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Using Financial Statements Data and Stock Market Return to Predict Real Economic Activity

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Abstract: *The main objective of this study is to examine whether the accounting profitability ratios that are used within the DuPont analysis of profitability are capable of predicting macroeconomic activities, particularly subsequent real Gross Domestic Product* ***(GDP)*** *growth. To attain this, this study investigated the relationship between accounting profitability drivers; operating profit margin and operating asset turnover, and subsequent real GDP growth. Furthermore, this study tried to compare between the prediction power of accounting profitability and that of annual stock returns to signify whether accounting data is valuable in predicting GDP. The results showed that aggregate accounting profitability drivers contain information that are useful in predicting subsequent annual GDP growth, particularly operating asset turnover and return on net operating assets as a whole. There was an insignificant relationship between operating profit margin and real GDP growth. The results also showed that using both profitability data and stock market returns would enhance the prediction power for GDP growth.*

Keywords: *DuPont Analysis of Profitability, Financial Statements, Gross Domestic Product, Macroeconomic Activities, Stock Market Return.*

1. Introduction:

Financial statements provide an extensive amount of data that can be easily accessed by all financial statements users such as investors and regulatory agencies. This data is helpful in evaluating the financial performance of firms and how management is pursuing the goals and objectives of the firm. However, analyzing financial statements by analysts could be considered a complementary part to financial disclosures by firms. The reason behind this is that analysts make data in financial statements comparable and help users evaluate the performance of firms better as well as forecasting their future performance (Palepu, Healy, and Bernard, 1997).

Information about stock returns is also considered another way to evaluate firm performance. Past stock returns are usually used to forecast future stock returns and consequently the financial performance of firms. Researchers have been assuming that there existed a correlation between analysis of financial statements data and stock market returns. The reason behind this is that both try to evaluate performance and forecast future performance as well.

Extended disputes and arguments appeared among researchers regarding how financial data and stock returns affect each other. Researchers were divided into advocates of the opinion that financial data affect stock returns and advocates of the opinion that stock returns affect financial data. Moreover, some researchers urged that financial data analysis and stock returns could be used together to forecast more comprehensive variables such as macroeconomic variables.

2. Background:

Financial statements analysis has a very important role in evaluating the performance of firms. Financial statement analysis is considered the most important part of a wider kin of analysis known as business analysis (Subramanyam and Wild, 2009). Financial statements analysis relies on systematic and organized methods to evaluate the financial performance of firms by utilizing the data found in the financial statements. In this way, financial statements analysis becomes reliable and the degree of uncertainty is decreased.

Financial analysts are in a weaker position than firms' managers regarding the amount of information they can have access to. In this way, they try to become more objective when evaluating the decisions and performance of firms by following a systematic framework for the analysis of financial statements. This framework mainly involves business strategy analysis which can be subdivided into accounting analysis, financial analysis, and prospective analysis. Another two types of analysis are used within the context of business strategy analysis which is equity analysis and credit analysis (Palepu, Healy, and Bernard, 1997; Subramanyam and Wild, 2009).

Profitability is the core goal of any firm. Profitability ratios measure the success of managers in generating value for their firms. It is important to determine the main sources and levels of profitability and to measure the impact of various profitability drivers (Subramanyam and Wild, 2009).

DuPont analysis is considered one of the types of financial statement analysis that is performed at the firm level. It mainly focuses on the analysis of profitability. The DuPont analysis of profitability decomposes return on net operating assets (RNOA thereafter) into profit margin (PM) multiplied by asset turnover (ATO). The DuPont analysis uses RNOA because it signifies the operating profitability of a firm and does not take into consideration the financial leverage. RNOA is considered the core measure of operating performance and can be used along with its drivers to forecast economic activity at the firm level (Konchitchki and Patatoukas, 2014b).

In spite of the shortcomings of accounting systems, earnings and book value offer a good reflection of much of the information in security prices. In the U.S., the combination of book value per-share and earnings explains, in a typical year, nearly two-thirds of the cross-sectional variation in stock prices. Such a finding indicates that book value and earnings provide good starting points for predicting the cash flows that should drive prices (Palepu, Healy, and Bernard, 1997).

Explaining variation in stock returns is a harder task than explaining

the variation in the level of a firm's stock prices. Researchers have had difficulty explaining more than a small fraction of the variance in stock returns over years or shorter intervals. Earnings data is the most powerful of the factors that have been studied; however, the explanatory power is relatively low (Palepu, Healy, and Bernard, 1997).

