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INTERNAL AND EXTERNAL DETERMINANTS OF PROFITABILITY AND THE MEDIATING ROLE OF WORKING CAPITAL MANAGEMENT: EVIDENCE FROM EGYPTIAN NON-FINANCIAL COMPANIES LISTED ON THE EGX

Hany Galal Elassar[1], Amr Youssef[2], Karim Elfaham[3], Mrwan Amer[4]

[1]Arab Academy for Science, Technology and Maritime Transport, Alexandria, Egypt. Email: hhelassar@gmail.com
[2]Vice Dean for Academic Affairs Graduate School of Business, Arab Academy for Science, Technology and Maritime Transport, Alexandria, Egypt. Email: amraziz@aast.edu
[3]Associate Professor of Accounting and Finance Department of Finance and Accounting, College of Management and Technology, Arab Academy for Science, Technology and Maritime Transport, Email: karimfaham@aast.edu
[4]Vice Dean for Training and Community Service, Graduate School of Business, Arab Academy for Science, Technology and Maritime Transport, Alexandria, Egypt. Email: mrwan.amer@aast.edu

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Corresponding Author: Hany Galal Elassar (hhelassar@gmail.com)

ABSTRACT

This study examines how internal firm-specific factors and external macroeconomic conditions shape profitability among Egyptian non-financial companies listed on the Egyptian Exchange, with particular attention to the mediating role of working capital management. Drawing on secondary financial and macroeconomic data represented in 798 firm-year observations, researcher applies descriptive statistics, regression diagnostics, multiple regression analysis, and bootstrap-based mediation analysis. Profitability is assessed using return on assets and return on equity, while internal factors include firm size, leverage, net profit margin, total debt, and liquidity, and external factors include inflation, reserves, deposit interest rates, GDP growth, and population growth. The findings show that internal factors are more powerful predictors of profitability than macroeconomic variables. Firm size significantly improves ROA and ROE, while leverage strengthens ROE and working capital management. Working capital management has a strong direct association with profitability and mediates the internal factors-profitability relationship, showing competitive partial mediation for ROA and full mediation for ROE. By contrast, external macroeconomic factors show weak mediation effects. Analyses of sectoral and economic-condition indicate that mediation is strongest in the industrial sector and during periods of economic instability. The evidence provides practical guidance for decision-makers.

KEYWORDS: Profitability; Working Capital Management; Internal Factors; Macroeconomic Factors; Egyptian Exchange; Non-Financial Firms; Mediation Analysis.

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1. INTRODUCTION

Profitability is one of the most visible indicators of corporate health, particularly in emerging capital markets where firms contend with tight financing conditions, exchange-rate pressure, inflationary volatility, and shifting investor expectations. For Egyptian non-financial companies listed on the Egyptian Exchange (EGX), it reflects firm-level resources, financing structure, operating efficiency, liquidity discipline, and the macroeconomic environment rarely one factor in isolation. This article examines profitability through return on assets (ROA) and return on equity (ROE), treating working capital management as the short-term financial mechanism through which internal and external conditions may translate into performance outcomes (Deloof, 2003; Moussa, 2018; Ukaegbu, 2014).

The central argument is that internal factors matter more directly than macroeconomic variables because managers can actively shape asset scale, leverage, liquidity, debt exposure, and operating margins. External conditions inflation, interest rates, GDP growth, foreign reserves, population growth influence costs, demand, and credit availability, but less controllably. The empirical results bear this out: internal determinants carry clearer explanatory power, working capital management proves strategically important, and the mediation channel shifts with the profitability measure, sector, and economic conditions. For managers, investors, regulators, and policymakers, this offers evidence-based grounding for profitability decisions in Egypt's non-financial sector (Allini et al., 2018; Enqvist et al., 2014; Hussain et al., 2021).

2. LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1. Internal Firm-Specific Factors and Profitability

Firm-specific determinants of profitability are often studied in finance, accounting and strategic management as they reflect decisions that managers can directly impact. Firm size is generally related with economies of scale, bargaining strength, better access to the market and lesser frictions in funding. Larger enterprises might be in a position to spread fixed costs over higher sales volumes, negotiate better loan terms and withstand external shocks more easily than smaller ones. In the present analysis, firm size is expected to influence both ROA and ROE as asset utilization and shareholder returns are partly determined by the scale and operating capability of the firm (Barney, 1991; Goddard et al., 2005; Teece et al., 1997).

