CUE113 - Intertemporal Decision and Cash Realizations: Empirical Evidences of Corporate Voluntary Disclosure

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Resumo

In this paper we test four voluntary disclosure predictions from Einhorn and Ziv (2008) intertemporal model. We found strong evidences of management implicit commitment to disclose on the existence of past disclosure. We also found managers have different incentives to disclose around zero earnings surprises. The fact of whether a previous disclosure was made or not also impacts the incentives. Next, we extent the channels which forecast are determined including stock options compensation variables and found evidences that cash realizations have no influence on managers decision to disclose. The evidence is the same for managers with and without disclosures history.

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Key-words: Voluntary disclosure; earnings surprises; stock options.

1 Introduction

Accounting literature has presented in the past decades an important discussion about why managers voluntarily disclose private information. The theory is getting more sophisticated and several explanations have major role on the literature. We are looking for evidences about four theoretical predictions from Einhorn and Ziv (2008) (Hereafter *EZ*). They presented a multi-period model focused on investigate the intertemporal dynamics of voluntary disclosure. They realized that although voluntary disclosure theory present mostly one period models so far, there is a relation between past voluntary disclosures and the willingness of future disclosures. Thus, their model enlightens that the choice of making a forecast is influenced by past disclosure decisions.

The model is based on Dye (1985) and Verrechia (1983) one period models, which add uncertainty informational endowment and costly disclosures (the disclosure costs are presented in a general matter. Could be the cost of getting the information or the opportunity cost of given outsiders private and strategic information). First, manager receive a signal with some probability and decides whether to disclose this signal to the market or not. Moreover, managers have the opportunity to withhold information, which is desirable to avoid disclosure costs. Thus, a rational manager chooses to disclose evaluating price impact and disclosure costs. When bad public news is available, firms choose to disclose private accounting information to discriminate themselves among other firms. After a disclosure is made, investors assume that manager as endowed with information. A following non-disclosing period is treated by investors as withholding information because manager has bad news and priced as such.

Withhold information for increasing periods enhances managers' uninformed reputation, which avoid disclosure costs and makes it easier to withhold information in the future. To choose to disclose means to give up having an uninformed reputation and to be able to withhold information and not being penalized by the market. Kothari et al (2009) shows evidence that managers withhold bad news disclosure to a certain threshold, but do not adopt the same behavior on good news statements. Beyer and Dye (2012) present a theoretical model that indicates the importance of reputation in a trust/investment game and found that rational managers.

A major result from the model is that when voluntarily disclosing private information a manager is implicitly committing herself with future disclosures. The model also predicts that the influence of past disclosures is so strong that cash realizations after disclosures have no real effect on managers' choice of making a new disclosure one period after. Hence, *EZ* conjectures a persistence behavior of management forecasts, cash realizations have no effect on forecast if a previous forecast was made and cash realization should negatively affect forecasts if no forecast was made. To test these predictions, I use managers forecast as voluntary disclosure proxy. I know it is a limitation as I do not consider many other communications channels between managers and market. Nevertheless, management guidance is clear and important information channel to investors evaluate their position and make their decision. Hence, it is a good proxy for voluntary disclosure.

Therefore, we first check if firms with different levels of earnings surprises would have different incentives to disclose. This test gives us an idea of how managers behave when choosing to disclose or not. We divided earnings surprises into four sets based on positives and negatives, below and above the respective mean. We call it less positive (negative) and most positive (negative) respectively. We can see that firms below zero have more incentives to disclose, indicating that they want to signal to investors that they are not so bad. The sign shifts as consider positive earnings surprises, indicating change of incentives. This result is consistent with *EZ* prediction that is easier to withhold information when presenting better performance. The results are stronger for firms presenting less negative and most positive earnings surprises.

On our second set of tests we find evidences that indeed the history of forecasts is a very important factor of making a new guidance. It is a consistent and strong result. Moreover, we found evidences that cash realizations do play a role on forecast choice. For a firm that did prior forecasts, increase of earnings surprises makes it more likely to choose to forecast again. This result does not sustain *EZ* predictions. For a firm that did not make a forecast, we found a non-significant negative relation between earnings surprises and the likeliness to disclose, in comparison with a disclosing firm. This result is consistent with *EZ* predictions, but the overall effect is positive and mainly significant unlike the model predicts.

Further, we extend the empirical model including another channel on which forecasts can be affected. Stock compensation can both be influenced by earnings and it is important for the manager when deciding whether or when to make a forecast. Bartov and Mohanran (2004) shows evidences of opportunistically stock options exercises, correlated with earnings and stock performance. They found evidences that earnings management induces untypical large options exercises which increases payment from exercises. Aboody and Kasznik (2000) documented that managers guide investors' expectations around stock options awards by delaying good news and rushing bad news. The opposite behavior is seeing around stock options exercises. Brockman et al (2010) found evidences that managers voluntarily disclose to increase stock prices if they have the intent to exercise stock options in the pre-exercise period. However, if they have the intent to withhold underlying shares, they guide investors to decrease stock prices and avoid taxes. Cicero (2009) evidenced that managers use private information to boost profitability of options exercise strategies. Cheng and Lo (2006) found that managers tends to time stock options exercises buying more after bad news disclosures.

