

WORKING PAPER NO: 523

Telling the Truth on 9-11: Market Reactions to Corporate Earnings Announcements

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Year of Publication – September 2016

**Telling the Truth on 9-11:
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By Ana Marques, and José Tavares*

In earnings announcements, managers can strategically attribute poor performance to external events. This paper analyzes market reactions to earnings announcements in the wake of a major event: the September 11 attacks in New York City. We assess the empirical effect of external events on firms and industries, and classify negative external attributions as justified or unjustified. Our results indicate that truthful negative external attributions are met with a positive market response, suggesting it pays to tell the truth. Thus, we conclude that *incremental information* was voluntarily disclosed in corporate earnings announcements in the wake of the September 11 attacks. (JEL: M41)

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The financial fortunes of business companies are affected by external factors, whose idiosyncratic nature and impact make it impossible to quantify in a meaningful way. The terrorist attacks of September 2001 have been an exception, an extreme external event that simultaneously affected the full cross-section of companies, within a short time frame. As an exogenous, extreme, and very public event, September 11 also provided managers of under-performing firms with a ready and easy excuse. The extent to which the market discounts illegitimate attempts to justify poor performance is an open question. This paper examines whether the market reacts differently to justified, as opposed to non-justified, external attributions of poor performance.¹

There are two rationales for external attributions of corporate performance.² The first, relying on market efficiency, sees external attributions as providing incremental information. The market assesses the information, filters it, and penalizes any attempt by managers at manipulating the market. This view is put forward by the *incremental information school*. The second view, advanced by the *impression management school*, assumes market inefficiencies exist, and discretionary disclosure can be used opportunistically so as to distort market perceptions. Here, market analysts cannot clearly assess, at least in the short term, how legitimate the external attribution is.

This paper fills two gaps in the literature. First, as suggested in Baginski, Hassell and Hillison (2000), "*research focusing specifically on disclosures of earnings causes is virtually nonexistent*". We see our paper as empirically

¹ The problem of illegitimate external attributions is becoming more acute as voluntary disclosures have been increasing and, though firms resist explicitly defensive causal attributions, they increasingly unload blame for negative earnings on external causes, rather than taking full responsibility. According to Laudicina (2005), 43 percent of Fortune 100 companies justify their unfulfilled forecast with external occurrences. Aerts and Cheng (2011) find that firms are prone to produce assertive causal disclosures when they have stronger earnings management. The authors examine Initial Public Offering by Chinese firms, a setting where information asymmetry is evident, and the use of narrative impression management is particularly tempting.

² External explanations are often invoked by managers. As Said (2006) ably puts it, "if (goals) are achieved and (management) gets compensation, great. If they're not achieved, management finds reasons to claim it's not reflective of their own performance - market variations, outside events like terrorist attacks and wars [are to blame]."

confirming the experimental findings in Barton and Mercer (2005),³ while our methodology is in line with Kimbrough and Wang (2014), which uses a random sample of quarterly earnings announcements to assess market reactions to self-serving attributions.⁴ Second, a study of external attributions anchored on events of the magnitude of September 11 is nonexistent. Our event of nearly cataclysmic proportions is public, relevant, and transversal. Identifying self-serving attributions in earnings announcements becomes relatively clear-cut. The temptation to lie by attributing external causes to corporate under-performance may be higher around extreme events that are widely and publicly perceived as “paradigm changing”. There is evidence that private investment and private consumption are especially affected by terror attacks, as in Eckstein and Tsiddon (2004), and Llussá and Tavares (2010). Both aggregates are directly associated with the financial performance of corporations.⁵

³ Barton and Mercer (2005) conduct an experimental study and suggest that financial analysts react negatively to managers’ attempt to unduly blame poor performance on external factors. These laboratory experiments have high internal validity, and can support causal attributions, as pointed by Cook and Campbell (1979), but generalizing results is hard, especially when a major terror attack is at stake. See also Scandura and Williams (2000).

⁴ Their identification of non-truthful firms is similar to our own. We code external negative attributions in sectors with no significant response to the September 11th as “lying”. Kimbrough and Wang (2014) suggest the market penalty for poor earnings news excused with defensive attributions is less severe as the earnings commonality increases. As Meric, Kim, Kim and Meric (2008) and Hon, Strauss and Yong (2004) suggest, there was the increased correlation across national stock markets in its following the September attacks. We look at all earnings announcements in the months after September 11, and assess market reactions in the days following each announcement, instead of relying on concurrent content and commonality within industry and market earnings. Results in the two papers are important and mutually consistent.

