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COMPETITION POLICIES AND MICRO, SMALL AND MEDIUM ENTERPRISES (MSMES) GROWTH IN DEVELOPING COUNTRIES: INCENTIVES OR BARRIERS?

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Abstract

The main aim of this paper is to examine the impact of competition policies on promoting Micro, Small and Medium Enterprises (MSMEs) in the developing countries. The business freedom index and trade freedom index are used as proxies for competition policies in different countries whereas data on the growth of SMEs are extracted from World Enterprise Surveys. Panel data analysis is mainly employed to assess the impact of competition policies on the evolvement of SMEs in the developing countries. Results show that competition does not currently support small and medium enterprises in the developing countries to grow and highlight the need to formulate more comprehensive competition policies not just laws to support MSMEs.

Keywords: Competition Policies, Micro, Small and Medium Enterprises (MSMES), Business Freedom Index, Trade Freedom Index, World Enterprise Surveys, Developing Countries

JEL Classification: C23, C55, K20, L26, M21

REKABET POLİTİKALARI VE GELİŞMEKTE OLAN ÜLKELERDE MİKRO, KÜÇÜK VE ORTAK İŞLETMELERİN (KOBİ) BÜYÜMELERİ: TEŞVİKLER VEYA ENGELLER?

Öz

Bu yazının temel amacı, rekabet politikalarının gelişmekte olan ülkelerdeki Mikro, Küçük ve Orta Ölçekli İşletmelerin teşviklerine olan etkisini incelemektir. İş özgürlüğü endeksi ve ticaret özgürlüğü endeksi, farklı ülkelerdeki rekabet politikaları için vekiller olarak kullanılırken, KOBİ'lerin büyüme verileri, Dünya İşletme Anketleri'nden çıkarılmıştır. Genel olarak panel veri analizi gelişmekte olan ülkelerdeki KOBİ'lerin gelişimi üzerine rekabet politikalarının etkisini değerlendirmek için kullanılmıştır. Sonuçlar, rekabetin gelişmekte olan ülkelerdeki küçük ve orta ölçekli işletmelerin büyümelerini desteklemediğini göstermekte ve sadece KOBİ'leri destekleyen yasaların değil, daha kapsamlı rekabet politikalarının oluşturulma gereğini vurgulamaktadır.

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Anahtar Kelimeler: Rekabet Politikaları, Mikro, Küçük ve Orta Ölçekli İşletmeler, İş Özgürlüğü Endeksi, Ticaret Serbestisi Endeksi, Dünya Kurumsal Anketleri, Gelişmekte Olan Ülkeler

JEL Sınıflaması: C23, C55, K20, L26, M21

1. Introduction

Despite of the rapid economic growth rates experienced by many developing countries in the last three decades, many have argued that these figures were not sufficient to improve people's lives in those countries. In most cases, the governments of developing countries focused more on growth without paying enough attention to creating jobs, improving equality and ensuring fair income distribution. As a result of this jobless growth, inequality has increased and even led to the unrests that swept the Arab region and ended up with toppling the ruling regimes in these countries. Governments now focus more on inclusive growth that creates more jobs and improves people's living conditions especially the poor. Micro, Small and Medium Enterprises (MSMEs) are considered to be one of the most important vehicles for creating jobs, reducing poverty and stimulating economic growth. However, in many developing countries MSMEs face several obstacles that push them into the informal sector and prevent these entities from expanding and significantly contributing to exports and economic growth.

