firms to using an English-speaking wire service to disseminate corporate news. We argue that this switch has two important consequences for investor recognition: a faster and more standardized dissemination of news through electronic media, and the use of English as the standard language of corporate communication. We find that European firms using a wire service exhibit a 3% lower post-earnings announcement drift, and a 12% higher trading volume than firms that do not. Our results are consistent with the idea that a targeted communication policy can enhance investor attention.

A central issue is whether our results are caused by the targeting of investors through the use of wires or are driven by unobserved heterogeneity at the firm level that influences both the targeting of investors and the stock price reaction to earnings announcements. We address this question by using the time dimension of our data. For many firms in our sample we observe a permanent switch to the use of English-speaking wires. Comparing to a control group of firms that do not use wires, switching firms experience a 4.5% decrease of the drift in the post-switch period compared to the pre-switch period.

Another concern is that the switch to wires could be correlated with unobserved events at the firm level that drive both the decision to switch and the behavior of the stock price. For example, the use of English-language wires might coincide with a decision by the firm to expand its international operations, which could increase its visibility with investors. To address this concern, we exploit a European Union regulatory change that occurred during our sample period, the Transparency Directive. The Transparency Directive mandated firms to disclose "regulated information in a manner ensuring fast access to such information […] in a

language customary in the sphere of international finance."[1] We argue that these regulatory requirements effectively forced those firms that did not yet use wires to start using them. Moreover, the move to using wires following this regulatory change is unlikely to be linked to company-level decisions to internationalize operations. When we restrict our sample to 2007 and beyond – the years following the enactment of the Transparency Directive in European national laws – we observe an even greater reduction of the post-earnings announcement drift when a firm starts using a wire.

We also investigate the consequences of targeted communication on two outcomes. The business press is a prime channel for news dissemination, and we should observe an increase in coverage by English-speaking media of firms after they switch to wires. For a sample of firms that switch to wires in anticipation of the enactment of the Transparency Directive, the average press coverage increases by 37.4%. Second, we study the consequence of targeted dissemination on foreign institutional ownership. Again, following the years they switch to wires, firms see their share of foreign ownership increase by 9.2 percentage point. Interestingly, the increase is more pronounced in the four years following the switch, suggesting that the targeting of investors is a process that takes a few years for the effects to become visible. This finding suggests that a long-lasted strategy of investors' targeting is successful in increasing foreign ownership.

Our study relates to three strands of the finance literature: investor attention, investor relations, and home bias. Several papers have shown that plausible proxies for investor inattention are positively associated with a higher post-earnings-announcement drift and a weaker immediate stock price response: DellaVigna and Pollet (2009) show that announcements made on Friday trigger a more delayed response. Hirshleifer, Lim, and Teoh (2009) reach similar conclusions for days when there are numerous news flows from other firms. In a similar vein Peress (2008) shows that announcements covered on the Wall Street Journal trigger less immediate reaction than announcements not covered in the press and made by the same firm.

[1]Articles 21(1) and 20(3) of Directive 2004/109/EC of the European Parliament and of the Council of December 15, 2004 (www.esma.europa.eu).

Investor relations (IR), defined as the strategic communication of corporate events to existing or potential investors, is generally unobservable to researchers who need to rely on a proxy. Bushee and Miller (2012) examine active investor relation strategies by looking at the effect of specialized IR firms. They find that hiring an IR firm results in an increase in disclosures, trading activity, institutional ownership, analyst following, valuation and press coverage.[2] For media coverage has been shown to influence stock price behavior in various ways[3], the subsequent literature has devoted much effort to understand how the communication and dissemination of corporate information ultimately impacts stock price through the media channel. Specifically, Bushee, Core, Guay, and Hamm (2010) and Soltes (2010) show that greater dissemination through the business press of firm-initiated disclosures tend to decrease bid-ask spread, suggesting that an IR strategy can alleviate information asymmetry. On a different line, Solomon (2012) shows that IR firms can spin firms' news to increase press coverage of positive corporate events.

We build on this literature by studying the specific effect of using commercial press wires to disseminate firms' initiated disclosures to investors and the media. This study complements Solomon and Soltes (2011) who come to the conclusion that for firms using newswire as a dissemination tool, "efforts like switching press wire service do not appear to be effective at all", meaning that the "brand" of a service should not matter. By contrast, we show that switching to a wire service matters when firms initially do not use it. For firms with a very low initial level of news dissemination, the use of commercial wires has a strong and long lasting impact.

Our paper also relates to the literature on home bias, a persistent phenomenon which reflects the tendency for investors to overinvest in domestic stocks, neglecting the value of international diversification. Such phenomenon has been associated with restrictions on international capital flows (Stulz (1981a), Stulz (1981b)) but a large body of evidence suggests

[2]Another strand of the literature studies how the quality of IR affects corporate disclosure. Such proxies include ranking by Investors magazine (Agarwal, Liao, Nash, Taffler, and Taffler (2008)) or scoring from companies' websites (Chang, D'anna, Watson, and Wee (2006)).

[3]Among others, Fang and Peress (2009)show that firms enjoying greater press coverage experience lower stock return, Engelberg and Parsons (2011) explore the causal role of media through geographical instruments. Other papers analyze the consequence of the tone (positive or negative) of media coverage on earnings (Tetlock (2007) and Engelberg (2008)) or firms value (Gurun and Butler (2012)).

that home bias also stems from the familiarity of investors with domestic stocks (Dvořák (2005), Grinblatt and Keloharju (2001)). Facing this constraint, firms willing to increase their investor basis and improve their visibility could choose to cross-list in other countries in an attempt to attract international investors (Baker, Nofsinger, and Weaver (2002)), but this is a costly strategy typically confined to large firms. Communicating on English-speaking press wires appears as a simple and less costly strategy within the reach of smaller firms.

The rest of this paper is organized as follows. Section 1 gives an overview of the press wire industry in Europe and develops our hypotheses and methodology. Section 2 presents the data and the different sample of estimation. Results are presented in section 3. Section 4 explores consequences in term of firm visibility. Section 5 concludes.

1. Setting and Methodology

We first give an overview of the press release wire industry in Europe. We then describe in turn our hypotheses and our identification strategy.

1.1. The press release wire industry in Europe

Press release wire services disseminate press releases from companies to various audiences. In the past, the typical audience was the business press, for which wire services are the most efficient way to gather firm-initiated information on a large set of firms. But nowadays press release wire services also disseminate firms' news releases to financial databases (Thomson Reuters, Bloomberg), newswire services such as Dow Jones and Reuters, or investors directly.[4] Press release wire services are not selective – they disseminate all the press releases issued by the companies they serve. By contrast, at newswire services such as Dow Jones or Reuters, journalists select and reformat company information. In their advertising, press wire services stress their ability to target the right audience – i.e. the investors or media that have a potential interest in the firm. As such, press release wire services enable the firm to reach a wide audience.

[4]E.g., investor relation services offered by Business Wire:
http://www.businesswire.com/portal/site/home/ir/online-investor-center/, retrieved January 7th, 2012

Press release wire services have operated in the United States as far back as the 1950's. Today their use by U.S. publicly traded firms is standard. Dyck and Zingales (2003) document that "97% of firms issue a news release [...] via [a press release wire service] as soon after the close of the quarter." Two press release wires, PR Newswire and Business Wire (a subsidiary of Berkshire Hathaway) now dominate the U.S. market.

In contrast with the U.S., the use of press release wire services in Europe is relatively new and concurrent with the advent of the Internet. While in principle European firms could always hire U.S.-based press release wire services, until recently only large European firms with a worldwide investor relation strategy did so. To disseminate press releases, European firms had no choice but to hope for press coverage by news agencies (such as the Agence France Presse, a French government-owned agency) since no press release wire services were available. Around the year 2000, the European press release wire industry started to emerge with the establishment of a European office in London for Business Wire (2001), the rivalry between PR Newswire and Business Wire to tap foreign market share, and the appearance of several press release wire services in European countries (Companynews in France, Directnews in Germany and Hugin in Norway).[5]

The use of press release wire services by European firms was spurred by a 2004 European Law, the Transparency Directive, which aimed at strengthening disclosure requirements for firms listed on European markets.[6] The wording of the EU Transparency Directive echoes Regulation FD with regard to the dissemination of information by firms. For example, the U.S. Securities and Exchange Commission (SEC) states that "acceptable methods of public disclosure for purposes of Regulation FD will include press releases distributed through a widely circulated news or wire service."[7] The EU Transparency Directive prescribes that listed firms "ensure fast access to information on a non-discriminatory basis" […] using such media as may reasonably be relied upon for the effective dissemination of information to the public."

[5] "Wire services up overseas muscle", July 2000, Haymarket Business Publications Limited
[6] Directive 2004/109/EC of the European Parliament and of the Council of 15 December 2004. Available on *www.esma.europa.eu*.
[7] http://www.sec.gov/rules/final/33-7881.htm.

The Transparency Directive also addressed the politically charged issue of the language used by companies in their news releases. Up until then, some continental European countries had actually made it legally difficult for firms to communicate in English. The Transparency Directive removed those prohibitions and promoted the use of "a language that is customary in the sphere of international finance" (EU jargon for English).

The trend towards greater transparency on European markets, partly driven by regulation, spurred the emergence of a true pan-European commercial wire such as the Hugin group, which results from the merger of several European press releases wires, and was acquired by NYSE-Euronext in 2006 before being sold to Thomson Reuters in 2009.