⁵ Investigating lying and truth-telling by managers in those occasions is particularly relevant. Ruling EITF 01-10, published by the Financial Accounting Standards Board (FASB) forbade accounting for September 11 as “extraordinary losses” in earnings reports. In the same document, the FASB recognizes that this event “interrupted the business activities of many entities and disrupted the US economy at many levels”. Furthermore, nothing prevents firms from mentioning September 11 in earnings announcements a justification for bad results. Perry, Lim, Hobson and Neusner (2001) suggested that the attacks of September 11 became the excuse for “all bad results”.

I. Methodology

Our sample consists of S&P500 firms, and we hand-collected and categorized information from earnings announcements' press releases in the wake of the September 11 attacks.⁶ Our strategy is to search for evidence in favor of either the *incremental information* or the *impression management* hypotheses, as inferred from corporate announcements in the wake of 9-11. We determine which external attributions of performance are empirically justified, and which are not. We then test the relative validity of the efficient market and the opportunistic behavior views of disclosures across two time horizons. Specifically, the hypotheses to be tested are:

Hypothesis 1: *If the efficient market and incremental information assumption holds, corporations are penalized by the market when they unduly attribute poor performance to external factors.*

Hypothesis 2: *If the opportunistic behavior and impression management view holds, in the short-run corporations can benefit from unduly attribution of poor corporate performance to external causes.*

To determine the justifiability of external explanations presented by firms we examine price changes, for the firm's industrial sector, in the period immediately after September 11, making use of the following model:

$$\text{PCHG} = \beta_1 \text{PCHG_TM1} + \sum_i \beta_i \text{MONTH}_i\text{-DVs} + \sum \beta_{13-31} \text{SEP2001*IND-DVs} \quad (1)$$

where PCHG stands for the price change, in percentage terms, occurred in the month of interest, estimated for each industrial sector, and PCHG_TM1

⁶ In the market reaction analysis we exclude financial firms and utilities due to the heavier regulatory framework within which they operate.

is the price change in the previous month,⁷ whereas MONTHi-DV are indicator variables for price changes occurring in other months. Given our month of interest, September, we interact the September dummy variable with indicator variables for each industry sector in our data. We use the estimate of these interaction coefficients to classify industries into two sectors that suffered a “negative impact”, a “positive impact”, or “no impact”.⁸ If a given industry experiences a significant price drop we consider the attribution of poor performance to external sources, by any firm in that industry, as justifiable, and we consider the firm’s behavior as “truth telling”. In the opposite case where the industrial sector the firm belongs to experienced no significant drop, or even an increase, in stock prices we classify the external attribution as “lying”. The “truth telling” firms can be seen as providing information, while the behavior of the “lying“ firms may be interpreted as an attempt to manipulate the market, which may or may not be successful.

We next examine the reactions to implausible – that is, unjustifiable - external explanations. We conduct a detailed examination of the actual content of earnings announcements’ and code any reference to 9-11 into one of four categories: (1) no reference made to the event; (2) reference to the event but no claim of a causal relation with results is put forward; (3) a positive external attribution is presented; and (4) a negative external attribution is presented. Market reactions are analyzed for a 3-day and a 63-day window, day zero being the date of the earnings announcement, specific for each firm. We test whether the market reacts to the reference itself, or to its plausibility. The base model is as follows:

⁷ The PCHG variable is calculated as the difference between the closing price of the month and the closing price of the previous month, divided by the closing price of the previous month, multiplied by 100. The lagged price change is introduced to take into account auto-correlation in price changes.

⁸ As an alternative, and for the sake of robustness, we identify the affected industries by analyzing the behavior of cumulated abnormal returns (CAR) 3 days after September 11, the pivotal date in the event in question. In this alternative specification we consider that firms which operate in industries which had a mean CAR lower than the overall mean use plausible external explanations.

$$\begin{aligned} \text{CAR} = & \beta_0 + \beta_1 \text{REF_ONLY_TEXT} + \beta_2 \text{SEP11_VARB} + \beta_3 \text{UE} + \beta_4 \text{SIZE} \\ & + \beta_5 \text{LOSS} + \beta_6 \text{CAL_Q1} + \beta_7 \text{CAL_Q2} + \beta_8 \text{CAL_Q3} \end{aligned} \quad (2)$$