The field of macroeconomics is a wide field that studies the changes that happen in the aggregate economy of a country. There are several macroeconomic variables that governments seek to control, but these can be grouped under four main headings. These are economic growth (GDP), unemployment, the balance of payments (governments aim to provide an environment in which exports can grow without an excessive growth in imports), and inflation. In order to achieve these goals, the government may seek to control intermediate variables which include interest rates, the supply of money, taxes, government expenditure, and exchange rates (Sloman, Hinde, and Garratt, 2010).

3. Literature Review and Development of the Hypotheses:

Previous literature has extensively examined the relationship between accounting data (mainly earnings and profitability), and stock market returns, both on the firm level and on the aggregate level. One of the first pioneer studies in this area was the study of Ball and Brown (1968) who examined accounting income numbers to evaluate their information content and how timely they were. They found that more than half of the accounting information within financial statements, particularly income statement information, was deemed as a valuable source of information about firms' performance other than stock data. This information, on the other hand, was not as timely as other sources of information such as interim reports or dividends announcements.

First: The Relationship between Accounting Data and Macroeconomic Variables:

Previous studies highlighted how aggregate accounting data could be useful in predicting macroeconomic variables. For example, Basu, Markov, and Shivakumar (2010) investigated whether financial analysts incorporate inflation information when forecasting future earnings and found that financial analysts actually did not fully take into consideration inflation and its capability of predicting future earnings.

Previous literature also suggested that firms that were subject to macroeconomic events, especially unfavorable ones, were more likely to include accounting data that could predict macroeconomic variables like GDP or inflation. Hann, Ogneva , and Sapriza (2012) analyzed the forecasts produced by both financial analysts and macroeconomic forecasters and found that Financial analysts underreacted to negative real GDP forecast errors while macro forecasters do not react to negative aggregate earnings forecast revisions.

In addition, the prediction power of aggregate accounting data was underestimated by macroeconomic forecasters even though it could improve their forecasts. Hutton, Lee, and Shu (2012) investigated the significance of management forecasts and analysts' forecasts of earnings and found that management forecasts were better than

analysts' forecasts when the firm faced extraordinary events while analysts' forecasts were better when the firm faced macroeconomic factors or at the industry level. Bonsall, Bozanic, and Fischer (2013) suggested that macroeconomic information was included in management forecasts where firms that faced macroeconomic factors/events included more macroeconomic information on a timely basis. Kothari, Shivakumar, and Urcan (2013) investigated whether accounting earnings were capable of predicting inflation by showing information about future inflation. The results showed that this prediction power was ignored by both macroeconomic forecasters and bond market investors. Konchitchki and Patatoukas (2014a) investigated the ability of aggregate earnings to forecast nominal GDP growth and highlighted that aggregate earnings were capable of predicting nominal GDP more than other indicators, however, macroeconomic forecasters did not use the predictive power of aggregate earnings.

Further investigation is still needed to find whether aggregate accounting data is able to predict GDP (whether real or nominal), and the extent of this prediction power, if existed, especially in a developing country like Egypt. In this way, accounting data in financial statements could be reemployed and its value could be enriched.

From the previous literature, the first null hypothesis was evolved:

H_{01}: Accounting profitability drivers do not include information that is useful in predicting real GDP growth.

Second: The Relation between Accounting Data, Stock Returns, and Macroeconomic Variables:

Previous literature discussed a number of issues concerning the three variables of this study; aggregate profitability, stock returns, and real economic activities. The most important issue is that the three variables are highly related to each other, a matter that makes them affect and are affected by each other. Konchitchki and Patatoukas (2014b) examined the role of DuPont analysis components, aggregate profitability, and stock returns in forecasting real GDP and found that operating margin and depreciation to sales ratio were able to forecast real GDP. They also found that aggregate profitability and stock returns were able to predict real GDP better than aggregate profitability alone.

Previous literature about the association between stock returns and real GDP growth was contradicting. Shavikumar (2007) and Konchitchki (2013) found that there was no association between stock returns and news of GDP growth. However, forecasters of the macro economy incorporated stock returns data in their forecasts and were aware of their value relevance.

In contrast, those macro forecasters ignored and underestimated the value of accounting data, specifically aggregate data, when forecasting economic activities even though the results of previous literature highlighted the aggregate accounting data ability to forecast economic activities (Patatoukas, 2014b; Patatoukas, 2014c; Li, Richardson, and Tuna, 2014).

