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Cash Flow Ratio Analysis: The Case Of Turkey*

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ABSTRACT

Cash flow-based information provides more insights about liquidity, profitability and financial structure of companies with the other primary financial statements. Hence, using cash flow ratios together with the conventional financial ratios will contribute to the financial statement analysis. Since cash flow ratios are not common as much as the traditional ratios and are still evolving, developing benchmarks and determining normative values are relatively harder for the assessment of firms. Thus, the main motivation of this study is to demonstrate the power of the statement of cash flows by using 8 fundamental cash flow ratios with 10 traditional ratios in the areas of liquidity, profitability and financial structure. We use 107 non-financial firms (966 firm-year observations) in Manufacturing Industry from 7 different sub-sectors in Borsa Istanbul (BIST) between the periods of 2008-2017. According to the results, firms are not good enough to generate sufficient cash to maintain activities and there is low quality of income due to the values in cash quality of sales ratio and quality of income. In addition to high external financing needs of firms, liquidity is also another big concern for the sample period. Furthermore, according to industry and yearly results, Non-Metallic Mineral Products sector and the year of 2009 have relatively the best values in terms of cash-flow based information.

Keywords: *Cash Flow Ratios, Ratio Analysis, The Statement of Cash Flow, IAS 7*

Jel Classification*: M40, M49*

Nakit Akış Oranı Analizi: Türkiye Örneği

ÖZET

Nakit akış temelli bilgiler, diğer temel finansal tablolarla birlikte şirketlerin likidite, karlılık ve finansal yapıları hakkında daha fazla bilgi sağlamaktadır. Dolayısıyla, nakit akış oranlarının geleneksel finansal oranlarla birlikte kullanılması finansal tablo analizine katkıda bulunacaktır. Nakit akış oranlarının kullanımının geleneksel oranlar kadar yaygın olmaması ve bu oranlara yönelik çalışmaların hala gelişim aşamasında olmasından dolayı, karşılaştırmalar yapmak ve bu oranlar için standart (normatif) değerler belirlemek göreceli olarak daha zor bir süreçtir. Dolayısıyla, bu çalışmanın temel motivasyonu likidite, karlılık ve finansal yapı alanlarında 8 temel nakit akış oranı ve 10 geleneksel finansal oran kullanarak nakit akış tablosunun gücünü ortaya koymaktır. Bu amaçla, 2008-2017 yılları arasında Borsa İstanbul'da (BIST) 7 alt sektörde faaliyet gösteren 107 İmalat Sanayi şirketi (966 firma-yıl gözlemi) örneklem olarak belirlenmiştir. Çalışma sonuçlarına göre, işletmelerin faaliyetlerini sürdürme noktasında yeterli nakit akışı sağlayamadıkları ve düşük gelir kalitesi sergiledikleri tespit edilmiştir. Firmaların yüksek dış finansman ihtiyacına ek olarak, likidite sorunu işletmelerde bir diğer önemli problem olarak saptanmıştır. Ayrıca, sektörel ve yıllık sonuçlara göre, Taşa ve Toprağa Dayalı Sanayi sektörü ve 2009 yılı nakit akışına dayalı bilgi açısından nispeten en iyi değerlere sahiptir.

Anahtar Kelimeler: *Nakit Akış Oranları, Oran Analizi, Nakit Akış Tablosu, TMS 7.*

JEL Sınıflandırması: *M40, M49*

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1. INTRODUCTION

Cash inflows and outflows are the lifeblood of firms and proper forecasting cash flows is essential for firms to survive in a dynamic business environment. The statement of cash flows has been a required part of the annual financial statements package for more than a decade in Turkey with the International Financial Reporting Standards. The statement of cash flows presents beneficial information to assess a firm's ability to create cash and needs of the unit in the use of these funds (Rezai and Jafaar, 2015). Cash flow-based information provides a more accurate measure and thus, superior to net income since earnings are more easily manipulated. Even if a firm reports a profit, it is essential that a firm must also have enough cash to cover daily expenses, to pay for current liabilities and to purchase needed assets for the operations. Therefore, cash flow management is vital since investors or creditors are mainly interested in the amounts of timing and certainty future cash flows (Subatnieks, 2005).