The theoretical relation between leverage and profitability is more uncertain. With trade-off thinking, debt could boost returns to shareholders if enterprises can get operating returns beyond borrowing costs. However, excessive debt could lower profitability through interest load, distress risk and reduced flexibility. The pecking-order view also implies that profitable enterprises may be less reliant on debt if internal finance is available. The results of Chapter Four are in line with this ambiguity: leverage is not a significant determinant of ROA, but it has a strong positive effect on ROE, suggesting that debt can amplify shareholders' returns even when its contribution to the profitability of assets is weaker (Frank & Goyal, 2009; Margaritis & Psillaki, 2010; Myers, 1984).

Liquidity, total debt and net profit margin are also included in the broader internal factor structure. Liquidity impacts a firm's ability to fulfill its obligations, sustain operations and avoid disruptive disruptions. Total debt indicates the overall financing load, which may influence risk and return. Net profit margin is a measure of operating efficiency and cost control, a link between sales performance and bottom-line results. The detailed coefficients are mainly reported for the firm size and leverage in the accessible Chapter Four regression tables, whereas the five internal dimensions are considered as complementing components of firm-level financial strength in the conceptual model (Almeida et al., 2004; Deloof, 2003; Pais & Gama, 2015).

2.2. External Macroeconomic Factors And Profitability

Profitability is affected by external macroeconomic factors, as they affect costs, demand, borrowing conditions, purchasing power, and the overall stability of the business environment. Inflation can lead to higher input costs and distortions in pricing decisions, while interest rates affect the cost of financing and the attractiveness of investment. But the impact may be uneven across sectors if GDP growth is not converted into company level sales or margin improvement. GDP growth may increase market demand. International reserves could be an indication of macroeconomic resilience and availability of foreign-currency but its direct impact on individual enterprises is mostly indirect and sector specific (Egbunike & Okerekeoti, 2018; Issah & Antwi, 2017).

Population growth can be viewed in two ways. On the other side, a larger population can expand the

consumer base and increase long-term demand. On the other hand, it may put more strain on infrastructure, employment, public financing and purchasing power, especially in nations where income growth is slower than demographic increase. The results in Chapter Four imply that population has a considerable negative effect on the ROE implying that demographic growth may have been associated with cost pressure, competition or demand quality which do not flow through to increased shareholder returns for the sampled firms (Issah & Antwi, 2017; Egbunike & Okerekeoti, 2018).

The research does not assume that macroeconomic effects are automatic or uniform. The impact of the same macro-economic shock on a firm can vary depending on its sector, its capital intensity, its reliance on imports, its pricing power, its financial structure and its inventory cycle. For non-financial enterprises in Egypt, inflation and interest rates may change the working capital burden by increasing the cost of replacing inventories and the opportunity cost of keeping current assets. Nevertheless, the negligible external-factor impacts in much of the empirical model imply that the internal operational discipline can have a predominant influence on broad macroeconomic movements in the available sample (Love et al., 2007; Enqvist et al., 2014; Anton & Afloarei Nucu, 2021).

2.3. Working Capital Management and Firm Profitability

Working capital management is the management of short-term assets and liabilities that sustain everyday operations. It is not only a liquidity ratio, but also how corporations fund inventory, collect receivables, pay suppliers and hold cash buffers. Efficient working capital strategies may result in improved profitability. They reduce idle funds, reduce financing costs, avoid operational disturbance and support timely production and sales. The speed and quality of working capital cycles can considerably affect business profitability, as evidenced in both classic and modern data (Deloof, 2003; García-Teruel & Martínez-Solano, 2007; Anton & Afloarei Nucu, 2021).

At the same time, the relationship between working capital and profitability might be non-linear. Too little working capital can expose organizations to stock-outs, late payments, ruined supplier relationships or liquidity problems. Too much working capital can tie up funds in inventories, receivables or idle current assets. This is why various research propose an ideal working capital level instead of a general guideline of minimization. Current results are in line with this balanced view: working capital management strongly predicts overall profitability, but the mediation path for ROA is negative, meaning that excessive or inefficient working capital can suppress the positive effect of internal resources on asset returns (Baños-Caballero et al., 2012; Baños-Caballero et al., 2014; Aktas et al., 2015).

The mediating role of working capital management is especially significant as it accounts for how business resources turn to profitability. Strong internal characteristics can lead to better access to funding, stronger negotiating power and better liquidity planning. But such benefits must pass through the operating processes that deal with current assets and current liabilities. "Being big and leveraged does not necessarily mean enduring gains without rigorous short-term financial management. Hence, this mediation logic relates corporate finance to daily operational execution (Preacher & Hayes, 2008; Altaf & Shah, 2018; Afrifa & Padachi, 2016).