In sum, the European press wire release wire industry underwent two transformations in the 2000 decade. First, supply increased markedly. Second, EU regulation pushed the demand curve for press release wire services to the right by making the use of wires almost mandatory – especially after 2007, the year in which EU countries started transposing the EU Transparency Directive into national legislation. This point is important since it mitigates the concern that the adoption of wires might be correlated with a fundamental event at the firm level, such as the entrance of a large foreign shareholder or an M&A operation, which would likely increase the demand for such services. For firms located in EU countries, hiring a press release wire service after 2007 likely stems from the change of regulation, and we posit that the adoption of a wire post-2007 is largely exogenous to unobservable firm characteristics. We will use the post-2007 sample in our analysis to assess the robustness of our results to endogeneity concerns.

1.2. Hypothesis development

Our discussion suggests that the use of wires has two major consequences for the communication policy of a firm: a greater standardization of the news dissemination process, and a wider audience thanks to the use of electronic media and the English language. Firms might find several benefits in reaching this audience, including the geographical diversification of its investor base, or the loosening of financial constraints through an easier access to capital

markets. We posit that firms that disseminate news through an English-language wire service, compared to those that release their disclosure in their home language, seek to target sophisticated international investors. Our main research question is whether such a strategy is successful.

Europe constitutes an ideal field for testing the implication of international investors' targeting. First, the vast majority of European markets are located in countries where English is not the official language and where the use of the local language is common, even among large firms. Second, the press wire industry in Europe has been in constant change over the last ten years and has been consolidated only recently. While companies in the United States largely rely on press wires to disseminate their press releases, the lack of integrated European wire services have prevented firms from targeting investors through this means for many years. Such a pattern of the European press wire industry provides us with a large variation in the use of press wires across firms and time.

If firms are able to expand their investor base and attract attention from more sophisticated investors, then targeted communication should have an impact on stock price behavior. The literature on investor attention predicts that stocks receiving more attention from investors are more actively traded and experience greater abnormal return on the days immediately following earnings announcements and smaller post-earnings announcement drift (DellaVigna and Pollet (2009), Hirshleifer, Lim, and Teoh (2009)). Thus, if communicating on wires is successful in attracting new investors and in gaining recognition, then the delayed stock reaction of on-wire firms should be lower than that of not-on-wire firms. Moreover, the abnormal trading volume should increase in the short term when a firm is on-wire. Second, we should observe a rise in the proportion of foreign investors in the company. Third, firms communicating on commercial wires should also raise the attention of the business press, as proxied by the two main electronic newswires, Dow Jones Newswire and Reuters. We hypothesize that, following the adoption of a commercial wire, coverage by electronic newswires increases.

1.3. Identification strategy

We begin by identifying firms that communicate their press releases on wires. Following prior research (Dyck and Zingales (2003), Bushee and Miller (2012), Bushee, Core, Guay, and

Hamm (2010), Core, Guay, and Larcker (2008)) we assume that all press releases on commercial wires are firm-initiated disclosures. As noted by Soltes (2010), some press releases are wrongly attributed to a firm and cannot be considered as true firm-initiated disclosures. Such concern does not affect the identification since our focus is on the use of wire services rather than on the level of disclosure. We thus define *OnWire*, a dummy variable equal to one if the firm issued a positive number of English-language press releases during the year, and equal to zero otherwise.

The use of annual rather than daily volume of press releases was dictated by several considerations. First, we focus our analysis on the stock reaction following annual earnings announcements, a more natural way to compare European firms than quarterly announcements. We are thus interested in any flows of information initiated by firms that could affect stock price behavior between two announcements. Second, an exploratory study leads us to believe that the firm's decision to go on wire is taken on an annual basis, most of the first press releases on wires being issued on the period surrounding annual earnings announcements. Third, as will become clear, the choice of switching to a wire is permanent and most of our analysis focuses on comparing the years before and after the switch. Missing the exact day at which a firm starts communicating on wires is not likely to change our conclusions.

As a starting point we test our hypothesis on the pooled sample of announcements, simply considering if they are made in conjunction with the communication of press releases on wires ("on-wire announcements"). While this approach does not take into consideration characteristics of firms that might affect the use of wires, it allows us to highlight the main phenomenon to be studied. We classify earnings surprise into quantiles and study the stock price response to earnings surprises. We examine whether the *sensitivity* of the stock price response to earnings surprises differs for on-wire and not-on-wire announcements.

Firms communicating on wires are likely to have unobservable characteristics that also drive the response to earnings surprises. To address this issue, we exploit of the panel structure of our data. For each firm, we track the use of commercial wires from year to year and define three groups of firms: firms that have always used wires, firms that have never used wires and firms that have switched to a wire on the period. The last group is the group of interest since it

allows us to study if the behavior of stock price changes after the switch. Such a setting controls for time-invariant unobserved characteristics of the switching firms.

A last concern is related to the fact that the characteristics of switching firms might change over time and that one of those changes simultaneously impact the likelihood of switching and the behavior of stock price. We address this issue by exploiting the regulatory change on disclosure implied by the Transparency Directive. We thus replicate the analysis on the firms that have switched to wires after their home country enacted the Transparency Directive. The adoption of wires by firms in those countries is likely to be driven by legal constraints rather than firms' characteristics and estimation of the effect of wires on this sample is unlikely to be biased.

2. Data and Descriptive Statistics

We describe the data collection process and provide detailed descriptive statistics on the sample.

2.1. Data

2.1.1. Press release wires

The press wire usage data come from Factiva, which offers access to a wide range of press release services from different countries and in many languages. It allows the user to customize a search to narrow a specific language without restraining it to a particular press wire. As our proxy for communicating to an international audience is the use of an English-speaking wire, irrespective of the type of services used, we run queries on all press wires communicating press releases in English, even if wires are located in a non-English-speaking country.

Our initial sample comprises all firms recorded in the I/B/E/S international database that belongs to the major European markets whose official language is not English. We thus restrain our attention to firms belonging to the following countries: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Italy, the Netherlands, Norway, Portugal, Spain, Sweden and Switzerland. We also require firms in the sample to be followed by at least two analysts. These filters yield 2,156 firms over the 1991-2010 period.

Factiva uses a unique key to identify firms, the "Factiva Intelligent Indexing Code." We manually search this key for all firms in our initial sample based on their name in the I/B/E/S identification file. Over the 2,156 firms in the initial sample we were able to identify 1,264 firms with a valid Factiva key that unambiguously maps with the company name from I/B/E/S. Collecting press wire usage then requires the submission of queries to Factiva to collect the volume of press releases communicated on English-speaking wires by each firm over the 1991-2010 period[8]. In some cases, Factiva incorrectly assigns the Indexing Code to a company: we thus manually check that the output of each query actually refers to the company associated to the Indexing Code. The final sample includes 1,195 firms over 1991-2010.

2.1.2. Earnings surprises and stock returns

We collect annual data on analyst forecasts and earnings announcements from the I/B/E/S international files. We collect one-year EPS forecasts for firms followed by at least two analysts issuing forecasts up to six months preceding the announcement date of the actual earnings. We define the earnings surprise as the difference between the actual earnings and the median consensus forecasts normalized by the price of a share five days before the announcement date of the actual. To compute the consensus, we keep the most recent forecasts made by an analyst for a given fiscal period and exclude forecasts made less than five days before the announcement date. Whenever possible, we compute consensus based on forecasts made on the last three months before the earnings announcements. Some firms in the sample have a small analyst coverage and in that case we had to compute a consensus based on forecasts made up to six months before the announcement. We exclude penny stocks and observations where actual earnings or forecasts are larger than the stock price.

We call $e_{y,i}$ the earnings per share of company i in year y and $c_{y,i}$ the corresponding consensus. $P_{y,i}$ is the price of the share five days before the announcement. The earnings surprise $s_{y,i}$ is:

$$s_{y,i} = \frac{e_{y,i} - c_{y,i}}{P_{y,i}}$$

[8] This was done using a combination of Perl Modules (Win32::GuiTest) and regular expression.

To mitigate potential errors in the reporting of actual figures, we delete observations where the earnings surprise (in absolute term) is greater than one. We match this annual earnings surprise with daily stock return downloaded from Datastream and compute cumulative abnormal returns over various horizons. We define $R_{d,i}$ as the return of the share of company i on day d and $R_{d,m}$ as the corresponding return of the market index. We first compute $\hat{\beta}$ from the following regression:

$$R_{d,i} = c + \beta R_{d,m}$$

where d is taken from 300 days to 46 days preceding the announcement date. We then define the cumulative abnormal return $CAR_{y,i}[x, X]$ of firm i in year y from day x to day X following the earnings announcement and computed as $[\prod_{d=x}(1 + R_{d,i}) - 1 - \hat{\beta}[\prod_{d=x}(1 + R_{d,i})] - 1]$. We use the Euro Stoxx 50 as the market index and drop announcements for which we had less than 40 days of stock price data to compute $\hat{\beta}$. We define $CAR[0,2]$ as the immediate response to earnings announcement and $CAR[2,60]$ as the drift following earnings announcements.

Finally, we match stock returns with the corresponding trading volume downloaded from Datastream. We compute the abnormal trading volume as the difference between the daily average number of shares traded after the announcement and the average daily number of shares traded between day -20 and day -11.

2.1.3. Other data:

To ensure that our results on the targeting of international investors are not driven by major M&A activity at the firm level that force the company to use international press wire services, we collect data on all major M&A operations on the European markets from the SDC Platinum database.

We collect data on market capitalization, market-to-book ratio, foreign sales and the fraction of closely held shares from Worldscope. Appendix A provides a full description of control variables.