More light should be shed on the prediction power of aggregate accounting data and how they could be utilized

efficiently without incurring any extra costs.

The second null hypothesis evolved from these previous studies as follows:

H_{02}: Using both accounting profitability drivers and stock market returns would not enhance the prediction of real GDP growth.

4-Method:

4.1 Data and Sample Selection:

The main objective of this study is to measure the extent to which aggregate profitability measures of DuPont analysis are capable of predicting real macroeconomic activity. Data collected was obtained from the balance sheets and income statements of firms. The main profitability measure in DuPont analysis is return on net operating assets (RNOA) which is decomposed into operating profit margin and operating asset turnover. The multiplicative product of these two measures equals to RNOA.

Furthermore, this study aims to measure whether the predictive ability of profitability measures is incremental to that of stock market return. This necessitated the calculation of a stock return for each firm within the sample. The stock return calculated is the annual stock return. Data used for calculating annual stock return was derived from the disclosure book published by the Egyptian Stock Exchange, Kompass Egypt finance yearbook, and Mubasher Egypt electronic website (www.mubasher.info/countries/eg). Data for real macroeconomic activities is limited only to data concerning Gross Domestic Product (GDP). GDP data was derived from the World Bank economic development indicators concerning Egypt. The World Bank presented two GDP measures which are GDP per capita and GDP growth for years starting from 1999 till 2012. The study used the GDP growth annual percentage as the measure of GDP.

In order to measure the aggregate impact of profitability on macroeconomic activities, data should be gathered from all firms working within the country's economy. This could be difficult to collect due to the cost considerations and lack of the availability of a complete set of all data required. For this reason, the sample of this study included the most active one hundred firms listed in the Egyptian Stock Exchange. Listed firms represent a large part of the economy. There are changes in their economic activity that could be informative about shifts in the overall economic activity (Fama, 1981). The one hundred most active firms listed in the Egyptian Stock Exchange are found in an index called the Egyptian Exchange Index (EGX 100). The EGX 100 Index is a price index of the top 100 listed companies in terms of market capitalization. Banks and other firms providing financial services were excluded from the study due to their unique financial and capital structure and the different accounting disclosures they are required to provide.

Firms within the sample included both firms with a fiscal year ending June 30 and firms with a fiscal year ending December 31. A reason behind this is that this study is concerned with annual percentages regardless of the beginning and ending of the fiscal year. Data for EGX100 was collected for seven years from 2008 till 2014 only due to time constraints, while the number of firms

that were accepted for each year within the index ranged from 84 to 87 firms per year. The sample consisted of 593 annual firm observations from which 25 firm observations were ignored due to lack of data availability resulting in a final sample of 568 annual firm observations. Sample selection in this study is consistent with that in the study of Konchitchki and Patatoukas (2014b).

4.2 Variables Measurement:

The dependent variable of this study is GDP which is measured by the subsequent annual GDP growth percentage since the prediction is done for future periods. In this study, the profitability drivers calculated for year 2008 were used to predict GDP for 2009, and the profitability drivers for 2009 were used to predict GDP for 2010 and so on. There are three independent variables in this study, operating profit margin, operating asset turnover, and stock market return. All variables were calculated as annual figures at year-end. Annual stock market return was calculated using the holding period return equation derived by Bodie, Kane, and Marcus (2004). The calculations used for all variables are presented in Table (1).

Table (1): Calculations Used for all the Variables of the Study

Indicator	Equation
Return on Net Operating Assets (RNOA)	Profit Margin × Asset Turnover
Operating Profit Margin (PM)	Operating Income/Net Sales
Operating Asset Turnover (ATO)	Sales/Average Net Operating Assets (NOA)
Average Net Operating Assets	$\frac{\text{NOA beginning + NOA ending}}{2}$
Net Operating Assets	Operating Assets – Operating Liabilities
Operating Assets	Total Assets - Cash
Operating Liabilities	Total Liabilities – Short term Notes – Long term Debt Or Total liabilities – (Short term debt + Current portion of long term debt) – Long term debt
Holding Period Return	$\frac{\text{Ending Stock Price} - \text{Beginning Stock Price + Cash Divi}}{\text{Beginning Stock Price}}$

For each year, an average figure was calculated for the annual observations for all variables in order to measure the aggregate impact of firm profitability and annual stock returns on GDP growth and the prediction power of the independent variables. GDP growth percentage was already one annual percentage for the whole Egyptian economy derived from the World Bank statistics regarding Egypt. Annual averages for the seven years were then statistically analyzed using the Statistical Package for Social Sciences (SPSS) where the number of observations was 7 observations reflecting annual averages

for the seven years of the sampling period.