2.4. Sectoral And Economic-Condition Differences

The sectoral heterogeneity is a significant issue in working capital research as industries differ in terms of inventory intensity, receivable periods, supplier bargaining power, seasonality and capital structure. Industrial enterprises frequently need a more active working capital planning because of raw materials, production cycles and credit sales. Consumer products companies may be able to move faster, but healthcare and real estate companies have different cash-flow models and asset structures. Therefore, the mediation impact of working capital management is expected to differ among sectors, instead of being constant across the non-financial market (Deloof, 2003; Pais & Gama, 2015; Anton & Afloarei Nucu, 2021).

Economic volatility also changes the significance of working capital management. During turbulent periods, financing conditions tighten, input prices change rapidly, suppliers alter payment terms, and enterprises need higher liquidity buffers. Business-cycle studies demonstrate that working capital decisions are especially important during downturns or tumultuous times since inadequate liquidity management may quickly affect operations and profitability. The findings of Chapter Four corroborate this approach by showing that the internal factors-profitability mediation through working capital management is more robust during economic instability than under stability (Enqvist et al., 2014; Love et al., 2007; Aktas et al., 2015).

2.5. Theoretical Framework

The theoretical foundation of this study combines the resource-based view, dynamic capabilities logic, capital-structure theory, and working capital theory. The resource-based view suggests that firms differ because they possess different resources and capabilities, including scale, liquidity, operating efficiency, and access to finance. Dynamic capabilities theory adds that resources produce value when firms can reconfigure them under changing environments. In this study, working capital management represents such a capability because it translates internal financial strength into operational continuity and profitability, especially when macroeconomic conditions are unstable (Barney, 1991; Teece et al., 1997; Almeida et al., 2004).

Capital-structure theory explains why leverage may affect ROA and ROE differently. Debt can discipline managers and magnify shareholder returns when investments generate returns above financing costs, but it can also weaken asset profitability when interest obligations rise or financial flexibility declines. Working capital theory completes the framework by showing that short-term financial decisions can either enhance or dilute the benefits of firm size, leverage, liquidity, total debt, and operating margins. The resulting framework treats profitability as the outcome of both strategic financial structure and day-to-day liquidity execution (Modigliani & Miller, 1958; Frank & Goyal, 2009; Baños-Caballero et al., 2014).

3. CONCEPTUAL FRAMEWORK

The conceptual framework positions internal firm-specific factors and external macroeconomic factors as exogenous determinants of profitability, with working capital management operating as a mediating mechanism. The first path assumes that internal factors influence profitability directly through scale, capital structure, liquidity capacity, and operational margins. The second path assumes that external macroeconomic factors influence profitability by shaping demand, costs, financing conditions, and investor confidence. The third path tests whether these internal and external determinants first influence working capital management and then profitability. This mediation logic is examined separately for ROA and ROE because asset-level profitability and shareholder profitability respond differently to leverage, liquidity, and short-term financing policy (Hayes, 2009; Preacher & Hayes, 2008).