We also collect institutional ownership data from the Thomson Ownership module and data on the press coverage by two specific media - Reuters wires and Dow Jones Newswire services, with a procedure similar to the one used for retrieving press wire communication.

2.2. Sample and descriptive statistics

Our final sample comprises 1,195 firms on the 1991-2010 period amounting to 9,715 firm-year observations. For each firm we track the use of press release wires over time. As press release wires are self-initiated disclosure media, a firm can choose each year whether or not it will disseminate information through this means. However, a large majority of firms in our sample (87%) exhibit a consistent behavior in the sense that either they choose to communicate their news through wires and then stick to this choice for the subsequent years either they do not communicate on wires at all.

This observation allows us to split our sample into three different sub-samples. The first sub-sample (Always-on-Wire) contains firms that use press release wires throughout our sample period. The second sample (Never-on-Wire) comprises firms that never use English-language press release wires. The third panel (Wire-Adopters) is the one of interest since it contains firms that started using press release wires during our sample period. To control for major events that could trigger the use of wires, we remove from this sub-sample firms that have a record in the SDC database involving investors outside their country of origin on the year they switch to English-speaking wires (27 firms).

Finally, we consider a subset of the Wire-Adopters panel containing firms that started to use a wire service after the enactment of the Transparency Directive in their country. We call them Directive-Wire-Adopters.

Table I Panel A provides descriptive statistics of the characteristics of firms in each sub-sample. At one extreme are firms that have always communicated their press releases on wire (Always-On-Wire firms): they are typically large firms, with high market-to-book and high analyst following. By contrast firms that never used a wire service for the dissemination of their press releases (Never-On-Wire firms) tend to be smaller and enjoy less analyst following. However, the average number of earnings forecasts (8.02) appears to be economically significant, suggesting that those firms benefit from a good informational environment in spite

of not being on wires. The characteristics of the Wire-Adopter firms are in between these two extremes: they end to be slightly bigger than Never-on-Wire firms, exhibit a larger market-to-book and a greater analyst following. By contrast, the group of firms that adopt a wire after a change in regulation (Directive-Wire-Adopters) are much smaller and less followed by analysts (6.53 forecasts), suggesting that the Transparency Directive has impacted firms with low informational environment.

Turning to earnings announcements, Table I Panel B describes whether firms have disseminated their press releases on wires on the year of announcement (On-Wire and Not-On-Wire announcements). Over the 9,715 announcements in the full sample, the majority (64.7%) is On-Wire (6,281 observations) and a fraction of 35.3% (3,434 observations) is Not-On-Wire. We rank earnings surprises into five quantiles, from Q1 (the most negative surprise) to Q5 (the most positive surprise). We choose to divide earnings surprises into five bins only to make it possible to compare announcements of the same level of surprise from the same firm, before and after it has switched to wires. At this point, it is important to note that if there were persistent differences in the magnitude of the surprise between On-Wire and Not-On-Wire announcements inside each quantile, this would make it difficult to disentangle the effect of communicating on wires from the effect of the surprise itself. Table I Panel C shows that on average, On-Wire announcements do not significantly differ from Not-On-Wire announcements for the first and the last quantiles (t-stat of respectively 0.36 and 1.46). For the last quantile, this difference tend to be larger (although not statistically significant) but this would tend to work against our main hypothesis – on-wire announcements make investors more attentive, since on-wire announcements are on average associated with slightly less surprising announcements.

Table II provides interesting insights into the chronology and geography of wire services adoption. Panel A column 2 shows that most of the Wire-Adopters firms started to use a wire service after the year 2000, consistent with the fact that wires have increased their presence in Europe only recently. From that date the proportion of firms in the sample using wires (column 4) is below 60% and tend to grow rapidly from the year 2004, confirming that regulatory changes have indeed spurred the use of wires. Turning to the geographical breakdown, panel B reveals no obvious effect of the country where the firm is registered: about half of the Wire-

Adopters are from France (98), Germany (91), and Switzerland (44) which reflects the weight of those countries in the sample.

3. Empirical Findings

3.1. Estimation

As explained in section 1.3, we test whether the sensitivity of stocks price to earnings surprise depends on the use of press release wires. Our approach is similar to DellaVigna and Pollet (2009). We estimate various specifications of the following equation:

$$CAR_{y,i}[x,X] = \alpha_0 + \sum_{j=2}^{5} \alpha_j Q_{y,i}^{j} + \alpha_w OnWire_{y,i} + \sum_{j=2}^{5} \beta_j^{w} Q_{y,i}^{j} * OnWire_{y,i} + \sum_{k=1}^{n} \gamma_k C_{y,i}^{k} + \sum_{j=2}^{5} \sum_{k=1}^{n} \delta_{j,k} C_{y,i}^{k} * Q_{y,i}^{j} + \varepsilon_{y,i} \quad (1)$$

where $CAR_{y,i}[x,X]$ is the abnormal stock return of firm i in year y from day x to day X following the earnings announcement. The $Q_{y,i}^{j}$ are dummy variables of the quantiles of surprise from $Q_{y,i}^{1}$ (the most negative surprise) to $Q_{y,i}^{5}$ (the most positive surprise) with $Q_{y,i}^{1}$ being the baseline category in the estimation of (1). The variable of interest $OnWire_{y,i}$ equals one if firm i communicates on a wire in year y and zero otherwise. The $C_{y,i}^{k}$ are control variables.

In most of the subsequent analysis, we will focus on the interpretation of the coefficients of the top-to-bottom surprise (Q_5 versus Q_1). To get a better understanding of these coefficients, suppose that we restrain our sample only to top and bottom surprises. In that case, equation (1) simply boils down to:

$$CAR_{y,i}[x,X] = \alpha_0 + \alpha_T Top_{y,i} + \alpha_w OnWire_{y,i} + \beta_T^w Top_{y,i} * OnWire_{y,i} + \sum_{k=1}^{n} \gamma_k C_{y,i}^k + \sum_{k=1}^{n} \delta_k C_{y,i}^k * Top_{y,i} + \varepsilon_{y,i}$$

(2)

In equation (2), α_T represents the differential reaction of top surprises versus bottom surprises for not-on-wire announcements, and β_T^w is the incremental difference for on-wire announcements. We are primarily interested in the coefficient β_T^w, which measures the difference response to earnings surprise between on-wire and not-on-wire firms. In particular, when considering the stock long term response ($CAR[2,60]$), the coefficient α_T is the top vs. bottom difference in drift and β_T^W gives the incremental difference in the drift (if any) implied by communicating on wires.

We allow the stock response to depend on a set of *n* control variables $C_{y,i}^k$. We include indicators for market capitalization as a proxy for size, constructed as the difference between the natural logarithm of market capitalization and the average of the log market capitalization of all firms in year *y* (variable *Size*). Other controls include analyst following (*Analyst*) and market-to-book ratio (*MTB*). Each control variable is also interacted with the quantile of earnings surprise, controlling for the fact that top surprise could be correlated with characteristics of the firm. The coefficient α_0 includes a set of fixed effects that takes into account temporal trend in stock response (year fixed-effect), systematic difference between countries (country fixed-effect) and across sector (sector fixed-effect). In some specifications we control for time-invariant firm heterogeneity by adding firm fixed-effects. We allow the residuals to be correlated for the same firm and compute standard errors adjusted for heterogeneity and within-firm clustering (Petersen (2009)).

3.2. Results on the pooled sample of announcements

As a starter, we estimate equation (2) on the pooled sample of announcements to investigate the association between wire communication and the earnings response drift. Table III displays coefficient estimates of the regression with the long term response $CAR_{y,i}[2,60]$ as

the dependent variable and with only top and bottom surprises considered. In the specification without controls, the difference between top and bottom surprises is 8.8% ($\widehat{\alpha_T} = 0.088$) for not-on-wire announcements. Being on wire results in a 3 percentage point decrease of the top vs. bottom drift ($\widehat{\beta_T} = -0.030$), a statistically and economically significant effect. Controlling for time-invariant characteristics (sector and country fixed-effects) and temporal trend (year fixed-effect) slightly decreases the magnitude of the effect ($\widehat{\beta_T} = -0.025$), but it remains significant at the 5% level. Standard controls do not affect the size of the effect (column 3) but in conjunction with year fixed effects the impact of communicating on wires becomes somewhat weaker. Figure 1a visually complements these findings by showing the mean level of response for all quantiles. On-wire announcements significantly trigger less reaction for the first two quantiles ($Q1$ and $Q2$) but tend to exhibit the same stock response for upper quantiles although the top-to-bottom return ($Q5$ to $Q1$) appears to significantly differ between each type of announcements. This finding is confirmed by Figure 2 which shows the drift at different horizons for both types of announcements. In the first ten days following earnings announcements both drift are indiscernible, but tend to diverge afterwards. Overall, these findings suggest that using press release wires reduces the earnings response drift.