We first validate the use of stock compensation variables by running regressions of forecast on prior forecast and each variable we propose, considering wealth and number of options. We choose to keep prior forecast variable because we already found that choosing to forecast or not in the past have a major role on forecasting on the future. We show that options compensation

variables we proposed have a significant effect on forecasts. Hence, we add each one in our prior model and one more time test for *EZ* predictions.

On this extension we found evidences that persistence on forecast still significant and strong, corroborating with the strength of the evidences found on the first set of tests. This result is consistent with all three options compensation variables tested and controlling for prior forecast. The most important result that comes from adding stock options compensation in *EZ* is that earnings surprises pretty much loses all significance on explaining the choice of forecast. Stock options variables shows to be important when explaining forecasts choices and earnings surprises plays at most a minor role. These evidences corroborate with *EZ* predictions that cash realizations after a forecast have no importance on making more likely to make a new forecast.

When running regressions on positive and negative earnings surprises we see a consistent shift of signal when surprises increases, indicating change of incentives. We can also see that cash realizations do not play an important role, having only some significance on the edges. Moreover, we see that the effect of earnings surprises for a firm with no history of forecast still lower than a firm with disclosing history, which goes in the direction of *EZ* predictions. Nevertheless, the joint effect shows no significance what so ever, but with eventual negative signs. This shows one more time the importance of using stock options compensation variables on explaining forecasts. In this manner, we search for empirical evidences for three predictions made on Einhorn and Ziv (2008) multi-period model for voluntary disclosure. We found evidences that strongly support two predictions and a weak clue for the prediction that earnings surprises have a negative effect on forecast.

These findings help accounting literature to understand why managers are voluntarily disclosing private information. We saw evidences that when considering whether to voluntarily disclose managers are not considering firm performance, but their own stock options endowment. This is an important to guide future relationships between firms and investors. Moreover, corporate governance literature has room to research and indicate how guidance could be an improve of information rather than an opportunistically behavior. Policy makers can use this information to decide if guidance should be regulated or not. The paper continues as the following: section 2 presents the research design, data and main variables; section 3 presents the empirical results and section 4 concludes.

2 Research Design

2.1 Hypothesis development

Einhorn and Ziv (2008) use a multi-period model to explain the intertemporal dynamics of voluntary disclosure. The model is a infinity repeated game where two agents (managers and investors) are interacting in the market. At the beginning of each period managers might receive or not a signal to be used to estimate forthcoming cash flows. Investors do not observe managers' information endowment and update their beliefs about it at the beginning of each period according with the available information.

An informed manager receives the signal and estimate future cash flows and decide whether to truthfully disclose this information or not. Disclosure is assumed to be costly and this cost is increasing over time as the number of disclosing periods increases. The informational environment is assumed to be a Markov chain and therefore history-dependent. Assuming that the information environment is relatively stable over time, if a firm choose to make a disclosure,

investors will see the manager as informed in the future. Any non-disclosing period in the future might be seeing as withholding of information and firm is priced as having bad news. This implicates that an implicit commitment to disclose is assumed whenever a disclosure is made, and this commitment strengthens as more disclosures are made. Baginski and Rakow (2012) showed empirical evidence that disclosure and cost of capital are negative related. Cheynel (2013) present a model in which non-disclose firms have a greater cost of capital than disclosure firms. This result brings our first set of hypotheses.

H1a: A firm is more likely to make a forecast about future cash flow realizations if a forecast was made in the previous period.

H1b: The likelihood of a forecast about future cash flows is not related to cash flow realizations if a disclosure was made in the previous period

In their model, managers want to withhold information for two reasons. First, to avoid current and future disclosing costs. Second, not to be seeing as informed and have to make a commitment to future disclosures. Avoiding disclosing enhances managers' reputation of being uninformed making it easy to withhold future information and the effect is stronger if the firm presented high cash flow realizations on non-disclosing history. Having a good performance and not disclosing makes it easy to managers to be seeing as uninformed instead of withholding information because it is too good information to be withheld. Rogers and Stocken (2005) also argued how managers willingness to mislead investor is a function of market ability to detect it. Acharya et at (2011) investigates the flow of information endogeneity and identify a possible channel to how market information can trigger managers disclosures. Besides, Verrechia (1983) evidences that because market has no perfect knowledge about the manager being informed or not, managers withhold information and discloses opportunely.