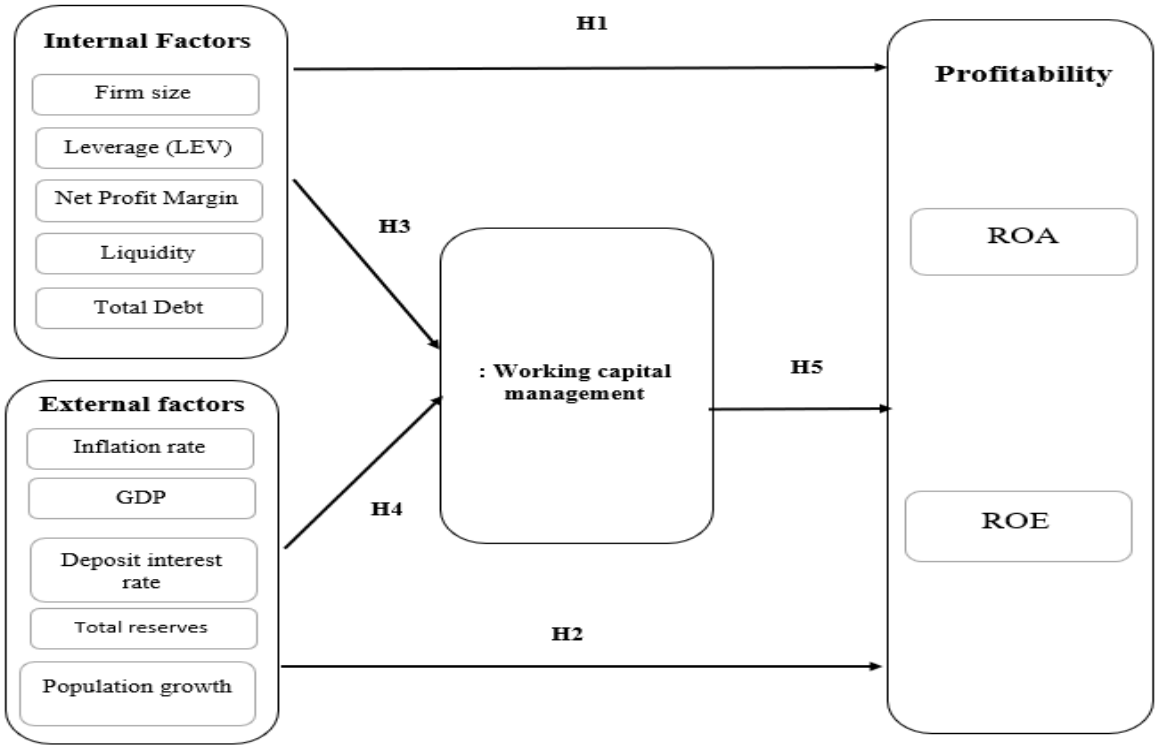


Figure 1: Conceptual Framework.

The framework also includes two sources of heterogeneity: sector and economic condition. Sectoral comparison is necessary because industrial, consumer goods, healthcare, and real estate firms do not share the same operating cycle or financing structure. Economic-condition comparison is also

necessary because stable and unstable periods can alter the value of liquidity and the cost of poor working capital decisions. Accordingly, the framework treats working capital management not as a fixed universal channel but as a context-sensitive mechanism whose strength may increase during instability and in sectors with working-capital-intensive operations (Enqvist et al., 2014; Hill et al., 2010).

4. RESEARCH PROBLEM AND QUESTIONS

Egyptian non-financial listed enterprises are working in a tough market where profitability is influenced by controlled and uncontrollable factors. Managers can impact company size strategies, leverage structure, liquidity policy, debt exposure and operating margins but cannot directly influence inflation, deposit interest rates, foreign reserve levels, GDP growth or population dynamics.

This indicates that the profitability of an organization could not be only explained by internal or external factors and the mediating effect of working capital management, in the context of the Egyptian listed-firm, is an under-researched issue (Allini et al., 2018; Ebaid, 2009; Moussa, 2018).

A second challenge relates to the measurement of performance. ROA and ROE measure various aspects of profitability. ROA assesses the efficiency of firms' asset use in generating earnings, while ROE represents returns to shareholders and is more sensitive to debt. Chapter Four's findings reveal that the determinants have different effects on the two measures: leverage is not significant for ROA but highly significant for ROE. Conclusions about profitability may be misleading if the study has used only one performance measure (Jensen & Meckling, 1976; Modigliani & Miller, 1958).

A third challenge concerns the short-term financial transmission route. Working capital management can enhance profitability by facilitating operations and lowering liquidity risk. However, excessive working capital may also consume resources and reduce returns.

The intricacy is abundantly evident from the mediation results: working capital management enhances the internal factors-ROE path but causes a competitive indirect effect on the internal factors-ROA path. Thus, the empirical question is not whether working capital management matters, but when, how and for which profitability measure it matters (Aktas et al., 2015; Baños-Caballero et al., 2014; Le, 2019).

A fourth concern is variety of situation. Operating cycles range greatly by sector, and economic volatility can impact the value of liquidity, access to financing and short-term asset management. The findings of Chapter Four show that mediation is important in the industrial sector and it is stronger in times of uncertainty. This implies that the aggregate findings of Egyptian non-financial enterprises may hide significant sectoral and temporal heterogeneity (Enqvist et al., 2014; Hill et al., 2010; Prasad et al., 2019).

Thus, the study is motivated by four research questions. RQ1 asks: To what extent does working capital management mediate the relationship between internal variables and business profitability in Egyptian non-financial listed firms?

RQ2: How does working capital management moderate the relationship between external macroeconomic factors and business profitability?

RQ3. How different is the mediating effect across sectors? RQ4. How does the mediating impact alter between periods of economic stability and instability? The questions allow the article to move beyond direct effects testing towards a more realistic mediation and contingency model of profitability (Preacher & Hayes, 2008; Anton & Afloarei Nucu, 2021).

5. RESEARCH AIM AND OBJECTIVES

This study aims to examine the impact of internal and external factors on firm's profitability and the role of working capital management in mediating these relationships among Egyptian non-financial enterprises listed on the EGX.

The aim of the study is to offer empirically grounded guidance to corporate executives, investors and policy makers on the most important profitability drivers and the sectoral and economic conditions under which the working capital channel becomes strategically relevant (Moussa, 2018; Hussain et al., 2021).