Turning to the immediate response, Figure 1b displays the mean level of $CAR_{y,i}[0,1]$ for each quantile of surprises. On-wire announcements are associated with more immediate response for the most negative surprises only (-0.19% versus -0.5%). Estimation of equation (1) using $CAR_{y,i}[0,1]$ as the dependant variable only marginally supports this view (Table IV) since the coefficient of interaction between $Wire$ and $Q5$ is positive but statistically not different from zero for all specifications. To gain a better understanding of the relation between short term and long term reaction of stock return, we conduct the test described in DellaVigna and Pollet (2009), based on the share of the total stock response $CAR_{y,i}[0,60]$ that occurs with delay ($CAR_{y,i}[2,60]$), a proxy for the delayed response of stocks. More precisely, we test whether the fraction of delayed response differs between on-wire and not-on-wire announcements. The computation involves estimating (1) with successively $CAR_{y,i}[2,60]$and $CAR_{y,i}[0,60]$ as dependent variables[9]. The response ratio for not-on-wire announcements is

[9] See DellaVigna and Pollet (2009) p.p. 729-730 for a derivation of this result.

then computed as the ratio between each estimate of the top-to-bottom return ($\alpha_T^{[2,60]}/\alpha_T^{[0,60]}$). The response ratio for on-wire announcements is similarly equal to $(\alpha_T^{[2,60]} + \beta_T^{w\,[2,60]})/(\alpha_T^{[0,60]} + \beta_T^{w\,[0,60]})$.

Table V displays our results on the delayed response ratio. For all specifications, on-wire announcements are associated with less drift than not-on-wire announcements. In the first specification (column 1), more than 84% of the long term reaction occurs with delay for not-on-wire announcements compared to a fraction of 77.4% for on-wire announcements. These results suggest that on-wire announcements are associated with quicker reaction of stock return to earnings surprises and less delayed reaction, consistent with the hypothesis that the use of wires reduces the time taken by investors to incorporate firms' news on earnings.

We finally investigate the effect of wire communication on trading volume on the pooled sample of earnings announcements. Figure 3 displays the abnormal trading volume following earnings announcements for each type of announcements over a ten-day period. On the announcement date, on-wire announcements exhibit 16% higher trading volume on average. In the next ten days, the difference remains positive and economically significant before vanishing afterwards. We confirm this this finding by estimating the following regression:

$$VOL = a_0 + \sum_{j=2}^{5} b_j Q_{y,i}^{j} + b_w OnWire_{y,i} + \sum_{k=1}^{n} c_k C_{y,i}^{k} + \varepsilon_{y,i} \qquad (2)$$

where VOL denotes the abnormal trading volume. The coefficient of interest is b_w, which measures the average effect of communicating on wires, conditional on earnings surprises and a set of control variables. Table VI shows that whatever the set of controls, communicating on wire is associated with greater abnormal volume. In the limit case, being on wire is associated with a 4.6% differential trading volume. In so far as low trading volume has been associated with investors' inattention (Gervais, Kaniel, and Mingelgrin (2001), Barber and Odean (2008)), this pattern is consistent with the idea that failing to support earnings announcements attract more investor attention when firms communicate on wires.

3.3. The effect of switching to a wire service

So far we have found that the use of wires is associated with less drift in the earnings response and higher trading volume, consistent with greater investor attention. However, our results might simply be due to the fact that firms choose to communicate on wires when they have important news. In this interpretation, both wire usage and the earnings response are the consequences of underlying events. Another issue stems from unobserved heterogeneity of firms in the sample: it could well be that firms communicating on wires have different characteristics (beyond observed ones) that also influence the reaction of investors. To control for these issues, we exploit the panel structure of our data and split firms into different subsamples. We first discard firms that have always communicated on wires over the period (Always-on-wire firms) since they are likely to exhibit characteristics that drive the earnings response (443 firms). We then discard firms that erratically use wires over the period since for these firms, the use of wires is likely to be driven by the importance of news to be conveyed (156 firms). We thus restrict our sample in the subsequent analysis to wire-adopters firms (426 firms) and never-on-wire firms (171 firms). The former are firms that durably change the nature of their communication at some point in time in the sense that, irrespective of the nature of the news on a given year, communication are made on wires. Never-on-wire firms, firms that do not rely on press wire services for their communication, are used as a control group.

For each firm we first identify the year in which the switch to wires becomes effective (the switching date). Figure 4 gives a sense of how the drift evolves around this date. In the three years preceding the switching date, the average drift is above 6% while it drops to less than 3% in the three years following it. Interestingly, the decision to go on wire does not appear to coincide with firms' decision to expand their international operations as showed by the mean evolution of foreign sales over the period.

To confirm this analysis, we check whether the adoption of a wire reduces the post-earnings drift ($CAR\ \ [2,60]$) to earnings surprise by estimating equation (1) on the sub-sample of wire-adopters only. In this sub-sample the variable $Onwire$ is equal to one if the year of announcement is posterior to the switching date and zero otherwise. Implicitly, the control group at each period is all firms that have not yet switched to wires. We are interested in how a change in firms' communication behavior affects stock price reaction and we thus need to follow firms at each period in time. For this reason, we estimate the full equation with all

quantiles of earnings surprise. Table VII displays the results of different specifications. All of them include firm fixed-effects so that the effect of wire on stocks' long term response is driven by a change within the firm over time. This way, we assess the effect of a change in the communication policy (going on wire) on the stock price reaction. In all specifications, the coefficient estimate on the interaction term between the top quantile ($Q5$) and $Onwire$ is large and significant. On average, in the specification without controls, switching to a wire results in a 4.6% decrease ($\widehat{\beta_5} = -0.046$) in the drift compared to the period before the switch.

While the above methodology sheds light on the effect of the switch in an event time setting, it suffers from a temporal bias. As shown in section 2.1, the switching date is clustered on certain years and it could well be that the observed pattern stems not from the switch itself but from some events that occur on the year of events and affects all firms in the sample. The post-earnings announcement drift could indeed change over time and in that case, the coefficient β_5 would simply reflect a change in market condition. To account for the possibility that the drift changes over time, we re-estimate equation (1) on the two samples of wire-adopters and never-on-wire firms. The latter sample thus provides a control group at each point in time that accounts for shocks common to all companies. In that case, we interpret the coefficient of interest ($\widehat{\beta_5}$) as the mean difference in the long-term response between wire-adopters and never-on-wire firms in the post-event period compared to the pre-event period. Table VIII presents the estimation of the results and broadly confirms our previous findings. On average, in the specification with all controls, switching to wires is associated with a 4.5% decrease ($\widehat{\beta_5} = -0.045$) in the long-term response, still an economically and statistically significant result.

3.4. Exogenous switch to wires : adoption of wires in response to the Transparency Directive

Another potential concern is that the switch to wires could be correlated with other events at the corporate level that also affect the stock price behavior. For instance, the decision to go on wire might coincide with a firm's decision to expand its international operations, which could also affect the trading of investors. To obtain reliable estimates of the effect of wires, we exploit the regulatory changes caused by the Transparency Directive. The European Transparency Directive that prescribed the use of wires came into force in European countries

in 2007. For firms switching to wires after this date, such a change is likely to be constrained by the new legislation and can be considered as truly exogenous.

We thus estimate equation (1) by replacing the variable *Wire* by the variable *Directive*, which is equal to one if a firm switches to wires after 2007 and is incorporated in a country affected by the transparency directives, and zero otherwise. All countries in the sample abide by the Transparency Directive except Norway[10].

Table IX presents our results. They confirm the results we obtained for the full sample but the effect of wire is magnified. In the specification without controls, wire usage results in a five-percentage point reduction of the drift comparing to the specification with the full sample of firms (Table VIII). In section 2.2, we document that firms adopting wires in response to the new European regulation are smaller and less covered by analysts. For those firms, switching to a wire has a marked impact on the delayed response of stocks to earnings surprises. This finding is consistent with Bushee and Miller (2012), who show that hiring a specialized IR firm has the strongest impact for small and midcap firms enjoying low visibility. By comparison, firms in the Directive-Wire-Adopters panel are European firms probably not easily able to attract international (sophisticated) investors. For those firms, targeting investors through the use of English-speaking wires appears to be an effective strategy.

4. Consequences On Firm Visibility and Ownership

The results in section 3 suggest that press release wires help enhance investor attention. We have drawn this conclusion from the observation that stock prices incorporate the information content of earnings announcements more quickly when firms have a presence on English-speaking wires. While this conclusion suggests that a strategy of investors' targeting (communicating in English) can succeed in raising investors attention, it does not tell us directly if the "right" investors, i.e. international investors, have indeed been attracted. In this section we explore the consequences of wire usage for firm international visibility by focusing on two measures: international media coverage and foreign institutional ownership. To steer

[10]Switzerland is not normally concerned by European Directives but it has implemented on the same period a law similar in its content to the Transparency Directive.

clear of the endogeneity issue, we perform the analysis on firms that have exogenously switched to wires in response to the Transparency Directive.

4.1. Impact on media coverage

If press wire services succeed in attracting international investors, then we should observe an increase in the coverage by the English-speaking business press, one of the most important channels of information between firms and investors (Zingales (2000)). At this point, we did not assume, like Soltes (2010), that press releases issued on commercial press wires have journalists as a unique audience. Indeed, the development of press wire in Europe has been concomitant to a wave of regulation that strengthens the need to communicate with all investors. Press wire services in Europe have thus advertized their services on the ground that they allow communication to investors and the media at the same time. It is thus still unclear whether the simple fact of subscribing to a commercial wire service can increase business media coverage.

As a proxy for international media coverage, we use the volume of articles published on Reuters and Dow Jones Newswire Services. The choice to confine to electronic newswires only as a proxy for press coverage was dictated by the fact that many firms in our sample are not big enough to be likely to have a column in U.S. newspapers. Electronic newspapers, by contrast, cover a large range of firms and are actively followed by market participants.