CAR is calculated as the firm-specific daily return minus the weighted average return of the entire market, in order to correct for aggregate price movements. We estimate four different versions of our second equation, each a different version of the variable SEP_VARB. In the first specification we use REF_ONLY_TEXT – an indicator variable coded as one whenever managers refer to 9-11 but make no causal attribution –, to test whether the market reacts to the mere reference to the event. The second specification tests for a market reaction when firms explicitly suggest their results were positively or negatively impacted by the 9-11 events. For that end, we create indicator variables whose prefix is SEP11 and the suffix the nature of the causal attribution - _POS or _NEG, respectively. The third specification includes interaction variables to assess whether the firms’ positive and negative attributions are perceived differently by the market depending on whether they are “justified” or “not justified”, as classified above using sectoral data. For that purpose, we create variables whose prefix is JUST_ or NJUST_, respectively.⁹ In our last specification, we include all variables from the third specification and additional indicator variables common to sets of firms that are similar as far as the sign of the stock price responses (JUST_INDS), to help us determine whether the market response is indeed a reaction to the content of the press releases, and not a common response to a specific set of firms.

We include controls which are common in capital markets events studies: (i) unexpected earnings (UE) are computed by subtracting from the accounting earnings per share the last mean analyst forecast before the earnings announcement date from I/B/E/S, and scaling this difference by market value of

⁹ These interactions reflect (i) whether a firm made a claim about an impact, and (ii) whether this claim is in line with our classification of it as “justified”.

equity; (ii) SIZE is calculated as the natural logarithm of total assets; (iii) LOSS is an indicator variable coded as one when net income announced is negative; (iv) indicator variables for the calendar quarters control for possible seasonality effects.

II. Data and Results

Our final sample consists of 351 firms.¹⁰ Most press releases were collected from Business Wire or PR Newswire, available via Factiva, as both these wire services are known for their closeness to the actual text released by firm managers.¹¹ Financial statement data are obtained from the Compustat quarterly database. Market reaction information is collected from CRSP and analysts' consensus forecasts come from I/B/E/S.

Table 1 presents the estimation results that consider the time interval between October 2000 and September 2001. Results indicate that only a few industries did not suffer an unexpected price change. We classify all other industries, which experience a negative and significant price decrease, as being justified if and when using external attributions to explain poor performance. Table 2 presents the frequency distribution of references to September 11. For a total of 666 press releases, 203 mention the event, and out of those, 108 have the reference in the main text of the press release, while 95 include it as part of the legal disclaimer, the latter of which are ignored.¹² A considerable number of mentions in the press release point to increase in overall market uncertainty and drops in demand. There are 101 observations where a negative attribution is made.¹³ Only two references to a positive impact are made. A clear majority of

¹⁰ After removing financial institutions and utilities, as well as firms with missing data.

¹¹ When the press releases could not be found in this source, we collected it from firms' websites.

¹² Considering references to 9-11 in the legal disclaimer does not, as anticipated, change in any way our results.

¹³ In 23 cases, firms go a step further and quantify the impact suffered.

the references - and negative attributions - are made in industries that we estimated to have been negatively hit by the September 11 attacks.

In Table 3 we present estimates of the reactions to references and external causal attributions, for the 3 and 63-day return intervals around each specific firm's earnings announcement. In the case of the 3-day intervals, we find that a simple reference to the event does not, in and of itself, induce a significant response in market returns. A negative external attribution, on the other hand, has on average a positive impact on returns of about 1.4 percent in three days, a sizeable effect. However, it is justified negative attributions that drive this result: we find evidence that the market rewards firms that make justifiable negative attributions, in other words, are located in sectors that we estimated to have suffered a decrease in stock prices in the wake of the attack.¹⁴ Since we control for the fact that a firm is in a justified industry, our results show that it is the nature of the external attribution – justifiable or not –, and neither the firm sector nor the external attribution in and by itself that are driving our results. In sum, firms benefit from telling the truth and acquire no benefit from lying. Indeed, the market does not penalize firms that lie. The last two sets of columns in Table 3 show that our results are robust to alternative definition of “justified”, based on CARs rather than changes in stock price.

In the 63-day window we cannot identify a significant market response to attributions, whether justified or not. We should recall the immense uncertainty associated with the 9-11 attacks, substantially mitigated in the immediate weeks after the events, as the risk to the American economy was perceived as sustainable and not as high as initially perceived. The resolution of that initial uncertainty may justify why the estimated coefficient for UE are not statistically significant in the 3-day window, though it becomes significant again

¹⁴ When negative indicators for attributions and justified negative attributions are entered together only the latter are negative and significant, and the former becomes insignificant.

in the longer time window.¹⁵ The fact that we identify a significant market reaction to justifiable external attributions in the 3-day window, when capital markets were reacting to a theretofore unforeseeable event and not to the usual indicators, such as unexpected earnings, is testimony to the relevance of our results.