The main aim of this paper is to examine the impact of competition policies on promoting MSMEs in the developing countries. Competition policies refer to the overall effect of governmental policies that influence economic competition in markets (Godfrey, 2008: 4). These policies should aim to prevent monopolistic actions that may hinder competition such as cartels, mergers and unilateral actions of large enterprises (White, 2008: 3). Eventually, competition should promote efficiency and is also positively linked with productivity and employment growth (Koźluk, 2009: 5). Regarding the MSMEs, competition policies ensure low market entry and exit barriers and protect these small entities from the abuse of large firms (Pardo, 2007: 9) and (Vesterdorf, 2001: 21). On the other hand, it can be argued that competition policies may lead to liberalization and market openness which may expose the MSMEs to vigorous competition from foreign and large firms. MSMEs suffer from the lack of enough competitive economic power in terms of market knowledge, innovation, proper investments and good business operations and management practices (Govori, 2013: 5). In addition, regulatory policies may sometimes have unintentional negative effects on MSMEs (Quartey, 2001: 7). The paper assesses both the positive and the negative effects of competition policies on MSMEs growth in developing countries to finally reach a balance. Moreover, the study will pay special attention to the Egyptian case. The MSMEs in Egypt constitute 99% of the non-agricultural private sector entities and create about 75% of jobs, however, they suffer many problems such as informality due to complex regulations, lack of access to finance, low

contribution to exports, concentration in specific areas and specific economic fields (El-Said, Al-Said and Zaki, 2014: 142) and (Youssef, 2014: 10-12). In its first part, the paper will discuss the role of MSMEs in economic growth from countries experiences and previous studies. Second, the paper will investigate competition policies in the developing countries and their effect on promoting or hindering MSMEs. The paper will employ a descriptive qualitative analysis technique as well as different statistical econometric regression models to study the effect of competition policies on the development of MSMEs in the developing countries. Indicators about MSMEs workforce and employment growth, sales growth, labor productivity growth, innovation and technology, and trade will be used as proxies for MSMEs growth and development. The business freedom index and trade freedom index will be used as proxies for competition policies in different countries. Data used in the analysis will come mainly from the World Enterprise Surveys of the World Bank and the Heritage Foundation (for the business freedom index and the trade freedom index). The paper will examine the situation of MSMEs and competition policies in Egypt. Last, a group of implications as well as policy recommendations for the developing countries and for Egypt are concluded.

2. Role of MSMEs in Economic Growth

The characterization of MSMEs varies by country. However, in general, there are three main criteria used to define the size of any enterprise which include the number of employees, the value of assets and/or the value of sales. Over 55% of the Gross Domestic Product (GDP) and 65% of employment in high-income countries come from Small and Medium Enterprises (SMEs). These percentages increase to 60% and 70% in low-income countries and 70% and 95% in middle-income countries respectively (OECD, 2004: 10-11). Kushnir, Mirmulstein, and Ramalho (2010) referred to data collected on MSMEs that employ up to 250 employees in 132 countries around the world. It indicated the existence of 125 million formal MSMEs worldwide employing one-third of the world's labor force out of which 89 million formal MSMEs are located in emerging economies (Kushnir, Mirmulstein, & Ramalho, 2010: 1-2). Edinburgh Group (2013) stated that the contribution of SMEs to GDP differs among countries with greater share in high-income countries (up to 51%) compared to low-income countries (about 16%) (Edinburgh Group, 2013: 7). In a recent report published by the International Labor Organization, SMEs are estimated to be between 420 and 510 million firms in the world. Between 19 and 23 million SMEs operate in the Middle East and North Africa (MENA) region representing only 4% to 6% of world SMEs compared to 44% to 46% in East Asia alone. Generally, formal and informal SMEs contribute with 60% to 70% of world GDP. In addition, enterprises that have between 5 and 99 employees share with more than half of the employment in the world economy. The size of the informal economy grows along with decreasing country income levels. Whereas representing 46.5% of the SMEs sector in low-income economies, the informal sector only represent 11% in high-income countries and 30% in lower-middle-income countries (International Labour Office, 2015: 8,15). In Sub-Saharan Arica, for example, the informal sector share in GDP ranges from 40% to 60% (Fjose, Grünfeld, & Green, 2010: 11).

