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Evaluating the Factors that Affect SMEs Financing Decisions

An Empirical Study on NILEX Listed SMEs in Egypt

تقييم العوامل المؤثرة على قرارات التمويل للمشروعات الصغيرة والمتوسطة

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Abstract

The objective of this thesis is to empirically investigate the firm-level factors that affect SMEs' capital structure decisions in Egypt, being one of the developing countries striving to promote SMEs for their vital role in economic growth, employment generation, enhancing competitiveness, fostering innovation and entrepreneurship. In order to achieve the research objectives, static Ordinary Least Squares (OLS) and dynamic panel system Generalized Method of Moments (GMM) were incorporated using data of 30 NILEX listed SMEs throughout the period 2009 - 2017 to assess the factors that affect the firm's capital structure like sales growth, profitability, SMEs' size, SMEs' age, industry sector, asset structure and business risk.

Results showed that SMEs profitability was the only variable that consistently showed a negative significant impact on SMEs' debt ratio using the different estimation methods, which is in accordance with the pecking order theory. SMEs' size positively affected debt ratio under OLS regression results, which is in line with the trade-off theory. Results for SMEs' size were insignificant under one-step and robust two-step system GMM methods. SMEs' age significantly and positively affected SMEs' leverage under OLS. SMEs' business risk was found to be negatively related to SMEs' financing decision under OLS regression results, but showed a positive impact on debt ratio under GMM method. Finally, the technology and real estate sectors positively affected SMEs' debt ratio under OLS. Asset structure and sales growth were insignificant to the capital structure decision of SMEs, which could be attributed to the sample employed in the study.

Keywords: SMEs, capital structure, firm-level determinants, Ordinary Least Squares (OLS), Generalized Method of Moments (GMM).

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List of Abbreviations

Abbreviation	Full Form
ANOVA	Analysis OF Variance
AR	Autoregressive
CEO	Chief Executive Officer
EBIT	Earnings Before Interest and Taxes
EC	European Communities
EGID	Egypt for Information Dissemination
FRM	Fractional Regression Model
GDP	Gross Domestic Product
GLS	Generalized Least Squares
GMM	Generalized Method of Moments
LM	Lagrange Multiplier
OECD	Organization for Economic Cooperation and Development
OLS	Ordinary Least Squares
POLS	Pooled Ordinary Least Squares
ROA	Return On Assets
S&P	Standard and Poor's
SMEs	Small and Medium-sized Enterprises
VIF	Variance Inflation Factor

Chapter One

Introduction

1.1 Introduction

The role played by small and medium-sized enterprises (SMEs) in the economic growth and development is undebatable, especially in developing countries. SMEs are also the driving force in employment generation and raising the standard of living for a huge and ever growing segment of the population. In addition, SMEs are vital for promoting exports, enhancing competitiveness and fostering innovation (Keskin, Sentürk, Sungur, and Kırış, 2010). SMEs growth has a strong positive effect on GDP growth; as it increases output and contributes to the value-added and profits generated in the economy, and thus has a tremendous effect on poverty alleviation (Gebremariam, Gebremedhin, and Jackson, 2004).

According to the Central Bank of Egypt, SMEs are companies with sales range between EGP 1 million and EGP 100 million and with less than 200 employees, while the capital of new SMEs ranges between EGP 50,000 and EGP 10 million for industrial facilities and less than EGP 5 million for non-industrial ones.

SMEs account for around 98% of all industrial facilities in Egypt, and employ around 47% of industrial sector's labor according to the Egyptian Center for Public Policy Studies. In Egypt, there are nearly 2.5 million SMEs that secure about 75% of total job opportunities and represent around 99% of the non-agricultural establishments of the private sector (El-Said & Zaki, 2013). The promotion of SMEs therefore requires special attention at local, national and international levels.

However, access to finance still represents an evident hurdle facing SMEs according to the Egyptian-banking institute. In particular, around 70% of non-OECD countries face a financing gap compared to only 30% of the OECD counterparts.

Financing SMEs in the developing countries is viewed as both risky and expensive for lenders, which results in an estimated financing gap of about one trillion USD according to the International Finance Corporation, 2011.

Consequently, it is of crucial importance to understand how, when and why SMEs seek financing sources to allow government policies to contribute to reducing SMEs financing gap necessary for promoting sustainable economic growth and development.