We estimate the following equation on firms that switch to wires in response to the Transparency Directive:

$$ln(1 + nbarticles_{yi}) = a_0 + a_1 Directive_{y,i} + \sum_{k=1}^{n} b_k C_{y,i}^k \qquad (3)$$

where $nbarticles_{yi}$ denotes the number of articles on electronic wires that cite firm i on year y. We include control variables ($C_{y,i}^k$) as well as years and firms fixed-effect.

The coefficient estimates reported in Table X**Erreur ! Source du renvoi introuvable.** point to a significant impact on press coverage of switching to wire communication. In the specification with all controls, switching to a wire results in a 37.4% increase of press coverage,

significant at the 1% level – consistent with the idea that switching to using a wire helps firms increase their international visibility.

4.2. Foreign institutional ownership

Enhanced international visibility, as a result of a specific targeting strategy, should translate into more attention from institutional investors. On a panel of Swedish firms Dahlquist and Robertsson (2001) show that foreign institutional investors value the presence of firms on international markets, e.g. through a cross-listing on another market. Similarly, we expect visibility on English-speaking wires to draw attention of foreign institutional investors.

We address this question by estimating the following equation on firms that switch to wires in response to the Transparency Directive:

$$ForeignProp = a_0 + a_1 Directive_{y,i} + \sum_{k=1}^{n} b_k C_{y,i}^k \qquad (4)$$

where $ForeignProp$ is the proportion of institutional investors that are not from the country where firm i is located.

In another specification, we replace $Directive$ by a set of dummy variables $yearX$ indicating the number of years elapsed since the switch to wire has occurred.

Table XI reports estimation of equation (4). In the first specification (column (1)), switching to a wire is associated with a nine percentage point increase in the proportion of foreign investors. However, such an effect is not homogeneous in time. In the second specification, $year1$ is the date at which the switch occurs and the estimation is performed by comparison with the pre-switch period. Interestingly, the attractive power of wire communication grows over time. The effect of switching to wires ranges from a 6.5 percentage point increase in foreign ownership in the year of the switch to a 16 percentage point increase four years after the switch. We interpret this differential effect as the time it takes for a firm to become visible among large foreign institutional investors. All in all, this supports the hypothesis that investor targeting through press release wires proves successful in the long run.

5. Conclusion

European firms communicating their press release on English-speaking wires experience a quicker stock price response following earnings announcement. This finding holds when firms switch to wires, i.e. when we observe for the same firm both a targeting strategy (after the switch) and virtually no strategy to attract investors (before the switch). Our findings suggest that the use of press release wires by firms enhances investor attention.

Targeted communication also increases the international visibility of firms. Firms that adopt wire service communication benefit from higher coverage by the English-speaking business press. Moreover, they tend to attract foreign institutional investors in the three years following the change in communication, consistent with communication in English broadening the firm's investor base.

Overall, our results highlight the importance of targeted financial communication (Merton 1987). Firms with a low degree of investor recognition can expand their investor base without relying on complex processes such as cross listing in a foreign market. Targeted communication toward investors appears to be a simple and inexpensive way to enhance investor attention.

Appendix A List of Variables

Variable	Definition	Source
OnWire	Dummy variable that equals one if a firm uses a press wire service on that year	Factiva
Directive	Dummy variable that equals one if a firm switches to wires after 2007 and is incorporated in a country affected by the transparency directives, and zero otherwise.	Factiva
Earnings Surprise	The difference between actual earnings and the median analyst divided by the price of the share five days before the announcement date.	I/B/E/S
Q1 to Q5	Five quantiles of Earnings Surprise	I/B/E/S
Following	Number of earnings forecasts issued by analysts	I/B/E/S
Size	Difference between the natural logarithm of market capitalization and the average of the log market capitalization for all firms in the same year.	Worldscope
MTB	Market to book ratio	Worldscope
Foreign sales percentage	The share of sales made on foreign markets.	Worldscope
Closely held shares	Fraction of closely held shares.	Worldscope
Sector	Sector fixed effects (six-digit SIC code).	I/B/E/S
Country	Country fixed effect	I/B/E/S
Nbarticle	Number of articles from Reuters and Dow Jones Newswire services citing a firm	Factiva
Foreignprop	The proportion of foreign investors.	Thomson Ownership

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Table I

Descriptive Statistics

This table displays characteristics of announcements and announcing firms. The sample period is 1991-2010. In Panel A, we present mean characteristics across firms and time for all firms in our sample (column 1) as well as characteristics for four subsamples: column 2 displays characteristics of firms that have always disseminated their press releases through wire services, column 3 describes firms that have never communicated on wires and the last two columns show statistics for firms that have adopted a wire service on the period. Column 4 describes characteristics of all Wire-Adopters while column 5 presents descriptive statistics for the subset of firms that switch to a wire service due to the enactment of the Transparency Directive. Earnings Surprise is the difference between actual earnings for the current year and the median analyst forecast up to 6 months before the earnings announcement divided by the price of the share five days before the announcement date. Market Cap. is defined as the logarithm of the market capitalization and Analyst Following is the number of earnings forecasts on the last six months. In Panel B and C, On-Wire announcements are announcements made by firms that disseminate their press releases through a wire service on the year of announcement. In panel C, Q1 to Q5 denotes the quantiles of earnings surprises. *T-stat* are displayed in parenthesis.

Panel A: Characteristics of Firms by Dissemination Policy

	All Firms	Always-on-Wire	Never-on-Wire	Wire-Adopters	Directive-Wire-Adopters
Market Cap.	13.9	14.8	12.97	13.5	12.9
Market-to-Book	2.91	3.11	2.41	2.86	2.68
Analyst Following	11.4	15.4	8.02	9.98	6.53
Number of firms	1,195	443	171	426	152

Panel B: Distribution of Announcements by Type of Announcements

	All	On-Wire	Not-On-Wire
Number	9,715	6,281	3,434
Fraction	100%	64.7%	35.3%

Panel C: Mean Level of Surprise by Quantiles for On-Wire and Not-On-Wire Announcements

	Q1	Q2	Q3	Q4	Q5
On-Wire	-0.043	-0.002	0.0007	0.005	0.036
Observations	*1215*	*1252*	*1244*	*1275*	*1295*
Not-On-Wire	-0.042	-0.002	0.0006	0.005	0.04
Observations	*713*	*688*	*734*	*666*	*633*
Difference	0.001	0.000	-0.001	0.0002	0.004
	(0.36)	(-0.11)	(-2.08)	(2.54)	(1.46)

Table II

Summary Statistics

This table presents summary statistics on firms that switch to wire services over the period 1991-2010. In Panel A, we report for each year the total number of firms (column 1), the number of firms that adopt a wire this year (column 2), the number of firms in the sample communicating on wires (column 3), and their proportion (column 4). Panel B is built by aggregating all firm-year observations for each country. The last row is the total number of distinct firms across all years.

	Total number of firms	Number of firms that switch to wires	Number of firms that communicate on wires	Proportion of firms that communicate on wires
Panel A:Summary statistics by year				
1991	32	0	15	46.9%
1992	110	3	41	37.3%
1993	93	3	40	43%
1994	122	4	50	41%
1995	191	2	61	31.9%
1996	205	5	70	34.1%
1997	296	10	101	34.1%
1998	356	14	135	37.9%
1999	419	18	191	45.6%
2000	564	28	300	53.2%
2001	510	38	321	62.9%
2002	556	31	341	61.3%
2003	520	28	354	68.1%
2004	690	32	468	67.8%
2005	741	18	511	68.9%
2006	858	35	595	69.3%
2007	965	41	693	72%
2008	925	55	710	76.8%
2009	683	23	548	80.2%
2010	802	38	694	86.5%
Panel B:Summary statistics by country				
Austria	31	11	18	58.1%
Belgium	55	18	20	36.4%
Denmark	46	15	21	45.7%
Finland	60	20	34	56.7%
France	219	98	101	46.1%
Germany	222	91	111	50%
Greece	48	6	31	64.6%
Italy	86	25	37	43%
Netherlands	73	26	27	37%
Norway	80	16	56	70%
Portugal	13	6	6	46.2%
Spain	67	19	26	38.8%
Sweden	102	31	72	70.6%
Switzerland	93	44	24	25.8%
Total	1,195	426		

Table III

Long Term Stock Price Reaction to Earnings Announcements for the Top and Bottom Quantiles

The cumulative abnormal return for each stock is computed as the difference between the cumulative return of the stock and the cumulative expected return estimated from the market model. The sample period is 1991-2010. Announcements are pooled together and five quantiles are formed on the basis of earnings surprise. Only quantiles five and one are used for the estimation of coefficients. OnWire is a dummy that takes the value one if an announcement is supported by press releases on a dedicated press wire on the year of the announcement. Standard errors adjusted for heteroskedasticity and clustered by firms are in parenthesis below the coefficient estimates.

