THE ACCOUNTING REVIEW
Vol. 87, No. 5
2012
pp. 1527–1553

American Accounting Association
DOI: 10.2308/accr-50186

Analyst Initiations of Coverage and Stock Return Synchronicity

Steven S. Crawford
Rice University

Darren T. Roulstone
The Ohio State University

Eric C. So
Stanford University

ABSTRACT: We examine how the information produced by analysts when they *initiate* coverage contributes to the mix of firm-specific, industry-, and market-wide information available about the firm. We hypothesize that the first analyst to initiate coverage provides low-cost market and industry information allowing him/her to follow more stocks, whereas subsequent analysts provide firm-specific information to distinguish themselves from existing analysts. We use stock return synchronicity to measure the mix of information available about a firm, with higher synchronicity indicating more industry and market information. Coverage initiations of firms with no prior analyst coverage increase synchronicity, suggesting that analysts produce industry- and market-wide information. In contrast, analysts initiating coverage on firms with existing coverage appear to focus on producing firm-specific information as these initiations lead to reduced synchronicity. Together, our findings indicate that the type of information that analysts produce at initiation depends on the information provided by other analysts.

Keywords: *stock return synchronicity; financial analysts; analyst initiations*.

Data Availability: *All data are available from public sources identified in the paper*.

We thank Beverly Walther (editor), Harry Evans (senior editor), and two anonymous reviewers for their helpful comments and suggestions. We also thank Scott Dyreng, Mo Kahn, Volkan Muslu, Phil Shane, and workshop participants at the 2009 Lone Star Accounting Research Conference, the 2009 Accounting Research Symposium at Brigham Young University, the 2010 American Accounting Association Annual Meeting, Massachusetts Institute of Technology, University of Colorado, and University of Oregon for helpful feedback. Analyst forecasts have been generously provided by I/B/E/S International. We gratefully acknowledge the financial support of the Fisher College of Business, Jesse H. Jones Graduate School of Business, and the Stanford University Graduate School of Business.

Editor's note: Accepted by Beverly Walther.

Submitted: March 2010
Accepted: March 2012
Published Online: April 2012

I. INTRODUCTION

A commonly held belief is that analysts primarily contribute firm-specific information to the market, which is logical given that much of the information produced by analysts relates directly to the firm in question, e.g., earnings forecasts and stock-specific recommendations. The belief is also supported by many studies that document associations between the information produced by analysts and market-adjusted firm returns (e.g., Schipper 1991; Ramnath et al. 2008). However, analysts also provide industry and market information to support their firm-level assessments, and many analysts make explicit recommendations regarding the industry outlook (Asquith et al. 2005; Kadan et al. 2011). Empirical evidence supports the use and importance of market- and industry-level information in analyst reports. For example, Ramnath (2002) shows that analysts revise their earnings forecasts when firms in the same industry make earnings announcements, and Hameed et al. (2010) document that analyst forecast revisions move prices of other firms in the industry. Furthermore, Piotroski and Roulstone (2004) argue that because analysts lack access to inside information (relative to institutions and insiders) they are likely to focus their efforts on collecting and interpreting industry- and market-wide information as it relates to the firms they cover, and their tests provide evidence consistent with these arguments.

In this study, we examine how the information produced by analysts when they *initiate* coverage contributes to the mix of firm-specific and industry- and market-wide information available about the firm, as measured by stock return synchronicity (measured as the R^2 value from a regression of firm returns on market and industry returns). We also explore whether the level of existing analyst coverage at the initiation affects the type of information analysts provide. These innovations provide two important contributions to the literature. First, coverage initiations represent a significant change in the information provided by analysts; thus, more new information is contained in initiation reports than in the reports of analysts engaged in continuing coverage. Evidence of this is found in studies that document abnormal returns around coverage initiations relative to other analyst activity (see Peterson 1987; Branson et al. 1998; Irvine 2003). We add to these studies by identifying how the mixture of firm-, industry-, and market-based information is rebalanced around initiations and thus identify compositional changes to the set of publicly available information that is associated with abnormal returns. Additionally, by examining how changes in coverage affect information, we alleviate concerns that analysts simply choose to follow firms that provide a specific mix of information to investors (see Piotroski and Roulstone 2004).[1]

Second, by conditioning our analysis on the existing level of coverage at the time of an initiation, we provide insight into whether analyst incentives to gather firm versus industry and market information depend on competition from other analysts—an issue that prior studies do not explore. This analysis is particularly important because analysts are thought to erode the informational advantage of insiders and institutions (Frankel and Li 2004). We examine whether this erosion is sensitive to the existing level of coverage.

Understanding analyst incentives to cover firms is important when examining how coverage initiations and competition influence the mix of information available about a firm. Analysts initiate coverage to generate lucrative trading commissions, drum-up investment banking business, and to provide information to important institutional clients (see Irvine 2003). Two important considerations affect the type of information they choose to provide: (1) information-gathering and -processing costs and (2) competition among other analysts. For new initiations (defined as initiations for firms without prior analyst coverage), only the former consideration applies. This

[1] While using a changes specification alleviates concerns that analysts simply choose to follow synchronous firms, our results are still subject to the concern that initiations are predetermined, i.e., variables that lead to changes in coverage could also precipitate changes in synchronicity. We discuss this concern in Sections III and V.

implies that analysts will choose to gather and disseminate low-cost information because it allows them to follow a larger set of stocks, and covering more stocks enables analysts to increase trading commissions, attract more investment banking business, and increase their compensation (Groysberg et al. 2011).[2] Gathering market and industry information poses the lowest cost because it does not require access to management or detailed analysis of historical financial statements. While market and industry information is less costly to acquire, it may provide fewer benefits to investors in terms of their ability to make capital allocation decisions *vis-à-vis* firm-specific information. Nevertheless, market and industry information can facilitate investors' capital allocation decisions as it provides investors with important information about how a firm's fundamentals vary with the market or its industry. This is especially true in the case of new initiations because no other analyst-provided information exists. For subsequent initiations (defined as initiations for firms with prior analyst coverage), the decision regarding what type of information to provide is less trivial because analysts also need to concern themselves with competition from other analysts. Thus, subsequent analysts face a greater incentive to provide firm-specific information to distinguish themselves from other analysts already covering the firm.

Based on this reasoning, the central hypothesis of our paper is that the first analyst initiating coverage of a firm provides more market and industry information, while subsequent analysts provide more firm-specific information. Consistent with our expectations, we find that analyst initiations of firms with no prior coverage increase the amount of industry and market information being impounded into price, as evidenced by an increase in synchronicity. Initiations of firms with existing coverage appear to decrease synchronicity, consistent with these initiations increasing the amount of firm-specific information flowing into price. Our results suggest that the type of information analysts provide in their initiation reports depends on whether the firm is being followed by other analysts.

Given that analysts choose to initiate coverage on firms, we must address the possibility that initiations are correlated with other events or characteristics that drive changes in stock return synchronicity. In our main tests we include control variables that may be correlated with both an analyst's decision to initiate coverage and changes in the mix of information regarding a given firm. To further address endogeneity concerns, we search for changes in analyst coverage that are plausibly exogenous to the individual firm. Specifically, we examine instances in which brokerage houses drop coverage of entire industry sectors.[3] We find that these "exogenous drops" in coverage are associated with increases in stock return synchronicity, mirroring the decreases in synchronicity associated with initiations at firms with existing coverage. We also use propensity score matching and find our results are robust to this methodology.

We also investigate whether changes in return synchronicity are the result of analyst initiations inducing co-movement among stocks for non-information reasons (see Barberis et al. 2005). We do so by adding the change in trading-volume synchronicity (defined as the extent to which market- and industry-level trading volume explain firm-level trading volume) to our main regressions and showing that our main results still hold. This suggests that analyst initiations change the mix of information available about the firm rather than simply causing stocks to trade in a more synchronous manner.

[2] These benefits may come as a result of the analyst "planting the flag" on a stock. Being the first analyst to cover a stock can serve to set the analyst apart from others not only in terms of receiving future brokerage commissions, but also with respect to generating investment banking business. For example, the covered firm may be more likely to develop a professional relationship with the analyst who is the first to provide coverage that may raise the analyst's employer to the top of the list when it comes time for the firm to engage the services of an investment bank.

[3] This methodology is similar in spirit to that in Kelly and Ljungqvist (2012) who examine drops in coverage caused by the closing of brokerage houses.

To sharpen the inferences of our main empirical tests, we also examine alternative measures of the mix of information available regarding a firm. As earnings forecasts are a primary output of analysts' efforts, we examine whether initiations aid in incorporating firm-specific or industry-level earnings surprises into consensus forecasts. Specifically, we show that new initiations are more likely to mitigate the relation between industry earnings innovations and consensus forecast errors, while subsequent initiations are more likely to mitigate the relation between firm-specific earnings innovations and consensus forecast errors. Furthermore, we examine changes in market and industry betas and changes in return kurtosis (Roll 1988). The results with these measures also support our conclusion that the type of information analysts produce at initiation depends critically on the information being provided by other analysts.

The rest of the paper is organized as follows. Section II details prior literature and develops our central hypotheses and Section III discusses the research design. Section IV discusses the findings of our main tests and Section V discusses several robustness checks. Section VI concludes.

II. PRIOR LITERATURE AND HYPOTHESIS DEVELOPMENT

Analysts' Contribution to the Information Environment of the Firm

Piotroski and Roulstone (2004) are among the first to empirically examine the type of information that analysts contribute to the price formation process. They examine the association between stock return synchronicity and the trading activities of analysts, institutions, and insiders. Piotroski and Roulstone (2004) postulate that analysts typically have less access to firm-level information than do insiders and institutions, making them more likely to specialize in obtaining and mapping industry- and market-level information into prices.[4] In their tests, Piotroski and Roulstone (2004) find that analyst coverage is positively related to stock return synchronicity, which is consistent with analysts increasing the amount of market- and industry-level information included in firms' stock prices. The authors argue that the association is a result of analysts facilitating intra-industry information transfers, i.e., analysts use their industry expertise to better interpret and disseminate common information across all firms in an industry.

To provide additional intuition for the Piotroski and Roulstone (2004) results and our main hypothesis, we define industry- and market-level information as encompassing two non-mutually exclusive components: (1) information about the performance of a given industry and the broader macroeconomy and (2) any information that describes how firms' fundamentals covary with market and industry performance. Synchronicity changes whenever new information alters investors' understanding of how the fundamentals of the firm align with the fundamentals of the industry or macroeconomy. This is because the market is better equipped to understand the implications of industry and market news for a firm and incorporate this news into firms' share prices in a timely fashion.

Pushing this argument further, if analysts provide new information that a firm's earnings prospects are heavily tied to the state of the macroeconomy or industry outlook, then investors have increased confidence that upturns (downturns) in market and industry indices signal an increase (decrease) in the value of the firm's future cash flows. Thus, we expect firms' synchronicity to increase, since price movements will exhibit a higher tendency to mirror market and industry indices.

[4] This assertion is supported by the tendency of analysts to specialize in a given industry (see Liang et al. 2008). Clement (1999) documents a positive association between forecast accuracy and the degree of analyst specialization.

One example of industry information comes from an initiation report on FiberNet Telecom, a telecommunications company, by an analyst at Merriman, Curhan, and Ford. In the report, the analyst describes how industry trends will affect the firm: "We expect FiberNet to benefit from macro industry trends, including firming pricing and increasing demand, as well as an improved operating structure . . . Similar to other data center companies, FiberNet is currently increasing its prices primarily due to the limited space that it and its competitors have" (Synesael 2006, 2, 4). Note that the analyst points out how FiberNet is similar to competitors and, thus, linking its price to the prices of other firms in the industry, which should increase synchronicity. We interpret this report as conveying industry information because it focuses on industry trends as the primary impetus for changes in FiberNet's performance prospects.