A lot of studies have examined the contribution of MSMEs in different economies. Some of the studies have analyzed SMEs, while others focused on micro enterprises specifically. For instance, Harvie (2003) studied the role played by micro enterprises in poverty alleviation and recovery after the crisis that hit the Asian region in 1997-1998. It mentioned that micro enterprises offer about 50% of paid employment. Tarmidi (2005) discussed the contribution of SMEs in APEC (Asia-Pacific Economic Cooperation) countries. It estimated the number of SMEs in APEC by 6 million establishments that contributed up to 30% of the exports. In addition, Harvie (2006) was concerned with the contribution of SMEs in the economies of East Asia and APEC. The study found that SMEs contribute 50% to 60% of their GDP and 70% of new jobs in East Asia. Nagarajan (2008) focused on the economic impact of micro enterprises in Bangladesh and drew the attention towards the importance of micro enterprises in the growth of large enterprises through their various business relations. Ahmad, Ahmad, Kahut, and Murtaza (2012) discussed the importance of SMEs in Pakistan as they contribute to 30% of its GDP (Ahmad, Ahmad, Kahut, & Murtaza, 2012: 514) and Khan and Khalique (2014) highlighted the role played by SMEs in the growth of both the Malaysian and the Pakistani economies. Akugri, Bagah, and Wulifan (2015) discussed the role of SMEs in the economy of Ghana.

Beck, Demirguc-Kunt, and Levine (2005) used data collected from 45 developed and developing countries around the world to examine the impact of SMEs on growth and poverty alleviation. The study found a positive correlation but could not establish a causal relation. On the other hand, Leegwater and Shaw (2008) constructed a positive correlation and causal relation between the dominance of MSMEs in the manufacturing sector and economic growth during the period (1990-2005). Ali, Rashid, and Khan (2014) found a strong negative relation between poverty and small businesses' level of output in Pakistan. Eze and Okpala (2015) studied the impact of Nigerian SMEs on economic growth and pointed out a nonsignificant effect that might have been the result of poor infrastructure and governmental policies. International Labour Office (2015) referred to studies that analyzed the effect of the SMEs sector on economic growth and while indicating a positive causality in the developed countries of the European Union (EU), they found more robust and stronger effects of large enterprises on growth in upper-middle and high-income countries compared to the contribution of SMEs (International Labour Office, 2015: 16).

Entrepreneurship is considered to be one of the most important drivers of economic growth and that's why it is important to study the effect of the regulatory burden that might exist on MSMEs and hinder their development (Gujrati, 2013: 95). International indicators that assess this regulatory burden can be used to achieve this goal. This study will use the indicators of business freedom and trade freedom produced by the Heritage Foundation to assess the burden of regulation in the developing countries and its impact on various dimensions of SMEs development and growth through time.

3. Competition Policies and MSMEs in Developing Countries: An Empirical Analysis

Competition induces efficiency where producers offer goods and services at low prices to consumers. Competition can be viewed as one of the means to reach a solid economy with continuing and increasing growth rates (Gomaa, 2014: 195). Competition motivate innovation and creation of new goods and services or even new methods of production, in addition to limiting the power and exploitation of firms and increasing the benefits gained by consumers (Voigt, 2009: 1225). Lack of competition can put more pressures on the poor who may endure higher prices or have limited options of goods and services (OECD, 2013: 3).

Despite of that, there are two points of view regarding the effect of competition on markets. The first point of view sees that competition promotes efficiency and increases consumers' welfare. The other point of view perceives competition as a factor that may hinder innovation and growth (Gomaa, 2014: 195). In addition, what seems to be good for large enterprises might not work for MSMEs that face greater costs and more biases (OECD, 2004: 50).