Ratio analysis is a cornerstone form of financial statement analysis that is used to obtain a quick indication of a company's performance in some areas such as liquidity, profitability, operating activities, stock market performance or debt and asset management. It is a quantitative method to gain some insights about a firm's financial performance to compare either with the previous years or with the firms in the same industry. Yet, ratio analysis of the cash flow statement is not popular as much as the ratio analysis of other primary financial statements, balance sheet, and income statement. Because of the statement of cash flow has been around for a short time, there are limited developed generally accepted analyses and standard or normative values. Thus, developing benchmarks for cash flow ratios enable this analysis to become widespread. Mills and Yamamura (1998) state that cash flow ratios are more liable when evaluating liquidity and analysts have long used these ratios except for auditors. Traditional financial ratio analysis is a way of evaluating the business in terms of accrual basis accounting procedure such as net profit. However, cash flow ratio analysis gives a different perspective to financial statement users about how solvent, liquid, and viable the company is (Hertenstein and McKinnon, 1997). Using cash flow ratio analysis with the conventional balance sheet and income statement ratios should lead to a better understanding of the financial strengths and weaknesses of firms (Carslaw and Mills, 1991). Hence, the main motivation of this study is to provide insights about the cash flow ratio analysis and to contribute to the literature by focusing on the power of cash flows.

The purpose of this study is to investigate the cash flows by using fundamental cash flow ratios developed in the literature. In addition, we calculate traditional ratios to conjunct the primary financial statements and helps to develop benchmarks for industries to evaluate a company's financial position better. We use 107 firms (966 firm-year observations) that operate Borsa İstanbul Manufacturing Industry between the dates of 2008 and 2017 continuously. According to the results, cash flow ratios provide consistent results with the conventional financial ratios in terms of liquidity, profitability and financial structure.

Subsequent sections are as follows. Section 2 explains the components of the statement of cash flow with the historical background. Section 3 reviews the most relevant studies in the literature. Research findings and industrial analysis are discussed in Section 4. The final section covers the limitations, conclusion, and suggestions for future research.

2. THE STATEMENT OF CASH FLOW

IAS 7 The Statement of Cash Flows is an integral part of primary financial statements that is classified and presented into operating activities (either using the 'direct' or 'indirect' method), investing activities or financing activities. All entities that prepare financial statements in conformity with IFRSs are required to present a statement of cash flows (IAS 7.1). The objective of IAS 7 is "to require the presentation of information about the historical changes in cash and cash equivalents of an entity by means of a statement of cash flows, which classifies cash flows during the period according to operating, investing, and financing activities." (www.iasplus.com, 2019). According to the FASB, the primary purpose of the cash flow statement is to assess a company's liquidity, solvency, viability and financial adaptability (Jooste, 2006).

Cash flows from operating activities (CFO) refer to the principal revenue-producing activities that denote the amounts generated that are available for acquiring assets, paying liabilities and paying cash dividends (Gup et. al. 1993;74). It is the most scrutinized figure that shows the company's ability to generate consistently positive cash flows from the operations. Cash flows from investing activities (CFI) are the acquisition and disposal of long-term assets and other investments not included in cash equivalents. Cash flows from financing activities (CFF) financing activities are activities that result in changes in the size and composition of the contributed equity and borrowings of the entity (IAS 7.6). IAS 7.18 encourage the direct method of presentation for the operating activities but the indirect method is acceptable. The cash flow statement prepared to the direct (gross) method indicates the gross cash inflows and outflows interest, collection, payments and tax payments.

The historical background of cash flow information is given in Table 1.

Table 1. Conceptual Framework Convergence Project Stages

Date	**Development**
June 1976	Exposure Draft E7 Statement of Source and Application of Funds
October 1977	IAS 7 Statement of Changes in Financial Position
July 1991	Exposure Draft E36 Cash Flow Statements
December 1992	IAS 7 (1992) Cash Flow Statements
1 January 1994	Effective date of IAS 7 (1992)
6 September 2007	Retitled from Cash Flow Statements to Statement of Cash Flows as a consequential amendment resulting from revisions to IAS 1
16 April 2009	IAS 7 amended by Annual Improvements to IFRSs 2009 with respect to expenditures that do not result in a recognized asset.

