Annual Report "Graphicity" and Stock Returns*

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Abstract

Prior literature finds information content in the text of 10-K filings. Using a large hand collected dataset, we provide the novel evidence on the additional information embedded in the designs and graphs of financial reports. We find that firms with lower accruals, larger size, and higher Fog index tend to add graphic information to the standard financial reports in addition to SEC standard 10-Ks. Interestingly, we find that firms who added graphic financial reports experienced a positive 2.7% abnormal returns after the graphic financial reports is released for 3 to 6 months. The finding remains robust after controlling for financial market constraints, investor sophistication, and information asymmetry. Further tests suggest that the new graphic information is additional soft information that the companies try to deliver, rather than "hardening" the existing numbers in the 10-Ks. This result suggests that corporate insiders try to employ better designed financial reports to deliver important soft information about their fundamentals, and it is still a challenge for the market to integrate the additional information in the graphic financial reports to stock prices timely and accurately.

Keywords: Graphic Financial Reports, Reporting Format Change, Soft Information, Anomaly

1. Introduction

In the digital age, investors may get easier and faster access to financial information through internet based information terminals such as Bloomberg and Morningstar and websites such as Google and Yahoo, or Edgar at SEC. However, considering that over half of the public firms are still making print based financial reports,[1] we may wonder why public firms are still "wasting" money on those fancy looking financial reports in addition to the standard financial filings required by SEC. After all, CEOs and CFOs are personal liable for any numbers provided in 10-Ks after the implement of the Sarbanes-Oxley Act of 2002 (SOX). However, CEOs and CFOs have much more freedom to draft and design the print version annual reports. It is very likely they could signal investors through "soft" information. To the best of our knowledge, there is no study about the extra information provided in the print annual reports in addition to the standard 10-K data, for example, the designs, the messages from managers, and graphs used in the print version annual reports. In this paper, we hand collect the information of 10-Ks and annual reports of 758 firms and study the pricing effect of graphic information embedded in the firms' annual reports, and we find that firms experience intermediate-term positive abnormal returns after they add graphic print version annual report to the standard 10-Ks.

Ever since Grossman and Stiglitz (1980), researchers have studied extensively information economics and investors trading behavior (See Karpoff (1986); Holthausen and Verrecchia (1990); Kim and Verrecchia (1997); Verrecchia (2001)). More recently, a growing body of finance and accounting literature uses content analysis to examine the clarity, the tone and the sentiment of the firms' annual reports/10-K (e.g. Li (2008), Tetlock (2007), Loughran and McDonald (2011, 2013, 2015), Engelberg & Parsons (2011) and etc.). These studies using

[1] Based on our hand collected data, there are 478 firms from SP1500 index still releasing print version annual reports from year 2008 to 2012. And only less than 300 firms stopped using the print version annual reports.

content analysis have found evidence that the firms' annual reports/10-Ks' text contains extra information about the firms' future performances. However, most of these studies only focus on the text of the financial reports rather than any other components of financial media such as the design of the reports or the graphs in the documents (i.e. Ventola & Guijarro, 2009). In this paper, we focus on the question as to whether the design and the multimedia elements of the firms' annual reports can deliver any additional information to investors.

Multimedia as an information communication tool has seldom studied in finance literature. To our knowledge, the only related study in mainstream finance research is Goeij et al. (2015).[2] Mainstream finance research literature has explored the Arabic numbers reported in the annual or quarterly financial reports, and more recently has studied the textual readability and sentiment in the text used in the financial reports. We try to fill in the gap by examining the additional information buried under the design and graphs used in financial reports.

In our paper, we examine the information content of the graphic version of firms' annual reports/10-Ks. We conjecture that managers will employ carefully crafted design and colorful prints to deliver important information to investors about the value of the firm. Thus, it is possible to reveal some systematic patterns in financial reports to predict higher subsequent returns comparing to peers, which are those firms that don't use these well-formatted graphic annual reports or simply use pure plain 10-Ks. We split our hand collected sample dataset into three categories: the firms who do not change their reporting format, the firms who add fancy-look print annual report to pure plain 10-Ks, and the firms who remove fancy-look print annual report to pure plain 10-Ks. We, then, examine their abnormal performance around their report-release dates (annual earnings announcement dates). On average, there is no short term abnormal

[2] Other related studies include Carrillo (2008) and Benefield and Cain (2009), which analyze the effects on housing markets transactions of the number of interior and exterior pictures used in the house sale advertisement. However, their studies focus on the real estate markets rather than the traditional finance fields.

performance for any group of firms that we study, which implies that investors have not fully reveal the information in the print financial reports. However, the firms who change their reporting format from pure 10-Ks to graphic annual reports gain positive abnormal returns, roughly 3%, at an intermediate horizon of three to six months. This finding is robust to different abnormal returns measures such as CAPM alphas, Fama-French 3 factor alphas, Fama-French-Carhart four factor alphas, and Fama-French five factor alphas.

We, then, match the firms who added the prints with their industry peers who didn't change their reporting format, and re-do the previous tests. The documented results still hold. We also consider whether there are other reasons that drive the positive future performance. We use institutional ownership, short interests, and analyst coverage before adding the colorful prints to proxy investor sophistication, market constraints, and information asymmetry. Although firms with less sophisticated investors, that are more short-sale constrained, and with higher degree of information asymmetry show slightly stronger pattern of the documented positive future stock performance, these possible reasons cannot fully explain our finding. The interesting findings in this paper show that the information embedded in the print annual reports takes one to two quarters to be finally revealed in the secondary market.

To further confirm that the new graphic reports contain new additional soft information, we conduct a short term event study around the earnings announcement day. Liberti and Petersen (2018) characterize hard information and soft information. Hard information is easy to measure and stone, and generally quantitative such as financial statements. From the event study, we fail to find any significant event CARs nor post-announcement drifts. Our results suggest that the newly added graphic reports contain new additional information rather than "hardening" the existing information.

Lastly, we attempt to study the possible sources of this wealthy effects. Employing Differences-in-Differences approach with the matched sample we find that firms who change their reporting format experience a statistically significant increase in their corporate investment, suggesting that firms might use the nicely drafted financial media to signal the corporation fundamentals.

One of our contributions is that we fill in the blank of analyzing an important source and channel of financial information. We find that corporate insiders use print financial reports to deliver extra signals to market in addition to the standard numbers. Second, we quantify the wealthy effects of public firms' communication with shareholders when using multimedia. And last but not least, the documented finding in stock returns serves a new anomaly to the secondary market.

The reminder of this paper is organized as follows. Next section reviews the related literature and develops our research methods; section 3 describes data and sample characteristics; section 4 reports our empirical results; section 5 concludes finally.

