

Predictive Ability of Investing Cash Flows

Melik ERTUĞRUL¹

Abstract

Prediction of cash flow from operating activities (CFO) is on the focus of most stakeholders of a firm since CFO is the major ingredient of the firm value and reveals liquidity of the firm. In our study, we examine the predictive ability of cash flow from investing activities (CFI). By employing a sample of Turkish listed firms between 2009 and 2018, we document that CFI does have a significant impact on neither one-year-ahead CFO nor two-years-ahead CFO while it significantly affects three-years-ahead CFO. In other words, today's cash investments are harvested three years after they take place.

Keywords: Cash flow from investments, investing, predictive ability

Jel Codes: G14, M21, M41

Yatırım Faaliyetlerinden Kaynaklanan Nakit Akışlarının Tahmin Gücü

Özet

İşletme faaliyetlerinden nakit akışları (İFNA) firma değerini belirleyen önemli unsurlardan olduğu ve firmanın likiditesini gösterdiği için gelecek dönemki İFNA'nın tahmini birçok paydaşın odak noktasında yer almaktadır. Çalışmamızda, yatırım faaliyetlerinden kaynaklanan nakit akışlarının (YFKNA) İFNA'yı tahmin gücü incelenmektedir. 2009-2018 yılları arası Borsa İstanbul'a kote firmalar için yapılan analizler, YFKNA'nın bir yıl sonraki ve iki yıl sonraki İFNA'yı tahmin gücü bulunmasa da üç yıl sonraki İFNA'yı tahmin edebildiğini göstermektedir. Diğer bir deyişle, sonuçlarımız, bugünkü yatırımların meyvelerinin üç yıl sonrasında alınabildiğine işaret etmektedir.

Anahtar kelimeler: Yatırım faaliyetlerinden kaynaklanan nakit akışları, yatırım, tahmin gücü

Jel Kodu: G14, M21, M41

1. INTRODUCTION

The impact of investments on corporate performance has been studied in detail by the finance literature. The traditional financial research majorly focusses on the topic by considering components of investments, especially capital expenditures and R&D expenses. However, the literature has not paid sufficient attention to analyzing investments as a whole. In their illuminative study, Hertenstein and McKinnon (1997) draw attention to the cash flow statement and its puzzling nature. Among several factors, Hertenstein and McKinnon (1997) underline the following two hindering the use of the cash flow statement. First, compared to the old (and familiar) financial statements, which are the balance sheet and the income statement, the cash flow statement is relatively new. Second, the presentation of the cash flow from operating

activities (CFO) section of the cash flow statement is difficult to comprehend if CFO is presented by following the indirect method.

Another part of the cash flow statement is the cash flow from investing activities (CFI) section which provides cash transactions related to mainly purchases and sales of long-term or non-current assets. To simply say, those transactions are generally i) capital expenditures, ii) proceeds from sales of equipment/buildings/investments, and iii) investments in subsidiaries. All negative figures are cash outflows representing positive investments. However, similar to other parts of the cash flow statement, CFI does not reflect non-cash transactions which should be separately disclosed in annual reports (International Accounting Standards Board, 2017). This fact undermines the use of the cash flow statement to some degree, especially in

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¹ Dr. Öğr. Üyesi, İstinye Üniversitesi, İktisadi, İdari ve Sosyal Bilimler Fakültesi, Zeytinburnu/İstanbul, **EMAIL:** melik.ertugrul@istinye.edu.tr **ORCID:** 0000-0003-2068-2080

countries like the United States (US) where a significant amount of corporate investments is financed with certain methods other than cash such as equity-financed takeovers. However, even in the United Kingdom (UK), where the stock market is a traditional financing preference for companies (La Porta et al., 1997), completely cash-financed takeover transactions have a share of 80% in total transactions (Faccio & Masulis, 2005). This percentage is reported as only 27% in the US takeover transactions (Andrade et al., 2001). Note that these figures are subjectively dependent on the analyzed period, different characteristics of different takeover waves, as well as other sampling restrictions of researchers; however, they provide us good insights regarding the convenience of using CFI as a total investment indicator. The statistics of Faccio and Masulis (2005) indicate that CFI seems to be useful even in the UK.