The main objective of this study is to thoroughly investigate the factors that affect SMEs financing decisions in Egypt. Using comprehensive data of NILEX listed SMEs; the researcher examines factors such as SMEs focus on profitability and growth, SME size, SME age, industry type, asset structure and business risk and their relationship to the SMEs financing decision.

Based on a review of SMEs determinants of capital structure and studies on SME financing decisions, such potential factors allow for modeling SMEs financing decision behavior by analyzing the demand-side determinants of SMEs financing choices. Sources of finance include internal, owner's resources (business earnings), external resources through debt, equity, and a combination of both (Alsharif, 2015).

1.2 Literature Review

The firm's optimal capital structure is one of the most puzzling issues that firms continuously face. Different capital structure theories

were developed as contingent theories attempting to explain how a firm determines its mix of debt and equity and how this affects the firm value.

Modigliani and Miller in 1958 presented their value-irrelevance proposition as the first theory on firm's capital structure and suggested that under certain assumptions that are hardly ever fulfilled in real world, capital structure is irrelevant to the value of the firm (Modigliani & Miller, 1958). Modigliani and Miller then relaxed their assumptions to account for the tax advantage of debt (Modigliani & Miller, 1963).

The Trade-Off Theory elaborated on the optimal debt to equity ratio that balances tax advantages of debt versus financial distress costs (Kraus & Lichtenberger, 1973). The Agency Theory accounted for the agency costs of debt and equity arising from the conflict of interests between different stakeholders (Jensen & Meckling, 1976). The Signaling Theory further explained how debt could serve as a positive signal to the market (Ross, 1977).

The Pecking Order Theory was developed to account for information asymmetry costs associated with each source of funds and suggested that firms follow a hierarchical order of preference, where they only issue equity as their last resort being the most expensive source in terms of information asymmetries (Myers & Majluf, 1984). Furthermore, the Free Cash Flow Theory demonstrated how debt could be employed to confine managers by reducing free cash available to them (Jensen, 1986).

Given the unique features of SMEs and their vital importance, different researches tried to assess the factors shaping SMEs' capital structure decisions in the light of the existing capital structure theories.

The positive impact of firm size on SMEs' capital structure decision was demonstrated by previous empirical studies, in conformity with the Trade-Off Theory (Bhaired and Lucey, 2010, Sherif, & Elsayed,

2013, Tongkong, 2013, Hashemi, 2013, Forte et al., 2013, Akingunola and Oyetayo, 2014, Alnajjar, 2015, Menike, 2015 and Xiang and Worthington, 2015, Nyeadi et al., 2017). Other studies concluded a negative relationship between SMEs' size and leverage, suggesting support for Pecking Order theory (Cole, 2011, Ibrahim and Marson, 2011 and Saarani, 2013).

Findings of previous empirical research showed that SMEs' age was negatively related to the capital structure decision, as predicted by the Pecking Order Theory (Cole, 2011, Forte et al., 2013, Saarani, 2013, Xiang & Worthington, 2015, Nyeadi et al., 2017), while other researchers found support for the Trade-Off Theory as SMEs' age was positively related to the debt ratio (Ampenberger et al., 2009, Sherif, & Elsayed, 2013 Menike, 2015).

Several previous empirical studies showed the positive effect of SMEs' growth on leverage, as suggested by the Pecking Order Theory (Klapper et al., 2006, Nguyen and Ramachandran, 2006, Tongkong, 2013, Xiang and Worthington, 2015, Alnajjar, 2015).

Some researchers found evidence for Pecking Order Theory as SMEs' profitability was negatively related to the firm's debt ratio (Bas et al., 2009, Pasillaki and Daskalakis, 2009, Ampenberger et al., 2009, Cole, 2011, Krasauskaite, 2011, Tongkong, 2013, Forte et al., 2013, Saarani, 2013, Alnajjar, 2015, Nyeadi et al., 2017, ElMaghawry, 2018). Whereas, others found a negative relationship between SMEs' profitability and its debt ratio and hence, support for the Trade-Off Theory (Ibrahim and Marson, 2011, Sherif, & Elsayed, 2013, Hashemi, 2013 and Akingunola & Oyetayo, 2014).

Previous studies showed that SMEs' industry sector affects SMEs' capital structure decision (Tongkong, 2013, Menike, 2015, Degryse, Goeij & Kappert, 2010, Xiang & Worthington, 2015).