2. Related Literature and Research Methods

Our research design relies on the approaches used in Psychology, Linguistics, Finance, and other sociology. As we know, content analysis does not origin from finance research. Most of content analysis has been conducted by scholars and researchers in the areas of linguistics, psychology, and sociology. In the fields we mentioned above, the content analysis is named discourse analysis. The major analytical tools for discourse analysis are the systemic functional (SF) approach and the multimodal social semiotic approach, which indicated the theory of analyzing the meaning from the use of multiple semiotic resources in discourses, ranging from

written, digital, audio, video, and texts to gestures and materials in real life. The SF approach is mainly adopted to analyze the verbal, while the multimodal social semiotic approach is to capture different modalities, such as audio and visual texts. As is proposed by Wohlwend (2011), "critical multimodal analysis unpacks modes to reveal how modal interaction maps onto discursively maintained power relations" (p. 262). The analysis mentioned above reveals how meaning was constructed in coherence and complementarity across linguistic, audio and visual elements.

As the most influential figure in Systemic Functional Linguistics (SFL), Halliday (1994) proposes three meta-functions, namely ideational function, interpersonal function and textual function. The ideational meaning of the text generally refers to the field knowledge, in which the states of affairs are represented. The interpersonal meaning deals with the social relations, which enables a way of valuing and assessing these activities and enacting power in relation to shared values. Meanwhile, the textual meaning function manages the information flow that organizes the ideational and interpersonal meaning into textures, which are responsive to the communicative demands of oral and written discourse.

The interpersonal and textual meaning is originally to be viewed for interpreting the traditional mode of writing. Nowadays, both written, visual components and other semiotics are considered to be crucial tools in our society for the construction of the meaning (Ventola & Guijarro 2009). During the last decade, the increasing interest across multiple disciplines generates the trend for an exploration to the multimodality within a range of domain, such as the advertising, picture books, music, etc. (Feng, 2011; Wignell, 2011).

Textual analysis is the study on qualitative information of financial media. This analysis is confronted by the difficult process of accurately converting qualitative information into

quantitative measures.

There are various methods to measure the qualitative information (i.e. words, tone, and graphic information) such as Naive Bayes classifications, likelihood ratios, or other classification algorithms. Li (2010) discusses the benefits of using a statistical approach over a word categorization one, arguing that categorization might have low power for corporate filings because "there is no readily available dictionary that is built for the setting of corporate filings". Tetlock (2007) discusses the limitations of the estimation of likelihood ratios based on difficulty to replicate and subjective classification of texts' tone. The commonly used tool to evaluate the tone of a text is Harvard's General Inquirer. However, Loughran and McDonald (2011) argue that the results Harvard dictionary provides are not accurate. Be specifically, they find many words in negative words list of Harvard dictionary are not actually negative under many financial contexts. Alternatively, Loughran and McDonald provide another negative word list, along with five other word lists, which better reflect tone in financial text.

There have been already a bunch of empirical studies providing much evidence about interaction between the financial text and many financial phenomena. Li (2008) finds that the financial reports of the firms with lower earnings are harder to read, and the financial reports of the firms with persistent positive earnings are easier to read. By using word content analysis, Hanley and Hoberg (2009) decompose information in the initial public offering prospectus into its standard and informative components. They find that greater informative content, as a proxy for premarket due diligence, results in more accurate offer prices and less underpricing. There also have some findings on mergers and acquisitions. By using text based analysis of 10-K product descriptions, Hoberg and Philips (2010) find that the transactions are more likely between firms that use similar product market language, and the related stock returns, ex-post

cash flows all increase as well. More recently, Twedt and Rees (2012) analyze the financial analysts' reports details and reports tone, finding that the tone of financial analyst reports contains significant information content incremental to the reports' earnings forecasts and recommendations, and report complexity (one component of report detail) helps explain cross-sectional variation in the market's response to the reports' recommendations.

Analyzing the content of graph in printed media is also an important component of content analysis. However, there are much fewer studies on this aspect in finance. Currently, most of these kinds of studies exist in the area of real estate.

By using instrumental variables, Carrillo (2008) find that visual contents have a large and positive effect on marketing outcomes. For instance, adding a virtual tour may increase the expected transaction price by about 2 percent and decrease the expected time on the market by about 20 percent.

Similarly, Benefield and Cain (2009) use the number of interior and exterior photos as the measure of information content, and find that additional photographs increase price, while simultaneously lengthening property marketing duration.

In this study, we extend the methods used in textual analysis and study the graphic information embedded in companies' financial reports. To identify the graphic information in financial reports we hand collect the firms which experience reporting format changes such as adding the nicely drafted colorful annual reports to the standard 10-Ks. In the following section, we discuss our hand collected sample and data sources.

3. Data and Research Design

3.1. Hand Collected Sample

We hand collected 758 firms from SP1500 index from 2007 fiscal year to 2012 fiscal year. We have requested print version from the public listed firms. All the firms we have requested were able to send us the print version annual reports. And those firms print version annual reports looks the same as the pdf version found on their websites under "investor relationship" section.

After obtaining the financial reports, we split our hand collected sample dataset into three categories: the firms who do not change their reporting format, the firms who add nicely drafted colorful print annual report to pure plain 10-Ks, and the firms who remove the colorful print annual report to pure plain 10-Ks. Then, we look for whether the firms adding colorful print annual report to pure plain 10-Ks experience any subsequent abnormal superior performance. Table 1 reports the summary of our hand collected sample. There are many interesting features in this sample. On average, there are still more than 70% of firms using colorful financial reports to deliver their annual financial information, and some firms have strong preference to use this kind of reporting (e.g. the maximum number of colorful pages in companies' annual reports is 83). And the management don't change their reporting format frequently. There are about 6% of firms adding or removing the colorful print version annual reports.

[Insert Table 1 about here]

3.2. Returns and Control Variables

We obtain the monthly returns and market returns from CRSP for the period of 2007–2013. In order to calculate abnormal returns, we download Fama-French Three Factors (FF3), Fama-French-Carhart Four Factors (FF3 plus up and down factor), and Fama-French Five Factors (FF5) from Fama-French factors database.

We obtain the annual firm level accounting variables and short interests data from

Compustat, institutional holdings data from Thomson's CDA/Spectrum database (form 13F), analyst coverage data from Institutional Brokers Estimate Systems (I/B/E/S), and readability fog index from SEC Analytic database.

4. Empirical Results

4.1. Firm Characteristics

To check if the companies who added graphic financial report (basically easily read version for generic readers) are fundamentally different from their peers, we matched a group of control firms based on total assets, industry, and readability with the firms in the treatment group, which are firms that experience newly added graphic financial reports in addition to their standard 10-K required by SEC. Table 2 reports the summary statistics of the firm characteristics for both groups before reporting format changes on their websites. We compare Total Assets, ROA, ROE, Sales Growth, Asset Growth, CAPX, CAPX&RD, Leverage, Readability, and the "Test for Differences" clearly shows that the two groups are statistically indifferent from each other.

[Insert Table 2 about here]

In Table 3, we then run logit model to test the relationship between Firm Characteristics and the Addition of Prints, and we report the results in Table 5. In the single factor regression, the readability index has a coefficient of 0.048 with t-stat of 1.71, and the same coefficient in the multivariate regression is 0.107 with a t-stat of 2.19, which means that firms are 10.7 % more likely to add graphic financial report when readability index increase by one. Clearly it shows that the firms with financial reports of higher readability are more likely to add graphic financial reports. And firms engaged in more accrual management are less likely to add graphic financial

reports. These results are consistent with Li (2008, 2010), which indicates that firms further use graphic financial reports to deliver information in addition to employ more readable financial report text.