As CFO reveals the cash generation capacity of a firm from its business activities, CFO is on the focus of many stakeholders of a firm. From the perspective of shareholders, free cash flows, which are mainly generated by CFO-related activities, are the major driver of the firm value. Therefore, an improvement in the future CFO will result in an increase in today's firm value *ceteris paribus*. It may also be an indication of the dividend distribution capacity of the firm, which may be attractive for some (potential) individual investors and investment funds. Furthermore, the future promising CFO may allure potential corporate investors and may result in lucrative takeover transactions. From the perspective of creditors, the future CFO is the direct measure of meeting future financial obligations (Al-Attar & Hussein, 2004) and the financial stability of the firm. A firm should generate a sufficient amount of CFO to pay its debt back and meet other financial obligations in order not to be face to face with financial bottlenecks which may eventually trigger financial distress. Furthermore, the future CFO

is on the focus of the management of a firm because the management decides on critical business activities such as expanding the business in the existing market, entering into a new market and quitting the business, which are mostly dependent on cash. Overall, the future CFO is analyzed by several stakeholders in detail and accurately predicting future CFO has attracted the interest of practitioners and researchers.

The literature provides ample evidence for future CFO predictors by majorly focusing on the current CFO and net income figures.² From the perspective of the traditional accounting discussion on the superiority of cash-based accounting and accruals-based accounting, ample studies compare the superiority of these two determinants in the future CFO prediction to shed light on that discussion. For instance, on the one hand, by documenting evidence in favor of accruals-based accounting, Dechow et al. (1998) report that net income is superior to CFO in the future CFO prediction. On the other hand, by documenting evidence in favor of cash-based accounting, Finger (1994) finds the opposite outcome, especially for shorter horizons. All in all, that literature includes contentious arguments and very much evidence for more than three decades.

The predictive power of CFI has not sufficiently attracted the interest of the accounting research. In our study, we examine the impact of CFI on future CFO figures. To our knowledge, there is also one similar research to our study: Gómez-Rodríguez et al. (2012) measure the ability of CFI to predict future CFO figures. However, our study differs from Gómez-Rodríguez et al. (2012) in two significant ways. First, their period of analysis is between 1991-2004, which means that they provide findings before International Financial Reporting Standards (IFRS) adoption. In other words, their outcomes belong to local accounting standards-based reported accounting figures

² Throughout our study, we interchangeably use terms 'net income' and 'earnings'.

which have not been used since 2005.³ By covering the period between 2009-2018, we document evidence for IFRS-based reported accounting figures which have been a set of accounting standards in use since 2005. Furthermore, we depict a very recent picture of the topic by covering the latest available financial statements. Second, Gómez-Rodríguez et al. (2012) employ a sample of listed firms in the UK which has been extensively analyzed from different accounting quality perspectives by the literature in detail. Moreover, the UK is one of the members of the family of Common Law tradition. In our study, we present outcomes based on a sample of listed firms in an emerging economy and a Civil Law country, Turkey, which has not been analyzed by the accounting quality literature in detail. All in all, to our knowledge, our study is the first one documenting evidence for the predictive ability of IFRS-based reported CFI and our major motivation is filling this gap in the literature.

Based on a sample of Turkish listed firms over 2009-2018, we document that CFI does not have a statistically significant impact on both one-year-ahead CFO and two-years-ahead CFO figures while it negatively affects three-years-ahead CFO at conventional significance levels.⁴ Although our outcomes reveal that today's investments are expected to be harvested in the future, there is no significant harvesting effect in the upcoming two years. This effect becomes statistically apparent three years after investments take place. We confirm these findings by performing additional tests. Gómez-Rodríguez et al. (2012) find statistically significant associations between CFI and all three CFO figures, and statistically insignificant associations reported in our study are not in line with the outcomes of Gómez-Rodríguez et al. (2012).

The remainder of our study is structured as follows. Section 2 presents theoretical

discussion. Section 3 focusses on data, model & variables, as well as methodology. Section 4 discusses results and Section 5 provides concluding remarks.

2. THEORETICAL DISCUSSION

Finance research focusses on the association between corporate future performance and components of investments including capital expenditures, takeovers and divestitures. Studies (among all, see Gómez-Rodríguez et al. (2012), Majanga (2018), and Sharma et al. (2019)) analyzing the former component reveal that capital expenditures have a significantly positive impact on corporate performance measured by share returns or market capitalization. Apart from the discussion on the overinvestment problem, this positive association should be interpreted as good news about positive lucrative projects signaled by capital expenditures. Capital expenditures are also considered a kind of management's communication of private information related to future demand and costs (Kerstein & Kim, 1995).