While Piotroski and Roulstone (2004) and others (e.g., Chan and Hameed 2006) show that analyst following is positively correlated with the relative amount of market- and industry-level information in prices, Liu (2011) suggests that the information analysts provide is predominantly firm-specific. Liu (2011) predicts that analysts produce more firm-specific information because its investment value is greater than the value of industry-specific information. To test his prediction, Liu (2011) examines short- and long-window market and industry adjusted returns surrounding analyst recommendation revisions and finds that revisions predominantly affect the firm-specific portion of returns.[5] Liu's (2011) arguments and results are intriguing because they suggest that analysts' incentives to gather firm-specific information will depend on analysts' beliefs about what information is already reflected in prices.[6]

We believe the type of firm-specific information referenced in Liu (2011) may include an analyst's analysis and discussion of novel strategies, products, services, and operations unique to the covered firm. One example of this type of information comes from a report by Rodman & Renshaw who initiated subsequent coverage on Conor Medsystems, a manufacturer of "CoStar" medical stents. In the report, the analyst provides a detailed description of Conor's unique product offerings: "Unlike conventional drug-eluting stents, the CoStar has unique laser drilled reservoirs that can be filled with multiple drug entities and then top-coated with a biodegradable polymer . . . We believe the CoStar can gain at least 8–10 percent market share in 2008, based on the strong clinical results so far" (Kalia 2005, 2). We interpret this report as conveying firm-specific information because it focuses on product developments unique to Conor Medsystems as the primary impetus for changes in the firm's fundamentals. This type of firm-specific information will tend to move the firm's price but have little impact on other firms and, thus, will reduce synchronicity.

Analyst Initiations

Our main empirical tests examine how coverage initiations affect stock return synchronicity. Initiations provide us with a powerful setting in which to test how analyst activity contributes to the

[5] We note that our findings and the results in Liu (2011) both document that firm returns are predominantly driven by firm-specific information. Our focus is on how the mix of information in returns shifts with analyst activity and how these shifts are affected by the level of analyst coverage.

[6] In determining our research design, we considered using an approach similar to Liu's (2011). However, his methodology relies on estimating market and industry betas prior to recommendation revisions in order to calculate the firm, industry, and market components of returns. Because initiations shift market and industry betas (see Section V), his approach is not well suited for our setting. In addition, short-window returns around initiations reflect not only the information provided by analysts, but also the market's perception of the benefits that accompany new coverage (e.g., increased liquidity as in Irvine [2003]). Furthermore, the market's assessment of these benefits is likely to be different for firms with little or no coverage than it is for firms with a large analyst following. In fact, we know from Irvine (2003) and others that short-window returns surrounding initiations are more positive for initiations with less analyst coverage as new analyst coverage is generally viewed as a favorable event for these firms.

flow of information because initiations likely contain more new information than continuing coverage reports. Several studies make this conjecture and then go on to show that initiations result in short-window, positive returns (see Peterson 1987; Branson et al. 1998; Irvine 2003; Demiroglu and Ryngaert 2010). Also, Demiroglu and Ryngaert (2010) document that new initiations of neglected stocks (those without any prior coverage) are particularly distinctive events. Finally, Schutte and Unlu (2009) show initiations defined at the firm-year level are associated with a decline in a measure of the noise in security prices. Although the results of these papers suggest that initiation events are notably different than continuing analyst coverage, they do not provide any evidence that the type of information contained in initiation reports is more firm-specific than it is market- and industry-related.

III. SAMPLE AND RESEARCH DESIGN

In this section, we describe our sample of analyst initiations and our synchronicity measure. We also formally specify our empirical tests.

Initiation Sample

We identify analyst initiations following the methodology of Irvine (2003) and Irvine et al. (2007).[7] We collect analyst recommendations on U.S. stocks from the I/B/E/S detail recommendation file. We count a recommendation as an initiation if it is the first time a given broker is associated with a particular firm on the I/B/E/S tape. We also require that it be the first time the analyst has covered the firm. This ensures that recommendations an analyst makes about a firm after the analyst moves from one brokerage house to another are not counted as initiations if the analyst covered the stock before switching employers. We also eliminate any initiations of coverage for IPO firms by deleting initiations that occur within three months of a firm's appearance on CRSP, our source of price and return data.

Occasionally, I/B/E/S adds brokerage firms to its coverage universe. Typically, these additions reflect a broadening of coverage by I/B/E/S rather than a response to the creation of a new brokerage firm. To ensure that we do not count simple database additions as initiations, we begin our sample in 1996 instead of 1994 when I/B/E/S first began gathering recommendations. We do so because coverage increased rapidly in the first several months of the I/B/E/S recommendation file. Furthermore, we eliminate initiations for brokerage firms that have not appeared in the I/B/E/S recommendation detail file for at least six months. After implementing these screens to identify initiations, we are left with 60,021 firm-months with at least one initiation from 1996 to 2006. We also require initiation firms to have the necessary data to compute the variables used in our study. This results in a sample of 39,855 firm-months with at least one initiation.[8] Table 1 shows the number of initiations by year. The number of initiation observations fluctuates over the sample period, with a high in 1998 of 5,069 and a low of 2,827 in 2006.

To determine whether the effects of coverage initiations on synchronicity vary based on the level of existing coverage at the time of the initiation, we measure the level of existing analyst coverage for each of our initiations. Specifically, we distinguish between initiations with no prior coverage (new initiations) and those with prior coverage (subsequent initiations). Initiations that

[7] Irvine (2003) validates his sample of initiations by searching the Dow Jones News Service (DJNS) for press coverage of the initiations. All but two of the initiations identified by DJNS as initiations are initiations in his sample. Furthermore, the initiation dates, as recorded by DJNS, match the initiation dates on I/B/E/S in all but three cases.

[8] We report the number of initiations at the firm-month level because we examine how synchronicity changes around a given month. The number of unique initiation events in our sample is 44,707. Our sample size is smaller than the sample in Ertimur et al. (2011) because of data restrictions.

TABLE 1

Sample of Analyst Initiations

Panel A: Number of Initiations Each Year

	$INITIATION_{i,t}$	$INITIATION\_NEW_{i,t}$	$INITIATION\_SUB_{i,t}$
1996	3,877	365	3,512
1997	4,068	289	3,779
1998	5,069	236	4,833
1999	4,172	195	3,977
2000	3,943	214	3,729
2001	3,677	139	3,538
2002	3,221	198	3,023
2003	2,887	185	2,702
2004	3,119	175	2,944
2005	2,995	178	2,817
2006	2,827	128	2,699
Total	39,855	2,302	37,553

Panel B: Number of Analysts Initiating Coverage at the Initiation

	$INITIATION_{i,t}$	$INITIATION\_NEW_{i,t}$	$INITIATION\_SUB_{i,t}$
1	35,690	2,120	33,570
2	3,599	149	3,450
3	475	24	451
4	69	6	63
5	18	3	15
6	2	0	2
7	1	0	1
9	1	0	1

Panel C: Recommendation Level

	$INITIATION_{i,t}$	$INITIATION\_NEW_{i,t}$	$INITIATION\_SUB_{i,t}$
1 = Strong Buy	14,009	1,021	12,988
2 = Buy	15,060	932	14,128
3 = Hold	9,966	327	9,639
4 = Sell	499	14	485
5 = Strong Sell	321	8	313

This table presents the number of firm-months with coverage initiations ($INITIATION_{i,t}$) used in our primary tests as well as the breakdown between firm-months with new initiations ($INITIATION\_NEW_{i,t}$) and subsequent initiations ($INITIATION\_SUB_{i,t}$). See Appendix A for detailed variable definitions.

Panel A shows the number of firm-months with initiations in each year.

Panel B shows the number of analysts initiating coverage for each initiation.

Panel C shows the I/B/E/S recommendation associated with each initiation. The recommendation code is an integer between 1 and 5 where 1 = Strong Buy and 5 = Strong Sell.

occur at firms with (no) existing coverage are denoted by the indicator variable ($INITIATION\_NEW_{i,t}$) $INITIATION\_SUB_{i,t}$.

Table 1 shows the number of initiations based on the level of existing coverage; new initiations make up about 5 percent of all initiations. In Table 1, we also document occasions during which multiple analysts initiate coverage on a firm in the same month. While the vast majority of initiations are made by a single analyst, approximately 10 percent of the sample is comprised of initiations by more than one analyst. Finally, Table 1 shows the recommendation level associated with the initiations (1 = Strong Buy, 5 = Strong Sell). Initiation recommendations are overwhelmingly favorable, especially for new initiations. The proportion of strong buy recommendations for new initiations is 44 percent, while subsequent initiations are associated with a strong buy 35 percent of the time.

Synchronicity Literature

Roll (1988) was the first to formalize the notion that stock return synchronicity, the association between a firm's stock returns and market and industry returns, is negatively associated with the amount of firm-specific information being impounded into individual stock prices. Since Roll's (1988) work, several studies have provided empirical support for his interpretation of synchronicity. For example, Durnev et al. (2004) show that lower synchronicity is associated with the efficient allocation of capital within U.S. capital markets. They argue this relation is a result of firm-specific information being impounded into prices, allowing for greater monitoring and reduced information asymmetry between insiders and outsiders. Many papers interpret synchronicity similarly (e.g., Morck et al. 2000; Wurgler 2000; Durnev et al. 2003; Ferreira and Laux 2007). Alternatively, some papers argue and find evidence that low synchronicity or high firm-specific volatility is a measure of noise (e.g., West 1988; Kelly 2007; Teoh et al. 2008). Given the debate over synchronicity as a measure of the mix of information available about a given firm, our empirical analyses are joint tests of how analyst initiations contribute to the information environment of the firm and our interpretation of stock return synchronicity.[9] To support the results using synchronicity we also examine the relation between analyst initiations and three additional measures of information flow: the association between forecast errors and firm- and industry-components of earnings, market and industry betas, and return kurtosis (see Section V).

Measurement of Stock Return Synchronicity

We use a measure of stock return synchronicity that is similar to measures found in the prior literature. However, our empirical focus is different in that we examine changes in synchronicity around an analyst initiation. Given this focus, we measure synchronicity and changes in synchronicity using daily returns over a relatively short time period.

For each calendar month, we estimate a firm-level measure of return synchronicity. Specifically, for each firm-month observation, we regress daily returns on the value-weighted market return and the value-weighted two-digit SIC industry return, or:

$$RET_{i,t} = \alpha + \beta_1 MARET_{i,t} + \beta_2 INDRET_{i,t} + \varepsilon_{i,t}. \quad (1)$$

[9] We interpret increases in return synchronicity as reflecting a decrease in the fraction of firms' returns that are explained by contemporaneous changes in the market and industry indices. The positive relation between new initiations and synchronicity suggests that analysts tend to provide information about how the fundamentals of the market or industry are likely to covary positively with the fundamentals of the covered firm. An additional and non-mutually exclusive interpretation is that new initiations increase synchronicity by reducing estimation risk associated with market and industry betas. We examine this interpretation in Section V, where we measure changes in market and industry betas around initiations.

The industry return ($INDRET_{i,t}$) for a specific day t, is created using all firms with the same two-digit SIC code, with firm i's daily return omitted. $INDRET_{i,t}$ is the value-weighted average of these firms' day t returns. We estimate this regression using daily returns from the past three months for each firm-month, with a minimum of 50 daily observations. For example, IBM's synchronicity measure for May 2000 is estimated using daily returns from March, April, and May 2000. All stock return data are gathered through CRSP. Following the definition in Morck et al. (2000), we define synchronicity as:

$$SYNCH_{i,t} = \log\left(\frac{R^2}{1 - R^2}\right). \tag{2}$$

where R^2 is the coefficient of determination from the estimation of Equation (1).[10] The log transformation of R^2 creates an unbounded continuous variable out of a variable originally bounded by 0 and 1. *SYNCH* is measured for each firm-month in the sample. By construction, high values of *SYNCH* indicate firms whose stock returns are closely tied to and vary strongly with market and industry returns and whose returns reflect relatively less firm-specific information.