A number of studies have analyzed the effect of competition policies on economic growth. Scopelliti (2009) investigated the impact of competition on economic growth in 20 OECD countries during the period (1995-2005) and the role of technology in this regard. OECD (2013) examined the interaction between competition policies as well as laws and poverty reduction. It referred to the benefits of competition on increasing the economic growth, decreasing poverty, and raising productivity and innovation levels. In addition, lack of competition and law enforcement harm the poor who won't be able to work in the market (OECD, 2013: 3). Competition also hampers corruption (Nellist, 2007: 2). The quantitative analysis of the economic effects of competition policies help assess the costs and benefits of these policies and setting their priorities (Don, Kemp, & Sinderen, 2008: 5). Gomaa (2014) used panel data analysis to study the effect of competition on the economic growth of 115 countries during the period (1995-2010) with special attention drawn to the MENA region. It found that domestic competition measured by the business freedom index as a proxy may impede growth, however when it comes to the MENA region this effect is trivial. On the other hand, the impact of international competition represented by the trade freedom index is negative but more evident for all countries including the MENA countries. The study also found that technology works in favor of gaining more benefits from foreign competition. In conclusion, the study pointed out that the negative effects of competition does not contradict with its necessity but highlights the need to address competition policies implementation and assessment.

Competition is closely related to the barriers that may prevent firms, whether national or international, from entering the market. Therefore, business freedom and trade freedom indexes, which are produced by the Heritage foundation for a large number of countries (about 186 countries around the world), can be used to measure the levels of national and international competition respectively. The business freedom index assesses the efficiency of governmental

regulations conducting businesses depending mainly on doing business data of the World Bank [1]. The trade freedom index assesses the presence or absence of barriers to international trade [2]. Both indexes range from 0 to 100 and the higher the value of each index the freer the market is and thus the greater the competition is. These two indexes were used by (Gomaa, 2014) to measure competition and the current study will follow this methodology as well to express the level of competition in the countries of interest.

Both competition and MSMEs are closely related and affect each other. Theoretically, the existence and growth of MSMEs should encourage competition and thus increase innovation and efficiency in the market (Katua, 2014: 464). Lall (2000) examined the factors that can promote the international competitiveness of SMEs especially in Egypt. OECD (2004) discussed factors that can increase the competitiveness of SMEs in the developing countries.

Indicators that measure the growth and development of MSMEs will be collected from World Enterprise Surveys of the World Bank. These surveys contain data about the economic establishments of different sizes from 135 countries and are conducted every 3 to 4 years. The data cover the period during (2005-2014) (see (World Bank, 2016)). These datasets are panel data, data collected on multiple units (countries) across time, but unequally spaced, which means that they are not all collected every period or at the same time (see (Baltagi & Wu, 1999: 814) and (Waldinger, 2014: 4)). Therefore, a panel data analysis will be conducted to measure the impact of competition on small businesses in the developing countries. The main advantage of panel data analysis is that it accounts for unobservable differences or heterogeneity about the units under analysis (Torres-Reyna, 2007: 3). Unfortunately, data of World Enterprise Surveys are limited to small and medium enterprises, therefore the effect on micro enterprises will be excluded from the analysis.

4. Model and Analysis Results

To examine the relationship between competition policies, measured on the national level by the business freedom index and internationally by the trade freedom index, and indicators on SMEs growth and development, a correlational analysis is first conducted at one point of time. The point of time chosen for this analysis is 2013 which corresponds to the most recent World Enterprise Survey conducted in Egypt. All of the developing countries for which data on SMEs are available for this year are included in the analysis. They represent countries from different parts of the world as well. Indicators on SMEs chosen to measure the growth and development of these enterprises include: percent of firms with an internationally recognized quality certification, percent of firms using technology licensed from foreign companies (these first two indicators assesses innovation and technology respectively), real annual sales growth rate, annual employment growth rate, annual labor productivity growth rate, and percent of firms exporting directly or indirectly at least 1% of their sales.

1 (Heritage foundation, 2016, http://www.heritage.org/index/business-freedom)

2 (Heritage Foundation, 2016, http://www.heritage.org/index/trade-freedom)

The correlational analysis reveals that for small enterprises there exist weak positive relations between business freedom (or national competition) and sales growth and trade freedom (or international competition) and international recognition. As for medium enterprises, there are significant, moderate, and positive relations between business freedom and both sales growth and productivity growth. There is also a significant but weak positive correlation between trade freedom and the international recognition of medium enterprises. However, this analysis is not enough and does not take into account the effect of time.