The latter component has very rich body of research which majorly analyses takeover transactions from the perspectives of both acquirers (or bidders) and sellers (or targets) by considering their stock price reactions around the announcement date. In general, as graphically visualized and deeply illustrated by Martynova and Renneboog (2006), price movements of targets are significantly large and positive while price movements of acquirers are either significantly negative or statistically insignificant. Such price movements may spring from the overpayment by an acquirer which may be a result not only of information asymmetry but also of the Hubris Hypothesis (Roll, 1986) and the Managerialism Motive (Seth et al., 2002). In any case, takeovers create significant value to shareholders of targets while they do not

³ In the UK, IFRS adoption becomes mandatory in 2005, and early adoption is not allowed (De George et al., 2016).

⁴ This significantly negative association is not counterintuitive since negative CFI figures referring to cash outflows mean that the firm spends cash on investments.

increase the wealth of shareholders of acquirers. This research focusses on a very short-term impact of the takeover announcement by considering cumulative abnormal returns around the announcement date. Furthermore, certain studies investigate the long-term impact of takeover transactions on the corporate performance which are generally measured by traditional profitability measures (return on assets or equity). For example, Kyriazopoulos and Drymbetas (2015) reveal that takeovers deteriorate the corporate performance of acquirers in the first two years following the transaction for domestic takeovers in the banking industry between 1996 and 2010. A similar outcome is reported by Raciborski (2017) for a sample of firms in the pharmaceutical industry between 1998 and 2011. All in all, the empirical research concludes that takeovers do create value to shareholders of acquirers neither in the short-term nor long-term.

Instead of analyzing separate components of investments, very few studies explore the impact of total investments on corporate performance by considering the CFI section of the cash flow statement (Gómez-Rodríguez et al., 2012). Livnat and Zarowin (1990) document evidence for the significantly negative association between CFI and share returns. This is an unexpected outcome because a firm has to invest in new tangibles, intangibles, and/or financial assets (like subsidiaries) in order to expand its activities in its existing market and/or enter into a new market which are expected to yield high future performance. Cordis and Kirby (2017) underline that firms with higher investments have lower future share returns than firms with lower investments due to poor budgeting practices. The Hubris Hypothesis (Roll, 1986) and the Managerialism Motive (Seth et al., 2002) may be further explanations of the outcome reported by Cordis and Kirby (2017). As per the overinvestment problem, there is a non-linear relationship between investments and stock returns (Cordis & Kirby, 2017).

Although several studies (among all, see Dechow et al. (1998), Finger (1994), and Kim and Kross (2005)) test the (joint) impacts of current CFO and earnings on future CFO figures, there is only one study similar to our research to our knowledge: by employing a sample of listed firms in the UK over 1991-2004, Gómez Rodríguez et al. (2012) examine the ability of CFI to predict future CFO. Gómez-Rodríguez et al. (2012) conclude that CFI does have a significantly negative association with one-year ahead CFO, two-years-ahead CFO, and three-years-ahead CFO figures. In other words, they report that today's cash spent on investments has an immediate (or short-term) impact on CFO figures and this impact continues for all analyzed horizons.

All in all, the literature reveals that investments provide significant inputs for corporate financial performance. In order to expand its business in the future, a firm has to invest more today. Hence, in line with the findings documented by Gómez-Rodríguez et al. (2012), we hypothesize that today's CFI figures are expected to generate a significant amount of CFO figures in the future, and we put forward the following hypothesis: Today's CFI has a significant ability to predict future CFO.

3. DATA, MODEL & VARIABLES, METHODOLOGY

3.1. Data

The sample of listed firms on Borsa Istanbul is employed in our study. Market values data are provided by the database of Borsa Istanbul while all necessary financial statement information is manually collected from annual financial statements that are available on the Public Disclosure Platform. Since the Public Disclosure Platform provides financial statements as of 2009, our period of analysis begins from 2009 and covers the latest available financial reporting, 2018. By performing the following six filters, we shape and finalize our sample: i) financial institutions, as well as holdings and utilities, are excluded as their reporting behavior and regulations are different than the others, ii) watchlist

observations are excluded as they have restricted trading rules and intervals, iii) if there are multiple listed shares of a firm, only the share type with the highest liquidity is included, iv) to keep the reporting homogeneity, observations with the financial year-end of December are included, v) as per the going-concern principle, only positive book value of equity observations are included, and iv) if any necessary variable to perform analyses is missing for any observation, that observation is excluded.

After all these filters, we obtain the final sample with 293 firms and 2,293 firm-year observations. As regressions require one lag to three lags, the number of observations figures reported in our regression outcomes are expectedly lower than 2,293.