Empirical Tests

The Effect of Initiations on Synchronicity

To determine if analyst initiations increase the amount of firm-specific or market- and industry-wide information impounded into prices we estimate the following equation using OLS:

$$\begin{aligned}\Delta SYNCH_{i,t} = {} & \alpha_0 + \beta_1 INITIATION_{i,t} + \beta_2 INITIATION_{i,t} * LNUM_{i,t-1} + \beta_3 LNUM_{i,t-1} \\ & + \beta_4 \Delta LMVE_{i,t} + \beta_5 \Delta INST_{i,t} + \beta_6 \Delta TURN_{i,t} + \beta_7 RET\_12_{i,t} + \beta_8 ISSUE\_12_{i,t} \\ & + \beta_9 REPORT_{i,t-1} + \beta_{10} GUIDE\_6_{i,t} + \beta_{11} LBM_{i,t-1} + \beta_{12} STDROA_{i,t} \\ & + \beta_{13} REG_{i,t} + \sum \alpha_i FIRM_i + \varepsilon_{i,t}.\end{aligned} \tag{3}$$

In all of our analyses, we provide standard errors corrected for cross-sectional and serial correlation by clustering at the industry (two-digit SIC) level. Our OLS estimations of Equation (3) also include firm fixed effects.

We define the variables as follows: $\Delta SYNCH_{i,t}$ is the change in synchronicity, defined as $SYNCH_{i,t+3} - SYNCH_{i,t-1}$.[11] $LNUM_{i,t-1}$ is the natural log of 1 plus the number of analysts covering firm i in month t–1. The estimated coefficients on $INITIATION_{i,t}$ and $INITIATION_{i,t} * LNUM_{i,t-1}$ are of primary interest in Equation (3). The coefficient on $INITIATION_{i,t}$ reveals how synchronicity responds to initiations, and the interaction term captures whether the type of information provided in initiation reports depends on the existing level of coverage. We define the remaining variables in Appendix A.

In addition to Equation (3), we introduce an alternative approach to estimating how the level of existing coverage can affect the relation between initiations and changes in synchronicity as follows:

$$\begin{aligned}\Delta SYNCH_{i,t} = {} & \rho_0 + \gamma_1 INITIATION\_NEW_{i,t} + \gamma_2 INITIATION\_SUB_{i,t} + \gamma_3 DROP_{i,t-1} \\ & + \gamma_4 DROP\_ZERO_{i,t-1} + \gamma_5 \Delta LMVE_{i,t} + \gamma_6 \Delta INST_{i,t} + \gamma_7 \Delta TURN_{i,t} \\ & + \gamma_8 RET\_12_{i,t} + \gamma_9 ISSUE\_12_{i,t} + \gamma_{10} REPORT_{i,t-1} + \gamma_{11} GUIDE\_6_{i,t} \\ & + \gamma_{12} LBM_{i,t-1} + \gamma_{13} STDROA_{i,t} + \gamma_{14} REG_{i,t} + \sum \rho_i FIRM_i + \varepsilon_{i,t}.\end{aligned} \tag{4}$$

---

[10] We use the adjusted R^2 in all of our empirical tests. We follow the literature and trim negative adjusted R^2 numbers at 0.0001.

[11] We define the change in synchronicity using two, non-overlapping measures of synchronicity. $SYNCH_{i,t+3}$ uses data from the three months following month t while $SYNCH_{i,t-1}$ uses data from the three months preceding month t.

In Equation (4) we define four new variables that take the place of $LNUM_{i,t-1}$ in Equation (3). If analysts contribute relatively more industry- and market-related (firm-specific) information about the firms they cover, then the estimated coefficients on $INITIATION\_NEW_{i,t}$ and $INITIATION\_SUB_{i,t}$ should be positive (negative). For completeness, we also define two variables related to decreases in analyst coverage: $DROP_{i,t}$ is an indicator variable set equal to 1 if the level of analyst coverage declines from month $t-1$ to t. $DROP\_ZERO_{i,t}$ is an indicator variable set equal to 1 if analyst coverage is non-zero in month $t-1$ and becomes 0 in month t. We include these variables to examine whether the loss of coverage provides insight into the type of information provided by analysts.[12]

The remaining variables in Equations (3) and (4) are controls. Fundamentally, variables should be included if they affect the type of information flowing into prices. Because we are not aware of prior studies that examine the determinants of shifts in stock return synchronicity, we base the variables included in our model on intuition and the results of related studies (see Bhushan 1989; O'Brien and Bhushan 1990). Additionally, we attempt to control for variables tied to analyst incentives that may also influence synchronicity. $\Delta LMVE_{i,t}$ is the change in the natural log of market value, defined as $LMVE_{i,t+1} - LMVE_{i,t-1}$. We include $\Delta LMVE_{i,t}$ because changes in size are likely to be associated with various dimensions of the firm's information environment, including media exposure and the overall level of investor interest. $\Delta INST_{i,t}$ is the average value of $INST$ in months $t+1$ to $t+6$, less the average value of $INST$ in months $t-1$ to $t-6$. We include variables related to institutional holdings because of their association with synchronicity, as documented in Piotroski and Roulstone (2004); in addition, analysts' initiations may be correlated with changes in institutional ownership. $TURN_{i,t}$ is the number of shares traded in month t divided by the number of shares outstanding as identified in CRSP. $\Delta TURN_{i,t}$ is the average value of $TURN$ in months $t+1$ to $t+6$, less the average value of $TURN$ in months $t-1$ to $t-6$. As discussed in Section IV, we include share turnover to control for changes in synchronicity that are driven by increased investor awareness that is unrelated to the type of information in analysts' reports. $RET\_12_{i,t}$ is the market-adjusted return on the firm's stock from $t-12$ to $t-1$, as measured by CRSP. We control for past returns as a summary measure of the information being released about the firm over the prior year. Further, analysts prefer to initiate coverage on stocks that have performed well (McNichols and O'Brien 1997). $ISSUE\_12_{i,t}$ is an indicator variable set equal to 1 if the firm issued equity in the past 12 months, 0 otherwise, which we include because issuing firms may be undergoing changes that affect how they relate to other firms in the industry and market. $REPORT_{i,t-1}$ is an indicator variable set equal to 1 if the firm reported earnings in month $t-1$, 0 otherwise. $GUIDE\_6_{i,t}$ is an indicator variable set equal to 1 if the firm issued earnings guidance within the last six months. We gather earnings release dates from Compustat and earnings guidance dates from First Call. We include $REPORT_{i,t-1}$ and $GUIDE\_6_{i,t}$ because they are information events that may affect synchronicity.[13] $LBM_{i,t-1}$ is the natural log of the book-to-market ratio in month $t-1$. $STDROA_{i,t}$ is the standard deviation of return on assets (ROA) measured over the current and previous four quarters. We include these two variables because analysts have been shown to prefer growth firms and firms with less volatile earnings. $REG_{i,t}$ is an indicator variable for financial services or utilities, which we include because firms in regulated industries are subject to common constraints on their operations, making it more likely that their returns move together.

[12] Dropped coverage may or may not have the same effect on synchronicity as initiations. On the one hand, when an analyst drops coverage there will be a decrease in the amount of information available about a firm, which would suggest that synchronicity changes accordingly. On the other hand, the analyst's recent reports and forecasts are not removed from the information set available to investors, so the corresponding change in synchronicity could happen over a long period of time as the analyst's information becomes stale and less relevant to current circumstances. Ultimately, the issue of whether drops affect synchronicity is an empirical question.

[13] Barron et al. (2002) show that earnings announcements trigger analyst information production. Also, Stickel (1989) finds that analysts supply more forecasts following large, negative earnings surprises.

TABLE 2

Descriptive Statistics for the Sample of Firm-Month Observations Available between Fiscal Years 1996 and 2006

	n	Mean	Std. Dev.	25th Pctl.	Median	75th Pctl.
Synchronicity Variables						
R^2	613,111	0.1105	0.1560	0.0001	0.0383	0.1621
$SYNCH_{i,t}$	613,111	−4.4808	3.4598	−9.2102	−3.32230	−1.6429
$\Delta SYNCH_{i,t}$	613,111	0.0472	3.6050	−1.2132	0.0000	1.3239
Analyst Coverage Variables						
$INITIATION_{i,t}$	613,111	0.0650	0.2465	0.0000	0.0000	0.0000
$INITIATION\_NEW_{i,t}$	613,111	0.0038	0.0612	0.0000	0.0000	0.0000
$INITIATION\_SUB_{i,t}$	613,111	0.0612	0.2398	0.0000	0.0000	0.0000
$DROP_{i,t}$	613,111	0.0763	0.2655	0.0000	0.0000	0.0000
$DROP\_ZERO_{i,t}$	613,111	0.0033	0.0574	0.0000	0.0000	0.0000
$NUM_{i,t}$	613,111	4.3983	5.8718	0.0000	2.0000	6.0000
$LNUM_{i,t}$	613,111	1.1874	0.9963	0.0000	1.0986	1.9459
Other Variables						
$LMVE_{i,t}$	613,111	12.1400	2.0435	10.6609	11.9659	13.4607
$\Delta LMVE_{i,t}$	613,111	0.0022	0.2683	−0.1077	0.0082	0.1210
$INST_{i,t}$	613,111	0.3112	0.3006	0.0232	0.2250	0.5483
$\Delta INST_{i,t}$	613,111	0.0174	0.0878	−0.0072	0.0009	0.0346
$TURN_{i,t}$	613,111	1.2787	2.6440	0.2887	0.6741	1.4557
$\Delta TURN_{i,t}$	613,111	0.0271	2.2525	−0.2153	−0.0010	0.2139
$RET\_12_{i,t}$	613,111	0.0606	0.9188	−0.3694	−0.0749	0.2548
$ISSUE\_12_{i,t}$	613,111	0.2196	0.4140	0.0000	0.0000	0.0000
$REPORT_{i,t-1}$	613,111	0.3191	0.4661	0.0000	0.0000	1.0000
$GUIDE\_6_{i,t}$	613,111	0.2050	0.4037	0.0000	0.0000	0.0000
$BM_{i,t-1}$	613,111	0.6869	0.8141	0.2996	0.5197	0.8274
$LBM_{i,t-1}$	613,111	−0.7327	0.8809	−1.2053	−0.6545	−0.1894
$STDROA_{i,t}$	613,111	0.0254	0.1410	0.0027	0.0087	0.0247
REG_i	613,111	0.0461	0.2098	0.0000	0.0000	0.0000

All variables are as defined in Appendix A.

IV. EMPIRICAL RESULTS

Univariate Statistics

Table 2 presents descriptive statistics for the variables we use in the study. For comparison purposes, we report the statistics for the raw R^2 values although we do not use this measure in any of our empirical tests. The average R^2 value is about 11.05 percent.[14] The average values of $SYNCH_{i,t}$ and $\Delta SYNCH_{i,t}$ are −4.4808 and 0.0472. Evaluated at the mean of R^2, this change in synchronicity represents a 0.47 percentage point increase in R^2 from 11.05 percent to 11.52 percent. Initiations occur in roughly 6 percent of the firm-month observations indicating that they are

[14] Morck et al. (2000) report an average R^2 in the U.S. of approximately two percent. Piotroski and Roulstone (2004) report an R^2 of over 19 percent in their sample. Our estimate falls between these two figures, which is likely due to (1) Piotroski and Roulstone (2004) including both current and lagged market and industry returns as explanatory variables in their synchronicity regressions; and (2) Morck et al. (2000) including only the market return in their regressions.

relatively infrequent events. Finally, a significant portion of our firm-months have no analyst coverage, as reflected in the first quartile of $NUM_{i,t-1}$ being 0.