[Insert Table 3 about here]

4.2. Stock Performance Subsequent to the Reporting Format Changes

Table 4 reports the results of abnormal returns around annual earnings announcement dates. We include the standard CAPM model, Fama-French three-factor model (FF3), the Four factor model (FF3 factors and the Up minus Down factor), and Fama-French five-factor model (FF5). We estimate the regression within the event windows of -3 months before, and 3 months, 6 months, 9 months, and 12 months after the format changes. The first four columns report the abnormal returns for firms that change standard 10-Ks to beautifully-designed annual reports, and the last four columns report the abnormal returns for firms that do the opposite changes in their financial report format. It is clear that the extra information carried with the graphic annual reports is on average positive because the abnormal returns from the four models are 0.027(p-value = 0.00) 0.047 (p-value = 0.01), 0.025 (p-value = 0.00) and 0.018 (p-value = 0.06) for 4-Factor model, Fama-French 3-factor model, Fama-French 5-factor model, and CAPM model respectively in the 6 months after the earnings announcement. And such a significant positive abnormal returns are not observed in the 3 months window. After 6 months, the abnormal returns drop slightly (but not significant in an untabulated t-test), but the reversal is quite limited, which indicates that it is not market short-term response to the fancy design of the financial report, but the insiders try to deliver information through an additional channel. On the other hand, when companies decide to the opposite, stopping doing the graphically designed annual reports, there

is negative but insignificant market response. The 6 months window abnormal returns are -0.01 (p-value = 0.52), -0.01 (p-value = 0.31), -0.01 (p-value=0.52), and -0.001 (p-value = 0.88) for 4-factor model, Fama-French 3-factor model, Fama-French 5-factor model, and CAPM model respectively. There is no significance for other windows as well. Figure 1 illustrates this documented pattern in stock returns around the earnings announcements using daily returns. At least, this shows that there was no additional positive information carried with the usually "cost saving" excuses to stop delivering the graphically designed financial reports. Actually, for almost all of the companies in our sample, the cost of adding the graphic fancy looking annual reports can always be ignored in the earnings numbers.

[Insert Table 4 about here]

[Insert Figure 1 about here]

4.3. Robustness

4.3.1. Matched Sample

To verify the documented return pattern subsequent to the reporting format change, we conduct various robustness tests. To deal with any selection bias, we re-do the same tests in Table 4 but use a different benchmark. Instead of comparing firms changing their reporting format from plain 10-Ks to graphic annual reports and firms reverting back to plain 10-Ks, we study the same first group of firms and their industry peers with similar size and financial report readability. We report the results in Table 5, in which we don't observe any significance for the matched peers. This confirms the results found in Table 4.

[Insert Table 5 about here]

4.3.2. Investor Sophistication

One might be curious if this anomaly has been studied yet? With the development of information technologies, the computers are more and more powerful. Recently text mining trading strategies has been become possible with the recent findings of informational contents buried in the text and voice, such as financial report, IPO prospectus, and earnings calls (e.g. Loughran & McDonald (2011, 2013, 2015), Engelberg & Parsons (2011), Jegadeesh & Wu (2013)). As far as we know, there has no previous academic literature systematically studied the information content embedded in the graphically designed financial reports. How about industry? Literature in general agrees that institutional investors have more resources and are more sophisticated. Have they already figured out the information in the prints? To answer the question, we split our sample based on the institutional holdings. Table 6 reports the abnormal returns around annual earnings announcement dates grouped by institutional ownership. The first four columns report the abnormal returns for firms that change standard 10-Ks to beautifully-designed annual reports for the firms with high institutional ownership, and the next four columns report the abnormal returns for the firms with low institutional ownership for the same time periods. Most of the numbers are positive and close to each other between the two groups. E.g. the 6 months abnormal returns for the high institutional ownership group are 0.020 (p-value =0.06), 0.023 (p-value = 0.06), 0.034 (p-value = 0.06), and 0.029 (p-value= 0.00) respectively for CAPM, FF-3 factors model, 4-factor model, and FF-5 factors model, and the 6 months abnormal returns for the low institutional ownership group are 0.020 (p-value = 0.08), 0.037 (p-value = 0.06), 0.064 (p-value = 0.02), and 0.051 (p-value =0.00) for the CAPM, FF-3 factors model, 4 factor model, and FF-5 factors model respectively. And the numbers are not statistically different between the groups, which indicates that investor sophistication is not a plausible

channel for the positive relationship between reporting format change and subsequent stock returns.

[Insert Table 6 about here]

4.3.3. Information Asymmetry

Our results in the previous subsection indicate that the positive future stock performance doesn't disappear after controlling institutional ownership. Can information asymmetry explain this interesting return pattern? Extant literature has suggested that companies' stocks with higher analyst coverage can be more efficient. The documented relationship between annual report "graphicity" and subsequent stock returns may disappear if information asymmetry is the driver of this relationship. To do so we split our sample based on the analyst coverage. Table 7 reports the abnormal returns around annual earnings announcement dates grouped by analyst coverage. The first four columns report the abnormal returns for firms that change standard 10-Ks to beautifully-designed annual reports for the firms with high analyst coverage, and the next four columns report the abnormal returns for the firms with low analyst coverage for the same time periods. Again, most of the numbers are positive and close to each other between the two groups. E.g. the 6 months abnormal returns for the high analyst coverage group are 0.019 (p-value =0.06), 0.021 (p-value = 0.04), 0.024 (p-value = 0.05), and 0.025 (p-value= 0.00) respectively for CAPM, FF-3 factors model, 4-factor model, and FF-5 factors model, and the 6 months abnormal returns for the low analyst coverage group are 0.021 (p-value = 0.08), 0.038 (p-value = 0.04), 0.068 (p-value = 0.02), and 0.055 (p-value =0.01) for the CAPM, FF-3 factors model, 4 factor model, and FF-5 factors model respectively. And these numbers are not statistically different between the groups, which indicates that the information asymmetry is not a sound explanation for the

positive subsequent returns.

[Insert Table 7 about here]

4.3.4. Stock Market Constraints

Stock market constraints such as short selling constraints affects market efficiency (see e.g. Diamond & Verrecchia (1987), Bris et al. (2007), Boehmer and Wu (2013), and etc.). If short selling constraints is a plausible channel to explain the documented relationship in this study, the positive relationship between annual report format change and subsequent stock returns is expected to be more pronounced for more constrained firms and to be negligible for heavily-shorted firms. To test this conjecture, we split our sample based on the annual average short interests the fiscal year before the earnings announcement. Table 8 reports the abnormal returns around annual earnings announcement dates grouped by short interests. The first four columns report the abnormal returns for firms that change standard 10-Ks to beautifully-designed annual reports for the firms with high short interests, and the next four columns report the abnormal returns for the firms with low short interests for the same time periods. Again, most of the numbers are positive and close to each other between the two groups. E.g. the 6 months abnormal returns for the high short interests group are 0.028 (p-value =0.07), 0.038 (p-value = 0.06), 0.033 (p-value = 0.05), and 0.035 (p-value= 0.00) respectively for CAPM, FF-3 factors model, 4-factor model, and FF-5 factors model, and the 6 months abnormal returns for the low analyst coverage group are 0.020 (p-value = 0.08), 0.057 (p-value = 0.04), 0.034 (p-value = 0.02), and 0.031 (p-value =0.00) for the CAPM, FF-3 factors model, 4 factor model, and FF-5 factors model respectively. And these numbers are not statistically different between the groups, which indicates that the short selling constraints cannot explain the positive subsequent returns.