The objectives are to study the effect of internal factors on ROA and ROE. To examine the effect of macroeconomic factors on ROA and ROE. To analyze the direct impact of working capital management on profitability.

To analyze the mediating effect of working capital management between internal factors and profitability. To analyze the mediating effect of working capital management between external factors and profitability. To compare the drivers of profitability in ROA and ROE.

To make recommendations for profitability maximization through internal resource management, working capital discipline, and

adaptive responses to changing macroeconomic conditions (Aktas et al., 2015; Enqvist et al., 2014).

Table 1: Research Hypotheses.

Hypotheses	Statement	Analytical focus
H1a-H1b	Internal firm-specific factors significantly affect ROA and ROE.	Internal determinant effects
H2a-H2b	External macroeconomic factors significantly affect ROA and ROE.	External determinant effects
H3-H4	Internal and external factors significantly affect working capital management.	Antecedents of WCM
H5	Working capital management significantly affects profitability.	Direct WCM-performance effect
H6a-H6b	WCM mediates internal factors-profitability relationships for ROA and ROE.	Internal mediation
H7a-H7b	WCM mediates external factors-profitability relationships for ROA and ROE.	External mediation
H8-H9	The mediation effect differs across sectors.	Sectoral heterogeneity
H10-H11	The mediation effect differs across economic stability and instability periods.	Economic-condition heterogeneity

6. RESEARCH METHODOLOGY

The study adopts a quantitative explanatory design based on secondary financial and macroeconomic data. The empirical analysis is drawn from Chapter Four statistical outputs covering 798 firm-year observations for Egyptian non-financial listed companies. This sample size supports exploratory regression and mediation testing, but it also requires conservative interpretation, especially for subgroup comparisons across sectors and economic conditions. The analysis uses descriptive statistics, normality assessment, residual diagnostics, multiple regression, simple regression, and bootstrap-based mediation analysis (Cain et al., 2017; Hayes, 2009; Preacher & Hayes, 2008).

Profitability is measured using ROA and ROE. Internal factors are conceptually represented by firm size, firm leverage, net profit margin, total debt, and liquidity; however, the available Chapter Four regression tables report firm size and leverage as the separately tested internal predictors. External macroeconomic factors include inflation, total reserves, GDP growth, population growth, and deposit interest rate levels. Working capital management is measured through the current assets/current liabilities ratio, reflecting the firm's short-term liquidity and current obligation coverage (Richards & Laughlin, 1980; Deloof, 2003).

Preliminary diagnostics indicate that the dataset is suitable for parametric analysis. Skewness values range from -0.702 to 1.808 and kurtosis values range from -1.558 to 2.840, supporting approximate normality. The regression diagnostic plots reported in Chapter Four also show no serious violation of residual normality, linearity, or homoscedasticity assumptions. These conditions support the use of multiple regression and mediation analysis, although future journal submission would benefit from additional panel-data robustness tests and multicollinearity diagnostics (Cain et al., 2017; Hayes & Scharkow, 2013).

The mediation models are interpreted through the path logic of independent variable to mediator, mediator to outcome, direct effect, and indirect effect. Bootstrap confidence intervals are used to determine whether indirect effects are statistically significant; an indirect effect is supported when the 95% confidence interval excludes zero. Sectoral and economic-condition comparisons are treated as heterogeneity analyses designed to identify whether the strength of the mediation mechanism differs across operating environments (Hayes, 2009; Preacher & Hayes, 2008).

Table 2: Descriptive Statistics of Study Variables.

Variable	Mean	SD	Min.	Max.	Interpretive note
Firm size	14.774	2.552	10.34	23.04	Moderate dispersion in organizational scale
Leverage	0.532	0.034	0.46	0.61	Low dispersion in debt utilization
ROA	0.375	0.099	0.03	0.59	Moderate asset-profitability variation
ROE	4.460	2.923	0.04	9.35	Strong shareholder-return variation
Working capital management	4.460	2.923	0.04	9.35	Substantial variation in short-term financial position
Inflation	15.760	9.847	4.85	33.90	High macroeconomic volatility
Total reserves	33.501	9.475	19.70	52.93	Moderate external-reserve variation
GDP growth	4.058	1.416	1.76	6.59	Relatively stable growth variation
Population growth	1.964	0.264	1.57	2.34	Limited demographic variation
Interest rate	11.230	6.831	6.74	27.25	Strong monetary-policy variation

7. DISCUSSION OF STUDY RESULTS

The results of the description show a data set with a large diversity in both business level and macro-

economic variables. The size of the firms spans from 10.34 to 23.04, indicating that the sample include firms with various operating sizes and market positions. The dispersion of leverage is considerably lower, which may reflect roughly comparable patterns of debt utilization amongst the listed non-financial enterprises. Profitability is more distinctly varied, especially ROE which indicates that shareholder returns differ significantly even while the leverage ratios are generally clustered (Goddard et al., 2005; Ebaid, 2009).