Table 2 also displays summary statistics for the control variables in the study. The median value of $LMVE_{i,t-1}$ is 11.97, which corresponds to a market value of approximately $157 million. Second, institutions own 31 percent of the average firm's shares. Third, on average, returns are positive in our sample, and only 4.6 percent of the firms in the sample are from regulated industries.

In untabulated results, we find that $\Delta SYNCH_{i,t}$ is not strongly correlated (all correlations with $\Delta SYNCH_{i,t}$ are less than $|0.05|$) with the independent variables included in Equations (3) and (4) or the other variables used in the analysis. Further, a strong positive (negative) relation exists between $LNUM_{i,t-1}$ and $INITIATION\_SUB_{i,t}$ ($INITIATION\_NEW_{i,t}$) because only firms with (without) coverage can have a subsequent (new) initiation.

The Impact of Initiations on Changes in Synchronicity

Table 3 reports the results of estimating Equations (3) and (4). The coefficient on $INITIATION_{i,t}$ reported in column (1) is −0.0484, suggesting that an initiation reduces synchronicity. The results in column (2) indicate that the negative effect of an initiation increases in the level of existing coverage. In fact, the effect of an initiation on changes in synchronicity is positive when prior coverage is 0. The results from estimating Equation (4) corroborate the preceding findings. Column (3) of Table 3 shows the estimated coefficient on $INITIATION\_SUB_{i,t}$ is negative and significant, while the coefficient on $INITIATION\_NEW_{i,t}$ is positive and significant. The absolute magnitude of the coefficient on $INITIATION\_NEW_{i,t}$ is approximately three times that of the coefficient on $INITIATION\_SUB_{i,t}$, suggesting that the absolute magnitudes of the impact on synchronicity is greater for first-time initiations than subsequent initiations. Initiations have significant economic effects with a new initiation producing a 2.38 percentage point shift in the average R^2 value from 11.05 percent to 13.43 percent. Subsequent initiations result in a downward shift in the R^2 value of 0.642 percentage points. Column (4) shows that decreases in coverage do not appear to affect synchronicity.

We interpret the results in Table 3 as indicating first that analysts initiating coverage at firms with no prior coverage provide relatively more industry- and market-related information about these firms as evidenced by the increase in synchronicity around the initiation. This is consistent with analysts gathering information that is relatively inexpensive to acquire but potentially valuable for investors seeking to place a newly covered firm in the context of its market and industry. Second, analysts initiating coverage at firms with existing coverage provide relatively more firm-specific information about the covered firm. These results are consistent with analysts only initiating coverage if they have a relevant piece of firm-specific information to share with investors since industry- and market-related information has already been provided by other analysts. These results suggest that the type of information analysts produce in their initiation reports depends on the information that other analysts already provide.[15]

[15] We also examine whether the effects of initiations vary across analyst and recommendation characteristics. We identify seven characteristics and interact them separately with $INITIATION\_NEW_{i,t}$ and $INITIATION\_SUB_{i,t}$ in Equation (4). The characteristics are as follows: (1) the level of the I/B/E/S recommendation code (an integer between 1 and 5 where 1 = Strong Buy and 5 = Strong Sell); (2) analyst experience measured as the number of months since the analyst appeared in I/B/E/S; (3) analyst employer resources captured by whether the analyst is employed at a brokerage in the largest size decile of brokerages (measured by number of analysts); (4) analyst specialization in a given industry; (5) whether an analyst initiates coverage on a firm in his industry of specialization; (6) the number of firms already covered by the analyst; (7) all-star analysts, as ranked by *Institutional Investor* magazine. Our untabulated results show little effect from these analyst-characteristic variables. Further, untabulated tests reflect no evidence that multiple initiations have a differential effect on synchronicity. Finally, we examine whether the intensity of coverage in a given industry affects how initiations impact synchronicity and find that initiations appear to have a uniform effect on synchronicity regardless of the intensity of coverage in a particular industry.

TABLE 3

Estimation of the Relation between Changes in Stock Return Synchronicity and Analyst Initiations

$$\Delta SYNCH_{i,t} = \alpha_0 + \beta_1 INITIATION_{i,t} + \beta_2 INITIATION_{i,t}{*}LNUM_{i,t-1} + \beta_3 LNUM_{i,t-1} + \beta_4 \Delta LMVE_{i,t} + \beta_5 \Delta INST_{i,t} + \beta_6 \Delta TURN_{i,t} + \beta_7 RET\_12_{i,t} + \beta_8 ISSUE\_12_{i,t} + \beta_9 REPORT_{i,t-1} + \beta_{10} GUIDE\_6_{i,t} + \beta_{11} LBM_{i,t-1} + \beta_{12} STDROA_{i,t} + \beta_{13} REG_{i,t} + \sum \alpha_i FIRM_i + \varepsilon_{i,t}.$$

$$\Delta SYNCH_{i,t} = \rho_0 + \gamma_1 INITIATION\_NEW_{i,t} + \gamma_2 INITIATION\_SUB_{i,t} + \gamma_3 DROP_{i,t-1} + \gamma_4 DROP\_ZERO_{i,t-1} + \gamma_5 \Delta LMVE_{i,t} + \gamma_6 \Delta INST_{i,t} + \gamma_7 \Delta TURN_{i,t} + \gamma_8 RET\_12_{i,t} + \gamma_9 ISSUE\_12_{i,t} + \gamma_{10} REPORT_{i,t-1} + \gamma_{11} GUIDE\_6_{i,t} + \gamma_{12} LBM_{i,t-1} + \gamma_{13} STDROA_{i,t} + \gamma_{14} REG_{i,t} + \sum \rho_i FIRM_i + \varepsilon_{i,t}.$$

Estimation	**(1)**	**(2)**		**(3)**	**(4)**
$INITIATION_{i,t}$	−0.0484	0.0656	$INITIATION\_NEW_{i,t}$	0.2221	0.2226
	(−3.49)***	(1.78)*		(3.25)***	(3.25)***
$INITIATION * LNUM_{i,t}$		−0.0610	$INITIATION\_SUB_{i,t}$	−0.0670	−0.0669
		(−3.05)***		(−4.16)***	(−4.05)***
$LNUM_{i,t-1}$	−0.1480	−0.1435	$DROP_{i,t}$		0.0010
	(−13.81)***	(−13.51)***			(0.05)
			$DROP\_ZERO_{i,t}$		0.0450
					(0.51)
$\Delta LMVE_{i,t}$	0.0232	0.0227	$\Delta LMVE_{i,t}$	0.0434	0.0434
	(0.70)	(0.69)		(1.29)	(1.29)
$\Delta INST_{i,t}$	0.5532	0.5489	$\Delta INST_{i,t}$	0.5750	0.5750
	(8.07)***	(8.07)***		(8.02)***	(8.03)***
$\Delta TURN_{i,t}$	−0.0164	−0.0164	$\Delta TURN_{i,t}$	−0.0157	−0.0157
	(−3.58)***	(−3.58)***		(−3.46)***	(−3.45)***
$RET\_12_{i,t}$	0.1374	0.1372	$RET\_12_{i,t}$	0.1441	0.1441
	(14.50)***	(14.53)***		(15.09)***	(15.12)***
$ISSUE\_12_{i,t}$	−0.0938	−0.0939	$ISSUE\_12_{i,t}$	−0.0986	−0.0986
	(−4.70)***	(−4.69)***		(−4.62)***	(−4.61)***
$REPORT_{i,t-1}$	0.0475	0.0474	$REPORT_{i,t-1}$	0.0472	0.0472
	(7.68)***	(7.66)***		(7.58)***	(7.56)***
$GUIDE\_6_{i,t}$	0.0373	0.0372	$GUIDE\_6_{i,t}$	0.0101	0.0101
	(2.07)**	(2.06)**		(0.60)	(0.59)
$LBM_{i,t-1}$	−0.2085	−0.2080	$LBM_{i,t-1}$	−0.1992	−0.1993
	(−14.17)***	(−14.20)***		(−12.55)***	(−12.48)***
$STDROA_{i,t}$	0.0417	0.0418	$STDROA_{i,t}$	0.0474	0.0474
	(2.64)***	(2.61)***		(2.47)***	(2.48)***
$REG_{i,t}$	−0.1246	−0.1248	$REG_{i,t}$	−0.1041	−0.1041
	(−1.84)*	(−1.84)*		(−1.36)	(−1.36)
Intercept	0.0576	0.0530	Intercept	−0.1058	−0.1060
	(2.53)***	(2.32)***		(−6.21)***	(−6.13)***
R^2	0.0104	0.0104	R^2	0.0102	0.0102
n	613,111	613,111	n	613,111	613,111

*, **, *** Indicate significance at the 0.1, 0.05, and 0.01 levels, respectively.

All variables are defined in Appendix A. t-statistics (in parentheses) are based on standard errors that are robust to heteroscedasticity and correlation across observations from the same two-digit SIC industry.

American Accounting Association

The coefficients on the control variables in Table 3 indicate that increases in the percentage of shares held by institutions, positive past returns, and the release of financial information increase synchronicity, while an increase in share turnover and the issuance of equity decrease synchronicity.

V. ROBUSTNESS CHECKS

This section reports checks on the robustness of the main empirical findings of Section IV.

Endogeneity

Work by McNichols and O'Brien (1997) and the theoretical model of Hayes (1998) provide evidence of endogenous coverage decisions. To the extent that expected changes in return synchronicity endogenously determine analyst coverage decisions, our coefficient estimates may be biased. To mitigate these concerns we examine instances in which a brokerage firm appears to exogenously drop coverage of an entire sector.

While we are unable to rule out the possibility that sector terminations are also endogenous, sector terminations are usually associated with brokerage firms shifting their focus across industries, brokerage closures, or changes in analyst coverage associated with brokerage firm mergers and acquisitions (Hong and Kacperczyk 2010). Using the I/B/E/S Detail Estimates file, we identify sector terminations as instances in which a brokerage firm (1) provides coverage of at least ten firms within a given four-digit SIC code and (2) ceases providing coverage on at least 75 percent of these firms in a given quarter, and (3) does not resume coverage within the next two quarters. This methodology identifies 1,643 firm-quarters of dropped coverage attributed to sector terminations. The resulting variable, $EXOG_{i,q}$, equals 1 in the presence of an exogenous drop in quarter q, and 0 otherwise. We treat all other sector drops failing to meet the above three criteria as endogenous.

Since we use the absence of analysts' forecasts within a two-quarter span as an indication of dropped coverage, drops in analyst coverage are identified at the quarterly level. Thus, to investigate the impact of exogenous changes in analyst coverage on return synchronicity, our main dependent variable is the difference in return synchronicity in the three months following a given quarter versus the three months prior to the quarter. Analogous to our main dependent variable above, we define $\Delta SYNCH_{i,q}$ as $SYNCH_{i,q+1} - SYNCH_{i,q-1}$, where the time subscript denotes the quarter of measurement.

In columns (1) and (2) of Table 4, the coefficient on $EXOG_{i,q}$ is positive and significant suggesting that reductions in analyst coverage increase return synchronicity. These results are consistent with those in Table 3 where subsequent initiations are associated with decreases in return synchronicity. Overall, to the extent that sector drops reflect exogenous changes in analyst coverage, the results of this section provide supporting evidence for our main findings.