[Insert Table 8 about here]

Given the results above, many alternative explanations don't seem interpret the positive subsequent returns. It suggests that the information content embedded in the graphic financial reports have not been revealed by the market yet.

4.4. Hardening Existing Information or Delivering Additional Soft Information?

Liberti and Petersen (2018) characterize hard information and soft information. Hard information is easy to measure and stone, and generally quantitative such as financial statements. Usually, firms use numbers contained in financial statements to signal the financial market. As the design of annual report that we study is part of the financial statements, a natural question to ask would be "Are companies who add graphic elements to their annual reports trying to 'harden' the numeric information in the reports or just deliver additional soft information?".

To answer this question, we study the short term stock prices variations around the earnings announcements for the firms who added the graphic information to their annual financial statements. We compute the market adjusted abnormal returns for the firms who add the graphic information, and conduct an event study around the release date of the new graphic financial report (e.g., the earnings announcement date). Table 9 reports the results. The cumulative abnormal returns (CARs) for event windows of [-1,1], [0,1], and [-1,0] are all statistically insignificant, suggesting that investors don't react to this reporting format change. The insignificant CARs of post event windows indicate that there are no post earnings announcement drifts, consistent with our conjecture that the market fail to identify this additional information until several months after the earnings announcement day.

In general, the results don't support the "signaling" explanation, and suggest that the newly added graphic reports are actually new additional information to the standard 10-Ks.

[Inset Table 9 about here]

4.5. Is This Soft Information Creditable?

So far, we have identified a possible information channel through which the insiders try to deliver information to the market. Is this information creditable? Do firms really invest on greater investment opportunities? We study the matched sample and employ the DiD method to test the real activities afterwards. Table 10 reports multivariate DiD results on firm performance and corporate investments around reporting format changes. The coefficients of Treatment explain the main effect of the reporting format change. Column (1) reports the results of ROA as the dependent variable with control variables and without controlling industry and year fixed effects. Column (2) reports the results of CAPX as the dependent variable with control variables. Column (3) reports the results of PPE as the dependent variable with control. We can find that even though the ROA seems not be different between the treatment and control group. However, the CAPX and PPE increased significant, with CAPX increases 2.406% (tstat = 1.67) on average, and PPE increases by 13.09% (tstat=1.68) on average. And the increase is survived with the industry fixed effects and year fixed effects as shown in columns (5) and (6).

[Insert Table 10 about here]

We further employ placebo tests to check the robustness, and the results are reported in Table 11. When we randomly change the year of adding graphic financial reports, we lost the significance in CAPX and PPE as reported in Table 11, which further confirms the results reported in Table 10.

[Insert Table 11 about here]

5. Conclusion

Extant literature on financial reports content analysis focuses on the standard numbers or textual information. With the help of computer programming, researchers have identified firm valuation and performance relevant information by mining text readability, Fog index, and sentiment. However, maybe because of lack of capability of analyzing non-textual information in financial reports, prior literature neglects the existence of the financial reports' overall design and graphics information. On the one hand, all reported numbers and other statements in financial reports are digitalized in the information era. On the other hand, it is hard to understand why there are a high fraction of firms still providing print version graphic financial reports. Managers might have tried to use the additional contents to deliver extra information. However, due to computers are still lack of the capability to process the non-textual information, it is very likely that it takes more time for such embedded information in the reports to be integrated into the stock prices.

By examining the firms adding graphic print version financial reports in a large hand-collected dataset, we find that those firms with newly added graphic financial reports earn at least a positive 2.7% abnormal returns. And this finding is robust with different specifications. Investor sophistication, financial market constraints, and information asymmetry don't seem to be the plausible explanations for this return pattern.

To further disentangle whether firms use the graphic information as additional message or just strengthening the existing numbers in 10-Ks, we conduct a short term event study. Our results suggest that the newly added graphic reports convey new additional information rather than "hardening" the existing information.

In order to pursue the reasons or the tendency why firms choose to add graphic financial

report, we match the firms with newly added print financial reports by size, industry, and readability, and form a control group. Then, we conduct DiD tests. With the powerful DiD tests, we further find that firms increased CAPX and PPE in the next fiscal year or two after they add print version financial reports, which implies that these group of firms have real growth that brings in superior performance.

Overall, our study suggests that not only texts but also graphics embedded in the financial report contains material information to the public. The underlying drivers and explanations behind this newly found anomaly is worth to pursue in the future studies.

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Appendix

Appendix 1: Variable Definitions

Variables	Definition
After	Dummy variable equal to 1 if the fiscal year is after the reporting format changes from pure plain 10-Ks to graphic annual reports and equal to 0 if the fiscal year is before the changes
Asset Growth	Total Assets (AT) divided by start-of-year Total Assets minus one x 100
Accruals	Accruals: it is calculated as discretionary accruals (Dechow et al. 1995)
Analyst Coverage	Number of analysts following the company immediately before the earnings announcement date
CAPX	Capital expenditures (Compustat CAPX) scaled by end-of-year total assets (AT) x 100
CAPX&RD	Capital expenditures (CAPX) plus Research and Development Expenses (XRD) scaled by end-of-year total assets (AT) x 100
CEO Letter	Dummy variable equal to 1 if the there is a CEO letter in the graphic annual report in the fiscal year, and 0 if else.
CEO Picture	Dummy variable equal to 1 if the there is a picture of the CEO in the graphic annual report in the fiscal year, and 0 if else.
CEO Signature	Dummy variable equal to 1 if the there is a CEO signature in the graphic annual report in the fiscal year, and 0 if else.
Change to 10-Ks	Dummy variable equal to 1 if the firm changes their reporting format from a graphic annual report to a pure plain 10-K, and 0 if else.
Change to Prints	Dummy variable equal to 1 if the firm changes their reporting format from pure plain 10-K to a graphic annual report, and 0 if else.
Institutional Ownership	Institutional ownership in percentage immediately before the earnings announcement date
Leverage	Long term debt (DLTT) plus debt in current liabilities (DLC) scaled by the sum of long term debt, debt in current liabilities, and total stockholders' equity (SEQ) x 100
Number of Graphic Pages	The number of pages with colorful pages in the graphic annual reports
PPE	Property, plant, and equipment net
Prints	Dummy variable equal to 1 if the firms use graphic annual reports in the fiscal year, and 0 if else.
Q	Tobin's Q is defined as market value of equity (PRCC x CSHO) plus book value of assets minus book value of equity minus deferred taxes (when available) (AT-CEQ-TXDB), scaled by book value of total assets (AT). Variable is lagged one year
Readability	Fog Readability index
ROA	Return on assets
ROE	Return on equity
Sales Growth	Sales dividend by the start-of-year sales minus one x 100
Short Interests	Yearly average of short interests / volume immediately before the earnings announcement date

Appendix 1, cont'd

Total Assets	Firm level total assets (in Millions USD)
Treatment	Dummy variable equal to 1 if the company experiences any format change from pure plain 10-Ks to graphic annual reports and its fiscal year during the period between 1 year and 2 years after this change. The dummy variable is equal to 0 when the firm years in the control group 2 years before and after their paired firms' format changes, and for the firms that add print financial reports pure plain 10-Ks before the format changes.