Table 1: Correlational Analysis for Small Enterprises in the Developing Countries

		recognition	license	sales	employment	productivity	export
Business freedom	**Pearson Correlation**	.157	-.034-	.340*	-.080-	.299	-.133-
	Sig. (2-tailed)	.346	.841	.039	.634	.072	.425
	N	38	38	37	38	37	38
Trade freedom	**Pearson Correlation**	.399*	.289	.208	-.094-	.277	.132
	Sig. (2-tailed)	.014	.083	.224	.579	.102	.437
	N	37	37	36	37	36	37

Table 2: Correlational Analysis for Medium Enterprises in the Developing Countries

		recognition	license	sales	employment	productivity	export
Business freedom	**Pearson Correlation**	.110	.014	.452**	-.052-	.457**	.069
	Sig. (2-tailed)	.510	.931	.007	.756	.007	.682
	N	38	38	34	38	34	38
Trade freedom	**Pearson Correlation**	.375*	.251	.278	-.110-	.302	.200
	Sig. (2-tailed)	.022	.133	.117	.517	.087	.236
	N	37	37	33	37	33	37

To investigate the effect of competition on the growth of SMEs in the developing countries, various panel models are constructed. Each model aims to measure the effect of business freedom or trade freedom on one of the five indicators chosen to assess the growth of SMEs. Moreover,

separate models are constructed for small and medium firms. Due to the different years in which World Enterprise Surveys are carried out in each country, two time points are considered in the analysis. The years of the first and last surveys conducted in each developing country are included in the analysis. The time horizon is small therefore the difference in years among countries should not impose a big problem in analysis. This also comes within the limitations of available data. To overcome the problem of endogeneity, a methodology similar to that used by Gomaa (2014) is followed where first lags of both the business freedom index and the trade freedom index are taken as the independent variables instead of the original data. This also allows for measuring the gradual effect of these indexes (*see* Gomaa, 2014: 202).

For each panel model, fixed-effects and a random-effects models are estimated and a Hausman test is conducted to determine which model is appropriate for each case. A fixed-effects model would be more suitable if the units under investigation change only a little over time, while a random-effects would be more suitable if the variables not included in the model are not correlated with variables observed and included in the model (Williams, 2016: 1,6).

The results of the significant panel models are showed in the appendices. Despite of not having a significant impact on small firms' international recognition as a measure of innovation, the trade freedom index has a positive impact on the international recognition of medium firms. As for using technology, both business freedom and trade freedom do not have a significant impact on small enterprises to adopt technology but they exert a positive impact on medium firms. What is really striking is the negative impact that business freedom has on both sales and productivity growth of small firms and the insignificant effects of trade freedom on all aspects of small enterprises' development. As for medium enterprises, both business and trade freedom indexes have significant negative impacts on employment growth and business freedom has a negative impact on exporting. This indicates the fierce national and international competition that face medium enterprises and limits its capabilities to export or hire new employees and expand.