1 July 2009	Effective date for amendments from IAS 27(2008) relating to changes in ownership of a subsidiary
1 January 2010	Effective date of the April 2009 revisions to IAS 7
29 January 2016	Amended by Disclosure Initiative (Amendments to IAS 7)
1 January 2017	Effective date of the January 2016 revisions to IAS 7

Source: (www.iasplus.com , 2019)

3. LITERATURE REVIEW

Cash-flow based studies are mainly concentrated on the free cash flow hypothesis (Jensen, 1986), (Lang and Litzenberger, 1989), Richardson (2006), cash flow sensitivity and investment (Kaplan and Zingales, 1997), (Almedia and Campello, 2004) and the association between cash flows and accruals (Rayburn, 1986), (Dechow, 1994), (Sloan, 1996) and (Barth et.al., 2001). However, studies using cash flows to assess the performance of firms like in conventional financial ratio analysis is not common as the other studies. Gombola and Ketz (1983) use 40 ratios including cash flow-based ratios and claim that cash flow ratios may have different information than profitability ratios and therefore should not be overlooked. Largay and Stickney (1980), Casey and Bartczak (1985), Gombola et.al. (1987) and Rujoub et.al. (1995) use the cash flow ratios to predict in bankruptcy and business failures. Sayari and Mugan (2013) also examine the financial distress by analyzing the cash flow statement components in the Turkish context.

Carslaw and Mills (1991) and Giacomino and Mielke (1993) are one of the first studies to classify the cash flow ratios systematically. Carslaw and Mills (1991) divide the cash flow ratios into 4 categories by using 9 ratios. The first category is solvency and liquidity that determines whether the firm is able to generate enough cash to meet its obligations and these ratios are cash interest coverage ratio, cash debt coverage ratio and cash dividend coverage ratio. Quality of income is the second category that states the superiority of cash flows to income and these ratios are cash quality of sales and cash quality of income. Capital expenditures and cash flow return ratios are the other categories that include 4 other ratios such as capital acquisition ratio, investment/finance ratio, cash flow per share and return on investment. Giacomino and Mielke (1993), on the other hand, classify the cash flow ratios into sufficiency and efficiency categories by using 9 ratios as well. According to the study, sufficiency ratios show the adequacy of cash flows for meeting a firm's needs, efficiency ratios demonstrate how well the firm generates cash flows comparing to the other years and other companies. While the cash flow adequacy ratio, the long-term debt payment, dividend payout, reinvestment ratio, the debt coverage ratio, and the depreciation-amortization impact ratio are determined as sufficiency ratios, the cash flow to sales ratio, the operations index and cash flow return on assets are assigned as efficiency ratios. Mills and Yamamura (1998) categorize as the cash flow ratios to test for solvency and liquidity and those that measure the viability of a company. Solvency and liquidity ratios are operating cash flow ratio, funds flow coverage, cash interest coverage and cash debt coverage ratios. Second category ratios that

assess the financial strength of a company are total free cash, cash flow adequacy, cash to capital expenditures and cash to total debt.

Carslaw and Mills (1991), Giacomino and Mielke (1993) and Mills and Yamamura (1998) are one of the first normative studies that try to develop optimal cash flow ratios and benchmarks to compare the companies with the previous years or the companies in the same industry. Other studies eg. (Jooste, 2006), generally use the same ratios but they also develop new ratios to reflect the economic condition of companies such as Operating and Investing Activity ratio in Porwal and Jain (2013). Yet, there is no consensus about the classification and denomination of cash flow ratios since the analysis of the statement of cash flow statement is still evolving. For example, while many studies denominate the ratio of CFO / Net Income as "Quality of Income", Subatnieks (2005) use the term "Cash Flow Yield".

Some studies only concentrate on specific cash flow ratios especially measuring the liquidity. Zeller and Stanko (1994), for example, only examine the operating cash flow in a retail firm and Kirkham (2012) also investigates the liquidity by using operating cash flow ratio, critical needs cash coverage and cash interest coverage with conventional ones. Yılmaz (1999) is the first study to use cash flow ratios in a hypothetical firm in Turkey to the best knowledge. Gücenme and Arsoy (2006) state that using cash flow ratios with traditional ratios provide more insights about liquidity and solvency of the company by calculating fundamental cash flow ratios. Karğın and Aktaş (2011) not only use cash flow ratios but also horizontal analysis and trend percentage analysis in the cash flow statement for Turkish context. Finally, some Turkish studies use cash flow-based ratios with multi-criteria decision-making models such as Sakarya and Akkuş (2015) and Yılmaz ve İçten (2018).