Appendix 2: An Example: AIRM

Air Methods (Ticker: AIRM) changes their reporting format from a pure plain 10-K to a graphic annual report style in the fiscal year of 2011. From the following, we show the cover pages of their annual reports in 2010 and 2011 FY as well as the daily stock prices around this format change. We can observe the significant changes in their reporting format, and how their share prices perform after the format change.

The Cover Page of AIRM's Annual Report for 2010 Fiscal Year

UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K/A

(Mark One)

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended December 31, 2010

OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 or 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from _____ to _____

AIR METHODS CORPORATION
(Exact name of registrant as specified in its charter)

Commission file number 0-16079

Delaware	**84-0915893**
(State or other jurisdiction of incorporation or organization)	(I.R.S. employer identification no.)

7301 South Peoria, Englewood, Colorado 80112
(Address of principal executive offices and zip code)

303-792-7400
(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:

COMMON STOCK, $.06 PAR VALUE PER SHARE (the "Common Stock")
(Title of Class)

The NASDAQ Stock Market
(Name of exchange on which registered)

Securities registered pursuant to Section 12(g) of the Act:

Not Applicable

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.
Yes [ ] No [X]

The Cover Page of AIRM's Annual Report for 2011 Fiscal Year

Snapshot from Yahoo Finance: Daily Stock Prices from Feb, 2012-Oct, 2012 with the Annual Earnings Announcement Date of April 10, 2012

Tables

Table 1: The Characteristics of Annual Reports/10-Ks
This table reports the descriptive statistics of the characteristics of all manually collected annual reports/10-Ks for all sample firms from S&P 1500. All variables are defined in Appendix 1.

Variable	No. of Firms	Mean	Median	Std. Dev.	Max.	Min.
Prints	758	0.722	1.000	0.449	2.000	0.000
Number of Graphic Pages	758	6.470	4.000	9.293	83.00	0.000
CEO Letter	758	0.761	1.000	0.427	2.000	0.000
CEO Signature	758	0.739	1.000	0.442	2.000	0.000
CEO Picture	758	0.509	1.000	0.500	1.000	0.000
Change to 10-Ks	758	0.035	0.000	0.183	1.000	0.000
Change to Prints	758	0.026	0.000	0.159	1.000	0.000

Table 2: Firm Characteristics before Reporting Format Changes

This table reports summary statistics of firm characteristics for both two groups in the matched sample one fiscal year immediately before the format changes from pure plain 10-Ks to graphic annual reports. The first group includes all firms that experience such format changes. The second group is formed by matching by total assets, industry, and readability with the firms in the treatment group. The t-stats for mean test and chi-sq for median test are also reported. All variables are winsorized at 1% and 99% level. ***, **, and * indicate significance at the 1%, 5%, and 10% levels. All variables have defined in appendix.

	Firms Changing to Prints				Matched Firms with no Format Changes				Test for Differences	
Variable	N	Mean	Median	SD	N	Mean	Median	SD	Mean (t-stats)	Median (chi-sq)
Total Assets	64	3,050	630.2	8,571	61	5,318	729.9	25,374	-0.67	0.96
ROA	54	12.63	12.44	9.89	54	11.35	10.56	10.78	0.64	0.44
ROE	54	23.03	22.08	22.13	54	21.62	20.08	26.10	0.30	0.44
Sales Growth	54	10.89	14.49	21.25	52	11.25	10.60	25.14	-0.08	0.69
Asset Growth	54	7.716	5.556	19.10	54	11.60	6.089	28.24	-0.83	0.00
CAPX	55	4.124	2.801	3.911	56	4.320	2.628	4.508	-0.24	0.44
CAPX&RD	34	8.639	7.698	6.907	37	9.091	6.48	8.204	-0.25	1.13
Leverage	54	18.87	5.47	22.33	54	20.20	17.13	22.57	-0.30	0.59
Readability	36	18.16	17.91	3.238	22	18.02	18.12	2.692	0.17	0.29

Table 3: Firm Characteristics and the Addition of Prints

This table reports the logistic regression results that identify the characteristics of the firms who added print financial reports. Columns (1) through (5) report the results of CAPX, Q, Size, and Readability-index as the independent variable without controlling other firm characteristics. Column (6) reports the results of all above variables as the independent variables with control variables. T-statistics are displayed in the parenthesis under each coefficient. Standard errors adjust for heteroskedasticity and clustered by firm. *, **, *** indicate significance at the 1%, 5%, and 10% levels respectively. All variables are defined in Appendix 1.

	(1) Prints	(2) Prints	(3) Prints	(4) Prints	(5) Prints	(6) Prints
CAPX	-0.014					-0.033
	(-0.50)					(-0.78)
Accurals		-0.310**				-0.469*
		(-2.25)				(-1.69)
Q			-0.079			-0.113
			(-0.74)			(-0.52)
Size				0.381***		0.335*
				(3.34)		(1.80)
Readability-Index					0.048*	0.107**
					(1.71)	(2.19)
Leverage						-0.004
						(-0.34)
Past Profitability						0.024
						(1.15)
N	602	519	600	613	279	196
pseudo R-sq	0.001	0.010	0.001	0.035	0.003	0.056

Table 4: Abnormal Performance around Annual Earning Announcement Dates

This table reports the abnormal returns for the firms that change their reporting format from pure plain 10-Ks to graphic annual reports, and vice versa. The abnormal returns are estimated using the following two regressions:

$r_{it} - rf_t = \alpha + \beta_1(rm_t - rf_t) + \beta_2 SMB_t + \beta_3 HML_t + \beta_4 UMD_t + \varepsilon_t$ and