The Dependent Variable is the Cumulative Abnormal Return from Day 2 to 60				
	(1)	(2)	(3)	(4)
Constant	-0.036***	-0.038	-0.001	-0.030
	(0.007)	(0.030)	(0.023)	(0.031)
Top Quantile	0.088***	0.079***	0.10***	0.092***
	(0.009)	(0.009)	(0.012)	(0.012)
OnWire	0.026***	0.016*	0.037***	0.021**
	(0.008)	(0.009)	(0.009)	(0.009)
Top Quantile*OnWire	-0.030***	-0.025**	-0.027**	-0.022*
	(0.011)	(0.011)	(0.013)	(0.012)
Market Cap.			-0.001	-0.002
			(0.002)	(0.002)
Top Quantile*Market Cap.			-0.005*	-0.003
			(0.003)	(0.003)
Following			-0.001	-0.000
			(0.001)	(0.001)
Top Quantile*Following			0.001	0.000
			(0.001)	(0.001)
Market-to-Book			-0.004***	-0.003**
			(0.002)	(0.001)
Top Quantile*Market-to-Book			0.001	0.000
			(0.002)	(0.002)
Country FE		yes	yes	yes
Sector FE		yes	yes	yes
Year FE		yes		yes
Number of Observations	3,856	3,856	3,788	3,788
R^2	0.041	0.138	0.17	0.16

*significant at 10%;**significant at 5%;***significant at 1%

Table IV

Short Term Stock Price Reaction to Earnings Announcements for the Top and Bottom Quantiles

The cumulative abnormal return for each stock is computed as the difference between the cumulative return of the stock and the cumulative expected return estimated from the market model. The sample period is 1991-2010. Announcements are pooled together and five quantiles are formed on the basis of earnings surprise. Only quantiles five and one are used for the estimation of coefficients. OnWire is a dummy that takes the value one if an announcement is supported by press releases on a dedicated press wire on the year of the announcement. Standard errors adjusted for heteroskedasticity and clustered by firms are in parenthesis below the coefficient estimates.

The Dependent Variable is the Cumulative Abnormal Return from Day 0 to 1				
	(1)	(2)	(3)	(4)
Constant	-0.002	-0.001	0.004	0.000
	(0.001)	(0.006)	(0.005)	(0.007)
Top Quantile	0.010***	0.010***	0.013***	0.013***
	(0.002)	(0.002)	(0.003)	(0.003)
OnWire	-0.003*	-0.002	-0.002	-0.002
	(0.002)	(0.002)	(0.002)	(0.002)
Top Quantile*OnWire	0.002	0.003	0.002	0.002
	(0.002)	(0.002)	(0.003)	(0.002)
Market Cap.			0.001	0.001
			(0.000)	(0.000)
Top Quantile*Market Cap.			-0.002***	-0.002***
			(0.001)	(0.001)
Following			-0.0001**	-0.001**
			(0.000)	(0.000)
Top Quantile*Following			0.000**	0.000**
			(0.000)	(0.000)
Market-to-Book			-0.000	0.000
			(0.000)	(0.000)
Top Quantile*Market-to-Book			-0.000	-0.000
			(0.000)	(0.000)
Country FE		yes	yes	yes
Sector FE		yes	yes	yes
Year FE		yes		yes
Number of Observations	3,856	3,856	3,788	3,788
R^2	0.02	0.041	0.038	0.044

*significant at 10%;**significant at 5%;***significant at 1%

Table V

Ratio of the Delayed Stock Response (2 to 60) to the Long-Term Stock Response (0 to 60)

This table presents estimates of the Delayed Response Ratio as defined in Dellavigna and Pollet (2009). It comes from the successive regressions of $CAR[2,60]$ and $CAR[0,60]$ as dependant variables on top and bottom quantiles of earnings surprises (equation (1)). The response ratio for not-on-wire announcements is then computed as the ratio between each estimate of the top-to-bottom return $(\alpha_5^{[2,60]}/\alpha_5^{[0,60]})$. The response ratio for on-wire announcements is similarly equals to $(\alpha_T^{[2,60]} + \beta_T^{w\,[2,60]})/(\alpha_T^{[0,60]} + \beta_T^{w\,[0,60]})$. Standards errors are computed using the delta method. Standard errors for each regression are adjusted for heteroskedasticity and clustered by firms.

	(1)	(2)	(3)	(4)
Response ratio for not-on-wire announcements	0.844	0.832	0.811	0.804
	(0.031)	(0.027)	(0.031)	(0.034)
Response ratio for on-wire announcements	0.774	0.755	0.731	0.728
	(0.031)	(0.033)	(0.051)	(0.052)
Difference between the response ratio for on-wire and not-on-wire announcements	-0.070**	-0.078**	-0.081**	-0.076*
	(0.036)	(0.039)	(0.041)	(0.039)
Country FE		yes	yes	yes
Sector FE		yes	yes	yes
Year FE		yes		yes
Number of Observations	3,856	3,856	3,788	3,788

*significant at 10%;**significant at 5%;***significant at 1%

Table VI

Trading Volume Response to Earnings Announcements

The cumulative abnormal trading volume is computed as the difference between the daily average number of share traded on the day of announcement (day 0 to1) and the daily average number of share traded over the period preceding the earnings announcement (days -20 to -11). The sample period is 1991-2010. Q refers to the quantiles of earnings surprise, Q5 being the most positive surprise. Standard controls include market capitalization, market-to-book ratio and analyst following. Standard errors adjusted for heteroskedasticity and clustered by firms are in parenthesis below the coefficient estimates.

The Dependent Variable is the Cumulative Abnormal Trading Volume		
	(1)	(2)
Constant	0.360***	0.113
	(0.029)	(0.146)
Q2	0.005	0.022
	(0.030)	(0.031)
Q3	-0.093***	-0.063**
	(0.030)	(0.030)
Q4	0.053*	0.045
	(0.031)	(0.031)
Q5	0.115***	0.105***
	(0.030)	(0.030)
OnWire	0.117***	0.045*
	(0.025)	(0.027)
Controls		yes
Year FE		yes
Number of Observations	9,715	9,508
R^2	0.009	0.044

*significant at 10%;**significant at 5%;***significant at 1%

Table VII

Long Term Stock Price Reaction to Earnings Announcements for Wire-Adopters

The sample of estimation is all the firms that have adopted a wire service over the 1991-2010 period. All specifications include firms fixed effects so that the effect of independent variables is driven by change of variables within each firm over time. For each firm, we compute the year it started to use a wire (the switching date). OnWire is a dummy that equals one if earnings announcements are made after the switching date. Q refers to the quantiles of earnings surprise, Q5 being the most positive surprise. Standard controls include market capitalization, market-to-book ratio and analyst following. Whenever a control is included, it is also interacted with all quantiles of earnings surprises. Standard errors adjusted for heteroskedasticity and clustered by firms are in parenthesis below the coefficient estimates.

The Dependent Variable is the Cumulative Abnormal Return from Day 2 to 60				
	(1)	(2)	(3)	(4)
Constant	-0.067***	-0.022	0.119***	0.116***
	(0.011)	(0.022)	(0.030)	(0.030)
Q2	0.016	0.016	0.031	0.03
	(0.013)	(0.013)	(0.022)	(0.02)
Q3	0.086***	0.082***	0.058**	0.055**
	(0.015)	(0.015)	(0.022)	(0.022)
Q4	0.077***	0.073***	0.071***	0.068***
	(0.015)	(0.015)	(0.021)	(0.021)
Q5	0.095***	0.085***	0.093***	0.085***
	(0.015)	(0.015)	(0.022)	(0.021)
OnWire	0.057***	0.032**	0.071***	0.037**
	(0.014)	(0.014)	(0.014)	(0.015)
Q2*OnWire	-0.003	-0.019	-0.031	-0.020
	(0.019)	(0.017)	(0.019)	(0.018)
Q3*OnWire	-0.067***	-0.048**	-0.073***	-0.056***
	(0.018)	(0.017)	(0.018)	(0.018)
Q4*OnWire	-0.043**	-0.029	-0.035	-0.023
	(0.019)	(0.019)	(0.02)	(0.020)
Q5*OnWire	-0.046**	-0.037**	-0.047**	-0.041**
	(0.019)	(0.017)	(0.020)	(0.019)
Controls (interacted)			yes	yes
Year FE		yes		yes
Individual FE	yes	yes	yes	yes
Number of Observations	3,869	3,869	3,801	3,801
*significant at 10%;**significant at 5%;***significant at 1%				

Table VIII

Long Term Stock Price Reaction to Earnings Announcements for Wire-Adopters and Never-On-Wire Firms

The sample of estimation is all the firms that have adopted a wire service over the 1991-2010 period and all the firms that have never been on wires. For each firm, we compute the year it started to use a wire (the switching date). OnWire is a dummy that equals one if earnings announcements are made after the switching date. OnWire equals zero for all periods for Never-On-Wire firms. Q refers to the quantiles of earnings surprise, Q5 being the most positive surprise. Standard controls include market capitalization, market-to-book ratio and analyst following. Whenever a control is included, it is also interacted with all quantiles of earnings surprises. Standard errors adjusted for heteroskedasticity and clustered by firms are in parenthesis below the coefficient estimates.