4.3 Empirical Models:

The first hypothesis in this study involved testing whether DuPont profitability drivers were capable of predicting subsequent real GDP growth. The model used to test this hypothesis was based on the model constructed by Konchitchki and Patatoukas (2014b) which is presented as follows:

$$g_{y+1} = \alpha + \beta_1 \times ATO_y + \beta_2 \times PM_y + e \quad (1)$$

Where:

g_{y+1} : Subsequent real GDP growth annual percentage at year y+1

ATO_y : Average operating asset turnover at year y

PM_y : Average operating profit margin at year y

The second hypothesis in this study tested whether DuPont profitability drivers' prediction power for real GDP is better than that of annual stock market return. It also tested whether the prediction power would increase if profitability data and stock returns were used together. This necessitated measuring the prediction power of annual stock return alone at first to be able to compare it with the overall all prediction power of all independent variables. The prediction ability of annual stock returns was tested using the following model:

$$g_{y+1} = \alpha + \beta \times ret_y + e \quad (2)$$

Where: ret_y is the average aggregate annual stock market return

Consequently, the model used to test the second hypothesis is presented as follows. Once again, this model was based on the model constructed by Konchitchki and Patatoukas (2014b).

$$g_{y+1} = \alpha + \beta_1 \times ATO_y + \beta_2 \times PM_y + \beta_3 \times ret_y + e \quad (3)$$

5- Results:

5.1 Descriptive Statistics:

Table (2) presents the descriptive statistics for the variables of the study. The average aggregate profitability for firms represented by RNOA ranged from 9.4% to almost 20% with a mean of 13% and a standard deviation of 4%. Aggregate operating profit margin for firms in EGX100 ranged from 4.5% to approximately 28% throughout the seven years of the study with a mean of 15% and a standard deviation of nearly 8%. The time-series data set showed that 25% of the firms had an operating profit margin less than 2.7% and 75% of the firms have a profit margin less than 22% with a median of 14%. Aggregate operating asset turnover for all firms ranged from 0.69 times to 1.76 times with a mean of 1.1 and a standard deviation of 0.35. The data set also showed that 25% of the firms had an operating asset turnover less than 0.79 times and that 75% of the firms had an operating asset turnover less than 1.29 times with median of 1.03. For aggregate annual stock return, the return yielded by firms ranged from -27% to 35% with a mean of 9% and a standard deviation of approximately 22%. The cross sectional data set showed that 25% of the firms had a return of less than approximately -9% while 75% of the firms had a return of less than 32.46% with a median of 12%. The annual growth percentage in the Egyptian economy fluctuated between 1.76% and 5.14% throughout the seven

years with a mean of 3.19% and a standard deviation of 1.42%.

Table (2): Descriptive Statistics of the Study

Descriptive Statistics	Return on Net Operating Assets ($RNOA$)	Operating Profit Margin (PM)	Operating Asset Turnover (ATO)	Annual Stock Market Return (ret_y)	Subsequent Real GDP Growth (g_{y+1})
Mean	0.132410	0.150629	1.097908	0.0933080	3.193086
Median	0.116043	0.144756	1.028815	0.120878	2.23
Std. Deviation	0.0409	0.08216118	0.3526624	0.2208176	1.4201306
Minimum	0.094407	0.045039	0.6905	-0.27093	1.764
Maximum	0.19808	0.281560	1.7602	0.35144	5.1472
Percentiles					
25	0.098079	0.066166	0.789471	-0.088693	2.11
75	0.175287	.0.218785	1.289283	.324612	4.673599

5.2 Correlation Analysis:

Table (3) shows pairwise correlations that were performed between profitability drivers and real GDP growth as well as between annual return and GDP growth. The primary results showed that RNOA and its drivers contain leading information about real GDP. The most significant relationships were between aggregate operating ATO and annual GDP growth as well as aggregate RNOA and annual GDP growth which are consistent with the results of Konchitchki and Patatoukas (2014b). The correlation analysis showed that the relationship between aggregate RNOA and g_{y+1} was positive, strong, and significant at the 95% confidence level. The results also showed that the relationship between aggregate operating ATO and g_{y+1} was also positive, strong, and significant at the 95% confidence level. On the contrary, the relationship between aggregate operating PM and g_{y+1} as well as ret_y and g_{y+1} was insignificant which contradicts with the results of Konchitchki and Patatoukas (2014b); Konchitchki (2013); and Patatoukas (2014b). These results showed that accounting profitability data are actually of more importance than ret_y in relation to $g_{y+1.}$ One reason behind that is the vulnerability of stock prices and their instability reflecting any news in the market which was more significant in the years following the 25th of January revolution in Egypt in year 2011. However, accounting numbers showed more stability and reliability reflecting the actual aggregate performance of firms within the Egyptian economy, a matter that adds to the value of accounting profitability data.