Consequently, existing literature generally divides the cash flow ratios into two categories, fundamental and other ratios. Fundamental ratios consist of sufficiency and efficiency ratios. In addition to this classification, liquidity and solvency are another facets of cash flow ratios. Sufficiency ratios evaluate the adequacy of cash flows of firms and it provides a forward-looking information about the cash sources for the purpose of paying the debts and maintaining activities (Yılmaz 1999; 188). Efficiency ratios evaluate how well the company generates cash flows relative to other years and other companies and how effectively firms manage the assets, sales and operating activities (Giacomino and Mielke, 1993). Other cash flow ratios are calculated in case of the need of firms. Fundamental cash flow ratios in the literature are presented in Table 2.

Table 2. Fundamental Cash Flow Ratios

Sufficiency Ratios	**Definition**
Cash Flow Adequacy Ratio	CFO / (Long Term Debt + Asset Purchase + Distributed Dividend)
Long-Term Debt Payment Ratio	Long-Term Debt Payment / CFO
Dividend Payment Ratio	Distributed Dividend / CFO
Re-Investment Rate	Asset Purchase /CFO
Operating Cash Flow Ratio	CFO / Current Liabilities
External Financing Index Ratio	CFF / CFO
Cash Flow to Debt Ratio	CFO / Total Debt
The Depreciation-Amortization Impact Ratio	Depreciation + Amortization / CFO
Efficiency Ratios	**Definition**
Cash Quality of Sales	CFO / Sales
Quality of Income	CFO / Period Profit or Loss
Cash Return on Asset	CFO / Total Assets
Cash Flow on Equity	CFO / Equity
Other Cash Flow Ratios	**Definition**
Cash Based Interest Rate Ratio	CFO + Interest Paid) / Interest Paid
Current Debt Coverage Ratio	(CFO - Cash Dividends) / Current Liabilities
Capital Acquisiton Ratio	CFO / Capital Expenditures
Cash Flow per Share	Net Cash Flow / Outstanding Shares
General Cash Flow Adequacy Ratio	CFO / Capital Expenditures + Merchandise + Cash Dividend
Cash Dividend Coverage	(CFO - Distributed Dividend) / Total Assets
Operating and Financing Activity	CFO / CFF
Operating and Investing Activity	CFO / CFI
Investment / Finance Ratio	CFI / CFF
Inventory Cash Flow Ratio	CFO / Inventory
Fixed Assets Cash Flow Ratio	CFO / Fixed Assets
Debt Issued Ratio	CFO / Debt Issued
Financial Expense Coverage Ratio	CFO / Financial Expense
Working Capital Cash Flow Ratio	CFO / Working Capital

Source: Carslaw and Mills (1991), Giacomino and Mielke (1993), Mills and Yamamura (1998), Yılmaz (1999), Porwal and Jain (2013)

4. RESEARCH DESIGN

4.1. Sample Selection

The study covers 107 non-financial firms that operate in BIST Manufacturing Industry continuously between the dates of 2008-2017. Since financial companies have different regulations, they are not included in the sample. We exercise a %1 outlier analysis from the upper and lower limits and remaining firm-year observation is 966. Cash flow information is obtained from the financial statements of the firms that are published in the Public Disclosure Platform. The information about the sub-sectors in BIST Manufacturing Industry is given in Table 3.

Table 3. Sub-Sectors of the Firms in Sample

Sectors	Number of Firms	Firm-Year Observations
Fabricated Metal Products, Machinery, and Equipment	19	171
Basic Metal Industries	13	116
Non-Metallic Mineral Products	22	204
Paper and Paper Products, Printing and Publishing	8	80
Food, Beverage, and Tobacco	13	125
Textile, Wearing Apparel and Leather	14	121
Chemicals, Petroleum Rubber, and Plastic Products	18	149
TOTAL	**107**	**966**

4.2. Research Findings

4.2.1. Cash Quality of Sales Ratio

Cash quality of sales ratio states the ability of a firm to generate cash flow in proportion to its sales volume and it is calculated by dividing operating cash flow by net sales. Since it is the achievement of a company to turn its sales into cash, there should be a positive correlation between sales and CFO. If the sales increase but CFO do not follow, it means that collection of trade receivables gives alarm due to the managerial inefficiencies. This also indicates that a firm is growing its sales at the expense of declining cash flows since management offers longer payment options to the customers. Consequently, this ratio is an essential performance measurement tool about the effectiveness of the firm's credit and collection policies. Although there is no standard guideline for CFO/Sales, the higher ratio is better for the companies.