	(1)	(2)	(3)	(4)
Constant	-0.063***	-0.057**	0.117***	0.107***
	(0.010)	(0.024)	(0.028)	(0.036)
Q2	0.013	0.015	0.022	0.028
	(0.011)	(0.010)	(0.018)	(0.017)
Q3	0.073***	0.071***	0.057***	0.052***
	(0.012)	(0.011)	(0.018)	(0.018)
Q4	0.076***	0.074***	0.070***	0.071***
	(0.011)	(0.011)	(0.017)	(0.017)
Q5	0.094***	0.083***	0.089***	0.082***
	(0.011)	(0.011)	(0.017)	(0.016)
OnWire	0.054***	0.028**	0.068***	0.036***
	(0.013)	(0.013)	(0.014)	(0.013)
Q2*OnWire	-0.027	-0.018	-0.026	-0.016
	(0.017)	(0.016)	(0.018)	(0.017)
Q3*OnWire	-0.055***	-0.038**	-0.065***	-0.050***
	(0.016)	(0.015)	(0.016)	(0.016)
Q4*OnWire	-0.043**	-0.031	-0.039**	-0.027
	(0.017)	(0.016)	(0.017)	(0.017)
Q5*OnWire	-0.045***	-0.035**	-0.048***	-0.040**
	(0.017)	(0.016)	(0.017)	(0.017)
Controls (interacted)			yes	yes
Year FE		yes		yes
Individual FE	yes	yes	yes	yes
Number of Observations	4,882	4,882	4,776	4,776

*significant at 10%;**significant at 5%;***significant at 1%

Table IX

Long Term Stock Price Reaction to Earnings Announcements for Directive-Wire-Adopters and Never-On-Wire Firms

The sample of estimation includes Wire-Adopters firms that switch to a wire service after the implementation of the Transparency Directive in their home country and firms that have never been on wires. The estimation period is 1991-2010. For each firm, we compute the year it started to use a wire (the switching date). Directive is a dummy that equals one if (a) the switching date is posterior to year 2007 and (b) the firm is registered in a country subject to the Transparency Directive. Directive equals one for all periods for Never-On-Wire firms. Q refers to the quantiles of earnings surprise, Q5 being the most positive surprise. Standard controls include market capitalization, market-to-book ratio and analyst following. Whenever a control is included, it is also interacted with all quantiles of earnings surprises. Standard errors adjusted for heteroskedasticity and clustered by firms are in parenthesis below the coefficient estimates.

The Dependent Variable is the Cumulative Abnormal Return from Day 2 to 60				
	(1)	(2)	(3)	(4)
Constant	-0.033*	-0.068	0.209***	0.158**
	(0.019)	(0.043)	(0.053)	(0.068)
Q2	0.006	0.013	0.008	0.257
	(0.014)	(0.014)	(0.027)	(0.026)
Q3	0.067***	0.068***	0.079***	0.076**
	(0.015)	(0.015)	(0.028)	(0.028)
Q4	0.075***	0.073***	0.084**	0.080***
	(0.014)	(0.013)	(0.027)	(0.027)
Q5	0.096***	0.073***	0.079***	0.078***
	(0.013)	(0.012)	(0.026)	(0.024)
Directive	0.097***	0.047*	0.093***	0.054*
	(0.029)	(0.028)	(0.029)	(0.027)
Q2*Directive	-0.050	-0.029	-0.045	-0.025
	(0.042)	(0.038)	(0.041)	(0.030)
Q3*Directive	-0.090**	-0.061*	-0.085**	-0.058
	(0.035)	(0.034)	(0.036)	(0.035)
Q4*Directive	-0.059	-0.043	-0.057	-0.039
	(0.038)	(0.037)	(0.037)	(0.036)
Q5*Directive	-0.094**	-0.072**	-0.095**	-0.075**
	(0.040)	(0.036)	(0.041)	(0.038)
Controls (interacted)			yes	yes
Year FE		yes		yes
Individual FE	yes	yes	yes	yes
Number of Observations	2,111	2,111	2,055	2,055
*significant at 10%;**significant at 5%;***significant at 1%				

Table X

Wire Adoption and Media Coverage

The sample of estimation includes Wire-Adopters firms that switch to a wire service after the implementation of the Transparency Directive in their home country. The estimation period is 1991-2010. The volume of press corresponds to all articles published on Reuters and Dow Jones Newswires. For each firm, we examine whether the volume of press increases on the years following the adoption of a press release service. Standard errors adjusted for heteroskedasticity and clustered by firms are in parenthesis below the coefficient estimates.

The Dependent Variable is the Log Volume of Press	
Constant	-2.378
	(1.74)
Directive	0.374***
	(0.122)
Log Market Cap.	0.073
	(0.110)
Analyst Following	-0.004
	(0.017)
Market-to-Book	0.022
	(0.022)
Individual FE	yes
Year FE	yes
Observations	1,080
*significant at 10%;**significant at 5%;***significant at 1%	

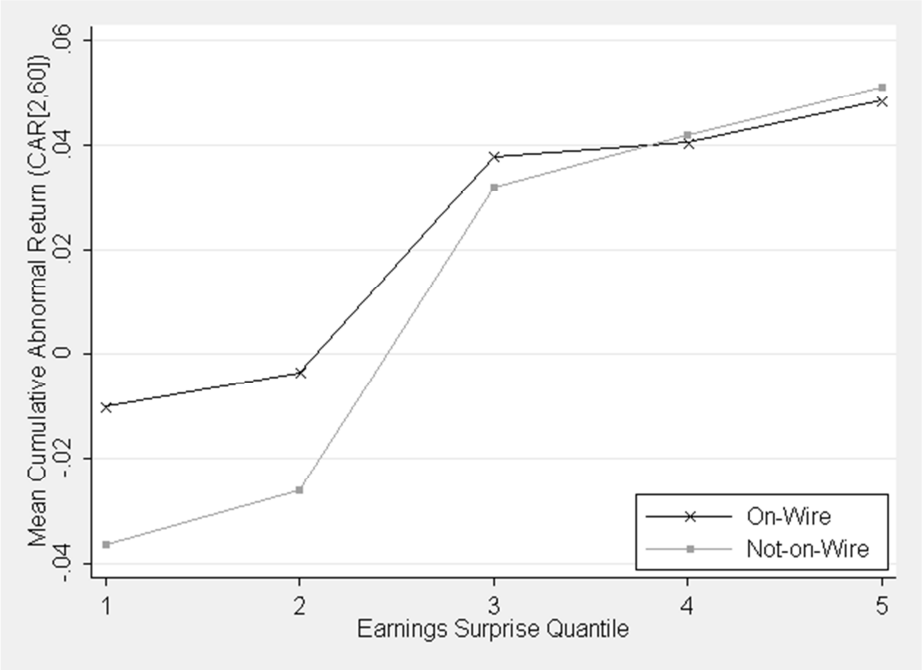
Table XI

Wire Adoption and Foreign Ownership

The sample of estimation includes Wire-Adopters firms that switch to a wire service after the implementation of the Transparency Directive in their home country. The estimation period is 1991-2010. The proportion of foreign ownership equals the number of foreign investors over the number of local investors. Standard errors adjusted for heteroskedasticity and clustered by firms are in parenthesis below the coefficient estimates.

The Dependent Variable is the Proportion of Foreign Ownership		
	(1)	(2)
Constant	-0.966	-0.798***
	(0.266)	(0.244)
Directive	0.092***	
	(0.015)	
Year1		0.065***
		(0.013)
Year2		0.107***
		(0.021)
Year3		0.136***
		(0.022)
Year4		0.105***
		(0.026)
Log Market Cap.	0.120***	0.122***
	(0.017)	(0.017)
Market-to-Book	-0.007**	-0.006**
	(0.003)	(0.003)
Analyst Following	-0.012***	-0.013***
	(0.004)	(0.004)
Individual FE	yes	yes
Observations	1,080	1,080
*significant at 10%;**significant at 5%;***significant at 1%		

(a)



(b)

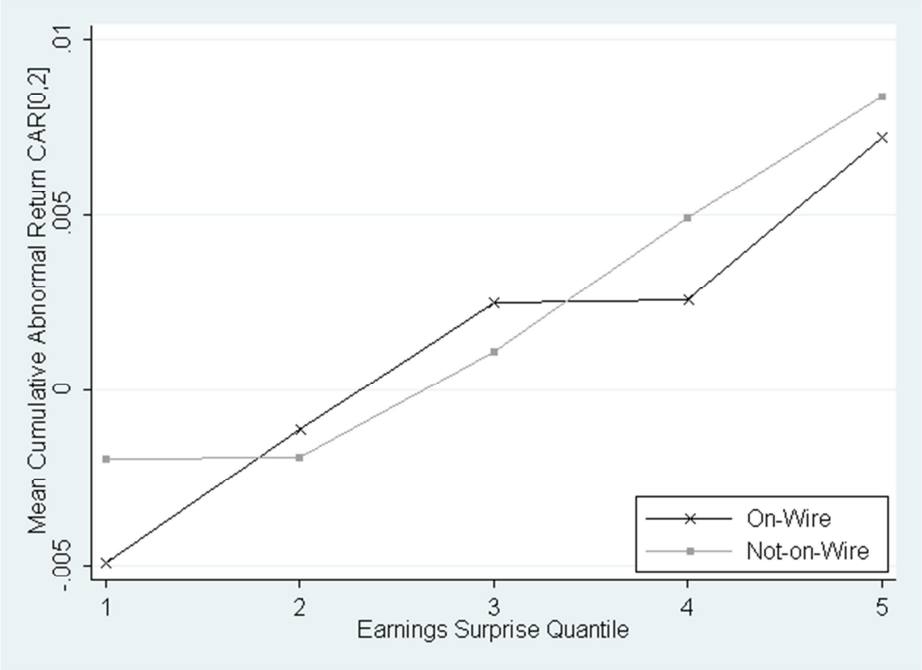


Figure 1a and b. Long term response to earnings surprises and short term response to earnings surprises. Cumulative abnormal return for each stock is computed as the difference between the cumulative return of the stock and the cumulative expected return estimated from the market model. Announcements are pooled together and five quantiles are formed on the basis of earnings surprise. The sample period is 1991-2010.