As an alternative approach to addressing endogeneity concerns, we employ propensity score matching to match firm-months with initiations to firm-months without initiations that are similar along multiple observable dimensions (Rosenbaum and Rubin 1983). Within each calendar month, we estimate the likelihood of an initiation using a probit regression, where the dependent variable equals 1 when an analyst initiates coverage.[16] We transform the fitted values from estimating this probit regression into a propensity score. The propensity score is the conditional probability of receiving an initiation in a given month conditional on the firm controls used in our initiation model. We pair firms

[16] We follow prior research in choosing variables associated with the probability of an initiation (see Liang et al. 2008). Our model of initiations includes firm size, prior analyst following, institutional ownership, trading volume, past returns, book-to-market, earnings variability, and indicators for events such as earnings announcements, management forecasts, and merger activity.

with an initiation with two control firm observations using the nearest neighbor algorithm. Matching each initiation firm with two non-initiation firms provides added power for our tests, yielding a sample of 119,565 firm-months, corresponding to three observations for each of the 39,855 initiations.[17]

Columns (3) and (4) in Table 4 report the results from re-estimating Equation (3) using the propensity score matched sample. Column (3) results demonstrate that the coefficient on $INITIATION_{i,t}$ is positive and significant while the interaction term has a negative and significant coefficient. To mitigate concerns about heterogeneity that is not captured by our matching algorithm, column (4) includes the main controls used in our primary analyses.[18] We again find that the coefficient on $INITIATION_{i,t} * LNUM_{i,t-1}$ is significantly negative, while the coefficient on $INITIATION_{i,t}$ is significantly positive. These findings mirror those in Table 3, suggesting that new initiations contribute primarily to industry- and market-information while subsequent initiations contribute to firm-specific information. The consistency of our findings within the multivariate, propensity score matching approach mitigates concerns regarding selection based on observables and provides additional support for our main tests.

Trading Co-Movement and the Speed of Information Flow

Barberis et al. (2005, 284) point out that if investors place stocks into specific groups such as industries, and then allocate resources to these groups of stocks instead of individual assets, this process can generate co-movement. In the context of our study, initiations could introduce stocks to investors, causing them to group these stocks with other firms in their respective industries, thereby increasing synchronicity as the stocks trade together. We attempt to rule out this possibility by using synchronicity in *trading volume* to capture the shift in return synchronicity that is driven by the increased awareness of the stock but is unrelated to the information provided by the analyst.[19,20] We re-estimate Equations (3) and (4) after controlling for changes in volume synchronicity (untabulated) and find that the positive (negative) association between new (subsequent) initiations and the change in synchronicity is still present and of similar magnitude to the results presented in Table 3.

Analysts may also impact return synchronicity without affecting the mix of information available about a firm by simply speeding up the flow of information into prices. Implicitly, our methodology for measuring synchronicity assumes that market and industry price movements map into a firm's stock price on a daily basis, but a firm's price may actually take more than a day to synchronize with the market and industry (Barberis et al. 2005). To address this issue we calculate our synchronicity measure using two lags of the industry and market stock return and then re-estimate Equation (4). Our untabulated results show no change in the relation between initiations and changes in synchronicity. New (subsequent) initiations continue to be positively (negatively) related to changes in synchronicity with no significant decreases in the magnitude of coefficients in Table 3.

---

[17] Matching to only one other observation yields similar results.

[18] As discussed in Armstrong et al. (2010), the most common way to assess the reasonableness of the propensity score approach is to examine the covariate balance between the treatment group (firms with initiations) and control group (firms without initiations). Covariate balance is not achieved in our case, but this is common in practice (see Ho et al. 2007) and the recommended approach is to estimate a regression of the outcome (change in synchronicity) as a function of the treatment and the control variables used in the propensity score model.

[19] Subsequent initiations could also induce co-movement in trading, but given that our results document a decrease in synchronicity for these initiations and that investors should already be aware of firms with coverage, we believe this is less likely to be the case than for new initiations.

[20] To estimate trading volume synchronicity we regress shocks to daily share turnover, measured as shares traded scaled by shares outstanding, at the firm level on shocks to daily share turnover at the industry- and market-level. Because daily turnover is highly auto-correlated, we create shocks to our turnover measures by regressing daily turnover (at the firm-, industry-, and market-level) on six daily lagged values of turnover. The residuals from these regressions are then used in the volume analog of Equation (1) (Halling et al. 2011).

TABLE 4

Estimation of the Relation between Exogenous Drops in Coverage and Changes in Stock Return Synchronicity and Estimation with Propensity-Score Matched Firms

$$\Delta SYNCH_{i,q} = \varphi_0 + \lambda_1 EXOG_{i,q} + \lambda_2 EXOG_{i,q}*LNUM_{i,q} + \lambda_3 LNUM_{i,q-1} + \lambda_4 \Delta LMVE_{i,q} + \lambda_5 \Delta INST_{i,q} + \lambda_6 \Delta TURN_{i,q} + \lambda_7 RET\_12_{i,q} + \lambda_8 ISSUE\_12_{i,q} + \lambda_9 REPORT_{i,t-q} + \lambda_{10} GUIDE\_6_{i,q} + \lambda_{11} LBM_{i,q-1} + \lambda_{12} STDROA_{i,q} + \lambda_{13} REG_{i,q} + \sum \varphi_i FIRM_i + \varepsilon_{i,t}.$$

$$\Delta SYNCH_{i,t} = \alpha_0 + \beta_1 INITIATION_{i,t} + \beta_2 INITIATION_{i,t}*LNUM_{i,t-1} + \beta_3 LNUM_{i,t-1} + \beta_4 \Delta LMVE_{i,t} + \beta_5 \Delta INST_{i,t} + \beta_6 \Delta TURN_{i,t} + \beta_7 RET\_12_{i,t} + \beta_8 ISSUE\_12_{i,t} + \beta_9 REPORT_{i,t-1} + \beta_{10} GUIDE\_6_{i,t} + \beta_{11} LBM_{i,t-1} + \beta_{12} STDROA_{i,t} + \beta_{13} REG_{i,t} + \sum \alpha_i FIRM_i + \varepsilon_{i,t}.$$

	Exogenous Drops Analysis			Propensity Score Analysis	
Estimation	**(1)**	**(2)**		**(3)**	**(4)**
$EXOG_{i,t}$	0.488	0.527	$INITIATION_{i,t}$	0.406	0.372
	(2.11)***	(2.28)**		(7.02)***	(6.62)**
$EXOG_{i,t}$ $* LNUM_{i,t}$	−0.101 (−1.17)	−0.100 (−0.95)	$INITIATION$ $* LNUM_{i,t}$	−0.148 (−6.25)***	−0.140 (−5.90)***
$LNUM_{i,t-1}$	−0.0200	−0.039	$LNUM_{i,t-1}$	0.002	0.018
	(−2.74)***	(−4.69)***		(0.15)	(1.27)
$\Delta LMVE_{i,t}$		0.686	$\Delta LMVE_{i,t}$		0.019
		(21.91)***			(0.51)
$\Delta INST_{i,t}$		0.993	$\Delta INST_{i,t}$		1.135
		(10.50)***			(11.07)***
$\Delta TURN_{i,t}$		−0.004	$\Delta TURN_{i,t}$		−0.094
		(−1.33)			(−12.13)***
$RET\_12_{i,t}$		0.151	$RET\_12_{i,t}$		0.198
		(15.33)***			(19.66)***
$ISSUE\_12_{i,t}$		−0.144	$ISSUE\_12_{i,t}$		−0.060
		(−7.23)***			(−2.75)***
$REPORT_{i,t-1}$		0.094	$REPORT_{i,t-1}$		0.019
		(3.36)***			(1.00)
$GUIDE\_6_{i,t}$		−0.007	$GUIDE\_6_{i,t}$		−0.011
		(−0.36)			(−0.59)
$LBM_{i,t-1}$		−0.101	$LBM_{i,t-1}$		−0.137
		(−9.74)***			(−11.08)***
$STDROA_{i,t}$		−0.036	$STDROA_{i,t}$		0.124
		(−0.52)			(3.58)***
$REG_{i,t}$		0.048	$REG_{i,t}$		−0.590
		(1.48)			(2.15)**
Intercept		0.032	Intercept	−0.038	−0.278
		(2.05)**		(−1.19)	(7.83)***
R^2	0.000	0.007	R^2	0.001	0.011
n	204,731	204,731	n	119,565	119,565

*, **, *** Indicate significance at the 0.1, 0.05, and 0.01 levels, respectively.
All variables are defined in Appendix A. t-statistics (in parentheses) are based on standard errors that are robust to heteroscedasticity and correlation across observations from the same two-digit SIC industry.

Alternative Measures of Information

Because synchronicity is not a perfect measure of the mix of information available about a specific firm, we use several alternative measures of the available information about a firm to assess the robustness of our main findings.

Analyst Forecast Errors

Earnings forecasts are an important channel through which analysts disseminate news and, thus, serve as an alternative measure of the type of information that analysts provide. In this section, we extend the analyses in Ayers and Freeman (1997) and Piotroski and Roulstone (2004) by examining the link between coverage initiations and the accuracy of analysts' forecasts. We conjecture that newly initiating analysts are more likely to incorporate industry-specific news than firm-specific news into their earnings forecasts and that the opposite holds for subsequent analysts. Thus, using earnings innovations as a proxy for news, we predict that the relation between industry-specific earnings innovations and consensus forecast errors is weaker following new initiations, while the relation between firm-specific earnings innovations and consensus forecast errors is weaker following subsequent initiations.

To investigate the relation between initiations and forecast errors, we measure seasonally adjusted earnings innovations, $\Delta E_{i,q}$, for each firm i and quarter q, where we scale innovations by the beginning of quarter price, $\Delta E_{i,q} = \frac{E_{i,q} - E_{i,q-4}}{P_{i,q}}$, where $E_{i.q}$ equals firm i's earnings per share for fiscal quarter q and $P_{i,q}$ denotes the beginning of quarter price. We next decompose $\Delta E_{i,q}$ into industry- and firm-specific components following Ayers and Freeman (1997). Specifically, we define the industry component of the current earnings innovation as the median earnings innovation of all firms in the same two-digit SIC code as firm i, denoted by $\Delta I_{i,q}$, minus the market earnings innovation, defined as the median value of $\Delta I_{i,q}$ for all industries in quarter q. Finally, we calculate the firm-specific earnings innovation, $\Delta F_{i,q}$, by subtracting $\Delta I_{i,q}$ from the total earnings innovation, $\Delta E_{i,q}$.

For each firm-quarter, we also calculate the consensus analyst forecast error, $FE_{i,q}$, defined as firm i's actual earnings minus the consensus forecast immediately prior to the quarterly earnings announcement, scaled by beginning-of-quarter price. Positive (negative) values of $FE_{i,q}$ correspond to cases where analysts are pessimistic (optimistic) relative to actual earnings. To complement our synchronicity-based tests, we examine the relation between the consensus analyst forecast error, $FE_{i,q}$, and the industry and firm-specific components of the earnings innovation.