3.2. Model & Variables and Methodology

Dechow et al. (1998) jointly test the predictive abilities of CFO and earnings by employing Equation 0. In that setting, the objective is to compare the superiority between CFO and earnings in the future CFO prediction. As we aim to reveal whether CFI provides valuable inputs for the CFO prediction, we slightly modify Equation 0 by replacing earnings with CFI. Hence, Equation 1a (1b) [1c] shows regression models for one-year ahead (two-years-ahead) [three-years-ahead] CFO figures.

$$CFO_{i,t+1} = \beta_0 + \beta_1 \times CFO_{i,t} + \beta_2 \times E_{i,t} \quad (0)$$

$$CFO_{i,t+1} = \beta_0 + \beta_1 \times CFO_{i,t} + \beta_2 \times CFI_{i,t} \quad (1a)$$

$$CFO_{i,t+2} = \beta_0 + \beta_1 \times CFO_{i,t} + \beta_2 \times CFI_{i,t} \quad (1b)$$

$$CFO_{i,t+3} = \beta_0 + \beta_1 \times CFO_{i,t} + \beta_2 \times CFI_{i,t} \quad (1c)$$

where i , t , CFO, E, and CFI respectively represent firm, year, cash flow from operating activities, bottom-line net income (or earnings), and cash flow from investing activities. Each variable is divided by the current sales figure to mitigate the scale effect problem. Our Hypothesis will be confirmed if β_2 coefficients are reported as statistically significant.

To control for possible data collection errors and the overinfluence of extreme values, each

variable in Equations 1a, 1b, and 1c is winsorized at the bottom and top 1 percentiles. Before analyses, just after running pooled OLS regressions, the Variance Inflation Factor (VIF) analyses are performed to detect the presence of multicollinearity. All individual and mean VIF values are so close to 1 which should be read as multicollinearity does not significantly influence regressions. Afterward, as highlighted by Ertuğrul and Demir (2018) and Onali et al. (2017), we determine the convenient regression method by performing the Hausman Test. For all Equations, the outcomes of the Hausman Test show the convenience of the use of the fixed effects method. Hence, we control for the firm-level unobserved heterogeneity by allowing the intercept to vary across firms. Furthermore, another dimension of unobserved heterogeneity may be at the year-level (Ertuğrul & Demir, 2018). Therefore, we also provide regression outcomes by employing year dummies in order to increase the robustness of our findings; however, we do not present regression coefficients of those dummies for brevity. Last, as suggested by Gow et al. (2010) and Petersen (2009), we use two-way clustered (at both firm level and year levels) standard errors to control for the cross-sectional correlation and serial correlation in our standard errors.

4. RESULTS

4.1. Descriptive Statistics and Correlation Matrices

Panel A of Table 1 shows descriptive statistics of our variables. First, both mean and median CFO figures are positive which means that firms generate cash inflows from their operating activities on average. Second, negative mean and median CFI values should be read as firms invest in their businesses on average.

Panel B of Table 1 reveals that 703 of the total observations record negative CFO figures. In other words, almost 30% of total observations cannot generate cash inflows from operations to cover necessary cash for investments and financing. As CFO shows the liquidity of a firm

that directly springs from core business activities, it may indicate significant defects in the firm's way of doing business. Panel B of Table 1 further presents the annual distribution of CFO figures based on their signs. The maximum [minimum] percentage (41.70%

[24.61%] of total observations) firms with negative CFO is observed in 2011 [2009]. After 2011, there is a declining trend in this percentage, the annual mean of which is 30.56%.

Table 1: Descriptive Statistics and Annual Distributions

PANEL A										
	N	MEAN	P10	P25	P50	P75	P90	SD	MIN	MAX
CFO	2,293	0.060	-0.137	-0.016	0.052	0.145	0.276	0.425	-2.260	2.506
CFI	2,293	-0.075	-0.218	-0.088	-0.032	-0.005	0.022	0.344	-2.223	1.581

	Yearly N	PANEL B				PANEL C			
		CFO (-)		CFO (+)		CFI (-)		CFI (+)	
		N	%	N	%	N	%	N	%
2009	191	47	24.61%	144	75.39%	160	83.77%	31	16.23%
2010	206	56	27.18%	150	72.82%	180	87.38%	26	12.62%
2011	223	93	41.70%	130	58.30%	188	84.30%	35	15.70%
2012	234	81	34.62%	153	65.38%	194	82.91%	40	17.09%
2013	239	84	35.15%	155	64.85%	193	80.75%	46	19.25%
2014	238	60	25.21%	178	74.79%	193	81.09%	45	18.91%
2015	248	77	31.05%	171	68.95%	207	83.47%	41	16.53%
2016	237	67	28.27%	170	71.73%	202	85.23%	35	14.77%
2017	239	72	30.13%	167	69.87%	196	82.01%	43	17.99%
2018	238	66	27.73%	172	72.27%	199	83.61%	39	16.39%
TOTAL	2,293	703	30.56%	1,590	69.44%	1,912	83.45%	381	16.55%