Studies showed that SMEs' asset structure play a role in determining its financing decision. Positive impact of asset structure on leverage was concluded by some researchers, who found evidence for the Trade-Off Theory (Nyeadi, Banyen, & Mbawuni, 2017, Akingunola & Oyetayo, 2014, Sherif, & Elsayed, 2013, Hashemi, 2013, Cole, 2011, Klapper, Sarria-Allende, & Zaidi, 2006, Sogorb-Mira, 2005, Hall, Hutchinson & Michaelas, 2004). Whereas, others found a negative relationship between tangibility and debt ratio, in line with the Pecking Order Theory (El Maghawry, 2018, Saarani, 2013, Hashemi, 2013, Pasillaki, & Daskalakis, 2009, Bas, Muradoglu, & Phylaktis, 2009, Nguyen, & Ramachandran, 2006).

Several researches attempted to evaluate the impact of SMEs' business risk on its capital structure. Some studies found a positive impact (Nguyen and Ramachandran, 2006, Ampenberger et al., 2009, Alnajjar, 2015 and ElMaghawry, 2018). Others concluded the negative impact of business risk on debt ratio (Pasillaki and Daskalakis, 2009, Alnajjar, 2015).

1.3 Research Gap

Although there has been a growing interest, by researchers worldwide, to tap into SMEs' capital structure decisions and the major determinants influencing their financing decisions, notably, studies that were conducted seem to be country specific and cannot be objectively generalized to other countries and rendered mixed results. In addition, the unique characteristics of SMEs that shape their financing choices differ on the country level and SMEs in Egypt are still under searched to the best of my knowledge. Given the vital importance of SMEs in Egypt, examining the factors shaping their financing decisions is the foremost motive for this research.

1.4 Problem Definition

Evaluating SMEs characteristics that affect SMEs financing decisions and the factors shaping it in the light of the existing capital structure theories and the implications for NILEX SMEs in Egypt.

1.5 Research Questions

In order to achieve the research aims; we seek to address the following research questions:

- What are the main determinants shaping SMEs financing decisions in Egypt?
- How do SMEs' characteristics affect their capital structure choice?
- To what extent do the results agree with the existing capital structure theories? In addition, what are the implications for academics and decision makers in Egypt?

1.6 Research Objectives

- 1- To explore the factors affecting SMEs financing decisions for the SMEs listed in NILEX in Egypt as one of the developing countries striving to tackle its economic burdens by promoting SMEs through multiple initiatives and incentives as the Central Bank initiative to finance SMEs at 5% simple interest rate to 7% decreasing interest rate.
- 2- To generate an understanding of the domain of SMEs financing decisions in Egypt by examining the influential determinants of its capital structure and the factors shaping it in the light of the prevailing capital structure theories; Pecking order theory and Trade-off theory.
- 3- To thoroughly investigate the impact of independent variables of interest; sales growth, profitability, SME size, SME age, industry type, asset structure and business risk on SMEs capital structure decision as the dependent variable.

1.7 Research Hypotheses

In order to achieve the research objectives, the researcher develops the following hypotheses:

- H₁: SMEs business focus on growth affects SMEs financing decision
- H₂: SMEs profitability affects its financing choice
- H₃: SMEs size has an effect on SME debt/equity financing decision
- H₄: SMEs age has an impact on SME external debt/equity financing choice
- H₅: SMEs industry type affects SME financing decision
- H₆: SMEs asset structure affects SME financing decision
- H₇: SMEs business risk affects SME financing decision

1.8 Research Importance

This research contributes to the limited research on the factors shaping NILEX listed SMEs financing decisions in Egypt, being one of the countries striving to promote SMEs through multiple initiatives for their vital role in the economic growth and development.

1.9 Research Limitations

The first limitation is the data availability for SMEs, so only data from NILEX listed SMEs are used in this research. The second limitation is the choice of the independent variables as the researcher focuses on the firm-level determinants of the financing decision for SMEs.

1.10 Thesis Organization

The rest of the thesis is organized as follows: Chapter two presents the theoretical background and literature review on the capital structure theories and the determinants shaping SMEs' financing decisions and related empirical studies. It starts with reviewing the existing capital structure theories and the empirical studies on the determinants of the