5. MSMEs and Competition Policies in Egypt

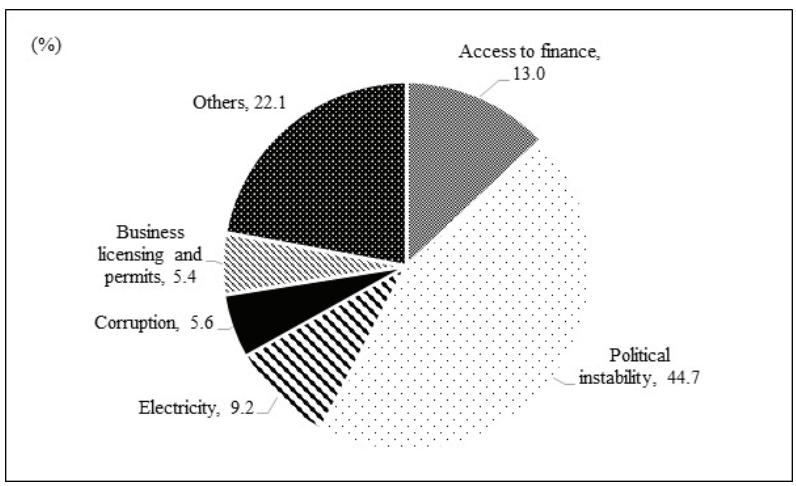
Nasr and Pearce (2012) indicated that MSMEs represent 20% to 40% of formal enterprises in the MENA region and this percentage increases to between 80% to 90% in Egypt (Nasr & Pearce, 2012: 5). Other sources state that MSMEs constitute from 86% to 97% of all formal private sector firms in Egypt. This percentage even rises to 99% taking the informal sector into consideration. The number of Egyptian MSMEs reached around 3.04 million enterprises employing 33.7% of working Egyptians and 85% of non-agricultural employment by the end of 2011. However, the contribution of MSMEs remains modest and stands at only 25% of GDP (Creative Associates International, 2014: 9-10). Moreover, estimates show that the informal sector represent 30% of Egypt's economy (El Saady, 2011: 226). According to the most recent statistics, SMEs are about 2.5 million firms in Egypt that represent 99% of the non-agricultural private sector establishments and contribute with 75% of the total employment (El-Said, Al-Said, & Zaki, 2014: 142).

Different entities and institutions in Egypt use different definitions of MSMEs. According to the Central Agency for Public Mobilization and Statistics (CAPMAS) in Egypt, a micro enterprise hires from 1 to 4 employees, a small enterprise hires from 5 to 49 employees, a medium enterprise comprises of 50 to 99 employees, and a large enterprise have 100 or more employees. This definition points out to the fact that only 1.6% of all firms in Egypt employ more than 10 staff members and the percentage even drops to just 0.2% for firms with more than 50 employees (Loewe, et al., 2013: 51-52). All of the above-mentioned figures show the crucial significance of MSMEs in Egypt and the need to support their survival and growth as well as enhancing their contribution to the Egyptian economy. Studying factors that promote or hinder MSMEs is also of great concern to Egypt.

To emphasize on the importance of MSMEs in its economy and the attention drawn by the government to support these firms, Egypt issued a law for small businesses in 2004. According to this law, the Social Fund for Development (SFD) became the main governmental entity and coordinator responsible for promoting MSMEs (Creative Associates International, 2014: 8).

Fouad (2013) and Creative Associates International (2014) referred to the main obstacles that face MSMEs in Egypt. They include: access to finance, the burden of regulations, and poor skills in all aspects of management. Loewe, et al. (2013) indicate that regulations and the control of competition are among the most hindering constraints faced by MSMEs in Egypt. Surveying the opinions of SMEs in Egypt, the study found that unfair competition and law enforcement is a crucial constraint facing them, and while others saw competition, especially from foreign firms and from the informal sector as well, others perceived competition as an incentive and motive to grow (see (Loewe, et al., 2013: 166)). The following figure shows the main obstacles faced by small firms in Egypt according to the latest World Enterprise Survey conducted in Egypt in 2013.

Figure 1: Obstacles Faced by Small Firms in Egypt



Source: Enterprise Surveys (http://www.enterprisesurveys.org/data)

The main objective of competition policies should be to protect and advance competition in the economy through two main elements: a competition or anti-trust law and a group of complementary policies that maintain a sound-functioning economy (Gomaa, 2014: 193). It is not enough to have a well-designed competition law, it needs to be supported by strong institutions and stable macroeconomic, social and political environment (UNCTAD, 2010: 3). According to Ghoneim (2002), competition policies consist of the competition law working side to side with other micro-industrial policies that tackle different issues such as tariffs, Foreign Direct Investment (FDI), and economic regulations that eliminate anti-competitive behaviors.