Sletten (2012) use a different way to study how bad news announcements may triggers management forecasts. She used other companies' restatements as a proxy for market news. Suppose a given company makes a restatement, if the abnormal return of a 3-day window centered in the announcement is positive (negative), she considers a good (bad) news. An industry peer firm will see and might make forecasts on their own or not. She finds that if the abnormal return resulted by the restatement is negative, peer industry firms are more willing to make forecasts. Nevertheless, there is no evidence that the magnitude of the abnormal return is related with forecasts. This is consistent with previous evidences that managers withhold information.

On the other hand, a manager that made a disclosure is seeing by investors as informed and because the Markovian information environment is assumed to be informed in the future. Hence, managers' natural behavior is to keep disclosing, regardless the signal. Stocken (2000) asserted that investors evaluated managers disclosure performance over time. Tse and Tucker (2010) use a duration analysis to show evidence that managers time disclosures in a within-industry context. They considered the third month on each fiscal quarter and identified the leader firm as the first one that released a negative earnings warning. Hence, they tested if following firms made warnings in a five days window after. Thus, they found evidence of clustering previously market news announcements. Afterwards, they did the same enquiry for good managers' disclosures and they found no evidences. Thereby, these findings indicate that not only managers are timing disclosures, but they are doing it asymmetrically. These results from *EZ* brings the following hypothesis.

H2a: The likelihood of a forecast about future cash flows is negatively related to cash flow realizations since last disclosure if there is not a history of disclosure

H2b: The likelihood of a forecast is decreasing on cash flows realizations

2.2 Main variables and estimation

We run Probit models on annual data with a dummy variable, *Forecast*, equal one if a forecast about next year Earnings Per Share (EPS) is made. We restrict forecasts from prior earnings announcement to fiscal year end date. We ignore forecasts from end of fiscal year and earnings announcement to avoid sample selection bias from preannouncements[1].

To control for information from cash realizations we use Earnings surprises, *EarnSup*. We measure earnings surprises as Earnings Per Share (Hereafter EPS) adjusted for splits minus consensus. EPS, consensus and managers' forecasts are obtained from I/B/E/S to mitigate measurement error and inconsistencies on definitions. At last, to investigate whether non-disclosing firms have still impact of cash realizations on manager forecast, we interact *EarnSup* with the inverse of *Forecast*. This setting makes it easier to analyze the effect of surprises on willingness to make a forecast when manager did not reveal information on previous periods. We control for firm characteristics commonly used on voluntary disclosure literature. We use liquidity and leverage to control for firms more exposed to economic shocks; ROA and investment for firm profitability; EPS and returns volatility for big changes on performance; market-to-book for size and number of analysts to external track that could influence the willingness to disclose.

We expect to see a positive and significant β_1 to indicate the implicit commitment to voluntarily disclose. Because EZ predicted this commitment, cash realizations should not be important for a firm with a prior disclosure. Thus, we expect to find a non-significant β_2. Moreover, firms want to create a uninformed reputation, thus a quiet firm should have lower incentives to disclose and we expect a negative β_3. To test for different incentives, we divide earnings surprises on four parts. First, we separated positives and negatives and then whether if it is above or below the respective mean. Thus, we run the regressions on each sub-sample to check if there are different incentives for different performances. Hence, we expect to see a change of signs on β_2 and β_3 between positives and negatives surprises.

$$Forecast = \alpha + \beta_1 LAG_F + \beta_2 EarnSup + \beta_3 EarnSup * (1 - LAG_F) + \gamma Controls + FE + \varepsilon \quad (1)$$

Next, we focused on investigate the fact that cash realizations are influencing the decision of disclosing, a finding which *EZ* predictions are not being sustained by empirical evidences. We consider that an agency problem might raise from the intuit of manager to maximize utility from stock options endowment. Managers focusing on stock options exercise engage on earnings management behavior. It is also known that managers have timing voluntary disclosure around

[1] Preannouncements are made for many firms as a practice to pre-closing results, normally with bad news to avoid lawsuits. We are interested on whether a manager make a forecast truly voluntary other than as a recurrent practice.

options awards and options exercises. Thus, exists a channel where earnings surprises might impact on managers forecast throughout stock options endowment.

We obtain CEO annual compensation from Computast ExecuComp and prepared following Core and Guay (2002). OptsVst is the ratio of vested wealth from options and total wealth from options. Opts is the ratio of number of unexercised exercisable options and total number of options. These two variables measure the proportion of option compensation that could be executable but were not and did not expire and the proportion of stock options in relation of managers' total portfolio. Furthermore, we check if just having options explain managers' voluntary willingness to forecast. For such, se consider two dummy variables: DoptsV equals one if manager have on earnings announcement date any wealth from vested options and equal to zero otherwise. Dopts equals one if manager have on earnings announcement date any wealth from options and equal to zero otherwise.