A possibility is that some firms operate in an industry hit negatively by 9-11 but still perform much better than their peers, opening the way for classifying negative external attributions as unjustified. We thus create a new variable, which considers a firm's claims as justified only when both at the industry-level and at the firm-level price changes – or CARs - are similarly coded. The results of this demanding robustness check are in line and confirm all our previous results.

III. Conclusion

We find that most industries and firms experienced negative performance shocks following the September 11 attacks. When companies engage in true negative external attributions, the market responds positively. We interpret our result as supportive of the *incremental information* and *efficient market* hypothesis. For business firms, and in the case of September 11, telling the truth seems to be the best strategy.

¹⁵ Descriptive statistics indicate that unexpected earnings were, on average, negative for the 3-day window, indicating that firms disclosed earnings per share which were lower than the markets' expectations

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APPENDIX
Table 1 – Changes in prices, per industry

	Coefficient	Robust t-statistic	
PCHG_TM1	-0.002	-0.19	
JAN	0.074	6.66	***
FEB	-0.056	-6.78	***
MAR	-0.053	-4.85	***
APR	0.097	11.89	***
MAY	0.014	2.78	***
JUN	-0.024	-3.30	***
JUL	-0.012	-1.83	*
AUG	-0.047	-8.70	***
OCT	0.310	3.81	***
NOV	-0.012	-0.28	
DEC	0.051	6.21	***
SEP_1010 – Energy	-0.120	-9.09	***
SEP_1510 – Materials	-0.125	-6.04	***
SEP_2010 – Capital goods	-0.148	-5.39	***
SEP_2020 – Commercial & professional services	-0.142	-3.66	***
SEP_2030 – Transportation	-0.130	-4.88	***
SEP_2510 – Automobiles & components	-0.195	-11.60	***
SEP_2520 – Consumer durables & apparel	-0.163	-10.49	***
SEP_2530 – Consumer services	-0.176	-4.56	***
SEP_2540 – Media	-0.134	-5.24	***
SEP_2550 – Retailing	-0.150	-6.55	***
SEP_3010 – Food & staples retailing	-0.105	-2.19	**
SEP_3020 – Food, beverage & tobacco	-0.010	-1.27	
SEP_3030 – Household & personal products	-0.010	-0.58	
SEP_3510 – Health care equipment & services	-0.011	-0.75	
SEP_3520 – Pharma, biotech & life sciences	-0.025	-1.41	
SEP_4510 – Software & services	-0.218	-8.88	***
SEP_4520 – Technology hardware & equipment	-0.193	-10.90	***
SEP_4530 – Semiconductors & equipment	-0.390	-14.34	***
SEP_5010 – Telecommunication services	-0.023	-0.62	
N		4,165	
Prob > F		0.000	

R²

0.056

NOTE: *** - White (1980) t-statistic statistically significant at a 1% level (2-sided test); ** - White (1980) t-statistic statistically significant at a 5% level (2-sided test); * - White (1980) t-statistic statistically significant at a 10% level (2-sided test)

Table 2 – hand-collected data

	No Industry Effect	Negative Industry Effect	Total
Total of press releases coded			666
Reference to September 11, no impact mentioned			
- in the text of the press release	15	93	108
- in the legal disclaimer section	7	88	95
Reference to negative impact of September 11	12	89	101
Reference to positive impact of September 11	1	1	2
Quantification of the effect of September 11	7	16	23

Table 3 – Market reactions to September 11

anel A: Short-term reaction, using 3-day cumulative abnormal returns

					<u>Just def. based on changes in prices</u>				<u>Just def. based on CARs</u>			
	Coeff.	t-stat	Coeff.	t-stat	Coeff.	t-stat	Coeff.	t-stat	Coeff.	t-stat	Coeff.	t-stat
REF_ONLY_TEXT	0.005	0.87	0.006	1.17	0.006	1.17	0.006	1.04	0.006	1.17	0.006	1.02
SEP11_NEG			0.014	2.16								
JUST_NEG					0.016	2.38	0.014	2.05	0.021	3.10	0.017	2.42
NJUST_NEG					0.004	0.18	0.010	0.48	-0.001	-0.10	0.003	0.28
JUST_INDS							0.009	1.72			0.009	2.13
UE	0.013	0.13	0.014	0.14	0.014	0.14	0.019	0.18	0.014	0.14	0.014	0.14
LOSS	-0.011	-1.73	-0.011	-1.69	-0.011	-1.70	-0.012	-1.80	-0.011	-1.67	-0.010	-1.62
SIZE	-0.001	-0.86	-0.002	-0.97	-0.002	-0.93	-0.001	-0.77	-0.002	-0.99	-0.002	-1.07
CAL_Q2	-0.004	-0.65	-0.003	-0.51	-0.031	-0.52	-0.003	-0.57	-0.003	-0.50	-0.004	-0.59
CAL_Q3	-0.011	-2.09	-0.010	-1.93	-0.010	-1.93	-0.011	-1.97	-0.010	-1.92	-0.011	-2.01
CAL_Q4	-0.012	-2.14	-0.014	-2.47	-0.014	-2.48	-0.014	-2.45	-0.014	-2.45	-0.014	-2.43
CONSTANT	0.026	1.69	0.027	1.74	0.026	1.71	0.018	1.11	0.027	1.75	0.023	1.50
N	1,359		1,359		1,359		1,359		1,359		1,359	
Prob > F	0.104		0.053		0.062		0.061		0.012		0.009	
R ²	1.0%		1.1%		1.2%		1.4%		1.3%		1.7%	

