Assessing the Ability of the Direct Method Format of the Statement of Cash Flows to Boost Financial Analysts Judgment Accuracy

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ABSTRACT

Statement of Financial Accounting Standards No. 95 allows businesses to use either the direct method (DM) or the indirect method (IM) in its preparation of the statement of cash flows. Current literature has shown that DM is useful in forecasting future cash flows. However, no empirical study examines whether DM is useful for analysts' cash flow forecasts. Therefore, this study fills this gap. Results indicate that analysts' cash flow forecasts are more accurate for firms employing the DM than for those using the IM in preparing the statement of cash flows.
Keywords: *Direct Method, Indirect Method, Analysts Forecasts*

INTRODUCTION

The accuracy of analysts' cash flow forecasts has been widely studied in the accounting literature. In the current study, we examine the association between the accuracy of analysts' cash flows forecast and the presentation format of the statement of cash flows. The Statement of Financial Accounting Standards No. 95 (SFAS 95) allows firms to use either the Direct Method (DM) or the Indirect Method (IM) in preparing the statement of cash flows. Compared to IM, DM is useful in predicting firms' future earnings and cash flows (Krishnan and Largay 2000; Orpurt and Zang 2009). Additionally, analysts are more likely to issue cash flow forecasts for DM firms (Zhao 2013). Nevertheless, no study until present has been conducted to demonstrate the ability of DM statement of cash flows to improve the accuracy of analysts' cash flow forecasts. Specifically, the current study fills the gap and investigates the association between the presentation format of the statement of cash flows and the accuracy of analysts' cash flow forecasts. The main prediction of the study is that analysts' cash flow forecasts will be more accurate for DM firms.

The study of the differential informational content of the DM method over the DI method is motivated by the on-going debate in various standards setting jurisdictions concerning the most appropriate method to prepare the statement of cash flows.

Financial Accounting Standards Board (FASB) and International Accounting Standards Board (IASB) allow both methods but highly recommend the DM (FASB 1987; IASC 1992).[1] A joint research project initiated in 2005 by FASB and IASB, concluded that the ability of the DM statement of cash flows to boost judgment accuracy is an important, pertinent and timely research topic to standard setters. Additionally, financial analysts have always shown preference to the DM. Moreover, the report of the Association for Investment Management and Research (AIMR) issued in 1993 indicates the potential for the DM to improve analysts assessment of companies' financial conditions (AIMR 1993).

[1] *See International Accounting Standard (IAS) 7 and Statement of Financial Accounting Standards (SFAS) No. 95.*

In addition, the current study contributes to the existing literature in several ways. Firstly, results provide empirical evidence of the value relevance of the DM Statement of Cash Flows for financial analysts' forecasts. Prior research on the DM and the IM focuses on examining which method is more useful to predict firms' future cash flows. Cheng and Hollie (2008), Clinch et al. (2002), Krishnan and Largay (2000), and Orpurt and Zang (2009) use different research designs to show that DM, compared to IM, provides incremental information to predict the future cash flows. In contrast to prior studies, the current study focuses on the usefulness of DM and finds that DM has value to financial statement users and to firms. Secondly, the findings provide additional evidence to standard setters regarding the most appropriate format to use in preparing the statement of cash flows.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

There is an increasing trend for analysts to forecast cash flows. The percentage of firms with cash flow forecasts has increased from 2.5 percent in 1993 (1993 is the first year with cash flow forecasts) to about 50 percent in 2005 (Givoly et al. 2009). The main reason argued in DeFond and Hung (2003) is investors' demand. They claim that cash flow information could complements the value-relevant information contained in earnings and help market participants interpret the information contained in earnings and assess firms' viability. Different from DeFond and Hung (2003), however, Givoly et al. (2009) investigate the properties of analyst' cash flow forecasts and find that analysts' cash flow forecasts are more accurate than forecasts derived from a time-series model but less accurate than the earnings forecasts.

