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Foreign Direct Investment, Business Start-up Regulations, and Entrepreneurship in Africa

Jonathan Munemo
Salisbury University

Abstract

This paper investigates how foreign direct investment (FDI) and its interaction with business start-up regulations affect entrepreneurship in a sample of African countries. Preliminary findings obtained from longitudinal data analysis suggest that the complementarity between FDI and entrepreneurship (measured by new business creation) significantly depends on the existing regulatory environment for business startups. More specifically, the results show that FDI significantly crowds-in new domestic firms when business start-up regulations are lower. In other words, excessive startup regulations are inefficient, and thus dissuade new firm creation by increasing the costs of doing business and impeding the crowding-in effect from FDI in domestic product and labor markets, as well as in foreign markets. From a policy standpoint, reforms to establish the level of regulation that is most beneficial for the successful entry of new local firms can therefore play a critical role in enhancing the complementarity between foreign and domestic enterprises. These reforms will not only increase the entry of new domestic firms, but will also generate positive externalities from FDI which arise from transmission of new ideas, entrepreneurial skills, and other knowledge transfers and lead to higher productivity and growth.

Associate Professor of Economics and Director of Global Programs in the Perdue School of Business, Salisbury University, 1101 Camden Ave., Salisbury, MD 21801, USA. E-mail: jxmunemo@salisbury.edu.
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1. Introduction

New business creation is a salient feature of the entrepreneurial process, and many studies have in fact demonstrated the positive effects of new firm creation on growth and development. As noted by Klapper *et al.* (2006) and Djankov *et al.* (2002), entering firms generally tend to be more efficient, and the competitive pressure that they exert on other firms enhances productivity and economic growth. Earlier studies by Black and Strahan (2002) and Hause and Du Rietz (1984), among others, have also shown that entrepreneurship has a positive impact on economic growth. In addition, some studies have also shown that start-ups and young businesses contribute more to job creation than more mature firms (Haltiwanger *et al.*, 2010).

Success in stimulating new local enterprises and entrepreneurship has been linked to the crowding-in effect of foreign direct investment (FDI) by multinational corporations (MNCs). This crowding-in effect results from the diffusion of superior technology and transmission of new ideas and skills through various mechanisms (see for example Keller, 2004; Ayyagari and Kosova, 2010; and Danakol *et al.* 2013) which include the entry of domestic firms as new suppliers (backward linkages) or customers (forward linkages) of foreign firms, particularly in vertically related industries where they are less likely to be perceived as potential competitors of foreign firms. In addition to these backward and forward linkages, another mechanism for knowledge diffusion is through a demonstration effect, whereby new domestic firms can enter the same industry by adopting practices similar to those introduced by foreign firms. Labor mobility is another mechanism for the diffusion of entrepreneurial skills from local workers trained and employed by foreign firms. Equipped with these superior skills, workers can establish businesses of their own when they cease to be employees of foreign firms. Finally, the fact that a majority of foreign owned firms export their products can also stimulate local firm entry by opening up export opportunities which local entrepreneurs can exploit using export channels already established by the foreign enterprises.

There is a risk however that an inflow of FDI may also have a crowding-out effect on entrepreneurship if it competes with domestic producers and raises technological barriers to entry. This effect is likely to be horizontal in nature, since the threat of competition is much higher from domestic firms operating in the same industry. Entry barriers for local firms can also arise when foreign firms increase average fixed costs. Another avenue through which foreign enterprises crowd out new local firms is by providing better working conditions and higher wages than domestic competitors. As a result, the most talented workers may end up working in foreign firms instead of utilizing their skills to establish their own firms. In addition, FDI may also fail to generate other positive externalities that would improve the productivity of domestically owned firms or stimulate the entry of new entrepreneurs.