The descriptive macroeconomic results suggest that the environment is turbulent. Inflation and interest rates have substantial standard deviations. GDP growth and population growth are more stable. This important because excessive inflation and interest-rate volatility can put pressure on input costs, borrowing expenses and working capital requirements. However, descriptive volatility does not necessarily imply statistically significant profitability implications. Regression results demonstrate that company performance is not equally explained by macroeconomic variables, especially when ROA is taken as the outcome (Boyd et al., 2001; Korajczyk & Levy, 2003).

The first primary empirical finding is that internal firm-specific characteristics are important for profitability. The model is significant for ROA ($F = 5.314$, $p = .007$) and explains 13.7% of variance. Firm size has a significant positive influence (beta = .346, $p = .003$), leverage is negative and insignificant (beta = -.128, $p = .265$). This shows that the profitability of assets in the Egyptian non-financial sector is more associated with scale and operational capabilities rather than with debt intensity. Larger enterprises may have a comparative advantage in translating assets into earnings because of their efficiency, market dominance and access to funding (Barney, 1991; Goddard et al., 2005).

ROE is substantially more powerful for the internal-factor model ($F = 31.632$, $p < .001$; $R^2 = .486$). Firm size is positive and significant (beta = .399, $p < .001$), while leverage is the best predictor (beta = .577, $p < .001$). This discrepancy between ROA and ROE makes sense in theory, as ROE is directly affected by the amount of equity and the utilization of borrowed money. Though debt does not increase the efficiency of assets in the same way, it can raise shareholder returns when borrowed capital delivers returns above the cost of financing (Jensen & Meckling, 1976; Modigliani & Miller, 1958).

The second significant finding is that external macroeconomic factors offer a weaker and more selective explanation of profitability. The ROA model is not statistically significant at the 5% level ($F = 2.185$, $p = .067$; $R^2 = .146$) and none of the external factors are individually significant. The ROE model is significant ($F = 8.713$, $p < .001$; $R^2 = .533$), with a substantial negative influence of population increase (beta = -.294, $p = .045$). This pattern implies that the macroeconomic determinants may be more strongly reflected in the equity-return dynamics than in the asset-utilization efficiency (Braun & Larrain, 2005; Hussain et al., 2021).

The negative effect of population growth on ROE should be read carefully. Population growth can increase long-term market demand, but it can also place strain on infrastructure, purchasing power, competition and cost structures, especially where population expansion is not accompanied by productivity development and income gains. This finding in the Egyptian context would suggest that demographic expansion does not automatically lead to better shareholder returns for listed non-financial enterprises (Boyd et al., 2001; Soukhakian and Khodakarami, 2019).

The third discovery deals with the antecedents of working capital management. Internal factors have a substantial effect on working capital management ($F = 31.632$, $p < .001$, $R^2 = .486$). Firm size and leverage both have significant favorable benefits, with leverage having the greater standardized coefficient. The finding shows that the size and debt intensity of enterprises are associated with a greater activity in managing the current asset and current liability connection. It also reflects the actual reality that loan obligations raise the significance of liquidity planning and management of short-term obligations (Hill et al., 2010; Petersen & Rajan, 1997).

Working capital management is not significantly affected by external factors ($F = .724$, $p = .608$; $R^2 = .054$). None of the macroeconomics variables have a substantial individual influence. This implies that working capital practices of sampled enterprises are more influenced by internal operational and finance structures than by direct changes in general macroeconomic indicators. In emerging economies, managers' responses to macroeconomic pressure may be indirect, via their pricing, borrowing or investment decisions, rather than via instantaneous adjustments to current asset-current liability ratios (Hussain et al., 2021; Korajczyk & Levy, 2003).

Working capital management has a strong and significant direct effect on profitability ($F = 272.190$, $p < .001$, $R^2 = .800$, beta = .894). This outcome confirms the notion that short term financial management is not only an operational routine, but a strategic profitability lever. However, this strong correlation

should be considered in conjunction with the mediation results since working capital management has the potential to improve the profitability when it is a reflection of efficient liquidity support but may weaken the profitability when it is a reflection of excessive current-asset accumulation or inefficient use of capital (Deloof, 2003; Aktas et al., 2015; Le, 2019).