According to the cash quality of sales, firms are not good enough to generate sufficient cash to maintain activities. The average is 6% for all the periods and Non-Metallic Mineral Products sector has the best value which is 14%. While 2008 and 2011 have the lowest average values (3%), the highest values are in 2009 and 2015 (10%). Net profit margin ratio also supports the findings that while the year of 2015 and Non-Metallic Mineral Products have the highest results, the year 2008 has the lowest net profit margin. In addition, the average receivable collection period is 86 days in the sample period. Since the correlation

between net sales and CFO is essential to evaluate a company's receivable collection policy, we also apply simple regression to these values. Table 4 displays that CFO and net sales are highly correlated and the relation is significant.

Table 4. Regression Results of CFO and Sales

Dependent Variable: CFO	Coefficient	t.	Prob.
Net Sales	**0,719**	32,21	0.000
R- Squared	**0,517**		

4.2.2. The Quality of Income Ratio

The quality of income ratio is defined as the proportion of cash flow from operations to period profit or loss. If the ratio is greater than 1.0, it usually indicates high-quality income, while a ratio of less than 1.0 indicates low-quality. This ratio also gives insights about the income recognition of the company. Earnings are generally considered to be of high quality if they have persistent, sustainable and backed by cash operating flows. A firm can generate earnings either through real operations (fundamental business) or from other sources such as a sale of assets. Thus, this ratio helps to identify whether earnings are mainly the results of actual sales of goods or services or accounting adjustments.

The average reveals that it is 0,87 for the sample period of all firms. The reason we use median values is to exhibit the extreme values and firm size differences effects on cash flows. Thus, while examining the quality of income, median values should be preferred and according to this 2009 and 2011 have the highest (1,1) and lowest (0,64) values respectively. Besides, 2009 is the only year where the median ratio is over 1 and this displays that there is low quality of income for Turkish firms. The median value of firms that operate in Non-Metallic Mineral Products sector is 1,08 which is the only industry that has the value over 1 and the rest of the industries are lower than 1. Paper and Paper Products, Printing and Publishing are the least successful with the value of 0,37 when considered from this point of view. The regression results are given in Table 5.

Table 5. Regression Results of CFO and Net Income

Dependent Variable: CFO	Coefficient	t.	Prob.
Net Income	**0,726**	32,88	0.000
R- Squared	**0,527**		

4.2.3. Cash Flow to Debt Ratio

Cash Flow to Debt Ratio is defined as the proportion of cash flow from operations to total debt. Although it is expressed as a percentage, it can also be evaluated in years by dividing 1 by the percentage. This denotes how much of a firm debt could be paid off and how long would it take if all CFO is used in payment for a given accounting period although this is an unrealistic approach. A high ratio is preferable and this proves that a company is better able to pay the debt but total assets (specifically current assets) should also be considered when evaluating the financial health of the company. As a consequence, this ratio is helpful to assess a firm's probability of default and a firm with higher Cash Flow to Debt Ratio can easily weather the financial distress.

While evaluating this ratio, we again use median values to emphasize firm size differences effects and it is 10% in all industries. Non-Metallic Mineral Products sector with the 29% median value has the best results with respect to debt coverage. Financial leverage ratio also supports the findings that the average value of firms in Non-Metallic Mineral Products is 32% that is quite lower than the average of all sample (49%).

External Financing Index Ratio is another financial structure ratio that is defined as the division of cash flow from financing activities to cash flow from operations (CFF/CFO). It indicates the extent of dependence on external sources and the larger the ratio means the more dependent a company is on external funding and that is a higher level of financial risk. The average is 0,497 which is consistent with the financial leverage ratio and it proves that Turkish firms are highly dependent on external financing.

4.2.4. Operating Cash Flow Ratio

Operating cash flow ratio is one of the liquidity ratios and measures how well a firm pays its current liabilities with cash flows from operations. This ratio should also be considered together with the current ratio, quick ratio and cash ratio to better evaluate the overall liquidity of the company. Operating Cash Flow Ratio is quite similar to Cash flow to Debt Ratio Except for using current liabilities instead of total debt and it demonstrates how long would it take to repay the current liabilities if all CFO devoted to pay off current debts. In a nutshell, it is an accurate way of measure of a firm's short-term liquidity than traditional liquidity ratios in firms where earnings are more managed and manipulated.