The regression models of this study were estimated using simple and multiple regression analyses. Table (4)

presents the models summary and Table (5) shows the coefficients and t-tests for all models.

Table (3): Pairwise Correlations

	RNOA	*ATO*	*PM*	ret_y	g_{y+1}
RNOA	1	0.686 *<0.1*	0.244 *0.422*	-0.167 *0.585*	0.819 *<0.05*
ATO	0.686 *<0.1*	1	0.200 *0.513*	-0.674 *0.012*	0.791 *<0.05*
PM	0.244 *0.422*	0.200 *0.513*	1	-0.103 *0.737*	0.057 *0.852*
ret_y	-0.167 *0.585*	-0.674 *0.012*	-0.103 *0.737*	1	-0.098 *0.751*
g_{y+1}	0.819 *<0.05*	0.791 *<0.05*	0.057 *0.852*	-0.098 *0.751*	1

5.3 Multiple Regression Analysis:

Table (4): Regression Models Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F-statistic	Significance Of Model
1	0.766	0.587	0.512	0.953388169	7.814	0.008
2	.109	.012	-0.071	1.411711704	0.144	0.711
3	0.854	0.730	0.649	0.8086603236	9.003	0.003
4	0.553	0.306	0.180	0.1921578776	2.423	0.134

For the first model that tested whether profitability drivers included information that enabled the prediction of subsequent real GDP growth, the analysis found that R^2 is equal to 0.587 which means that the model explained almost 59% of the variation in the dependent variable g_{y+1}. The overall model was significant at the 95% confidence level, rejecting the null hypothesis and accepting the alternative hypothesis which suggested that profitability drivers of DuPont analysis included information that were useful in predicting subsequent annual real GDP growth. Furthermore, the analysis related the prediction power of profitability drivers to only operating ATO at the 95% confidence level where a positive strong relationship was found between ATO and GDP. It could be statistically said that increasing aggregate operating ATO by 1 unit would increase GDP by 3.174 units, fixing all other factors at the 95% confidence level. On the contrary, the relationship between operating PM and GDP was insignificant. This result is different from the results of Konchitchki and Patatoukas (2014b) that also used DuPont analysis of profitability as the independent variable but found that operating margin and depreciation to sales ratio were able to forecast real GDP

growth, and operating asset turnover failed to predict real GDP. This contradiction in the results could be due to the difference in the nature of the countries where the analyses took place. Moreover, the study of Konchitchki and Patatoukas (2014b) used quarterly information and not annual information like this study, and the time span of their study was longer.

Table (5): Coefficients and T-tests for All Models

Model	B	Std. Error	Beta	t	Sig.
1					
Constant	0.087	0.945		0.092	0.928
Operating PM	-2.510	3.452	-0.145	-0.727	0.482
Operating ATO	3.174	0.804	0.788	3.946	0.002
2					
Constant	3.258	0.415		7.856	0.000
Annual Stock Return	-0.699	1.846	-0.109	-0.379	0.711
3					
Constant	-1.200	0.978		-1.227	0.248
Operating PM	-3.355	2.951	-0.194	-1.137	0.282
Operating ATO	4.213	0.818	1.046	5.148	0.000
Annual Stock Return	2.918	1.269	0.454	2.300	0.044
4					
Constant	0.441	0.190		2.315	0.41
Operating PM	0.290	0.696	0.108	0.416	0.685
Operating ATO	-0.356	0.162	-0.569	-2.198	0.050

For the second regression model that tested whether annual stock returns included information that could predict subsequent real GDP growth, it was found that annual stock return explained only about 1.2% of the variation in g_{y+1} and the model itself was insignificant at the 95% confidence level. This result is consistent with the results of Shavikumar (2007); Konchitchki (2011); and Konchitchki (2013) who found that there was no association between aggregate stock returns and macroeconomic variables including GDP and inflation. On the other hand, this result is contrary to what Patatoukas (2014b) found where he found a strong positive relationship between aggregate stock returns and GDP. The reason behind the result of this regression model could be that aggregate returns might not be directly linked to GDP, and this requires adding another independent variable to aggregate returns to make sure that the results will stay insignificant or will change. This is done in the next regression model.