The mediation analysis on ROA demonstrates a partial competitive mediation. Internal factors favorably affect working capital management (B = 1.263, p < .001), while working capital management negatively affects ROA (B = -.139, p = .005). The direct effect of internal factors on ROA is positive and significant (B = .421, p < .001) and indirect effect is negative and significant (effect = -.175; 95% CI [-.373, -.062]). This suggests that internal strength directly increases asset profitability, but some of the increase is mitigated through a working capital channel which may be over-investment in current assets or poor management of short-term resources (Baños-Caballero et al., 2014; Hayes, 2009).

The mediation study in ROE shows a significant full mediation effect with an indirect effect of .432 and a 95% confidence interval of [.272, .595]. Substantively, internal factors appear to affect shareholder profitability mainly through working capital management. This is consistent with the notion that the size and financing structure of the firm are useful to shareholders when they are converted into liquidity discipline, efficient short-term financing and enhanced current asset-current liabilities management.

However, the table reflects some extremely small or rounded standard errors in the ROE mediation model and so the result should be confirmed in the final journal version with the actual dataset (Preacher & Hayes, 2008; Hayes & Scharkow, 2013).

External mediation models are unsupported. In the model external factors do not have significant effect on working capital management, working capital management does not have significant effect on ROA and the indirect effect confidence interval contains 0 .

The indirect effect on ROE is also not significant and the given confidence interval contains zero. These results indicate that the macroeconomic indicators do not operate through working capital management in a statistically significant manner for the studied enterprises.

External pressures may also affect profitability via other channels such as pricing, exposure to exchange rates, cost of capital or sector demand (Hussain et al., 2021; Soukhakian & Khodakarami, 2019).

A sectoral analysis is one of the most interesting pieces. The mediating effect of internal factors-profitability is significant only for the industrial sector, with an indirect effect of .3956 and a 95% confidence interval [.1663, .5140] that does not include zero. Healthcare, real estate and consumer products do not exhibit considerable mediation. Theoretically, this outcome is justifiable considering that industrial firms are generally characterized by longer production cycles, inventory requirements, negotiations for supplier credit, and capital-intensive operations, which renders working capital management a more salient performance mechanism (Enqvist et al., 2014; Prasad et al., 2019).

External factors: Sectoral comparisons do not support significant mediation in any area. Indirect effects through working capital management are not important, as their bootstrap intervals contain zero, while direct effects of external factors are important in the industrial and consumer products sectors.

Thus, macroeconomic variables may directly affect profitability in some sectors, but under the present working capital measure utilized in the study, they do not appear to do so (Braun & Larrain, 2005; Hussain et al., 2021).

The analysis of economic conditions indicates that working capital management mediates the internal factors-profitability link in periods of both stability and instability, but the influence is stronger in periods of instability.

The indirect effect is from .1291 in stability to .3008 in instability. This observation is practically important as working capital management decisions become more valuable in unstable periods, because cash conservation, receivables discipline, inventory control, and management of current liabilities may determine whether internal capabilities are translated into financial performance (Enqvist et al., 2014; Hill et al., 2010).

Finally, under no economic circumstance external influences are significantly mediated by working capital management. In stable conditions the indirect effect is negative and not significant, in unstable conditions the indirect effect is close to zero.

This result supports the general conclusion that working capital management is essentially an internal transmission mechanism rather than a macroeconomic transmission mechanism in the present sample.

In the words, working capital management could be used by managers to transform business level strengths into profitability but it is not enough to convert macroeconomic conditions into superior

returns (Moussa, 2018; Prasad et al., 2019).

Table 3: Main Regression Results Summary.

Hypothesis	Relationship	Model fit	Key interpretation	Decision
H1a	Internal factors -> ROA	F = 5.314, p = .007; R^2 = .137	Firm size positive significant; leverage negative insignificant	Supported
H1b	Internal factors -> ROE	F = 31.632, p < .001; R^2 = .486	Firm size and leverage positive significant	Supported
H2a	External factors -> ROA	F = 2.185, p = .067; R^2 = .146	No individual macro variable significant	Not supported
H2b	External factors -> ROE	F = 8.713, p < .001; R^2 = .533	Population growth negative significant	Partially supported
H3	Internal factors -> WCM	F = 31.632, p < .001; R^2 = .486	Firm size and leverage positive significant	Supported
H4	External factors -> WCM	F = .724, p = .608; R^2= .054	No macroeconomic predictor significant	Not supported
H5	WCM -> profitability	F = 272.190, p < .001; R^2 = .800	WCM positive and strongly significant	Supported

Table 3: Mediation And Heterogeneity Results Summary.