Contrast to Givoly et al. (2009), Call et al. (2009) examine whether analysts' earnings forecasts will be more accurate when issuing with cash flow forecasts. They find that analysts' earnings forecasts are more accurate if they are issued with cash flow forecasts and analysts' cash flow forecasts facilitate a better understanding of earnings process. McInnis and Collins (2011) argue that analysts cash flow forecasts increase the transparency of accrual manipulations and they find that firms with cash flow forecasts are less likely to manipulate earnings compared to the firms without cash flow forecasts. All these empirical research has shown that analysts' cash flow forecasts are important to investors and managers. Call (2008) finds that analysts' cash flow forecasts play the role of monitoring in the firms' reported operating cash flows. The accuracy of analysts' cash flows forecasts has an important implication to investors, managers and analysts.[2] Jones and Widjaja (1998) conducted a survey based on 159 financial statement users to explore the decision relevance of AASB 1026 by different user groups. They ask 115 questions, which include the followings: (a) how do respondents view the overall relevance of company financial reports and, Statement of Cash Flows; (b) how do they view the decision relevance of the cash flow statement, used both in isolation and in conjunction with other accrual-based financial statements; (c) and how do they view the decision relevance of the DM versus IM for reporting operating cash flows. Their results show that 70 percent respondents prefer for the DM. Their results are consistent with Klammer and Reed (1990) that bank analysts and loan officers are more likely to grant the loan for DM firms.

Whether the DM disclosure is useful in forecasting earnings or cash flows is still not widely investigated in the current literature. DM and IM directly affect the operating cash flow information disclosed, which may have influence on analysts cash flow forecasts. Therefore, this study examines

[2] *Call et al. (2009) show that cash flow forecasts accuracy is relevant to analysts' career. Analysts are less likely to be fired with issuing more accurate cash flow forecasts.*

whether the format of statement of cash flows, i.e. DM/IM, affect the quality of analysts' cash flow forecast.

There is a long-term debate over the benefits and costs of DM disclosures and IM disclosures. The proponents of DM disclosure method claim that DM provides incremental information of predicting future cash flows and also improves the comparative ability of individual component of cash receipts and cash payments across similar firms over times (Krishnan and Largay 2000; Orpurt and Zang 2009; Richardson 1991). In addition, DM is more consistent with the purpose of cash flow statement that provides relevant information about the cash receipts and cash payments of an enterprise during a period (SFAS 95, para 4). The DM information is valuable to evaluate firms' ability to generate future cash flows, to meet dividend and debt obligations, which assists investors and creditors access the liquidity, financial flexibility and solvency of an entity. However, DM has been criticized to be more costly to implement.

Different with DM, IM explains why the net cash flows from operating activities are different from net income; it is less costly and more convenient to implement. However, the IM format has been criticized to confuse users. IM links the cash flows from operating activities to the results in accrual accounting income statements. The CFA Institute claimed that even a skilled analyst cannot reconstruct DM items based on the information provided by IM (CFA-Institute 2007), which indicate that computing the DM components is not a simply mechanically work. Various studies also provide evidences that DM items cannot be accurately reconstructed by the information disclosed by IM.

Drtina and Largay Iii (1985) demonstrate that cash flows from operations (CFO) calculated by IM cannot be accurately converted to the actual cash flows. Bahnson et al. (1996) examine 9,757 public financial statements from COMPUSTAT and find that there is an unexpected difference between expected CFO and actual amounts presented in the statement of cash flows. Drtina and Largay Iii (1985) and Bahnson et al. (1996) provide evidence that DM components cannot be accurately converted from IM and DM information is useful.