Notes: Panel A shows descriptive statistics. CFO and CFI respectively refer to cash flow from operating activities and cash flow from investing activities. Each variable is divided by sales. Panel B (C) reveals annual distribution of observations with negative and positive CFO (CFI) figures. N, MEAN, P10, P 25, P50, P75, P90 SD, MIN, and MAX refer to the total number of observations, mean, 10th percentile, 25th percentile, median, 75th percentile, 90th percentile, standard deviation, minimum, and maximum.

Panel C of Table 1 shows that 381 of total observations record positive CFI figures. It further presents the annual distribution of CFI figures based on their signs. The maximum [minimum] percentage (19.25% [12.62%] of total observations) firms with positive CFI are observed in 2013 [2010]. The annual mean of this percentage is 16.55%. In other words, 83.45% of firms annually invest in their business activities on average.

Panel A (B) [C] of Table 2 demonstrates the correlation matrix obtained for Equation 1a (1b) [1c]. One-year-ahead CFO has statistically significant and positive associations with both CFO and CFI. For two-years-ahead CFO, its association with CFO is statistically significant

and positive while its association with CFI is reported as statistically insignificant. For three-years-ahead CFO, its association with CFI is significantly negative while its association with CFO is reported as statistically insignificant. The significantly negative association between CFO and CFI is expected because CFO should ideally feed investing and financing parts of the cash flow statement. Last, these smaller correlation coefficients indicate no significant multicollinearity problem which must be statistically detected by performing the VIF analysis. As discussed in the previous section, all VIF figures are so close to 1 which means the multicollinearity problem does not influence regressions at conventional significance levels.

Table 2: Correlation Matrices

PANEL A	
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	CFO _{i,t+1}	CFO _{i,t}	CFI _{i,t}
CFO _{i,t+1}	1		
CFO _{i,t}	0.0858*	1	
CFI _{i,t}	0.1248*	-0.3100*	1
PANEL B			
	CFO _{i,t+2}	CFO _{i,t}	CFI _{i,t}
CFO _{i,t+2}	1		
CFO _{i,t}	0.1302*	1	
CFI _{i,t}	0.0133	-0.3100*	1
PANEL C			
	CFO _{i,t+3}	CFO _{i,t}	CFI _{i,t}
CFO _{i,t+3}	1		
CFO _{i,t}	0.0463	1	
CFI _{i,t}	-0.0923*	-0.3100*	1

Notes: Panel A (B) [C] shows descriptive statistics. CFO, CFI, i and t respectively refer to cash flow from operating activities, cash flow from investing activities, firm and year. t+1, t+2, and t+3 stand for one-year-ahead, two-years-ahead, and three-years-ahead figures. Each variable is divided by sales. * indicates the significance level at 5%.

4.2. Multivariate Analyses

In Panel A of Table 3, fixed effects regression outcomes are reported by not taking year-fixed effects into account. The first (second) [third] column of this Panel shows regression outcomes with the dependent variable of one-year ahead (two-years-ahead) [three-years-ahead] CFO figures. The first column reveals that neither CFO nor CFI has a statistically significant impact on one-year-ahead CFO figures. The second column provides the same outcome for two-years-ahead CFO figures. In other words, today's CFI, as well as CFO, cannot predict either one-year-ahead CFO or two-years-ahead CFO. However, these insignificant associations turn to be significant as shown in the third column: the impact of CFI on three-years-ahead CFO is statistically significant and negative. To explain, today's cash investments (or outflows) are harvested (in forms of CFO inflows) three years after investment. All in all, CFI figures can predict three-years-ahead CFO. Our Hypothesis is confirmed by the third column while the first two columns do not provide evidence in line with our Hypothesis. In Panel B of Table 3, as a robustness check, fixed effects regression outcomes for each Equation are reported by also taking year-fixed effects into account. All these findings remain unchanged in this research setting.