Since the average says 0,27, it means operating activities only cover the %27 of current liabilities if all CFO devoted to pay off current liabilities. Not surprisingly, Non-Metallic Mineral Products sector has the value 71% that is above the average of all sample. In addition, the conventional liquidity ratios; current ratio, acid test ratio, and cash ratio show greater values in this industry that supports the operating cash flow ratio. The correlation between the operating cash flow ratio and the current ratio is 40% and significant as expected. However, the proportion of current liabilities in total liabilities do not significantly differ in all industries. Besides, Turkish firms have higher amounts of current liabilities in total liabilities with an average of 72%. Yearly results are also given in Table 7 and the year of 2009 denotes the relatively best results regarding liquidity ratios.

4.2.5. The Depreciation-Amortization Impact Ratio

The Depreciation-Amortization Impact Ratio shows the percentage of cash from operations resulting from addbacks of depreciation and amortization (Giacomino and Mielke 1993). Depreciation and amortization are non-cash expenses and the cost of capital assets and intangible assets being used over time on the balance sheet. While depreciation and amortization do not have a direct impact on the cash flow statement, they will positively effect by reducing tax payments. The lower ratio indicates that a firm has a more efficient operation and the results reveal that the depreciation effect on cash flow is relatively high in the financial statements (%24). In addition, the average proportion of depreciation and amortization expenses in tangible and intangible assets is 12,7% for all sample.

4.2.6. Cash Return on Assets and Cash Flow on Equity

Cash return on assets is a measure of the return on assets used to compare companies on the basis of cash generation and it should be interpreted with Return on Asset (ROA). This ratio should be higher especially in manufacturing or raw materials industries since they need more cash to maintain, update and replace the long-term assets. The cash return on asset ratio is more helpful than the return on asset ratio when there is a dramatic difference between cash flows and net income since it is not affected by any income measurements or income recognition. This ratio is a performance indicator to compare a company in the industry to measure how well a company is utilizing its assets to generate more cash flows.

According to the results, it is observed that firms generally cannot use their assets in a profitable way. The average ratio exhibits that it is %5 with the same results in terms of best values (Non-Metallic Mineral Products sector and the year of 2009). The association between ROA and cash return on assets is consistent in industries but not in the years. The correlation between the operating cash flow ratio and the current ratio is 44% and significant as expected.

Cash flow on equity is the last cash flow ratio which shows quite similar findings to cash return on assets and that should be interpreted with return on equity (ROE). The average value is %9 and the correlation between the operating cash flow ratio and current ratio is 53% and significant.