$r_{it} - rf_t = \alpha + \beta_1(rm_t - rf_t) + \beta_2 SMB_t + \beta_3 HML_t + \beta_4 RMW_t + \beta_5 CMA_t + \varepsilon_t$,

where r_{it} is the individual daily stock returns, rf_t is risk free rate, rm_t is the market return calculated as value weighted return on all NYSE, AMEX, and NASDAQ stocks from CRSP. *SMBt* is the return difference between portfolios of small and big stocks; *HMLt* is the return difference between portfolios of high and low book-to-market stocks; *UMDt* is the return difference between portfolios of high and low prior-return stocks; RMW_t is the return difference between portfolios of robust and weak operating profitability; CMA_t is the return difference between portfolios of low and high investment stocks. CAPM alpha measures the monthly abnormal return when restricting the coefficients of *SMBt*, *HMLt*, and *UMDt* to zero in the first regression. Three-Factor Alpha is the intercept from the regression above when *UMDt* is omitted. Four-factor alpha is the intercept from the first regression above. Five-factor alpha is the intercept from the second regression above. We estimate the regression within the event windows of 3 months before, and 3 months, 6 months, 9 months, and 12 months after the format changes. P-values are reported for each statistic. *, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	Firms that Change 10-Ks to Prints				Firms that Change Prints to 10-Ks			
	CAPM	3 Factor Alpha	4 Factor Alpha	5 Factor Alpha	CAPM	3 Factor Alpha	4 Factor Alpha	5 Factor Alpha
[-3, 0 mo]	0.001	-0.005	-0.004	-0.002	0.003	-0.015	-0.004	-0.003
p-value	*0.75*	*0.43*	*0.56*	*0.77*	*0.97*	*0.80*	*0.72*	*0.65*
[0, 3 mo]	0.007	-0.036	-0.036	-0.036	0.001	0.009	0.010	0.010
p-value	*0.45*	*0.34*	*0.34*	*0.35*	*0.95*	*0.78*	*0.74*	*0.75*
[0, 6 mo]	0.018*	0.047***	0.027***	0.025***	-0.001	-0.010	-0.010	-0.011
p-value	*0.06*	*0.01*	*0.00*	*0.00*	*0.88*	*0.31*	*0.52*	*0.54*
[0, 9 mo]	0.013*	0.025**	0.019**	0.018**	-0.001	-0.011	-0.011	-0.011
p-value	*0.09*	*0.05*	*0.02*	*0.03*	*0.84*	*0.24*	*0.28*	*0.32*
[0, 12 mo]	0.014	0.025**	0.020**	0.020**	0.000	-0.012	-0.010	-0.010
p-value	*0.14*	*0.04*	*0.02*	*0.03*	*0.97*	*0.21*	*0.32*	*0.37*

Table 5: Abnormal Performance around Annual Earning Announcement Dates: Matched Sample

This table reports the abnormal returns for the firms that change their reporting format from pure plain 10-Ks to graphic annual reports, and vice versa. The abnormal returns are estimated using the following two regressions:

$r_{it} - rf_t = \alpha + \beta_1(rm_t - rf_t) + \beta_2 SMB_t + \beta_3 HML_t + \beta_4 UMD_t + \varepsilon_t$ and

$r_{it} - rf_t = \alpha + \beta_1(rm_t - rf_t) + \beta_2 SMB_t + \beta_3 HML_t + \beta_4 RMW_t + \beta_5 CMA_t + \varepsilon_t$,

where r_{it} is the individual daily stock returns, rf_t is risk free rate, rm_t is the market return calculated as value weighted return on all NYSE, AMEX, and NASDAQ stocks from CRSP. *SMBt* is the return difference between portfolios of small and big stocks; *HMLt* is the return difference between portfolios of high and low book-to-market stocks; *UMDt* is the return difference between portfolios of high and low prior-return stocks; RMW_t is the return difference between portfolios of robust and weak operating profitability; CMA_t is the return difference between portfolios of low and high investment stocks. CAPM alpha measures the monthly abnormal return when restricting the coefficients of *SMBt*, *HMLt*, and *UMDt* to zero in the first regression. Three-Factor Alpha is the intercept from the regression above when *UMDt* is omitted. Four-factor alpha is the intercept from the first regression above. Five-factor alpha is the intercept from the second regression above. We estimate the regression within the event windows of 3 months before, and 3 months, 6 months, 9 months, and 12 months after the format changes. P-values are reported for each statistic. *, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	Firms that Change 10-Ks to Prints				Matched Firms with no Format Changes			
	CAPM	3 Factor Alpha	4 Factor Alpha	5 Factor Alpha	CAPM	3 Factor Alpha	4 Factor Alpha	5 Factor Alpha
[-3, 0 mo]	0.001	-0.005	-0.004	-0.002	0.004	-0.016	-0.004	-0.006
p-value	*0.75*	*0.43*	*0.56*	*0.77*	*0.95*	*0.80*	*0.70*	*0.71*
[0, 3 mo]	0.007	-0.036	-0.036	-0.036	0.001	0.009	0.012	0.012
p-value	*0.45*	*0.34*	*0.34*	*0.35*	*0.94*	*0.78*	*0.77*	*0.68*
[0, 6 mo]	0.018*	0.047***	0.027***	0.025***	-0.002	-0.011	-0.011	-0.013
p-value	*0.06*	*0.01*	*0.00*	*0.00*	*0.86*	*0.37*	*0.58*	*0.52*
[0, 9 mo]	0.013*	0.025**	0.019**	0.018**	-0.001	-0.01	-0.012	-0.013
p-value	*0.09*	*0.05*	*0.02*	*0.03*	*0.74*	*0.25*	*0.28*	*0.32*
[0, 12 mo]	0.014	0.025**	0.020**	0.020**	0.002	-0.013	-0.015	-0.014
p-value	*0.14*	*0.04*	*0.02*	*0.03*	*0.95*	*0.41*	*0.39*	*0.41*

Table 6: Abnormal Performance around Annual Earning Announcement Dates, Grouped by Institutional Ownership

This table reports the mean abnormal returns for the firms that change their reporting format from pure plain 10-Ks to graphic annual reports grouped by institutional ownership before the format changes. The abnormal returns are estimated using the following two regressions:

$r_{it} - rf_t = \alpha + \beta_1(rm_t - rf_t) + \beta_2 SMB_t + \beta_3 HML_t + \beta_4 UMD_t + \varepsilon_t$ and

$r_{it} - rf_t = \alpha + \beta_1(rm_t - rf_t) + \beta_2 SMB_t + \beta_3 HML_t + \beta_4 RMW_t + \beta_5 CMA_t + \varepsilon_t$,

where r_{it} is the individual daily stock returns, rf_t is risk free rate, rm_t is the market return calculated as value weighted return on all NYSE, AMEX, and NASDAQ stocks from CRSP. *SMBt* is the return difference between portfolios of small and big stocks; *HMLt* is the return difference between portfolios of high and low book-to-market stocks; *UMDt* is the return difference between portfolios of high and low prior-return stocks; RMW_t is the return difference between portfolios of robust and weak operating profitability; CMA_t is the return difference between portfolios of low and high investment stocks. CAPM alpha measures the monthly abnormal return when restricting the coefficients of *SMBt*, *HMLt*, and *UMDt* to zero in the first regression. Three-Factor Alpha is the intercept from the regression above when *UMDt* is omitted. Four-factor alpha is the intercept from the first regression above. Five-factor alpha is the intercept from the second regression above. We estimate the regression within the event windows of 3 months before, and 3 months, 6 months, 9 months, and 12 months after the format changes. P-values are reported for each statistic. *, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	Firms with Higher Institutional Ownership				Firms with Lower Institutional Ownership			
	CAPM	3 Factor Alpha	4 Factor Alpha	5 Factor Alpha	CAPM	3 Factor Alpha	4 Factor Alpha	5 Factor Alpha
[-3, 0 mo]	0.002	0.004	0.001	0.002	0.004	-0.016	-0.004	-0.006
p-value	*0.70*	*0.41*	*0.32*	*0.83*	*0.95*	*0.80*	*0.70*	*0.71*
[0, 3 mo]	0.028*	-0.023	-0.023	-0.021	0.031	-0.023	-0.023	0.011
p-value	*0.06*	*0.67*	*0.67*	*0.35*	*0.21*	*0.61*	*0.61*	*0.70*
[0, 6 mo]	0.020*	0.023*	0.034*	0.029***	0.020*	0.037*	0.064**	0.051***
p-value	*0.06*	*0.06*	*0.06*	*0.00*	*0.08*	*0.06*	*0.02*	*0.00*
[0, 9 mo]	0.015	0.016*	0.018*	0.017**	0.015	0.027*	0.035*	0.030**
p-value	*0.13*	*0.10*	*0.10*	*0.03*	*0.41*	*0.09*	*0.08*	*0.04*
[0, 12 mo]	0.017*	0.017*	0.018	0.020**	0.016	0.026*	0.035*	0.030**
p-value	*0.09*	*0.09*	*0.13*	*0.03*	*0.37*	*0.09*	*0.07*	*0.03*