Above-discussed outcomes are partially in line with Gómez-Rodríguez et al. (2012) who document significantly negative associations between CFI and all three future CFO figures. In other words, Gómez-Rodríguez et al. (2012) reveal that today's cash investments significantly contribute to the future CFO figure immediately, and this effect continues in all analyzed future horizons. However, we conclude that today's cash investments contribute to the CFO generation three years after investment. In our opinion, our outcomes for the impacts of CFI on one-year-ahead and two-years-ahead CFO figures may differ from Gómez-Rodríguez et al.'s (2012) outcomes due to two reasons. First, Gómez-Rodríguez et al. (2012) report outcomes for a Common-Law country which has a different investment environment. Second, Gómez-Rodríguez et al. (2012) provide evidence for a period before IFRS adoption. The local financial reporting regime in the UK is shareholder-based (Devalle et al., 2010), which may make the UK attractive for investments compared to its peers. Hence, it is reasonable to expect that investments immediately (or just after they take place) begin to generate higher future CFO figures in Gómez-Rodríguez et al.'s (2012) period of analysis.

Table 3: Regression Outcomes

	PANEL A			PANEL B		
	CFO _{i,t+1}	CFO _{i,t+2}	CFO _{i,t+3}	CFO _{i,t+1}	CFO _{i,t+2}	CFO _{i,t+3}
CFO_{i,t}	-0.0568 (0.1098)	-0.0033 (0.0974)	-0.1534*** (0.0130)	-0.0679 (0.1085)	-0.0009 (0.0962)	-0.1498*** (0.0331)
CFI_{i,t}	0.2280 (0.1324)	0.0729 (0.1013)	-0.1136*** (0.0299)	0.2246 (0.1279)	0.0768 (0.0982)	-0.1062*** (0.0185)
Constant	0.0882*** (0.0198)	0.0718*** (0.0142)	0.0935*** (0.0120)	0.0886*** (0.0074)	0.0720*** (0.0045)	0.0938*** (0.0123)
Firm FE	YES	YES	YES	YES	YES	YES
Year FE	NO	NO	NO	YES	YES	YES
# of Observations	2,005	1,727	1,460	2,005	1,727	1,460
R-squared	0.254	0.234	0.244	0.265	0.245	0.254

Notes: CFO, CFI, i and t respectively refer to cash flow from operating activities, cash flow from investing activities, firm and year. Each variable is divided by sales. The dependent variable of each regression is stated at the top of each column. FE stands for fixed effects. Two-way clustered (at both firm and year levels) standard errors are used. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Our outcomes for the predictive ability of CFO are not in line with the extant Turkish literature including Aktaş and Karğın (2012) and Temiz and Acar (2018). Based on a sample of Turkish listed firms between 2008 and 2010, Aktaş and Karğın (2012) find that today's CFO has a significantly positive impact on one-year-ahead CFO. Based on a sample of Turkish listed manufacturing firms between 2005 and 2016, Temiz and Acar (2018) report very similar outcomes to Aktaş and Karğın (2012). Our outcome for the ability of CFO to predict one-year-ahead CFO differs from Aktaş and Karğın (2012) and Temiz and Acar (2018) due to several reasons. First, our sample is different from those studies: i) Aktaş and Karğın's (2012) period of analysis covers only three years, and ii) although Temiz and Acar (2018) cover a longer period, their sample is restricted to only manufacturing firms. Second, our econometric concerns may be different than Aktaş and Karğın (2012) and Temiz and Acar (2018) because they do not clearly describe their methodologies in detail. As highlighted by Ertuğrul and Demir (2018) and Onali et al. (2017), incorrect regression methods are more likely to generate incorrect inferences; therefore, as per their suggestions and consistent with Gómez-Rodríguez et al. (2012), we obtain our outcomes by performing the fixed effects methodology. We present regression outcomes not only with firm-fixed

effects but also with firm-fixed and year-fixed effects. In any case, we highlight that Aktaş and Karğın (2012) and Temiz and Acar (2018) do not present and discuss their methodologies in detail. That's why we consider that our econometric concerns 'may' be different than these authors. As reported by Dechow et al. (1998), the predictive power of CFO on the future CFO is not always significant and positive for different horizons. For instance, Dechow et al. (1998) find that the impact of CFO on one-year-ahead CFO is significantly positive while its impacts on both two-years-ahead CFO and three-years-ahead CFO figures are significantly negative. In other words, CFO does not yield similar outcomes for the future CFO prediction in different horizons. Our outcomes for the predictive ability of CFO do confirm this interpretation.