To validate using compensation variables to explain managers forecast, we first run Probit regressions of each options variables on *Forecast*, where *Compensation* represents each option variable discussed above. We expect that β_1 present the same behavior and be positive and significant indicating the persistency of forecasts and a significant β_2 showing that compensation matter. The expected sign here depends on which variable we are considering. The fact of having stock options should increase voluntary disclosure as managers have the incentive to sink stock prices before stock options awards and to boost stock prices before exercise periods. Moreover, considering the stock options wealth variables we expect to see a negative sign because managers have less incentives to disclose due stock options wealth rather than stocks wealth. It represents a relative relationship.

$$Forecast = \alpha + \beta_1 LAG_F + \beta_2 Compensation + \gamma Controls + FE + \varepsilon \qquad (2)$$

Finally, we add compensation variables on our *EZ* test setting and investigate whether the three predictions are sustained with empirical evidences.

$$Forecast = \alpha + \beta_1 LAG_F + \beta_2 EarnSup + \beta_3 EarnSup * (1 - LAG_F) + \beta_4 Compensation + \gamma Controls + FE + \varepsilon \qquad (3)$$

3 Data

Our full sample is formed with over 2,000 firms and around 18,000 firm-years observations from 2000 to 2016. To create these samples, we use data from I/B/E/S Guidance, I/B/E/S History, Compustat Annual Industry, Compustat ExecuComp and return files from CRSP. Table 1 Panel A present descriptive statistics for guidance, surprises and compensation variables. Panel B shows descriptive statistics for control variables following voluntary disclosure literature. Panel C presents descriptive statistics relative to size and performance divided by 1000 for expositional purposes. We winsorized at 1% to mitigate earnings surprises variance inflation due outliers.

We can see from Panel A that a little more than half of the firms choose not to release management forecasts in the sample period. Nevertheless, forecast have a huge standard deviation, indicating that some firms never disclose, and others always disclose, which brings evidences for *EZ* predictions. We can also see that stock options are around 22% on average, mostly of options wealth are vested, options are the bigger part of equity being hold by managers and a little more than half are exercisable but not exercised yet, which indicates possible existence of incentives for managers to influence stock price at some point. We can see from Panel C that our sample contains

mostly big firms with more than 8.5 billion dollars average total assets and more than 3 billion dollars book-value. We can also see from Panel B a great volatility on EPS and number of analysts following firms, with some firms having not being followed at all.

Table 1: Summary statistics

Panel A

Variable	Mean	Std. Dev.	Min.	Max.	N
Forecast	0.389	0.487	0	1	19470
EarnSup	0.445	2.035	-4.06	12.41	19470
Opts ratio	0.406	0.313	0	1	18729
OptsVst	0.581	0.292	0	1	16541
NumUnexOpts	0.553	0.236	0	1	17952
NumOpts	0.817	0.258	0	1	18624

Panel B

Variable	Mean	Std. Dev.	Min.	Max.
Liquidity	0.014	0.026	0	0.16
#Analysts	84.235	100.634	0	462
ROA	0	0	-0.002	0.002
EPS volat	1.204	1.831	0	77.951
Investment	0.047	0.05	0	0.272
Ret volat	0.027	0.013	0.009	0.078
Leverage	0.532	0.234	0.085	1.204
Market-to-book	0.006	0.017	-0.005	0.121
N	19470			

Panel C

Variable	Mean	Std. Dev.	Min.	Max.	N
Mkvalt	8.712	27.665	0.006	626.550	19066
Total Assets	14.255	87.784	0.008	2573.126	19470
BV	3.386	11.884	-16.116	256.205	19449
NI	0.435	1.999	-38.468	53.394	19470
EPS	1.772	2.393	-42.27	58.33	19470

4 Empirical Results

We are focused on testing *EZ* results about the intertemporal dynamics of voluntary disclosure. Three predictions follow the results. First, managers want to create an uninformed reputation to be easier to withhold information on current and future periods. This result implicates that managers with uninformed reputation are less likely to disclose when presenting high performance. Second, because the history dependence of informational environment, once a manager reveal herself as informed, there is a persistence behavior on forecasts. When making a forecast, manager implicitly commits himself on making forecasts on following periods. Third, if a manager is seeing as informed, the propensity of a new disclosure is unaffected by any cash

realizations since the last disclosure. Being revealed as informed induces a disclosing behavior and information is unraveled.

Table 2 presents the first set of results. investigate if there is evidences of the implicit commitment of disclosure and how cash realizations affect disclosure for managers that have a forecast history and those who have not, and. Column 1 presents the result for eq. (1) and we can see a consistent result for disclosing commitment after manager being identified as informed. We can also see the effect of cash realizations for managers that did make a prior forecast and for those that stayed quiet. Even so the coefficient of the interaction of surprises and the inverse of disclosing dummy is not significant, the liquid effect is positive and significant indicating that overall firms that did not make a prior forecast are taking surprises into consideration when deciding to voluntarily disclose. This result contradicts *EZ* predictions about the intertemporal dynamic effect of forecast.