There is almost an agreement that developing countries should set competition policies, but on the other hand there are no clear-cut rules or criteria that determine how to design and implement these policies or how to measure and assess their benefits (Voigt, 2009: 1228). However, the developing countries suffer from the greatest distortions in competition practice (Nellist, 2007: 4). Therefore, each economy must update and design the type of competition policies that suits its circumstances and capabilities besides ensuring the independence of the delegated competition authority (UNCTAD, 2010: 4-5).

Before the issuance of the competition law in Egypt in February 2005, several scholars discussed competition in Egypt. Ali El Dean and Mohieldin (2001) pointed out that developments on both the national and international levels necessitated the issuance of a competition law in Egypt, however this law would not be enough to promote competition in Egypt. Also, Ghoneim (2002) highlighted the need for complementary main elements of a competition policy that must work with the competition law to achieve effectiveness. After introducing Law no. (3) of 2005 on the Protection of Competition and Prohibition of Monopolistic Practices, the Egyptian Competition Authority (ECA) was established to enforce the law (Egyptian Competition Authority, 2007: 50). The independence of ECA was emphasized upon significantly in 2010 and 2011 by granting this authority the right of initiating criminal actions (OECD, 2012: 3). ElFar (2014) examined the enforcement of the Egyptian competition law and the practices of the Egyptian Competition Authority (ECA) in this regard. It highlighted the development of the Authority's work and extension in new sectors. Moreover, OECD (2014) referred to the amendments introduced to the Egyptian competition law in 2014 to increase the independence of ECA and the development in its improved performance in monitoring and enforcing the law.

6. Conclusion

Results show that competition does not currently support small and medium enterprises in the developing countries to grow. International competition has no significant effect on small enterprises and even hinders medium enterprises to grow and hire more employees. As for national competition, it negatively affects small enterprises growth of sales and productivity. This might be the result of both a fierce competition from bigger national and international firms in the economy or from the informal sector. Competition also limits the ability of medium firms in

the developing economies to export and penetrate international markets. These results highlight the need to formulate more comprehensive competition policies not only laws in the developing to support MSMEs.

Some strategies can be used to increase the competitiveness of MSMEs. These strategies include: innovation that can be induced through knowledge, information technology that can be used to decrease production costs, niche strategy in which these small enterprises benefit from focusing on the small market segments they serve, networking and clustering in which these small businesses strengthen their competitiveness by establishing links together or with other large enterprises, Foreign Direct Investment and supply chain that permits MSMEs access to technology and new sources of knowledge through their linkages with large international businesses (Harvie, 2006: 26).

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Appendix 1: Summary of Significant Results of Panel Models for Small Enterprises

Table 3: Panel Model Results using Percent of Firms with an Internationally-Recognized Quality Certification (recog) as the Dependent Variable and Lagged Values of the Business Freedom Index (lagb) as the Independent Variable

recog	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
lagb	-.1445349	.0551756	-2.62	0.011	-.2547282	-.0343416
_cons	17.24737	3.302251	5.22	0.000	10.65232	23.84242
sigma_u	5.1789036					
sigma_e	6.2112337					
rho	.41010475	(fraction of variance due to u_i)				

Table 4: Panel Model Results using Real Annual Sales Growth (sales) as the Dependent Variable and Lagged Values of the Business Freedom Index (lagb) as the Independent Variable

sales	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
lagb	-.4178755	.1826818	-2.29	0.028	-.7887392	-.0470117
_cons	29.2843	10.73632	2.73	0.010	7.48842	51.08018
sigma_u	10.716592					
sigma_e	14.809279					
rho	.3436836	(fraction of variance due to u_i)				