4.3. Robustness Analyses

Unbiased estimators are very essential to underpin the validity of regression outcomes. In order to reduce the potential bias, we present our outcomes by taking firm-fixed effects into account. We further present our outcomes by taking year-fixed effects in addition to firm-fixed effects into account. Note that Panel B of Table 3 works as a simultaneous robustness mechanism. In order to reduce the potential bias in standard errors, we perform two-way clustering. In this section, further

robustness analyses are presented and discussed to strengthen our outcomes.

Losses carry more information than profits (Hayn, 1995); therefore, their differential valuation should be controlled (Chambers et al., 2007). Hence, we obtain Equations 2a, 2b, and 2c by adding a loss dummy, which takes the value 1 if net income is negative, to Equations 1a, 1b, and 1c. As net income is a significant ingredient of CFO, we define loss in the corresponding horizon of the dependent variable of each Equation. Then, we reperform all regressions and present the outcomes in Table 4. In Panel A (B) of Table 4, regression outcomes with firm-fixed (both firm-fixed and

year-fixed) effects are reported. Both Panels of Table 4 indicate that CFI significantly and negatively affects only three-years-ahead CFO figures while its impacts on one-year-ahead and two-years-ahead CFO figures are insignificant. The same outcome is reported for the predictive ability of CFO.

$$CFO_{i,t+1} = \beta_0 + \beta_1 \times CFO_{i,t} + \beta_2 \times CFI_{i,t} + \beta_3 \times Li_{t+1} \quad (2a)$$

$$CFO_{i,t+2} = \beta_0 + \beta_1 \times CFO_{i,t} + \beta_2 \times CFI_{i,t} + \beta_3 \times Li_{t+1} \quad (2b)$$

$$CFO_{i,t+3} = \beta_0 + \beta_1 \times CFO_{i,t} + \beta_2 \times CFI_{i,t} + \beta_3 \times Li_{t+1} \quad (2c)$$

Table 4: Robustness Analyses-I

	PANEL A			PANEL B		
	CFO _{i,t+1}	CFO _{i,t+2}	CFO _{i,t+3}	CFO _{i,t+1}	CFO _{i,t+2}	CFO _{i,t+3}
CFO_{i,t}	-0.0589 (0.1074)	-0.0056 (0.0954)	-0.1581*** (0.0154)	-0.0703 (0.1058)	-0.0025 (0.0940)	-0.1546*** (0.0017)
CFI_{i,t}	0.2283 (0.1325)	0.0759 (0.1009)	-0.1190*** (0.0296)	0.2239 (0.1280)	0.0802 (0.0979)	-0.1115*** (0.0296)
Li_{t+1}	0.0358 (0.0239)			0.0371 (0.0251)		
Li_{t+2}		0.0194 (0.0240)			0.0258 (0.0258)	
Li_{t+3}			0.0124 (0.0280)			0.0164 (0.0318)
Constant	0.0790*** (0.0156)	0.0681*** (0.0071)	0.0878*** (0.0061)	0.0790*** (0.0025)	0.0665*** (0.0038)	0.0871*** (0.0076)
Firm FE	YES	YES	YES	YES	YES	YES
Year FE	NO	NO	NO	YES	YES	YES
# of Observations	1,990	1,710	1,442	1,990	1,710	1,442
R-squared	0.259	0.246	0.259	0.271	0.256	0.267

Notes: CFO, CFI, L, i and t respectively refer to cash flow from operating activities, cash flow from investing activities, loss dummy which is equal to one if net income is negative, firm and year. Each variable except the loss dummy is divided by sales. The dependent variable of each regression is stated at the top of each column. FE stands for fixed effects. Two-way clustered (at both firm and year levels) standard errors are used. *** p<0.01, ** p<0.05, * p<0.1.

As highlighted by Dechow et al. (1998), earnings are good predictors of future CFO figures. Hence, we obtain Equations 3a, 3b, and 3c by adding the current year's net income figure to Equations 1a, 1b, and 1c. In these Equations, E represents net income divided by sales. We reperform all regressions and present the outcomes in Table 5. In Panel A (B) of Table 5, regression outcomes with firm-fixed (both

firm-fixed and year-fixed) effects are reported. Both Panels of Table 5 indicate that both CFI and CFO significantly and negatively affect only three-years-ahead CFO figures. Net income has a significantly positive association only with one-year-ahead CFO while it has no significant association with one-year-ahead and two-years-ahead CFO figures.

$$CFO_{i,t+1} = \beta_0 + \beta_1 \times CFO_{i,t} + \beta_2 \times E_{i,t} + \beta_3 \times CFI_{i,t} \quad (3a)$$

$$CFO_{i,t+2} = \beta_0 + \beta_1 \times CFO_{i,t} + \beta_2 \times E_{i,t} + \beta_3 \times CFI_{i,t} \quad (3b)$$

$$CFO_{i,t+3} = \beta_0 + \beta_1 \times CFO_{i,t} + \beta_2 \times E_{i,t} + \beta_3 \times CFI_{i,t} \quad (3c)$$

All in all, our robustness analyses entirely confirm what we report in Table 3: today's cash investments significantly generate CFO three years after they take place while they do not have a significant predictive impact on one-year-ahead and two-years-ahead CFO figures.