To test the prediction of negative relation between forecasts and past cash realizations, we run eq. (1) on earnings surprises, positives and negatives. We expect that firms on higher surprises are less likely to forecast and firms on lower quartiles are more likely to forecast. Columns 2 to 5 brings the results of re-estimating eq. (1) but now considering firms performance. We see on columns 2 and 3 that earnings surprises have a positive effect for firms that made a prior disclosure when firms present negative performance. These results are an inconsistent with *EZ* predictions. Cash realizations should have no effect for a disclosing firm. On the other hand, columns 4 and 5 present the results for firms that present positive earnings surprises. We can see a negative coefficient, significant for higher surprises firms. This result could indicate that disclosing firms and choosing to stop disclosing and the really good performance gives the opportunity to do so. These firms could be seeing as uninformed instead of being withholding information given the high performance.

EZ argued that firms with high performance that did not make a forecast are more likely to the manager to be seeing as uninformed because “things are too good to stay quiet”. Thus, a firm implicit committed to disclose presenting a high performance could use the opportunity of having “too good to be quiet” performance to stop disclosing and start to build an uninformed reputation. Although it is not a result from *EZ*, stay quiet and try to create an uninformed reputation for high performance firms is expected even for firms with disclosing history. Furthermore, we see a different pattern for non-disclosing firms. First, we can see from column 2 that firms performing really bad have no greater incentive to disclose. This can be explained as firms that are not disclosing and are performing poorly prefer to stay quiet and not call attention to them. It is a defense mechanism to hide a poor

Table 2

	(1)	(2)	(3)	(4)	(5)
VARIABLES	Forecast	Most Neg	Less Neg	Less Posit	Most Posit
LAG F	1.928***	1.923***	1.909***	2.064***	2.104***
	(0.0347)	(0.137)	(0.0757)	(0.0659)	(0.140)
EarnSup	0.0280**	0.204***	0.782***	-0.0307	-0.0432**

	(0.0133)	(0.0692)	(0.210)	(0.114)	(0.0190)
(EarnSup)*(1-LAG F)	-0.00907	-0.122	-0.413	-0.142	0.0480*
	(0.0181)	(0.0832)	(0.276)	(0.141)	(0.0271)
#Analysts	-0.0003	8.70e-05	-0.0003	-0.0004	-0.0003
	(0.0002)	(0.0005)	(0.0003)	(0.0003)	(0.0005)
ROA	173.2***	186.2	178.3***	-39.31	-116.7
	(43.79)	(125.4)	(69.12)	(65.66)	(162.5)
Investment	-0.792**	-1.936*	-0.295	-0.660	-1.064
	(0.352)	(1.129)	(0.575)	(0.499)	(0.975)
Market-to-book	2.544**	-3.486	-1.415	3.685**	-2.447
	(1.075)	(4.758)	(2.076)	(1.444)	(3.553)
Liquidity	-1.571**	-1.330	-0.131	-1.046	-0.896
	(0.767)	(2.955)	(1.348)	(1.150)	(2.296)
EPS volat	-0.09***	-0.15***	-0.0490	-0.048**	-0.141***
	(0.0153)	(0.0374)	(0.0301)	(0.0209)	(0.0297)
Ret volat	-18.4***	-20.31***	-18.9***	-15.7***	-1.327
	(1.624)	(4.224)	(2.854)	(2.697)	(4.528)
Leverage	0.356***	0.619***	0.410***	0.369***	0.436**
	(0.0801)	(0.200)	(0.123)	(0.112)	(0.218)
Constant	0.223	-0.250	-0.0666	0.853***	-0.707
	(0.257)	(0.448)	(0.407)	(0.263)	(0.446)
Observations	18,736	4,798	4,650	4,702	4,503
Industry FE	YES	YES	YES	YES	YES
year FE	YES	YES	YES	YES	YES

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

F-test					
Coeff	0.0190	0.0822	0.3681	-0.1723	0.0047
p-value	0.041	0.152	0.044	0.028	0.780

year. Moreover, we can see on columns 3 and 4 a change of disclosing incentives depending being below or above zero earnings surprises. We see that firms performing on the less negatives earnings surprises group have incentives to start talking to separate themselves among the poor performance firms. This result gives the idea of a threshold on deciding to start voluntarily disclosing and identify themselves as informed manager rather them stay quiet valuing the uninformed reputation.

On column 5 we see the result for higher performance firms. Interestingly we see that high-performance firms have no effect of cash realizations. These results contradict *EZ* prediction that non-disclosing firms with really good performance have the opportunity to strengthen the uninformed reputation.