Hypothesis	Mediation path	Evidence	Interpretation	Decision
H6a	Internal factors -> WCM -> ROA	Indirect = -.175; 95% CI [-.373, -.062]	Partial competitive mediation	Supported
H6b	Internal factors -> WCM -> ROE	Indirect = .432; 95% CI [.272, .595]	Full mediation	Supported
H7a	External factors -> WCM -> ROA	95% CI includes zero	No mediation	Not supported
H7b	External factors -> WCM -> ROE	95% CI includes zero	No mediation	Not supported
H8	Internal mediation across sectors	Significant only in industrial sector	Sectoral difference exists	Supported
H9	External mediation across sectors	No sector has significant indirect effect	No sectoral mediation difference	Not supported
H10	Internal mediation across economic conditions	Indirect stronger in instability (.3008) than stability (.1291)	Condition-based difference exists	Supported
H11	External mediation across economic conditions	Indirect effects insignificant in both periods	No condition-based difference	Not supported

8. RESEARCH RECOMMENDATIONS

Managers should treat working capital management as a strategic profitability tool rather than a routine liquidity function. Industrial firms in particular should strengthen receivables collection, inventory planning, supplier-credit negotiation, and short-term cash forecasting because the mediation results show that working capital management is most relevant in this sector. Firms should also avoid excessive current-asset accumulation when it weakens ROA, and should align working capital targets with sector operating cycles and economic conditions (Aktas et al., 2015; Baños-Caballero et al., 2014).

Investors should evaluate ROA and ROE separately because leverage and working capital management influence these indicators differently. A firm with high ROE may be benefiting from leverage and working capital efficiency, while asset profitability may tell a more cautious operational story. Policy makers should support listed firms during unstable periods by improving credit access, transparency, and macroeconomic predictability, because the internal factors-profitability channel becomes stronger when instability rises (Ebaid, 2009; Enqvist et al., 2014; Moussa, 2018).

9. LIMITATIONS

The study is limited by the available Chapter Four statistical output and the sample size of 798 firm-year observations. Although the internal construct is conceptually defined through firm size, leverage, net profit margin, total debt, and liquidity, the regression tables separately report firm size and leverage as internal predictors. Therefore, the article avoids unsupported coefficient-level claims for unreported internal dimensions. The subgroup tests by sector and economic condition should also be interpreted cautiously because smaller subsamples reduce statistical power (Hayes & Scharkow, 2013; Preacher & Hayes, 2008).

A second limitation concerns model specification. The analysis uses regression and mediation tests, but a journal submission would be stronger if supported by panel fixed-effects, random-effects, robust standard errors, endogeneity checks, variance inflation factors, and alternative working capital measures such as the cash conversion cycle. Some ROE mediation outputs also appear rounded or unusually exact, so the final dataset should be

rechecked before submission to ensure that scaling, coding, and collinearity issues are fully addressed (Cain et al., 2017; Prasad et al., 2019).

10. FUTURE RESEARCH

Future study should extend the sample over a longer time horizon and include other non-financial sectors listed on the EGX. A richer panel dataset would allow researchers to investigate dynamic profitability effects, lagged working capital adjustments, and firm fixed effects. Future research should additionally independently evaluate the five internal dimensions, including net profit margin, total debt and liquidity, so that the influence of each internal aspect can be isolated with more precision (Goddard et al., 2005; Le, 2019).

Moreover, future research could also examine various indicators of working capital management such as current ratio, net working capital, cash conversion cycle, receivable days, inventory days and payable days. Finally, researchers may want to explore other potential variables such as ownership structure, export intensity, exposure to exchange-rate movements, corporate governance and financial restrictions. These additions will clarify the conditions under which working capital management provides value, when it becomes costly, and how Egyptian enterprises can adjust their profitability strategies to economic uncertainty (Baños-Caballero et al., 2014; Hussain et al., 2021; Prasad et al., 2019).

11. CONCLUSION

This study provides evidence that profitability of Egyptian non-financial listed companies is driven more by internal firm-specific characteristics and working capital management than by direct macroeconomic effects. Firm size is constantly significant, leverage matters especially for ROE and working capital management and working capital management is a major mediator in the internal determinants-profitability link. The results therefore corroborate the managerial interpretation of profitability: enterprises do not control the macroeconomic volatility but they may enhance their internal resources and handle short-term financial cycles with more care (Deloof, 2003; Moussa, 2018).

The study also reveals that mediation is not uniform. Working capital management competes as a mediating factor in the association between internal variables and ROA, fully mediates the relationship between internal factors and ROE and has no relevant mediation effect over the relationship between external macroeconomic factors and profitability. Mediation effect is the strongest in the industrial sector and in the period of economic instability, confirming that working capital management is most valuable in the time of operating cycles and environmental pressure, when short-term financial decisions become more consequential (Enqvist et al., 2014; Prasad et al., 2019).

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