5. CONCLUSION

The cash flow statement documents relatively new information compared to traditional financial statements (balance sheet and income statement). It shows the journey of cash during the financial reporting period by summarizing cash in three major categories: operating activities, investing activities, and financing activities. The former category provides invaluable inputs for almost every stakeholder of a firm, including (potential) investors, creditors, and the management since it reveals the cash generation capacity of a firm from its business activities. Therefore, the future CFO prediction plays a very significant role in the decision making of these stakeholders.

Table 5: Robustness Analyses-II

	PANEL A			PANEL B		
	CFO _{i,t+1}	CFO _{i,t+2}	CFO _{i,t+3}	CFO _{i,t+1}	CFO _{i,t+2}	CFO _{i,t+3}
CFO_{i,t}	-0.0331 (0.1013)	-0.0032 (0.0965)	-0.1604*** (0.0347)	-0.0438 (0.0995)	-0.0008 (0.0950)	-0.1578*** (0.0265)
E_{i,t}	0.2271** (0.0702)	0.0036 (0.0984)	-0.0680 (0.0717)	0.2224** (0.0728)	0.0012 (0.0968)	-0.0728 (0.0729)
CFI_{i,t}	0.2186 (0.1338)	0.0726 (0.0999)	-0.1113** (0.0400)	0.2154 (0.1300)	0.0768 (0.0961)	-0.1037*** (0.0265)
Constant	0.0794*** (0.0184)	0.0716*** (0.0170)	0.0960*** (0.0128)	0.0799*** (0.0067)	0.0719*** (0.0031)	0.0966*** (0.0002)
Firm FE	YES	YES	YES	YES	YES	YES
Year FE	NO	NO	NO	YES	YES	YES
# of Observations	2,005	1,727	1,460	2,005	1,727	1,460
R-squared	0.286	0.234	0.246	0.296	0.245	0.255

Notes: CFO, CFI, E, i and t respectively refer to cash flow from operating activities, cash flow from investing activities, net income, firm and year. Each variable is divided by sales. The dependent variable of each regression is stated at the top of each column. FE stands for fixed effects. Two-way clustered (at both firm and year levels) standard errors are used. *** p<0.01, ** p<0.05, * p<0.1.

There is a rich body of research on the future CFO prediction, which dominantly analyses and compares the predictive powers of today's CFO and net income figures. In our study, different than the extant literature, we analyze the predictive power of CFI. Based on a sample of Turkish listed firms over 2009-2018, we document that CFI predicts neither one-year-ahead CFO nor two-years-ahead CFO figures while it predicts three-years-ahead CFO figures. To explain, today's investments generate CFO three years after they take place. We confirm

these outcomes by performing several robustness checks.

Our study contributes to the existing literature twofold. First, we provide outcomes for IFRS-based reported accounting figures. Albeit being very similar to our research Gómez-Rodríguez et al. (2012), document evidence for non-IFRS based accounting figures based on a sample of listed firms in the UK. Second, we present findings for an emerging economy and a civil law country, which has limited evidence in the accounting quality literature. Our study also

provides insights for equity investors using accounting-based forecasting models by revealing that CFI is a valuable input of three-years-ahead CFO prediction.

Additional issues are generated for future research. First, future research may document findings by covering a longer horizon. In our study, since the Public Disclosure Platform provides financial reporting information as of 2009, we cover a period of 10 years which limits our analyses to some degree. For instance, we are not able to present outcomes by considering eight-years-ahead CFO figures

as in Finger (1994). Second, our outcomes belong to a single country. Therefore, future research may employ samples including multiple countries to get more generalizable findings. Note that international data vendors, which are major data sources of almost all studies documenting evidence based on multi-country samples, may provide incomplete data and a limited number of observations (Ertuğrul, 2019). As underlined by Siekkinen (2016), the limited number of observations for each country may hinder the generalizability. We wishfully believe that our findings shed light on future research despite these caveats

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