Hence, empirical evidences show that indeed that is a persistent behavior on voluntary management forecast. Such behavior induces managers that once started disclosing to keep doing so, evidence of the implicit commitment discussed by *EZ*. We also found evidences that there is different incentives to disclose, depending on firm performance. *EZ* predicted that is easier to quiet firms to stay quiet and strengthen uninformed reputation when present better performance. We found evidences of such behavior for firms presenting performance around zero. However, we see that cash realizations still have a part on forecast decision, being the manager committed to disclose or not. This result contradicts what was predicted by the model. Our hypothesis is that managers might decide to disclose not because of performance but, focusing on boosting or sinking stock price to maximize their own utility.

Next, we investigate whether there is a channel through compensation where surprises affect willingness to disclosure. First, we validate the use of compensation to explain disclosure by estimating eq. (2) on our three compensation variables. Firms use stock options as part of manager compensation package to align manager interests with shareholders' interests. Unfortunately, other agency problems may be arising and, focusing on maximize their utility, managers might have incentives to influence stock price when interested on exercising options or around options awards.

Table 3 presents results for these tests. We can see that compensation variables are significantly explaining forecasts. Although signs are not consistent, they are as expected. Managers have incentives to boost stock prices having stock options or not. A non-disclosing manager with only stocks will trigger a negative investors reaction due skepticism, which decreases managers' wealth. On the other hand, if the manager has only stock options, the decision of non-disclosing will leave the stock price to be affect only by normal market reactions. Thus, managers' wealth remains unchanged. Because managers' payoff is smaller with stocks than with options, having options decrease the probability of disclose relatively to stocks. Hence, the reason for the sign to shift is that correlation between *Forecast* and equity or options are opposites. Nevertheless, the results show that hold stock options have an impact on willingness to make management forecasts. These results corroborate with our argument that compensation might be an important channel throughout cash realizations influence disclosures that was not considered do far. Having this relationship being distinguished, we can look whether *EZ* predictions hold when considering the effect on compensation on *Forecast*.

Table 3

	(1)	(2)	(3)	(4)
VARIABLES	Forecast	Forecast	Forecast	Forecast
LAG F	1.925***	1.872***	1.929***	1.928***
	(0.0345)	(0.0356)	(0.0345)	(0.0345)
Opts	0.193***			
	(0.0463)			
OptsVst		-0.0791*		
		(0.0454)		

DoptsV			0.0998**	
			(0.0388)	
Dopts				0.0926**
				(0.0438)
#Analysts	-0.000302	-0.000273	-0.000282	-0.000285
	(0.000189)	(0.000190)	(0.000189)	(0.000189)
ROA	185.8***	184.2***	183.6***	182.8***
	(43.86)	(47.52)	(44.07)	(44.22)
Investment	-0.711**	-0.530	-0.769**	-0.779**
	(0.352)	(0.374)	(0.353)	(0.353)
Market-to-book	2.637**	3.222***	2.636**	2.639**
	(1.081)	(1.178)	(1.078)	(1.081)
Liquidity	-1.643**	-1.987**	-1.533**	-1.517**
	(0.763)	(0.854)	(0.766)	(0.768)
EPS volat	-0.08***	-0.09***	-0.09***	-0.09***
	(0.0152)	(0.0160)	(0.0152)	(0.0152)
Ret volat	-19.22***	-19.63***	-19.17***	-19.18***
	(1.605)	(1.677)	(1.609)	(1.608)
Leverage	0.341***	0.368***	0.350***	0.349***
	(0.0797)	(0.0834)	(0.0797)	(0.0799)
Constant	0.200	0.377	0.196	0.204
	(0.253)	(0.232)	(0.252)	(0.253)
Observations	18,729	16,541	18,736	18,736
Industry FE	YES	YES	YES	YES
year FE	YES	YES	YES	YES

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 4 presents results for eq. (3), on proportion of vested options. Column 1 shows overall results for option wealth variables, column 2 to 5 for regressions considering different earnings surprises performances. We can see on column 1 that on average cash realizations have no impact on willingness to forecast. This is already an improvement from our first set of results. We can see that managers with a history of forecast are not considering performance when deciding to disclose again. This result corroborates *EZ* prediction and is an improvement from our first set of results. Now, columns 2 - 5 shows that firms with different performances have different incentives to disclose. We can see a clear shift of effect around zero for disclosing firms, indicating change of incentives. Managers that made a prior forecast take performance into consideration on

forecast decision whenever earnings surprises are really low. Perhaps this effect reflects a necessity to sign a better result on the future.

However, when looking for a quiet manager F-tests shows that firms right above zero have big incentives to stay quiet and keep building an uninformed reputation. For firms right below zero, we see a negative coefficient, which also corroborates with the uninformed reputation prediction, but is not significant. Results on most positive surprises are controversial. Evidences shows that a quiet manager are more likely to start talking if performing really well unlike predicted by the model. We still see a consistent and significant effect of past forecasts on manager willingness of making more forecasts, corroborating on *EZ* predictions of implicit commitment for managers that forecasted on previous period.