The third regression model tested the second hypothesis of this study. It tested whether including aggregate stock

returns with aggregate profitability drivers in one model would enhance the prediction power of subsequent real GDP growth. The results showed that the aggregate profitability and aggregate returns together explain 73% of the variation in subsequent real GDP growth which signifies the strength of this regression model. The overall model was significant at the 95% confidence level, rejecting the null hypothesis and accepting the alternative hypothesis which suggested that the prediction power for g_{y+1} was enhanced when using profitability drivers of DuPont analysis and aggregate stock market returns together. The prediction power for profitability drivers alone was about 59% which was increased to 73% when disclosing stock market returns data. The significance of the model could be traced to aggregate operating ATO and aggregate stock returns where a positive strong relationship was found between each one of them and g_{y+1}. The relationship between aggregate operating PM and g_{y+1} was insignificant. The results of this model is consistent with the results of Konchitchki and Patatoukas (2014b) who found that aggregate profitability and stock returns were able to predict real GDP better than aggregate profitability alone. It is worth noting that aggregate stock returns when tested within the second model showed that the relationship with g_{y+1} was insignificant, however, a significant relationship between aggregate stock returns and g_{y+1} appeared when including aggregate stock returns with profitability drivers. This could be interpreted that the primary source of prediction of g_{y+1} was profitability information and that the prediction power of aggregate stock returns could be considered a secondary or helping variable.

An additional analysis was made to find if there existed an association between aggregate profitability drivers and stock returns as both are the independent variables of the second hypothesis. The regression model was constructed as follows:

$$ret_y = \alpha + \beta_1 \times ATO_y + \beta_2 \times PM_y + e \quad (4)$$

The regression found that aggregate profitability drivers explained about 31% of the variation in aggregate stock returns where the overall model was insignificant. There existed, however, a negative strong relationship between aggregate operating ATO and aggregate stock returns at the 95% confidence level. The result of this model was consistent with the results of Kothari, Lewellen, and Warner (2006)who found that there was a negative relationship between aggregate earnings news and stock returns on the contemporaneous level. This result was also consistent with the results of Jorgensen, Li, and Sadka (2012) who found that there was no obvious association between earnings and future stock returns. It is, however, inconsistent with Ragab and Omran (2006) who found that there was a positive significant relationship between accounting earnings level and stock returns while there was no relationship between earnings changes and stock returns. It is obvious that there was no clear agreement on the nature of the relationship between aggregate profitability and aggregate stock returns which could be attributed to the unique nature of each study as well as the conditions of the economy in which the analyses have taken place.

6- Conclusion

The present study examined the usefulness of aggregate accounting

profitability measures in predicting real macroeconomic activity. This was achieved by using the DuPont analysis of profitability whose main profitability measure was Return on Net Operating Assets (RNOA) and its profitability drivers were operating asset turnover and operating profit margin. These profitability measures were used to predict subsequent annual real GDP growth. The study used aggregate profitability measures for EGX100 firms for seven years and used the annual real GDP growth rate of the Egyptian Economy derived by the World Bank. The results showed that profitability data actually contained information that was useful in predicting real GDP growth. The major profitability measure that had the greatest prediction ability was aggregate operating asset turnover followed by RNOA; however, aggregate operating profit margin did not show strong prediction ability. Moreover, annual aggregate stock returns for the seven years of the sample were incorporated in the regression analysis to examine if there existed any increase in the prediction power for GDP and the results showed that the prediction power for both profitability measures and stock returns was enhanced. This enhancement, however, was mainly attributed to the prediction power of profitability measures rather than that of stock returns. The study showed that accounting data remains to be of much usefulness on the macroeconomic level even when previous studies showed that macroeconomic analysts did not take into consideration accounting data when forecasting macroeconomic activities.

Future research could be directed towards investigating the role of accounting information disclosed in financial statements in forecasting other macroeconomic variables such as inflation. In this way, the value of accounting information could be of more importance to macroeconomic forecasters. More research could also be directed towards the relationship between aggregate profitability information and aggregate stock returns since this relationship had not been consistent within throughout the previous research.

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