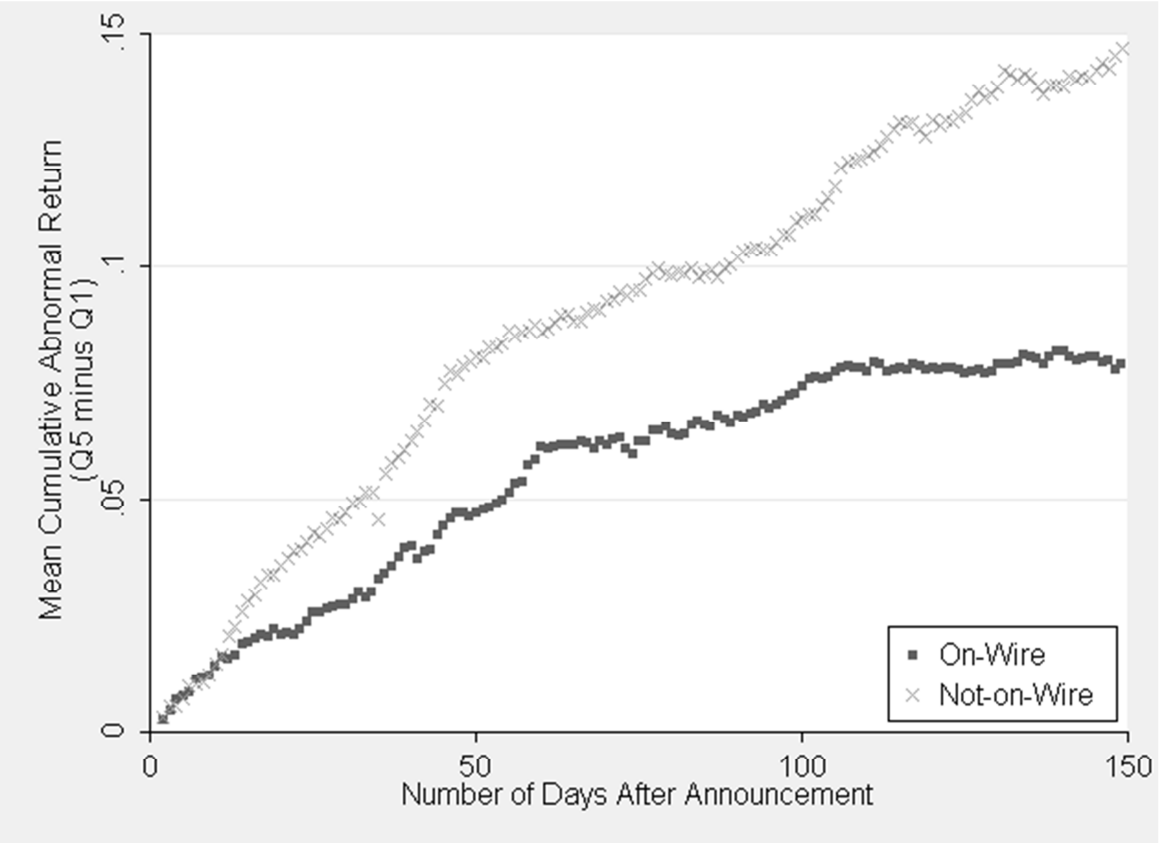


Figure 2. Performance of drift. Cumulative abnormal return for each stock is computed as the difference between the cumulative return of the stock and the cumulative expected return estimated from the market model. Announcements are pooled together and five quantiles are formed on the basis of earnings surprise. The drift at t days is measured as the average cumulative abnormal return from day 2 to day t for quantile 5 minusthe average cumulative abnormal return from day 2 to day t for quantile 1. The sample period is 1991-2010.

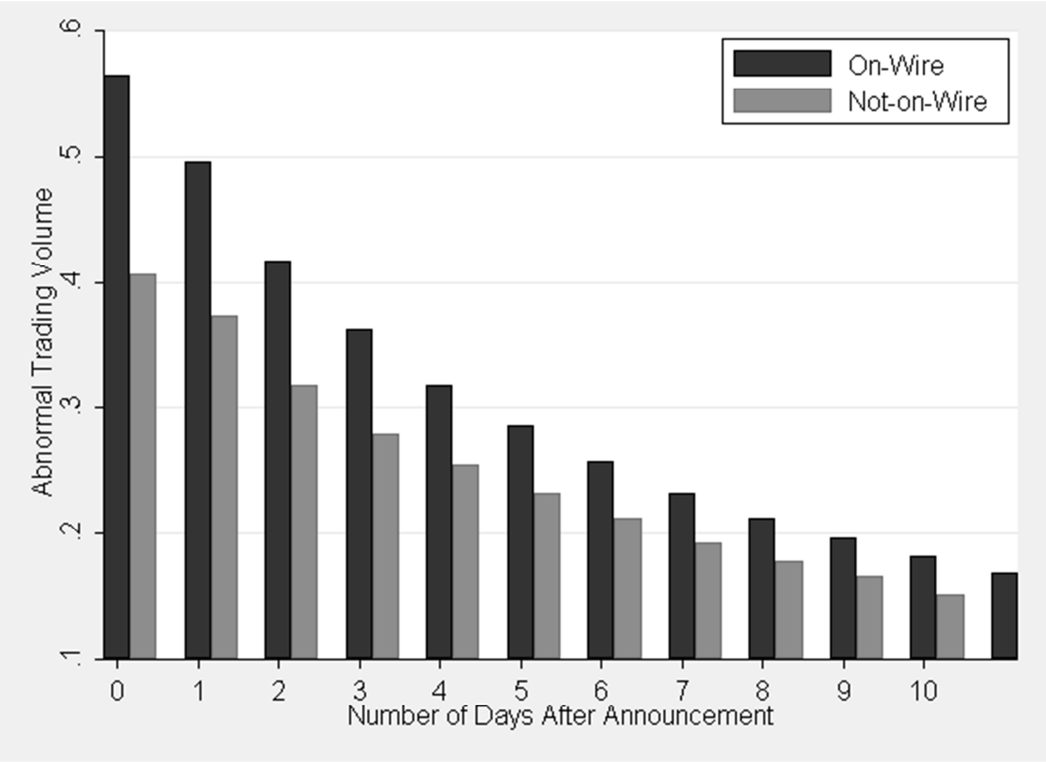


Figure 3. Abnormal trading volume in the ten days following earnings announcement. Earnings announcements are matched with trading volume from Datastream. Abnormal trading volume is the difference between the daily average number of share traded after the announcement and the average daily number of shares traded between day(-20) and day(-11). The sample period is 1991-2010.

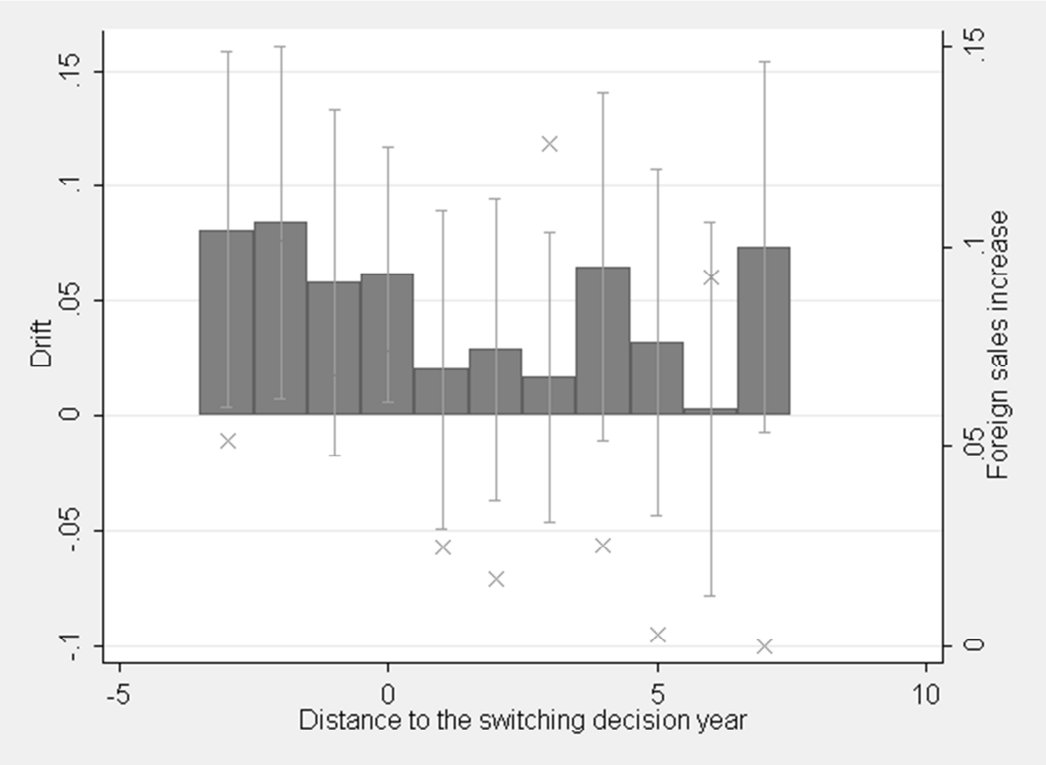


Figure 4. The sensitivity of stock response around the switching decision year. This figure reports value of the drift as a function of the time distance to the switch on wire services. We estimate equation (1) with $\boldsymbol{CAR[2,60]}$ as the dependant variable and by replacing variable $\boldsymbol{OnWire}$ by the distance (in year) from the switching date as dummy variables. Year 0 thus indicates the date at which the switch occurs. We report value of the interaction coefficient between top quantile and the set of distance dummy variables together with their 95% confidence interval. The sample period is 1991-2010. Estimations include year and country fixed-effect. Standard errors are adjusted for heteroskedasticity and clustered by firms. The dash line represents the mean increase of foreign sales as a proxy for firms internationalization over the period.