We predict that new initiations increase the extent to which industry earnings news is reflected in consensus forecasts, while subsequent initiations increase the extent to which firm-specific earnings news is reflected in consensus forecasts. To test these predictions, we estimate the following regression:

$$\begin{aligned} FE_{i,q} = {} & \alpha_0 + \beta_1 \Delta F_{i,q} + \beta_2 \Delta F_{i,q} * INITIATION\_NEW_{i,q} + \beta_3 \Delta F_{i,q} * INITIATION\_SUB_{i,q} \\ & + \beta_4 \Delta I_{i,q} + \beta_5 \Delta I_{i,q} * INITIATION\_NEW_{i,q} + \beta_6 \Delta I_{i,q} * INITIATION\_SUB_{i,q} \\ & + \beta_7 INITIATION\_NEW_{i,q} + \beta_8 INITIATION\_SUB_{i,q} + \beta_9 LMVE_{i,q} + \beta_{10} LBM_{i,q} + \varepsilon_{i,q}, \end{aligned} \tag{5}$$

where $INITIATION\_NEW_{i,q}$ is a dummy variable that equals 1 when the firm experiences a new initiation in the 60 trading days prior to firm i's quarter q earnings announcement and we define $INITIATION\_SUB_{i,q}$ analogously for subsequent initiations.[21] If newly initiating analysts primarily

[21] When $INITIATION\_NEW_{i,q}$ equals 1, the consensus forecast will generally consist of only the forecast from the initiating analyst, although there can be additional forecasts if there are subsequent initiations following the new initiation. In untabulated results, we find qualitatively identical results when $INITIATION\_NEW_{i,q}$ equals 1 and the new initiation is the only forecast or the consensus forecast consists of the new initiation and one or more subsequent initiations.

provide market- and industry-information, then we expect to observe a negative coefficient on the interaction between $\Delta I_{i,q}$ and $INITIATION\_NEW_{i,q}$, consistent with new analysts reducing consensus forecast errors by incorporating the effects of industry earnings innovations into their forecasts. Similarly, if subsequent analysts primarily provide firm-specific information, then we expect to observe a negative coefficient on the interaction between $\Delta F_{i,q}$ and $INITIATION\_SUB_{i,q}$, consistent with subsequent analysts reducing consensus forecast errors by incorporating the effects of firm-specific earnings innovations into their forecasts.

Analyst forecast errors and earnings innovations are obtained from I/B/E/S and Compustat, respectively. We eliminate firms whose stock price is less than five dollars to avoid scaling issues when measuring analyst forecast errors. The final sample consists of 116,699 firm-quarters spanning 1996–2007. All non-binary variables are standardized at the quarterly level to have a mean of 0 and a standard deviation of 1.

Table 5 presents the results from estimating Equation (5). The results demonstrate that analyst forecast errors are positively related to both contemporaneous innovations in industry and firm-specific earnings innovations, $\Delta I_{i,q}$ and $\Delta F_{i,q}$, respectively. All else equal, greater increases (decreases) in firm or industry-level earnings lead to analysts being overly pessimistic (optimistic) relative to realized earnings. In addition, the negative interaction term between $\Delta F_{i,q}$ and $INITIATION\_SUB_{i,q}$ demonstrates that subsequent initiations attenuate the relation between firm-specific earnings innovations and analyst forecast errors. All else equal, when an analyst initiates coverage on a firm already followed by other analysts, firm-specific earnings news is more likely to be reflected in the consensus forecast. In contrast, the interaction term between $\Delta F_{i,q}$ and $INITIATION\_NEW_{i,q}$ is positive but insignificant. These findings suggest that while subsequent initiations contribute to the incorporation of firm-specific earnings innovations into earnings forecasts, the same is not true of new initiations. The results also demonstrate a negative interaction effect between industry earnings innovations, $\Delta I_{i,q}$, and $INITIATION\_NEW_{i,q}$. The fact that we find a negative and significant interaction effect between industry earnings innovations and $INITIATION\_NEW_{i,q}$, while finding a positive and insignificant interaction effect between firm-specific earnings news and $INITIATION\_NEW_{i,q}$, is consistent with analysts primarily providing industry-earnings news when initiating coverage on firms without existing coverage.

We further document a negative interaction effect between industry earnings innovations and $INITIATION\_SUB_{i,q}$, consistent with subsequent initiations also contributing to the incorporation of industry-specific news into earnings forecasts. An F-test rejects the equality of the $INITIATION\_SUB_{i,q}$ interaction terms, consistent with subsequent initiations playing a larger role in the assimilation of firm-specific earnings news into the consensus forecast relative to the assimilation of industry-specific earnings news. Column (4) of Table 5 demonstrates that these relations are robust to including interaction effects between the components of the earnings innovations and firm size and book-to-market.

Taken together, the results of this section corroborate and extend the main analyses. The results provide additional evidence that the type of information provided by analysts varies depending on the existing level of coverage. Specifically, we show that new initiations are more likely to incorporate industry-earnings innovations into the consensus forecast, while subsequent initiations are more likely to incorporate firm-specific earnings innovations into the consensus forecast. Additionally, by documenting how the type of coverage initiation affects the type of information reflected in analysts' forecasts, the results highlight one of the potential mechanisms through which analysts affect the mix of industry- versus firm-specific information reflected in security prices.

TABLE 5

Estimation of the Relation between Analyst Forecast Errors, Firm and Industry Earnings, and Analyst Initiation

$$FE_{i,q} = \alpha_0 + \beta_1 \Delta F_{i,q} + \beta_2 \Delta F_{i,q} * INITIATION\_NEW_{i,q} + \beta_3 \Delta F_{i,q} * INITIATION\_SUB_{i,q} + \beta_4 \Delta I_{i,q} + \beta_5 \Delta I_{i,q} * INITIATION\_NEW_{i,q} + \beta_6 \Delta I_{i,q} * INITIATION\_SUB_{i,q} + \beta_7 INITIATION\_NEW_{i,q} + \beta_8 INITIATION\_SUB_{i,q} + \beta_9 LMVE_{i,q} + \beta_{10} LBM_{i,q} + \varepsilon_{i,q}.$$

Estimation	**(1)**	**(2)**	**(3)**	**(4)**
$\Delta F_{i,q}$	0.290	0.308	0.308	0.250
	(45.23)***	(45.23)***	(43.07)***	(37.68)***
$\Delta F_{i,q} * INITIATION\_NEW_{i,q}$	0.052		0.041	−0.018
	(0.77)		(0.61)	(−0.28)
$\Delta F_{i,q} * INITIATION\_SUB_{i,q}$		−0.127	−0.126	−0.087
		(−8.67)***	(−8.65)***	(−5.87)***
$\Delta I_{i,q}$	0.052	0.055	0.056	0.055
	(16.29)***	(15.02)***	(15.15)***	(14.73)***
$\Delta I_{i,q} * INITIATION\_NEW_{i,q}$	−0.094		−0.095	−0.116
	(−1.78)*		(−1.81)*	(−2.19)**
$\Delta I_{i,q} * INITIATION\_SUB_{i,q}$		−0.021	−0.021	−0.014
		(−3.19)***	(−3.26)***	(−2.17)**
$INITIATION\_NEW_{i,q}$	0.125	0.121	0.124	0.117
	(2.57)**	(2.61)**	(2.56)**	(2.41)**
$INITIATION\_SUB_{i,q}$	0.058	0.061	0.061	0.059
	(10.07)***	(10.50)***	(10.50)***	(10.11)***
$LMVE_{i,q}$	0.079	0.078	0.078	0.077
	(25.68)***	(25.47)***	(25.47)***	(25.44)***
$LBM_{i,q}$	−0.015	−0.015	−0.015	−0.015
	(−3.28)***	(−3.30)***	(−3.30)***	(−3.22)***
$\Delta F_{i,q} * LMVE_{i,q}$				−0.096
				(13.73)***
$\Delta F_{i,q} * LBM_{i,q}$				0.026
				(5.04)***
$\Delta I_{i,q} * LMVE_{i,q}$				−0.022
				(−6.04)***
$\Delta I_{i,q} * LBM_{i,q}$				0.000
				(0.02)
Intercept	−0.010	−0.010	−0.010	−0.006
	(−3.23)***	(−3.21)***	(−3.21)***	(−1.99)**
R^2	0.098	0.100	0.100	0.100
n	116,699	116,699	116,699	116,699

*, **, *** Indicate significance at the 0.1, 0.05, and 0.01 levels, respectively.
All variables are defined in Appendix A. t-statistics (in parentheses) are based on standard errors that are robust to heteroscedasticity and correlation across observations from the same two-digit SIC industry.

Other Measures of Information

In addition to examining analyst forecast errors, we use the market and industry betas from variations of Equation (1) and return kurtosis, measured over the same time period as return synchronicity, to assess how initiations affect the information available about a firm.

Market and industry betas should capture how a firm's returns move with changes in the market and industry returns. We regress firm returns on market returns ($MKT\_BETA_{i,t}$) and firm returns on industry returns ($IND\_BETA_{i,t}$) to obtain the betas and then replace changes in synchronicity around initiations with changes in these betas around initiations. Table 6 contains the results of estimating Equation (4) where the dependent variable equals the change in betas. The estimated coefficients on $INITIATION\_NEW_{i,t}$ ($INITIATION\_SUB_{i,t}$) are positive (negative) and significant when $\Delta MKT\_BETA_{i,t}$ or $\Delta IND\_BETA_{i,t}$ is the dependent variable.[22] These results are consistent with our primary findings.[23]

Roll (1988) documents that the kurtosis of the return distribution declines significantly when he eliminates daily observations associated with firm-specific news, suggesting that a change in kurtosis may be one way to measure the presence of firm-specific information. Accordingly, we replace the change in synchronicity with the change in kurtosis and re-estimate Equation (4). The results, presented in Table 7, show that subsequent initiations lead to an increase in kurtosis while new initiations have no appreciable effect on kurtosis. Decreases in coverage result in a decrease in kurtosis. Interpreting these results in the light of Roll (1988) suggests that subsequent initiations increase the amount of firm-specific information being impounded in price, while decreases in coverage have the opposite effect.

Other Robustness Checks

We now summarize several other untabulated robustness checks that do not alter the main inferences of our study. First, because analysts may simply choose to cover firms that receive more press coverage, and because press coverage may actually increase the amount of firm-specific news available (instead of analysts increasing a firm's exposure to the press), we include the change in media coverage as a control variable.[24] Second, we replace adjusted R^2 values in the calculation of synchronicity with raw R^2 values to ensure that our modifications to the adjusted R^2 measure do not affect our results. Third, we include fixed effects defined by industry and month instead of firm fixed effects. Fourth, we include a time trend in the regressions. Fifth, we use the Prais-Winsten procedure to correct for autocorrelation in the regression error terms reported in Table 3. Finally, we

---

[22] For completeness we also include $DROP_{i,t}$ and $DROP\_ZERO_{i,t}$ in the regressions. We document that when there is a drop in coverage in a given month the market and industry betas increase, which is consistent with the decrease in betas when there is a subsequent initiation. In untabulated results, we also include our volume synchronicity measure as a control variable. The coefficient on $INITIATION\_NEW_{i,t}$ ($INITIATION\_SUB_{i,t}$) remains positive (negative) and significant.

[23] Note that betas and R^2s can change independently of each other. They are only directly related under strict distributional assumptions regarding the variances of the dependent and independent variables. Given this, we have estimated the relation between changes in synchronicity and initiations while controlling for changes in betas. Results (untabulated) indicate that new (subsequent) initiations continue to have a positive (negative) relation with the change in synchronicity. Given that the R^2 of a regression is determined by the regression betas, the variance and covariance of the independent variables, and the variance of the idiosyncratic portion of the dependent variable, and assuming that initiations do not affect the variance and covariance of market and industry returns, our findings suggest that initiations affect a firm's stock return synchronicity through changes in the weight placed on market and industry returns (i.e., changes in betas) as well as changes in the idiosyncratic portion of the firm's returns.

[24] Eugene Soltes of Harvard Business School graciously provided data on media coverage (Soltes 2010).