Table 5: Panel Model Results using Annual labor productivity growth (prod) as the Dependent Variable and Lagged Values of the Business Freedom Index (lagb) as the Independent Variable

prod	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
lagb	-.4343971	.1628687	-2.67	0.012	-.765386	-.1034082
_cons	26.25877	9.598476	2.74	0.010	6.752318	45.76522
sigma_u	10.366797					
sigma_e	13.203109					
rho	.38138152	(fraction of variance due to u_i)				

Appendix 2: Summary of Significant Results of Panel Models for Medium Enterprises

Table 6: Panel Model Results using Percent of Firms with an Internationally-Recognized Quality Certification (recog) as the Dependent Variable and Lagged Values of the Trade Freedom Index (lagt) as the Independent Variable

recog	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
lagt	.1809548	.0719451	2.52	0.012	.0399449	.3219646
_cons	7.490589	5.163942	1.45	0.147	-2.630551	17.61173
sigma_u	3.1112025					
sigma_e	10.095608					
rho	.08673391	(fraction of variance due to u_i)				

Table 7: Panel Model Results using Percent of Firms with an Internationally-Recognized Quality Certification (recog) as the Dependent Variable and Lagged Values of the Business Freedom Index (lagb) as the Independent Variable

recog	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
lagb	.2662697	.0768721	3.46	0.001	.1156031	.4169362
_cons	5.026712	4.62484	1.09	0.277	-4.037807	14.09123
sigma_u	5.5839902					
sigma_e	9.4265024					
rho	.25975487	(fraction of variance due to u_i)				

Table 8: Panel Model Results using Percent of Firms using Technology Licensed from Foreign Companies (licensed) as the Dependent Variable and Lagged Values of the Business Freedom Index (lagb) as the Independent Variable

licensed	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
lagb	.1616017	.0718132	2.25	0.024	.0208504	.302353
_cons	6.316509	4.360697	1.45	0.147	-2.230301	14.86332
sigma_u	0					
sigma_e	10.656598					
rho	0	(fraction of variance due to u_i)				

Table 9: Panel Model Results using Percent of Firms using Technology Licensed from Foreign Companies (licensed) as the Dependent Variable and Lagged Values of the Trade Freedom Index (lagt) as the Independent Variable

licensed	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
lagt	.2119447	.0694987	3.05	0.002	.0757297	.3481597
_cons	1.057271	4.961086	0.21	0.831	-8.666278	10.78082
sigma_u	0					
sigma_e	10.799184					
rho	0	(fraction of variance due to u_i)				

Table 10: Panel Model Results using Annual Employment Growth (employ) as the Dependent Variable and Lagged Values of the Business Freedom Index (lagb) as the Independent Variable

employ	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
lagb	-.0633143	.0368606	-1.72	0.086	-.1355597	.0089311
_cons	10.63879	2.285157	4.66	0.000	6.159963	15.11761
sigma_u	2.3525892					
sigma_e	3.9653746					
rho	.26034665	(fraction of variance due to u_i)				

Table 11: Panel Model Results using Annual Employment Growth (employ) as the Dependent Variable and Lagged Values of the Trade Freedom Index (lagt) as the Independent Variable

employ	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
lagt	-.0831036	.0354825	-2.34	0.019	-.1526479	-.0135592
_cons	12.62058	2.573541	4.90	0.000	7.576536	17.66463
sigma_u	2.0788098					
sigma_e	3.9533161					
rho	.21661233	(fraction of variance due to u_i)				

Table 12: Panel Model Results using Percent of Firms Exporting Directly or Indirectly (At Least 1% of Sales) (export) as the Dependent Variable and Lagged Values of the Business Freedom Index (lagb) as the Independent Variable

export	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
lagb	-.2749413	.1193931	-2.30	0.024	-.5133173	-.0365652
_cons	38.28551	7.029152	5.45	0.000	24.25136	52.31967
sigma_u	12.458117					
sigma_e	8.9592029					
rho	.65912159	(fraction of variance due to u_i)				