Table 4

	(1)	(2)	(3)	(4)	(5)
VARIABLES	Forecast	Most Neg	Less Neg	Less Posit	Most Posit
LAG F	1.872***	1.906***	1.833***	1.986***	2.013***
	(0.0359)	(0.144)	(0.0771)	(0.0674)	(0.145)
EarnSup	0.0202	0.241**	1.163***	-0.0524	-0.0142
	(0.0211)	(0.106)	(0.369)	(0.179)	(0.0322)
(EarnSup)*(1-LAG F)	-0.00472	-0.166*	-0.409	-0.129	0.0583**
	(0.0188)	(0.0882)	(0.287)	(0.148)	(0.0283)
OptsVst	-0.0830*	-0.100	-0.399***	-0.119	0.231
	(0.0466)	(0.226)	(0.129)	(0.0973)	(0.183)
(EarnSup)*OptsVst	0.0129	-0.00336	-0.667	0.0134	-0.0408
	(0.0221)	(0.140)	(0.474)	(0.220)	(0.0379)
#Analysts	-0.0003	-7.66e-05	-0.001***	-0.01***	-0.001**
	(0.0002)	(0.0004)	(0.0003)	(0.0002)	(0.0004)
ROA	174.1***	216.9	219.5***	-47.15	-365.0
	(47.08)	(140.9)	(71.48)	(66.59)	(223.4)
Investment	-0.548	-1.692	-0.0297	0.256	-0.420
	(0.373)	(1.170)	(0.610)	(0.520)	(1.049)
Market-to-book	3.136***	-8.501	-3.134	5.762***	2.658
	(1.172)	(6.664)	(2.238)	(1.504)	(3.775)
Liquidity	-2.027**	-2.312	-1.309	-3.79***	-0.115
	(0.851)	(3.278)	(1.476)	(1.198)	(2.494)
EPS volat	-0.09***	-0.15***	-0.0373	-0.044**	-0.147***

	(0.0161)	(0.0421)	(0.0329)	(0.0225	(0.0305)
Ret volat	-18.7***	-20.4***	-12.12***	-9.57***	-4.042
	(1.705)	(3.282)	(2.142)	(2.099)	(3.944)
Leverage	0.365***	0.696***	0.372***	0.348***	0.514**
	(0.0834)	(0.208)	(0.130)	(0.115)	(0.227)
Constant	0.335	-0.305	-0.236	0.218	-1.074***
	(0.234)	(0.477)	(0.366)	(0.226)	(0.397)
Observations	16,541	2,305	5,468	6,644	2,218
Industry FE	YES	YES	YES	YES	YES
year FE	YES	YES	YES	YES	YES
	Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				
	F-test				
Coeff	0.016	0.142	-0.249	-1.001	0.038
p-value	0.295	0.102	0.739	0.096	0.067

Furthermore, we look for total options instead of wealth. Table 5 presents the results. The overall results are similar to what we found with options vested ratio. Earnings surprises are not significant for disclosing managers, also consistent with *EZ* predictions. For those managers that did not have a history of disclosure, although we see a negative sign as predicted by *EZ*, it is mostly not significant. F-test also corroborate with evidences that earnings surprises do not have effect on disclosure for stayed quiet managers.

When looking to performance regressions we can see a difference of incentives for managers that disclosed or stayed quiet. If a manager made a forecast before earnings surprises have impact if performing bad or when performing really well, when being quiet penalization for an informed manager could be at least enlivened by the very good performance. The negative coefficient for higher performance firms is very interesting. This result is not predicted by *EZ* but is consistent with the argument that firms performing better have greater opportunity to stay quiet and be seeing as uninformed. For non-disclosing manager the liquid effects of surprises are not significant, but we can see evidences for *EZ* predictions as the sign shifts according to performance. Untabulated results for having stock options instead of looking to wealth shows that the overall result is similar for both of them and consistent with what we have found before.

Table 5

	(1)	(2)	(3)	(4)	(5)
VARIABLES	Forecast	Most Neg	Less Neg	Less Posit	Most Posit
LAG F	1.924***	1.922***	1.903***	2.062***	2.103***
	(0.0346)	(0.139)	(0.0758)	(0.0658)	(0.141)