TABLE 6

Estimation of the Relation between Changes in Betas and Analyst Initiations

$$\Delta BETA_{i,t} = \rho_0 + \gamma_1 INITIATION\_NEW_{i,t} + \gamma_2 INITIATION\_SUB_{i,t} + \gamma_3 DROP_{i,t-1} + \gamma_4 DROP\_ZERO_{i,t-1} + \gamma_5 \Delta LMVE_{i,t} + \gamma_6 \Delta INST_{i,t} + \gamma_7 \Delta TURN_{i,t} + \gamma_8 RET\_12_{i,t} + \gamma_9 ISSUE\_12_{i,t} + \gamma_{10} REPORT_{i,t-1} + \gamma_{11} GUIDE\_6_{i,t} + \gamma_{12} LBM_{i,t-1} + \gamma_{13} STDROA_{i,t} + \gamma_{14} REG_{i,t} + \sum \rho_i FIRM_i + \varepsilon_{i,t}.$$

Estimation	$\Delta MKT\_BETA_{i,t}$	$\Delta MKT\_BETA_{i,t}$	$\Delta IND\_BETA_{i,t}$	$\Delta IND\_BETA_{i,t}$
$INITIATION\_NEW_{i,t}$	0.0635	0.0640	0.0526	0.0526
	(3.43)***	(3.43)***	(4.58)***	(4.55)***
$INITIATION\_SUB_{i,t}$	−0.0124	−0.0111	−0.0134	−0.0130
	(−2.22)**	(−2.02)**	(−4.30)***	(−4.13)***
$DROP_{i,t}$		0.0170		0.0067
		(2.93)***		(1.87)**
$DROP\_ZERO_{i,t}$		0.0025		−0.0260
		(0.10)		(−1.07)
$\Delta LMVE_{i,t}$	0.1167	0.1169	0.0549	0.0550
	(5.63)***	(5.62)***	(4.71)***	(4.72)***
$\Delta INST_{i,t}$	0.1637	0.1641	0.1386	0.1388
	(4.84)***	(4.83)***	(6.25)***	(6.26)***
$\Delta TURN_{i,t}$	0.0118	0.0119	0.0111	0.0111
	(4.67)***	(4.68)***	(5.38)***	(5.39)***
$RET\_12_{i,t}$	0.0461	0.0462	0.0287	0.0287
	(8.94)***	(8.94)***	(9.40)***	(9.41)***
$ISSUE\_12_{i,t}$	−0.0464	−0.0465	−0.0199	−0.0199
	(−4.50)***	(−4.50)***	(−4.76)***	(−4.76)***
$REPORT_{i,t-1}$	0.0058	0.0057	0.0055	0.0055
	(4.14)***	(4.08)***	(3.69)***	(3.67)***
$GUIDE\_6_{i,t}$	0.0076	0.0072	−0.0019	−0.0020
	(2.53)**	(2.38)**	(−0.80)	(−0.87)
$LBM_{i,t-1}$	−0.0399	−0.0401	−0.0259	−0.0260
	(−8.10)***	(−8.00)***	(−11.48)***	(−11.51)***
$STDROA_{i,t}$	−0.0009	−0.0010	0.0035	0.0035
	(−0.10)	(−0.11)	(0.60)	(0.59)
$REG_{i,t}$	0.0442	0.0440	0.0401	0.0400
	(2.00)**	(2.00)**	(1.78)*	(1.78)*
Intercept	−0.0299	−0.0313	−0.0171	−0.0175
	(−8.62)***	(−8.47)***	(−7.81)***	(−8.06)***
R^2	0.0208	0.0208	0.0181	0.0181
n	613,111	613,111	613,111	613,111

*, **, *** Indicate significance at the 0.1, 0.05, and 0.01 levels, respectively.

All variables are defined in Appendix A. t-statistics (in parentheses) are based on standard errors that are robust to heteroscedasticity and correlation across observations from the same two-digit SIC industry.

TABLE 7

Estimation of the Relation between Changes in Kurtosis and Analyst Initiations

$$\begin{aligned}\Delta KURTOSIS_{i,t} = {} & \alpha_0 + \beta_1 INITIATION_{i,t} + \beta_2 INITIATION_{i,t} * LNUM_{i,t-1} + \beta_3 LNUM_{i,t-1} \\ & + \beta_4 \Delta LMVE_{i,t} + \beta_5 \Delta INST_{i,t} + \beta_6 \Delta TURN_{i,t} + \beta_7 RET\_12_{i,t} + \beta_8 ISSUE\_12_{i,t} \\ & + \beta_9 REPORT_{i,t-1} + \beta_{10} GUIDE\_6_{i,t} + \beta_{11} LBM_{i,t-1} + \beta_{12} STDROA_{i,t} \\ & + \beta_{13} REG_{i,t} + \sum \alpha_i FIRM_i + \varepsilon_{i,t}.\end{aligned}$$

$$\begin{aligned}\Delta KURTOSIS_{i,t} = {} & \rho_0 + \gamma_1 INITIATION\_NEW_{i,t} + \gamma_2 INITIATION\_SUB_{i,t} + \gamma_3 DROP_{i,t-1} \\ & + \gamma_4 DROP\_ZERO_{i,t-1} + \gamma_5 \Delta LMVE_{i,t} + \gamma_6 \Delta INST_{i,t} + \gamma_7 \Delta TURN_{i,t} \\ & + \gamma_8 RET\_12_{i,t} + \gamma_9 ISSUE\_12_{i,t} + \gamma_{10} REPORT_{i,t-1} + \gamma_{11} GUIDE\_6_{i,t} \\ & + \gamma_{12} LBM_{i,t-1} + \gamma_{13} STDROA_{i,t} + \gamma_{14} REG_{i,t} + \sum \rho_i FIRM_i + \varepsilon_{i,t}.\end{aligned}$$

Estimation	**(1)**		**(2)**	**(3)**
$INITIATION_{i,t}$	−0.0350	$INITIATION\_NEW_{i,t}$	−0.0482	−0.0495
	(−1.28)		(−1.05)	(−1.09)
$INITIATION * LNUM_{i,t}$	0.0386	$INITIATION\_SUB_{i,t}$	0.0429	0.0402
	(2.37)**		(3.33)***	(3.13)***
$LNUM_{i,t-1}$	0.0641	$DROP_{i,t}$		−0.0363
	(10.11)***			(−3.43)***
		$DROP\_ZERO_{i,t}$		−0.0288
				(−0.62)
$\Delta LMVE_{i,t}$	−0.0844	$\Delta LMVE_{i,t}$	−0.0941	−0.0944
	(−3.49)***		(−3.91)***	(−3.93)***
$\Delta INST_{i,t}$	−0.0895	$\Delta INST_{i,t}$	−0.1025	−0.1033
	(−1.60)***		(−1.85)*	(−1.87)*
$\Delta TURN_{i,t}$	0.0588	$\Delta TURN_{i,t}$	0.0586	0.0585
	(7.56)***		(7.51)***	(7.51)***
$RET\_12_{i,t}$	−0.0205	$RET\_12_{i,t}$	−0.0237	−0.0239
	(−3.76)***		(−4.44)***	(−4.47)***
$ISSUE\_12_{i,t}$	−0.0290	$ISSUE\_12_{i,t}$	−0.0269	−0.0269
	(−4.27)***		(−3.75)***	(−3.72)***
$REPORT_{i,t-1}$	−0.0316	$REPORT_{i,t-1}$	−0.0315	−0.0314
	(−6.76)***		(−6.68)***	(−6.61)***
$GUIDE\_6_{i,t}$	−0.1590	$GUIDE\_6_{i,t}$	−0.1466	−0.1459
	(−9.78)***		(−9.69)***	(−9.67)***
$LBM_{i,t-1}$	0.0327	$LBM_{i,t-1}$	0.0288	0.0293
	(3.59)***		(3.13)***	(3.17)***
$STDROA_{i,t}$	−0.0609	$STDROA_{i,t}$	−0.0635	−0.0634
	(−4.76)***		(−4.19)***	(−4.21)***
$REG_{i,t}$	0.0159	$REG_{i,t}$	0.0064	0.0070
	(0.38)		(0.14)	(0.16)
Intercept	0.0337	Intercept	0.1047	0.1079
	(3.58)***		(9.79)***	(10.28)***
R^2	0.0135	R^2	0.0134	0.0134
n	608,548	n	608,548	608,548

*, **, *** Indicate significance at the 0.1, 0.05, and 0.01 levels, respectively.
All variables are defined in Appendix A. t-statistics (in parentheses) are based on standard errors that are robust to heteroscedasticity and correlation across observations from the same two-digit SIC industry.

include the fourth lag of the level of synchronicity in our regressions as firms with higher levels of synchronicity may experience higher or lower shifts in synchronicity.

VI. CONCLUSION

In this study, we examine how analyst initiations affect synchronicity in order to determine whether analysts provide market- and industry- or firm-specific information about the firms they cover. We show that initiations increase synchronicity among firms with no existing analyst coverage and interpret this result as evidence that the first analyst report for a firm predominantly provides industry and market information. In contrast, we find that coverage initiations of firms with existing coverage appear to decrease synchronicity. Thus, if other analysts are following the firm, then analysts who initiate coverage appear to provide firm-specific information. Our results contribute to the literature by suggesting that the information analysts provide relies critically on the presence of other analysts. Furthermore, we extend prior studies that examine the relation between returns and analyst initiations by also showing that initiations are important information events.

We solidify our findings by documenting that they are robust to alternative measures of the mix of information available about a firm. For example, we disaggregate earnings news into industry- and firm-specific components and examine each component's relation with consensus forecast errors. Consistent with our synchronicity-based tests, we show that new initiations reduce the sensitivity of consensus forecast errors to industry earnings innovations, while subsequent initiations are more likely to mitigate the relation between consensus forecast errors and firm-specific earnings innovations. These findings document how the type of coverage initiation affects the type of information reflected in analysts' forecasts, thus highlighting a potential channel through which analysts affect the mix of industry- versus firm-specific information reflected in security prices. We also show that our results are robust to efforts to control for the endogenous nature of coverage decisions.

While our results are important for understanding the type of information that analysts produce, we do not take a comprehensive approach to identifying the mechanisms through which analysts communicate this information to investors. For example, in addition to their earnings forecasts, do analysts convey specific components of earnings news through their written assessment of market and industry conditions and the firm's operations? Additionally, do investors learn about industry and market information by observing analysts' coverage decisions? We leave these questions to future research.

REFERENCES

Armstrong, C., A. Jagolinzer, and D. Larcker. 2010. Chief executive officer equity incentives and accounting irregularities. *Journal of Accounting Research* 48 (2): 225–271.

Asquith, P., M. Mikhail, and A. Au. 2005. Information content of equity analyst reports. *Journal of Financial Economics* 75 (2): 245–282.

Ayers, B., and R. Freeman. 1997. Market assessment of industry and firm earnings information. *Journal of Accounting and Economics* 24 (2): 205–218.

Barberis, N., A. Shleifer, and J. Wurgler. 2005. Comovement. *Journal of Financial Economics* 75 (2): 283–317.

Barron, O., D. Byard, and O. Kim. 2002. Change in analysts' information around earnings announcements. *The Accounting Review* 77 (4): 821–846.

Bhushan, R. 1989. Firm characteristics and analyst following. *Journal of Accounting and Economics* 11 (2–3): 255–274.

Branson, B., D. Guffey, and D. Pagach. 1998. Information conveyed in announcements of analyst coverage. *Contemporary Accounting Research* 15 (2): 119–143.

Chan, K., and A. Hameed. 2006. Stock price synchronicity and analyst coverage in emerging markets. *Journal of Financial Economics* 80 (1): 115–147.

Clement, M. 1999. Analyst forecast accuracy: Do ability, resources, and portfolio complexity matter? *Journal of Accounting and Economics* 27 (3): 285–303.

Demiroglu, C., and M. Ryngaert. 2010. The first analyst coverage of neglected stocks. *Financial Management* 39 (2): 555–584.

Durnev, A., R. Morck, and B. Yeung. 2004. Value enhancing capital budgeting and firm-specific stock return variation. *Journal of Finance* 59 (1): 1461–1493.

Durnev, A., R. Morck, B. Yeung, and P. Zarowin. 2003. Does greater firm-specific return variation mean more or less informed stock pricing? *Journal of Accounting Research* 41 (5): 797–836.