Table 7: Abnormal Performance around Annual Earning Announcement Dates, Grouped by Analyst Coverage

This table reports the mean abnormal returns for the firms that change their reporting format from pure plain 10-Ks to graphic annual reports grouped by analyst coverage before the format changes. The abnormal returns are estimated using the following two regressions:

$r_{it} - rf_t = \alpha + \beta_1(rm_t - rf_t) + \beta_2 SMB_t + \beta_3 HML_t + \beta_4 UMD_t + \varepsilon_t$ and

$r_{it} - rf_t = \alpha + \beta_1(rm_t - rf_t) + \beta_2 SMB_t + \beta_3 HML_t + \beta_4 RMW_t + \beta_5 CMA_t + \varepsilon_t$,

where r_{it} is the individual daily stock returns, rf_t is risk free rate, rm_t is the market return calculated as value weighted return on all NYSE, AMEX, and NASDAQ stocks from CRSP. *SMBt* is the return difference between portfolios of small and big stocks; *HMLt* is the return difference between portfolios of high and low book-to-market stocks; *UMDt* is the return difference between portfolios of high and low prior-return stocks; RMW_t is the return difference between portfolios of robust and weak operating profitability; CMA_t is the return difference between portfolios of low and high investment stocks. CAPM alpha measures the monthly abnormal return when restricting the coefficients of *SMBt*, *HMLt*, and *UMDt* to zero in the first regression. Three-Factor Alpha is the intercept from the regression above when *UMDt* is omitted. Four-factor alpha is the intercept from the first regression above. Five-factor alpha is the intercept from the second regression above. We estimate the regression within the event windows of 3 months before, and 3 months, 6 months, 9 months, and 12 months after the format changes. P-values are reported for each statistic. *, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	Firms with Higher Analyst Coverage				Firms with Lower Analyst Coverage			
	CAPM	3 Factor Alpha	4 Factor Alpha	5 Factor Alpha	CAPM	3 Factor Alpha	4 Factor Alpha	5 Factor Alpha
[-3, 0 mo]	0.001	-0.007	-0.006	-0.004	0.003	-0.012	-0.001	-0.002
p-value	*0.52*	*0.35*	*0.49*	*0.81*	*0.95*	*0.80*	*0.70*	*0.71*
[0, 3 mo]	0.023*	-0.022	-0.013	-0.022	0.032	-0.019	-0.013	0.003
p-value	*0.06*	*0.67*	*0.67*	*0.35*	*0.21*	*0.58*	*0.45*	*0.87*
[0, 6 mo]	0.019*	0.021**	0.024**	0.025***	0.021*	0.038**	0.068**	0.055***
p-value	*0.06*	*0.04*	*0.05*	*0.00*	*0.08*	*0.04*	*0.02*	*0.01*
[0, 9 mo]	0.015*	0.013*	0.017*	0.015**	0.019	0.029*	0.032*	0.041**
p-value	*0.09*	*0.10*	*0.10*	*0.03*	*0.41*	*0.08*	*0.09*	*0.02*
[0, 12 mo]	0.017*	0.018	0.016	0.019	0.019*	0.036*	0.035*	0.031**
p-value	*0.09*	*0.19*	*0.13*	*0.20*	*0.10*	*0.09*	*0.06*	*0.04*

Table 8: Abnormal Performance around Annual Earning Announcement Dates, Grouped by Short Interests

This table reports the mean abnormal returns for the firms that change their reporting format from pure plain 10-Ks to graphic annual reports grouped by short interests before the format changes. The abnormal returns are estimated using the following two regressions:
$r_{it} - rf_t = \alpha + \beta_1(rm_t - rf_t) + \beta_2 SMB_t + \beta_3 HML_t + \beta_4 UMD_t + \varepsilon_t$ and
$r_{it} - rf_t = \alpha + \beta_1(rm_t - rf_t) + \beta_2 SMB_t + \beta_3 HML_t + \beta_4 RMW_t + \beta_5 CMA_t + \varepsilon_t$,
where r_{it} is the individual daily stock returns, rf_t is risk free rate, rm_t is the market return calculated as value weighted return on all NYSE, AMEX, and NASDAQ stocks from CRSP. *SMBt* is the return difference between portfolios of small and big stocks; *HMLt* is the return difference between portfolios of high and low book-to-market stocks; *UMDt* is the return difference between portfolios of high and low prior-return stocks; RMW_t is the return difference between portfolios of robust and weak operating profitability; CMA_t is the return difference between portfolios of low and high investment stocks. CAPM alpha measures the monthly abnormal return when restricting the coefficients of *SMBt*, *HMLt*, and *UMDt* to zero in the first regression. Three-Factor Alpha is the intercept from the regression above when *UMDt* is omitted. Four-factor alpha is the intercept from the first regression above. Five-factor alpha is the intercept from the second regression above. We estimate the regression within the event windows of 3 months before, and 3 months, 6 months, 9 months, and 12 months after the format changes. P-values are reported for each statistic. *, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	Firms with Higher Short Interests				Firms with Lower Short Interests			
	CAPM	3 Factor Alpha	4 Factor Alpha	5 Factor Alpha	CAPM	3 Factor Alpha	4 Factor Alpha	5 Factor Alpha
[-3, 0 mo]	0.001	-0.001	-0.002	-0.001	0.004	-0.005	-0.003	-0.004
p-value	*0.45*	*0.25*	*0.36*	*0.75*	*0.55*	*0.48*	*0.35*	*0.57*
[0, 3 mo]	0.028*	-0.023	-0.023	-0.021	0.031	-0.023	-0.023	0.011
p-value	*0.07*	*0.72*	*0.57*	*0.35*	*0.21*	*0.61*	*0.61*	*0.70*
[0, 6 mo]	0.028*	0.038*	0.033**	0.035***	0.020*	0.057**	0.034**	0.031***
p-value	*0.07*	*0.06*	*0.05*	*0.00*	*0.08*	*0.04*	*0.02*	*0.00*
[0, 9 mo]	0.015	0.016*	0.018*	0.017**	0.017*	0.019**	0.025**	0.029**
p-value	*0.13*	*0.09*	*0.08*	*0.03*	*0.09*	*0.05*	*0.03*	*0.04*
[0, 12 mo]	0.016	0.019	0.018	0.016	0.017	0.020*	0.024**	0.025**
p-value	*0.09*	*0.22*	*0.19*	*0.30*	*0.11*	*0.09*	*0.05*	*0.03*