Table 6. Cash Flow Ratios of Sub-Sectors

	SECTORS	Fabricated Metal Products, Machinery and Equipment		Basic Metal Industries		Non-Metallic Mineral Products		Paper and Paper Products, Printing and Publishing		Food, Beverage and Tobacco		Textile, Wearing Apparel and Leather		Chemicals, Petroleum Rubber and Plastic Products		TOTAL	
	RATIOS	Avg.	Med.	Avg.	Med.	Avg.	Med.	Avg.	Med.	Avg.	Med.	Avg.	Med.	Avg.	Med.	Avg.	Med.
CASH FLOW RATIOS	Cash Quality of Sales	4%	5%	5%	3%	**14%**	**14%**	5%	4%	3%	4%	2%	2%	6%	6%	**6%**	**6%**
	Quality of Income	1,26	0,91	2,7	0,56	1,25	**1,08**	0,56	**0,37**	-1,33	0,52	0,79	0,43	0,49	0,94	**0,87**	**0,87**
	Cash Flow to Debt Ratio	11%	9%	9%	5%	**49%**	**29%**	17%	8%	4%	6%	**4%**	**3%**	15%	13%	**18%**	**10%**
	Operating Cash Flow Ratio	0,17	0,13	0,13	0,07	**0,71**	**0,44**	0,23	0,11	0,11	0,07	0,06	0,06	0,21	0,19	**0,27**	**0,15**
	Depreciation-Amortiz.. Impact Ratio	18%	21%	19%	17%	**45%**	**35%**	71%	46%	2%	24%	34%	13%	20%	23%	**24%**	**27%**
	Cash Return on Asset	5%	5%	4%	3%	**9%**	**8%**	5%	4%	2%	3%	2%	1%	6%	7%	**5%**	**5%**
	Cash Flow on Equity	7%	10%	12%	8%	**13%**	**13%**	8%	9%	7%	8%	3%	2%	12%	13%	**9%**	**10%**
TRADITIONAL RATIOS	Current Ratio	1,64	1,48	1,48	1,28	**2,58**	**2,08**	1,92	1,40	1,41	1,36	1,64	1,39	1,82	1,54	**1,84**	**1,49**
	Acid-Test Ratio	1,08	0,99	0,88	0,82	**1,92**	**1,53**	1,44	0,98	0,94	0,93	1,01	0,79	1,30	1,08	**1,27**	**1,01**
	Cash Ratio	0,30	0,18	0,26	0,18	**0,88**	**0,45**	0,37	0,15	0,32	0,07	0,22	0,08	0,36	0,25	**0,43**	**0,20**
	Financial Leverage	60%	63%	56%	55%	**32%**	**29%**	49%	50%	56%	55%	49%	45%	53%	49%	**49%**	**49%**
	Current Liabilities / Total Liabilities	71%	71%	74%	78%	68%	72%	77%	78%	71%	74%	69%	71%	75%	78%	**72%**	**74%**
	Return on Assets (ROA)	3%	4%	1%	2%	**8%**	**7%**	1%	2%	0%	1%	1%	2%	5%	5%	**3%**	**3%**
	Return on Equity (ROE)	-2%	10%	5%	5%	**10%**	**11%**	-6%	4%	-9%	1%	0%	3%	9%	10%	**2%**	**7%**
	Net Profit Margin	3%	5%	0%	1%	**11%**	**10%**	1%	2%	-1%	1%	1%	2%	5%	5%	**4%**	**4%**

Table 7. Cash Flow Ratios for 2008-2017

	YEARS	2008		2009		2010		2011		2012		2013		2014		2015		2016		2017	
	RATIOS	**Avg.**	**Med.**	**Avg.**	**Med.**	**Avg.**	**Med.**	**Avg.**	**Med.**	**Avg.**	**Med.**	**Avg.**	**Med.**	**Avg.**	**Med.**	**Avg.**	**Med.**	**Avg.**	**Med.**	**Avg.**	**Med.**
CASH FLOW RATIOS	Cash Quality of Sales	**3%**	**4%**	**10%**	**8%**	6%	6%	**3%**	**4%**	4%	4%	4%	4%	8%	7%	**10%**	**8%**	7%	7%	6%	6%
	Quality of Income	4,31	0,78	2,91	**1,1**	0,33	0,76	0,16	**0,64**	0,73	0,84	0,77	0,81	0,43	0,95	0,42	0,97	1,16	0,94	-1,54	0,85
	Cash Flow to Debt Ratio	15%	10%	29%	**16%**	17%	10%	12%	9%	11%	9%	19%	**7%**	23%	13%	23%	13%	19%	11%	14%	10%
	Operating Cash Flow Ratio	0,22	0,15	**0,43**	**0,23**	0,27	0,13	0,18	0,11	0,16	0,14	0,28	0,09	0,33	0,16	0,34	0,21	0,3	0,17	0,19	0,14
	Depreciation-Amortiz. Impact Ratio	93%	31%	18%	28%	43%	34%	25%	20%	29%	28%	29%	28%	21%	29%	40%	21%	33%	23%	2%	24%
	Cash Return on Asset	4%	5%	**8%**	**8%**	5%	3%	2%	4%	3%	5%	4%	4%	7%	6%	7%	7%	7%	6%	5%	5%
	Cash Flow on Equity	6%	8%	**16%**	**14%**	13%	6%	1%	5%	6%	7%	3%	9%	16%	13%	13%	14%	13%	13%	14%	11%
TRADITIONAL RATIOS	Current Ratio	1,85	1,39	**2,04**	1,48	1,96	1,60	1,95	1,64	1,85	1,53	1,94	1,57	1,82	1,56	1,79	1,60	1,69	1,36	1,58	1,29
	Acid-Test Ratio	1,25	0,89	**1,41**	1,02	1,34	1,07	1,32	1,07	1,26	0,99	1,36	1,09	1,23	1,03	1,28	1,04	1,19	0,93	1,11	0,94
	Cash Ratio	0,46	0,20	**0,65**	0,31	0,52	0,23	0,45	0,18	0,39	0,23	0,40	0,25	0,37	0,19	0,43	0,21	0,33	0,13	0,30	0,15
	Financial Leverage	50%	48%	**45%**	**45%**	45%	47%	48%	48%	47%	45%	49%	50%	48%	47%	50%	46%	54%	53%	56%	56%
	Current Liabilities / Total Liabilities	75%	80%	73%	76%	72%	74%	73%	75%	74%	77%	69%	72%	70%	73%	69%	70%	69%	70%	71%	72%
	Return on Assets (ROA)	0%	2%	2%	3%	3%	3%	3%	4%	3%	3%	3%	3%	5%	4%	5%	4%	3%	2%	4%	4%
	Return on Equity (ROE)	-17%	2%	2%	5%	4%	5%	4%	8%	5%	6%	-1%	6%	6%	10%	6%	8%	-2%	7%	**10%**	**11%**
	Net Profit Margin	**-1%**	**1%**	2%	4%	4%	4%	4%	4%	4%	4%	3%	4%	6%	5%	**6%**	**6%**	3%	3%	4%	4%