EarnSup	0.00961	0.211**	0.752***	0.0993	-0.0520**
	(0.0155)	(0.0894)	(0.262)	(0.138)	(0.0238)
(EarnSup)*(1-LAG F)	-0.00806	-0.121	-0.407	-0.145	0.0492*
	(0.0182)	(0.0854)	(0.275)	(0.141)	(0.0271)
Opts	0.173***	-0.0432	0.191*	0.276***	0.338*
	(0.0471)	(0.230)	(0.116)	(0.0948)	(0.176)
(EarnSup)*Opts	0.0398**	-0.0205	0.0431	-0.283	0.0163
	(0.0195)	(0.136)	(0.437)	(0.196)	(0.0341)
#Analysts	-0.0003	9.18e-05	-0.0003	-0.0004	-0.0004
	(0.0002)	(0.0005)	(0.0003)	(0.0003)	(0.0005)
ROA	176.4***	187.1	183.3***	-31.19	-128.6
	(43.63)	(125.0)	(69.34)	(65.76)	(164.4)
Investment	-0.713**	-1.947*	-0.256	-0.598	-0.716
	(0.352)	(1.129)	(0.576)	(0.498)	(0.977)
Market-to-book	2.554**	-3.693	-1.210	3.669**	-2.043
	(1.075)	(4.784)	(2.113)	(1.438)	(3.551)
Liquidity	-1.670**	-1.233	-0.365	-1.267	-0.782
	(0.762)	(2.942)	(1.352)	(1.145)	(2.278)
EPS volat	-0.09***	-0.157***	-0.0514*	-0.0497**	-0.137***
	(0.0154)	(0.0374)	(0.0299)	(0.0209)	(0.0302)
Ret volat	-18.31***	-20.28***	-18.96***	-15.81***	-0.760
	(1.626)	(4.224)	(2.860)	(2.700)	(4.493)
Leverage	0.339***	0.621***	0.391***	0.357***	0.411*
	(0.0797)	(0.200)	(0.122)	(0.112)	(0.215)
Constant	0.165	-0.234	-0.162	0.742***	-0.824*
	(0.252)	(0.458)	(0.424)	(0.284)	(0.447)
Observations	18,729	2,612	6,173	7,516	2,535
Industry FE	YES	YES	YES	YES	YES
year FE	YES	YES	YES	YES	YES

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

F-test					
Coeff	0.0016	0.089	0.345	-0.046	-0.003
p-value	0.899	0.170	0.161	0.687	0.898

5 Conclusion

This paper searches for evidences for four predictions made by Einhorn and Ziv (2008) multi-period voluntary disclosure model. We first investigate evidences of an implicit disclosure commitment for managers seeing by the market as informed. Thus, we check how cash realizations affect the propensity of disclosure. Them we check for whether likeliness to disclose are decreasing on cash realizations, indicating that good performance brings opportunity to create a reputation of not being informed.

Running regressions on positive and negative earnings surprises we show that indeed managers have different incentives to disclose regard firms' performance. We found good evidences that firms with history of disclosure are more likely to keep informing the market, as predicted by the model. We also found evidences of earnings surprises having a positive and significant effect on forecast for both disclosing and non-disclosing firms. This finding does not give support for *EZ* predictions. Next, we include stock options compensation variables to the model setting. We found that forecast persistence still positive and significant. More important, this extension shows that earnings surprises have no influence on forecasts for firms with history of management forecasts, which is exactly the prediction from *EZ*. We also found that earnings surprises increase reduces the willingness to disclose for a firm with no history of forecasts, like the model predicts, but this effect is not significant.

When running regressions on positives and negatives earnings surprises we see different incentives to disclose for managers that made a forecast or not. An informed manager considers cash realizations when making a disclosure choice if are performing bad or performing really good. This result is really interested because it shows that a disclosing manager could stop disclosing when performing really well, as argued by *EZ*. On the other hand, a quiet manager tends to stay quiet, especially if performing right above zero earnings surprises. We can also see a weak negative relation between cash realizations and forecast, as *EZ* predicted.

In conclusion, we found that managers around zero earnings surprises have different incentives when deciding to disclose or not. We found that those below zero have great incentives to disclose and discriminate themselves a part and those above the median have more incentives to stay quiet if they did not make a prior forecast. This result sustains *EZ* predictions that managers have a threshold when deciding whether to voluntarily disclose or not their private information.

We also found strong evidences of a inter-temporal effect on the choice of making a forecast. This finding indicates that after choosing to make a forecast, managers are seeing as informed and market expects to continue on revealing information. The creation of a reputation of not being informed is important to be able to withhold information and not being penalized by the market as a holder of really bad information, such would be a manager that chooses to stop disclosing. We also found that earnings surprises have not much of a role when managers choose to disclose or not and a prior disclosure was made. Not being seeing as holder of really bad news becomes much more important than withhold information and managers have a persistent behavior after choosing to disclose. Both these findings corroborate with *EZ* predictions and give support to their theory.

Unfortunately, we did not find evidence that earnings surprises have a negative effect on the likeliness to disclose. We found that a firm with no history of discloses are less likely to make a forecast, but the joint effect is not significant although we found some negative signs. This finding is not what *EZ* predicted but in no way opposed the theory. It gives room for further investigation of what more effects could be missing.

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