Table 9: Multivariate DiD Results: Firm Performance and Corporate Investments around Reporting Format Changes

This table reports the mean abnormal returns for the firms that change their reporting format from pure plain 10-Ks to graphic annual reports grouped. We compute the abnormal returns using market model, within the event windows of 1 day before to 1 day after, 1 day after to 10 days after, and to 30 days after the format changes. P-values are reported for each statistic. *, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	[-1, 0]	[0, 1]	[-1, 1]	[1, 10]	[1, 30]
CAR	0.002	0.003	0.009	0.008	-0.008
P-value	*0.45*	*0.34*	*0.48*	*0.49*	*0.48*

Table 10: Multivariate DiD Results: Firm Performance and Corporate Investments around Reporting Format Changes

This table reports the regression results that estimate differences in treated and their paired firms' firm performance and corporate investment around the reporting format changes. Column (1) reports the results of ROA as the dependent variable with control variables and without controlling industry and year fixed effects. Column (2) reports the results of CAPX as the dependent variable with control variables and without controlling industry and year fixed effects. Column (3) reports the results of PPE as the dependent variable with control variables and without controlling industry and year fixed effects. Column (4) reports the results of ROA as the dependent variable with control variables and controlling industry and year fixed effects. Column (5) reports the results of CAPX as the dependent variable with control variables and controlling industry and year fixed effects. Column (6) reports the results of PPE as the dependent variable with control variables and controlling industry and year fixed effects. T-statistics are displayed in the parenthesis under each coefficient. Standard errors adjust for heteroskedasticity and clustered by firm. *, **, *** indicate significance at the 1%, 5%, and 10% levels respectively. All variables are defined in Appendix 1.

	(1) ROA	(2) CAPX	(3) PPE	(4) ROA	(5) CAPX	(6) PPE
After	2.076	-0.911	-7.617	3.013	0.223	-0.419
	(1.54)	(-0.73)	(-1.19)	(1.01)	(0.12)	(-0.05)
Treatment	-1.129	2.406*	13.09*	-0.789	1.941*	5.529*
	(-0.87)	(1.67)	(1.68)	(-0.30)	(1.69)	(1.67)
Size	0.279	-0.227	-0.823	0.861	-0.333	-4.839**
	(0.49)	(-0.63)	(-0.25)	(0.71)	(-0.73)	(-2.17)
Leverage	0.020	0.038*	0.592***	0.008	0.014	0.331**
	(0.63)	(1.95)	(3.44)	(0.12)	(0.43)	(2.11)
Readability-Index	-0.524*	-0.025	0.687	-0.682**	-0.043	0.655
	(-1.76)	(-0.24)	(0.70)	(-2.36)	(-0.55)	(1.09)
Past Profitability	0.756***	0.161***	0.782***	0.552***	0.113***	0.242
	(6.82)	(5.06)	(3.76)	(3.75)	(3.19)	(1.27)
Industry Fixed Effects	No	No	No	Yes	Yes	Yes
Year Fixed Effects	No	No	No	Yes	Yes	Yes
N	160	160	157	160	160	157
adj. R-sq	0.548	0.134	0.193	0.627	0.455	0.695

Table 11: Placebo Tests

This table reports Placebo tests results when we define the event year as "Pseudo Event" year. Panel A reports the placebo tests results when we use the third year before the format change as the "Pseudo Event" year for all firms. Panel B reports the placebo tests results when we use the third year after the format change as the "Pseudo Event" year for all firms. Columns 1 and 2 report the results of dependent variables as CAPX and PPE without controlling year and industry fixed effects; Columns 3 and 4 report the results of dependent variables as CAPX and PPE with controlling year and industry fixed effects. T-statistics are displayed within parentheses under each coefficient. Standard errors adjust for heteroskedasticity and within correlation clustered by firm. All variables are defined in Appendix 1. *, **, *** indicate significance at the 1%, 5%, and 10% levels respectively.

	CAPX	PPE	CAPX	PPE
Panel A: Year of Format Changes=-3				
Treatment	-1.604	10.69	0.490	0.001
	(-0.46)	(0.83)	(0.19)	(0.00)
with Controls	Yes	Yes	Yes	Yes
Year/Industry Fixed Effects	No	No	Yes	Yes
Panel B: Year of Format Changes=+3				
Treatment	0.929	-2.482	1.540	-3.746
	(0.63)	(-0.22)	(1.28)	(-0.50)
with Controls	Yes	Yes	Yes	Yes
Year/Industry Fixed Effects	No	No	Yes	Yes

Figures

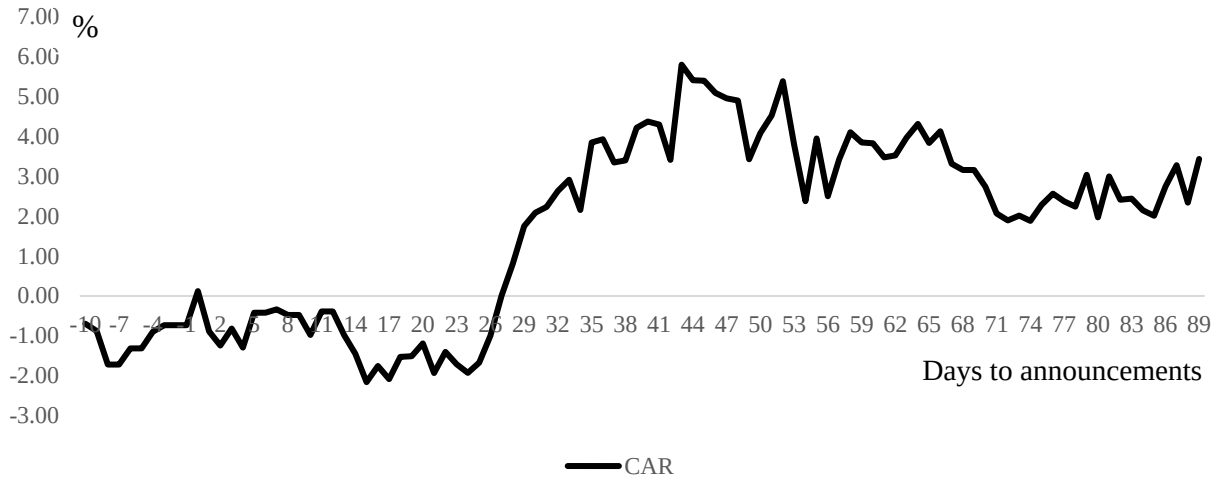

Figure 1: Abnormal Returns around the Reporting Format Changes
This figure depicts mean market adjusted cumulative abnormal returns, for firms who change their reporting format (adding graphic reports) from 10 days before to 90 days after the format changes.