Ertimur, Y., V. Muslu, and F. Zhang. 2011. Why are recommendations optimistic? Evidence from analysts' coverage initiations. *Review of Accounting Studies* 16 (4): 679–718.

Ferreira, M., and P. Laux. 2007. Corporate governance, idiosyncratic risk, and information flow. *Journal of Finance* 62 (2): 951–989.

Frankel, R., and X. Li. 2004. Characteristics of a firm's information environment and the information asymmetry between insiders and outsiders. *Journal of Accounting and Economics* 37 (2): 229–259.

Groysberg, B., P. Healy, and D. Maber. 2011. What drives sell-side analyst compensation at high-status investment banks? *Journal of Accounting Research* 49 (4): 969–1000.

Halling, M., P. Moulton, and M. Panayides. 2011. Volume dynamics and multimarket trading. *Journal of Financial and Quantitative Analysis* (forthcoming).

Hameed, H., R. Morck, J. Shen, and B. Yeung. 2010. *Information, Analysts, and Stock Return Comovement*. Working paper, National Singapore University.

Hayes, R. 1998. The impact of trading commission incentives on analysts' stock coverage decisions and earnings forecasts. *Journal of Accounting Research* 36 (2): 299–320.

Ho, D., K. Imai, G. King, and E. Stuart. 2007. Matching as nonparametric preprocessing for reducing model dependence in parametric causal inference. *Political Analysis* 15 (3): 199–236.

Hong, H., and M. Kacperczyk. 2010. Competition and bias. *Quarterly Journal of Economics* 125 (4): 1683–1725.

Irvine, P. 2003. The incremental impact of analyst initiation of coverage. *Journal of Corporate Finance* 9 (4): 431–451.

Irvine, P., M. Lipson, and A. Puckett. 2007. Tipping. *The Review of Financial Studies* 20 (3): 741–768.

Kadan, O., L. Madureira, R. Wang, and T. Zach. 2011. *Analysts' Industry Expertise*. Working paper, The Ohio State University.

Kalia, S. 2005. *Conor Medsystems*. Rodman & Renshaw Research Report, September 7.

Kelly, B., and A. Ljungqvist. 2012. Testing asymmetric-information asset pricing models. *Review of Financial Studies* 25 (5): 1366–1413.

Kelly, P. 2007. *Information Efficiency and Firm-Specific Return Variation*. Working paper, University of South Florida.

Liang, L., E. Riedl, and R. Venkataraman. 2008. The determinants of analyst-firm pairings. *Journal of Accounting and Public Policy* 27 (4): 277–294.

Liu, M. 2011. Analysts' incentives to produce industry-level versus firm-specific information: Theory and evidence. *The Journal of Financial and Quantitative Analysis* 46 (3): 757–784.

McNichols, M., and P. O'Brien. 1997. Self-selection and analyst coverage. *Journal of Accounting Research* 35 (Supplement): 167–199.

Morck, R., B. Yeung, and W. Yu. 2000. The information content of stock markets: Why do emerging markets have synchronous stock price movements? *Journal of Financial Economics* 58: 215–260.

O'Brien, P., and R. Bhushan. 1990. Analyst following and institutional ownership. *Journal of Accounting Research* 24 (Supplement): 55–76.

Peterson, D. 1987. Security price reaction to initial reviews of common stock by the value line investment survey. *Journal of Finance and Quantitative Analysis* 22 (4): 483–494.

Piotroski, J., and D. Roulstone. 2004. The influence of analysts, institutional investors, and insiders on the incorporation of market, industry, and firm-specific information into stock prices. *The Accounting Review* 79 (4): 1119–1151.

Ramnath, S. 2002. Investor and analyst reactions to earnings announcement of related firms: An empirical analysis. *Journal of Accounting Research* 40 (5): 1351–1376.

Ramnath, S., S. Rock, and P. Shane. 2008. Financial analysts' forecasts and stock recommendations: A review of the research. *Foundations and Trends in Finance* 2 (4): 311–420.

Roll, R. 1988. R^2. *The Journal of Finance* 43 (3): 541–566.

Rosenbaum, P. R., and D. B. Rubin. 1983. The central role of the propensity score in observational studies for causal effects. *Biometrika* 70 (1): 41–55.

Schipper, K. 1991. Analysts' forecasts. *Accounting Horizons* 5 (4): 105–131.

Schutte, M., and E. Unlu. 2009. Do security analysts reduce noise? *Financial Analysts Journal* 65 (3): 40–54.

Soltes, E. 2010. *Disseminating Firm Disclosures*. Working paper, Harvard University.

Stickel, S. 1989. The timing of and incentives for annual earnings forecasts near interim earnings announcements. *Journal of Accounting and Economics* 11 (2-3): 275–292.

Synesael, C. 2006. FiberNet Telecom Group, Inc. Merriman, Curhan, and Ford Research Report, December 15.

Teoh, S. H., Y. Yang, and Y. Zhang. 2008. *R-Square: Noise or Firm-Specific Information?* Working paper, University of California, Irvine.

West, K. 1988. Dividend innovations and stock price volatility. *Econometrica* 56 (1): 37–61.

Wurgler, J. 2000. Financial markets and the allocation of capital. *Journal of Financial Economics* 58 (1-2): 187–214.

APPENDIX A

VARIABLE DEFINITIONS

Variable		Definition
Synchronicity Variables		
R^2	=	coefficient of determination from the firm-month estimation of the model: $RET_{i,t} = \alpha + \beta_1 MKRET_{i,t} + \beta_2 INDRET_{i,t} + \varepsilon_{i,t}$, where *MKRET* is the value-weighted market return and *INDRET* is the two-digit SIC industry value-weighted return for day t (not including the return of firm i). The model is estimated using daily returns from the past three months for each firm-month with a minimum of 50 daily observations;
$SYNCH_{i,t}$	=	logarithmic transformation of R^2, defined as log $(R^2/(1-R^2))$;
$\Delta SYNCH_{i,t}$	=	change in synchronicity defined as $SYNCH_{i,t+3} - SYNCH_{i,t-1}$;
$MKT\_BETA_{i,t-1}$	=	β_1 from the firm-month estimation of the model: $RET_{i,t} = \alpha + \beta_1 MKRET_{i,t} + \varepsilon_{i,t}$, where *MKRET* is the value-weighted market return. The model is estimated using daily returns from the past three months for each firm-month with a minimum of 50 daily observations;
$\Delta MKT\_BETA_{i,t}$	=	change in the market beta defined as $MKT\_BETA_{i,t+3} - MKT\_BETA_{i,t-1}$;
$IND\_BETA_{i,t-1}$	=	β_1 from the firm-month estimation of the model: $RET_{i,t} = \alpha + \beta_1 INDRET_{i,t} + \varepsilon_{i,t}$, where *INDRET* is the two-digit SIC industry value-weighted return for day t (not including the return of firm i). The model is estimated using daily returns from the past three months for each firm-month with a minimum of 50 daily observations;
$\Delta IND\_BETA_{i,t}$	=	change in the industry beta defined as $IND\_BETA_{i,t+3} - IND\_BETA_{i,t-1}$;
$KURTOSIS_{i,t-1}$	=	average of three monthly values of kurtosis based on a firm's daily returns, i.e., this is the average of kurtosis measured in months $t-1$, $t-2$, and $t-3$; and
$\Delta KURTOSIS_{i,t}$	=	change in kurtosis defined as $KURTOSIS_{i,t+3} - KURTOSIS_{i,t-1}$.
Analyst Coverage Variables		
$INITIATION_{i,t}$	=	indicator variable set to 1 if an analyst initiates coverage on a stock in month t, 0 otherwise;
$INITIATION\_NEW_{i,t}$	=	indicator variable set to 1 if an analyst initiates coverage on a stock with no existing coverage in month t, 0 otherwise;
$INITIATION\_SUB_{i,t}$	=	indicator variable set to 1 if an analyst initiates coverage on a stock with prior coverage in month t, 0 otherwise;
$DROP_{i,t}$	=	indicator variable set to 1 if the level of analyst coverage declines from month $t-1$ to t;
$DROP\_ZERO_{i,t}$	=	indicator variable set to 1 if analyst coverage in month t is 0 and non-0 in month $t-1$;
$EXOG_{i,q}$	=	indicator variable set to 1 if there is an exogenous reduction in coverage in quarter q;
$NUM_{i,t-1}$	=	number of analysts covering firm i in month $t-1$; and
$LNUM_{i,t-1}$	=	natural log of 1 plus the number of analysts covering firm i in month t.
Other Variables		
$LMVE_{i,t}$	=	natural log of market value of equity (in millions) in month t calculated as price times the number of shares outstanding;
$\Delta LMVE_{i,t}$	=	change in the natural log of *MVE* defined as $LMVE_{t+1} - LMVE_{t-1}$;
$INST_{i,t}$	=	number of shares in firm i held by institutions in month t divided by the total number of shares outstanding. We obtain data on institutional holdings from the CDA/Spectrum database;

(continued on next page)

APPENDIX A (continued)

Variable		Definition
$\Delta INST_{i,t}$	=	average value of $INST_{i,t}$ in months t+1 to t+6 less the average value of $INST_{i,t}$ in months $t-1$ to $t-6$;
$VOL_{i,t-1}$	=	log of the average trading volume in the six months prior to month t, $VOL_{i,t-1}$;
$TURN_{i,t}$	=	number of shares traded in month t divided by total shares outstanding;
$\Delta TURN_{i,t}$	=	average value of $VOLUME_{i,t}$ in months t+1 to t+6 less the average value of $VOLUME_{i,t}$ in months $t-1$ to $t-6$ scaled by the total number of shares outstanding in month t;
$RET\_12_{i,t}$	=	market-adjusted return on the firm's stock from $t-12$ to $t-1$;
$ISSUE\_12_{i,t}$	=	indicator variable set equal to 1 if the firm issued equity in the past 12 months, 0 otherwise;
$REPORT_{i,t-1}$	=	indicator variable set equal to 1 if the firm reported earnings in month $t-1$, 0 otherwise;
$GUIDE\_6_{i,t}$	=	indicator variable set equal to 1 if the firm issued earnings guidance within the last six months, 0 otherwise;
$BM_{i,t-1}$	=	book-to-market ratio in month $t-1$ defined as book value divided by MVE;
$LBM_{i,t-1}$	=	natural log of the book-to-market ratio in month $t-1$ defined as book value divided by MVE;
REG_i	=	indicator variable set equal to 1 if the firm belongs to a regulated industry, namely financial services or utilities;
$STDROA_{i,t}$	=	standard deviation of return on assets (ROA) measured over current and previous four quarters;
$\Delta E_{i,q}$	=	seasonally adjusted earnings innovation, scaled by price: $\Delta E_{i,q} = \frac{E_{i,q} - E_{i,q-4}}{P_{i,q}}$, where $E_{i,q}$ equals firm i's earnings per share for quarter q and $P_{i,q}$ denotes the beginning of quarter price;
$\Delta I_{i,q}$	=	industry component of the current earnings innovation defined as $\Delta IE_{i,q} - \Delta ME_{i,q}$, where $\Delta IE_{i,q}$ is the median earnings innovation of all firms in the same two-digit SIC code as firm i and $\Delta ME_{i,q}$ is the median value of $\Delta IE_{i,q}$ for all industries in quarter q;
$\Delta F_{i,q}$	=	firm-specific earnings innovation, $\Delta F_{i,q}$ defined as $\Delta E_{i,q} - \Delta IE_{i,q}$; and
$FE_{i,q}$	=	consensus forecast error defined as firm i's actual quarter q earnings minus the consensus forecast immediately prior to the quarterly earnings announcement, scaled by beginning of quarter price.