Krishnan and Largay (2000), Cheng and Hollie (2008) and Orpurt and Zang (2009) use different research designs to show that DM provides incremental information in predicting future cash flows. Krishnan and Largay (2000) examine the predictive errors by IM and DM model to measure the ability of each method to forecast future cash flows. They find that DM leads to more accurate predictions of future operating cash flows than IM. Cheng and Hollie (2008) used the estimated IM and DM components to examine the role of cash flow components in predicting future cash flows. They found that the estimated DM components improve the predictive ability of future cash flows. Different from Krishnan and Largay (2000) and Cheng and Hollie (2008), Orpurt and Zang (2009) use the actual DM components instead of estimated DM item lines and show that DM is incrementally useful in forecasting future cash flows. Contrast to previous study, this study investigates this question by examining analysts' cash flow forecast errors. If DM helps forecast future cash flows, then the accuracy of analysts' cash flow forecasts should be higher for firms using DM. This is also in the line with financial analysts' preference to the DM disclosure. Financial analysts are persistent in advocating mandatory DM to present the statement of cash flows. Therefore, this study is expecting that analysts' cash flow forecasts will be more accurate for firms with DM disclosure. This prediction is expressed in alternative form as follows:

H: *The accuracy of analysts' cash flow forecasts is higher for firms choosing DM to present the statement of cash flows.*

RESEARCH DESIGN

Estimation of Analysts' Cash Flow Forecast

This study calculates the forecast errors based on the absolute value of analysts' cash flow forecast error, which equals the absolute value of the difference between actual cash flow per share and forecasted cash flow per share (Givoly et al. 2009).

Absolute Error= |Actual cash flows per share – Forecasted cash flow per share|

Research Model

$$|\text{Cash flow forecast errors}_{i,t}| = \alpha_0+\alpha_1 \text{DMdisclosure indicator}_{i,t-1}+\alpha_2 \text{Dep}_{i,t-1}+\alpha_3 \Delta WC_{i,t-1} + e_{it} \quad (1)$$

Where:

Cash flow forecast error: absolute value of the difference between the actual cash flow value and the forecasted value;

DM disclosure indicator: 1 if firm i chooses DM and 0 otherwise at year t-1;

$Dep_{i,t-1}$: Depreciation and amortization for firm i at year t-1;

$\Delta WC_{i,t-1}$: changes in the working capital accounts, including accounts receivable, inventories and accounts payable.

Model (1) shows the interest of this study is capturing and measuring α_1. The study predicts α_1 to be negative, which is consistent with the literature that DM is useful in predicting future cash flows (Krishnan and Largay 2000; Cheng and Hollie 2008; Orpurt and Zang 2009). According to Krishnan and Largay (2000), Cheng and Hollie (2008) and Orpurt and Zang (2009), DM provides detailed information about how the operating cash flows received and where the operating cash flows spent. This detailed information facilitates users to analyze and evaluate firms' future cash flows. Therefore, this study expects the relation between accuracy of analysts' cash flow forecasts and the choices of DM/IM to be negative, which indicate that DM improve the accuracy of analysts' cash flow forecasts.

Consistent with prior research (Givoly et al. 2009), we measure depreciation, amortization, changes in accounts receivable, changes in inventory and changes in accounts payable.

SAMPLE SELECTION

The sample includes companies included in Lexis/Nexis who prepared their statement of cash flows using the DM between 1989 and 2009. The following keywords were used to search for the sample companies in the database:

-Direct method
-Cash collected from customers
-Cash collection from customers
-Cash received from customers
-Cash receipts from customers
-Cash paid to suppliers
-Cash payments to supplier
-Cash paid for interest
-Cash paid for tax

548 firms using the DM statement of cash flows were found. Due to the data constrains on COMPUSTAT, 208 firms were eliminated. In addition, financial and utility firms with SIC codes between 6,000 and 6,999 and between 4,900 and 4,999 were excluded from the sample. Therefore, the final full sample consists of 217 DM firms from 1989 to 2009. Table 1 summarizes the sample selection. Figure 1 shows the changes of DM firms from 1989 to 2009.