Panel B: Long-term reaction, using 63-day cumulative abnormal returns

					<u>Just def. based on changes in prices</u>				<u>Just def. based on CARs</u>			
	Coeff.	t-stat	Coeff.	t-stat	Coeff.	t-stat	Coeff.	t-stat	Coeff.	t-stat	Coeff.	t-stat
REF_ONLY_TEXT	0.013	0.74	0.010	0.57	0.010	0.57	0.010	0.55	0.010	0.57	0.007	0.39
SEP11_NEG			-0.024	-1.07								
JUST_NEG					-0.035	-1.42	-0.035	-1.44	-0.026	-1.11	-0.044	-1.82
NJUST_NEG					0.047	1.54	0.048	1.54	-0.018	-0.40	0.001	0.02
JUST_INDS							0.003	0.23			0.037	3.39
UE	0.604	2.77	0.602	2.76	0.605	2.77	0.606	2.78	0.602	2.76	0.602	2.83
LOSS	-0.066	-4.05	-0.067	-4.07	-0.066	-4.04	-0.067	-4.03	-0.067	-4.07	-0.065	-4.01
SIZE	-0.008	-1.91	-0.008	-1.84	-0.008	-1.93	-0.008	-1.92	-0.008	-1.84	-0.008	-1.99
CAL_Q2	0.039	2.82	0.038	2.71	0.038	2.73	0.038	2.72	0.038	2.70	0.036	2.60
CAL_Q3	-0.019	-1.36	-0.020	-1.44	-0.020	-1.42	-0.021	-1.42	-0.021	-1.44	-0.023	-1.57
CAL_Q4	-0.029	-2.11	-0.025	-1.76	-0.024	-1.71	-0.024	-1.70	-0.025	-1.76	-0.024	-1.71
CONSTANT	0.137	3.60	0.136	3.58	0.139	3.64	0.136	3.53	0.136	3.58	0.121	3.18
N		1,359		1,359		1,359		1,359		1,359		1,359
Prob > F		0.000		0.000		0.000		0.000		0.000		0.000
R ²		6.3%		6.4%		6.5%		6.5%		6.4%		7.2%

- CAR_3d = cumulative abnormal return (based on the firm-specific daily return minus the weighted average return of the entire market) for 3-day window, centered on the date of the earnings announcement press release.
- CAR_63d = cumulative abnormal return (based on the firm-specific daily return minus the weighted average return of the entire market) for 63-day window, which starts the day before the date of the earnings announcement press release.
- REF_ONLY_TEXT = indicator variable coded as one when there is a reference in the text of the press release to the event considered (Sep11), without the firm making a causal attribution, and zero otherwise.
- SEP11_NEG = indicator variable coded as one when firm explicitly suggest its results were negatively impacted by the event (Sep11), and zero otherwise.
- JUST_NEG = indicator variable coded as one when SEP11_NEG=1 and claim is classified as just, and zero otherwise.
- NJUST_NEG = indicator variable coded as one when SEP11_NEG=1 and claim is not classified as just, and zero otherwise.
- JUST_INDS = indicator variable coded as one when firm belongs to industry which we classify as “Justified”, and zero otherwise.
- UE = unexpected earnings (EPS – analysts’ consensus), scaled by beginning price.
- LOSS = indicator variable coded as one when firm announces a loss and zero otherwise.
- SIZE = natural logarithm of total assets, to control for Size.
- CAL_Q2 = indicator variable coded as one when earnings announcement press release was done in the second calendar quarter (March to June), and zero otherwise.
- CAL_Q3 = indicator variable coded as one when earnings announcement press release was done in the third calendar quarter (July to September) and zero otherwise.
- CAL_Q4 = indicator variable coded as one when earnings announcement press release was done in the fourth calendar quarter (October to December) and zero otherwise.