5. CONCLUDING REMARKS

Although cash flow statement gains popularity and becomes the part of mandatory financial statements package in recent years, it is still behind the balance sheet or income statement when it comes to financial statement analysis. one of the biggest reasons for not The statement of cash flow provides valuable insights about a company's cash sources and uses in three main items, CFO, CFI, and CFF. While cash flow from operations plays a major role in cash flow statement, investing and financing activities are also very important to assess the profile of the firms and sectors. The purpose of this study is to calculate and interpret the cash flow ratios with the help of traditional ratios for the 107 Turkish manufacturing firms between the dates of 2008-2017. This study aims to develop benchmarks for the ratios and expand the usage of cash flow-based information. We use 8 cash flow ratios and 10 traditional ratios to determine the financial position of the firms in different sub-sectors and years in the sample period. According to the study results,

- The cash quality of sales states that firms are not good enough to generate sufficient cash to maintain activities and the average is 6%. The increase in the sales does not directly reflect to cash flows due to the managerial efficiencies.

- The quality of income is lower than 1 and the average is 0,87. This proves that earnings are not mainly the results of actual sales of goods or services but the accounting adjustments.

- According to Cash Flow to Debt Ratio that denotes how much of a firm debt could be paid off if all CFO devoted to payment of a total debt, the average is 18% and quite low. In addition, the average financial leverage ratio is 49%. External financing index ratio also supports the financial leverage with the value of 0,497.

- Operating cash flow ratio that measures the liquidity displays that Turkish firms have problems with the liquidity since the average is 18%. Although the average values of the current ratio, acid test ratio, and cash ratio are 1,84, 1,27, 0,43 respectively, the average proportion of current liabilities in total liabilities is 72%. Thus, cash-flow based ratios convey more beneficial information than traditional ratios about the liquidity as expected in the literature.

- Cash return on assets or cash flow return on equity ratios are quite consistent with ROA and ROE respectively. According to the results, it is observed that firms generally cannot use their assets and equities in a profitable way. The average values are %5 and 8% respectively.

- According to the yearly results, 2009 shows better results in terms of cash quality of sales, quality of income and operating cash flow ratios. In addition, recent years display better values from the point of profitability.

- Industry results reveal that Non-Metallic Mineral Products sector is well ahead with regards to all cash flow and traditional ratios.

The reason why the cash flow is not receiving enough attention mainly related to accounting education. Many accounting, finance and auditing textbooks include only traditional ratios and educators only emphasize them in the financial statement analysis (Yamamura and Mills, 1998). Thus, in order to increase the quality of accounting information and auditing process, cash flow-based information should play a more essential role in the accounting education process.

The study has some limitations in different aspects such as sample or period. In addition, since the usage of cash flow statement ratios is not as common as traditional ratios benchmarking and interpreting issues are still the main obstacles to overcome. However, future studies may concentrate on the improvement of the usage of the cash flow statement and develop benchmarks for financial statement analysis. Further studies may also exercise the analyses with larger datasets with different ratios for other countries.

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