Table 1: Descriptive Analysis of Firms using DM

Panel A: Distribution of DM Firms by Year

Fiscal Year	Number of firms using DM	Proportion of firms using DM
1989	113	4.59
1990	117	4.75
1991	122	4.96
1992	130	5.28
1993	139	5.65
1994	143	5.81
1995	152	6.18
1996	149	6.05
1997	153	6.22
1998	144	5.85
1999	138	5.61
2000	126	5.12
2001	118	4.79
2002	106	4.31
2003	95	3.86
2004	96	3.90
2005	90	3.66
2006	88	3.58
2007	83	3.37
2008	80	3.25
2009	79	3.21
Total	2461	100

Panel B: Distribution of IM firms by year

Fiscal Year	Number of firms using IM	Proportion of firms using IM
1989	6445	4.25
1990	6475	4.26
1991	6611	4.35
1992	7005	4.61
1993	7363	4.85
1994	7675	5.06
1995	8498	5.60
1996	8691	5.72
1997	8497	5.60
1998	8714	5.74
1999	8664	5.71
2000	8235	5.42
2001	7679	5.06
2002	7274	4.79
2003	6987	4.60
2004	6785	4.47
2005	6574	4.33
2006	6320	4.16
2007	6014	3.96
2008	5835	3.84
2009	5480	3.61
Total	151821	100

The total IM sample includes 18,716 firm-year observations over the sample period. Panel B of Table 2 presents the frequency and proportion of IM firms. In addition, actual cash flow value and forecasted cash flow value are obtained from IBES.

EMPIRICAL RESULTS

Panel A of Table 2 reports the comparison of analysts' cash flow forecast errors in DM and IM groups. Analysts' cash flow forecasts are available after 1993, after merging with the IBES database and deleting all the missing data, the final sample used in Table 2 is 909 observations. The difference of cash flow forecast between DM and IM group is significant at 0.0199, indicating that analysts' cash flow forecast errors are statistically smaller for DM group. This univariate analysis shows that DM cash flow information could help improve the quality of analysts' cash flow forecasts. Panel B of Table 2 provides the estimation results for model (1). The results show that the coefficients on DM/IM firms are negative and significant at less than 10 percent, representing that analysts' cash flow forecast errors are much smaller for DM firms. This supports the expectation in this study that analysts' cash flow forecasts are more accurate for DM firms. DM cash flow information is useful in improving analysts' cash flow forecasts. This finding is consistent with the analysts' preference over DM and IM.

Table 2 Comparison of analysts' cash flow forecast errors between DM and IM firms

Panel A	**Cash flow forecasts errors comparison between DM and IM**		
Cash flow forecast	DM	IM	Difference
	Mean	Mean	T-test P-value
	0.4249	3.7960	0.0199
Panel B	**Regression results (N=909)**		
	Pred. sign	**Coeff**	**P-value**
Intercept	N/A	1.1332	0.0116***
DM disclosure	-	**-0.5843**	**0.0623***
Size	N/A	0.5019	<.0001***
Depreciation and amortization expense	N/A	-0.4816	<.0001***
WC changes	N/A	0.1315	0.0233**
R-squared=0.046			

Panel A reports the mean differences of analysts' cash flow forecast errors between DM firms and IM firms.

Panel B reports the estimation results of the pooled regression of Model (1)

**, **, * represents statistical significance at the 1%, 5% and 10% levels, respectively.

|*Cash flow forecast error*|: absolute value of the difference between actual cash flow value and forecasted value.

DM Disclosure: 1 if firm j using DM; 0 otherwise.

Size: Log (total assets).

$Dep_{i,t-1}$: Depreciation and amortization for firm i at year t-1.

$\Delta at_{i,t-1}$: changes in the working capital accounts, including accounts receivable, inventories and accounts payable for firm I at year t-1.

In summary, the t-test and regression analysis support the hypothesis that analysts will be more likely to issue cash flow forecasts for DM firms and the forecast will be more accurate for DM firms.

CONCLUSION

IAS No. 7 and SFAS No. 95 recommend the DM to present the statement of cash flows. The current study examines whether DM information is more useful in forecasting future cash flows by investigating the relation between DM cash flow information and the accuracy of analysts' cash flow forecasts. Results indicate that the accuracy of analysts' cash flow forecasts is significantly improved when they examine statement of cash flows prepared using the DM than when they compare similar statements prepared using the IM method. These results are consistent with prior literature that DM provides more useful information than IM in predicting future cash flows (Krishnan and Largay 2000; Cheng and Hollie 2008; Orpurt and Zang 2009).

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