The overall effect of MNCs on entrepreneurship in a host economy therefore depends on which of these two opposing forces dominates. At the same time, it is also important to keep in mind that the crowding-in effect of FDI may ultimately depend on local conditions which affect a host country's absorptive capacity (i.e. capacity to harness positive spillovers from FDI). In particular, the prevailing domestic regulatory environment for business start-ups is regarded as one of the most important local conditions. For example, Busse and Groizard (2008) find that in general, countries with restrictive regulations do not fully exploit the growth benefits from FDI, and that regulations affecting firm entry in particular seem to matter more for achieving these growth benefits. There is also strong evidence which shows that bureaucratic business start-up regulations can make entry costly and thus directly impede new firm creation (see for example

Klapper *et al.* 2006), and as such any technology and knowledge spillovers from FDI that would otherwise crowd-in investment by encouraging the entry of new firms will not be realized, and the crowding-in effect of FDI will be reduced. This study uses longitudinal/panel data over the period 2004 to 2012 to investigate the effect of FDI on entrepreneurship in Africa. In doing so, the paper also explores the interaction between FDI and the existing domestic regulatory environment for business start-ups, in light of the evidence which has demonstrated that business start-up regulations play an important role in determining the benefits from FDI in the host economy. The paper focuses on Africa because it is the only region in the world where the cost of completing start-up regulations to register a business is highest. As shown in Figure 1, the cost of business start-up regulations in Sub-Saharan Africa (SSA) is on average more than double the cost in other regions. Thus, understanding the manner in which absorptive capacity is impacted by such a regulatory environment is very important for designing policy reforms which would foster technology and knowledge spillovers from FDI, and thereby crowd-in investment by encouraging the entry of new firms.

The paper's preliminary findings suggest that the complementarity between FDI and the entrepreneurial activity of new domestic firms in the sample of African countries significantly depends on the existing regulatory environment for business start-ups. More specifically, the results show that FDI significantly crowds-in new local firms when business start-up regulations are lower. In other words, excessive startup regulations in these African countries are inefficient, and thus dissuade new firm entry by increasing the costs of doing business and impeding the crowding-in effect of FDI in domestic product and labor markets, as well as in foreign markets. From a policy standpoint, reforms to establish the level of regulation that is most beneficial for the successful entry of new local firms can therefore play a critical role in enhancing the complementarity between foreign and domestic enterprises. These reforms will not only increase the entry of new domestic firms, but will also generate positive externalities from FDI which arise from transmission of new ideas, entrepreneurial skills, and other knowledge transfers and lead to higher productivity and growth. The results also reveal the positive impacts that a good governance system and economic development can have on the establishment of domestic firms.

This study and its findings relates to the empirical literature examining the crowding-in and/or crowding-out effects of FDI and the relatively more recent empirical literature on business entry regulations and entrepreneurship that has emerged since the World Bank, Doing Business project began publishing data on business regulations in 2004. The paper makes a central contribution by linking both strands of this literature to investigate the relationship between FDI, business start-up regulations, and entrepreneurial activity of new firms. Additionally, the paper also makes a separate contribution to the existing literature on the crowding-in /out effects of FDI. In this literature, crowding-in/out effects primarily depend on how FDI affects total domestic investment. This approach does not address the issue of crowding-in or out of new firms since investment by established firms is the major source of total domestic investment. Moreover, this approach cannot be used to conduct separate analysis of the effects of FDI on new firms due to unavailability of disaggregated data on domestic investment. This study overcomes this problem by using the number of newly created firms to provide evidence on the relationship between FDI and investment by new firms.

The reminder of this paper proceeds as follows. Section 2 gives an overview of the data and lays out the empirical strategy. The results of the empirical analysis are discussed in section 3, and conclusions of the paper are provided in section 4.

2. Data and Empirical Approach

In this study, entrepreneurship is measured by the number of newly registered firms with limited liability in the formal sector. Data on the number of newly created firms was collected from the Doing Business website (www.doingbusiness.org). With the exception of a few countries like Botswana, Mauritius, and South Africa, new business density (the number of newly registered companies with limited liability per 1,000 working-age population (ages 15-64)) is quite low in many African countries, as shown in Figure 2. Firms that re-register give a distorted view of entrepreneurship and are therefore excluded. The informal sector, which is an important component of entrepreneurship in many developing countries, is also excluded due to unavailability of data on the number of firms operating in the informal sector. Other types of formal businesses such as partnerships and sole proprietorships are also not included because differences with respect to their definition and regulation make cross-country comparisons difficult.

Following the previous literature (see for example Djankov *et al.* (2002) and the World Bank (2004)), the number of procedures to register a business and the time (in days) required to start a business are used as measures of business startup regulations. Data on these two measures was also collected from the Doing Business website. The data from the Doing Business project was then combined with data on FDI, governance, and real GDP per capita from the World Bank's African Development Indicators (ADI) databank. FDI is measured by total net inflows of investment (including equity capital, reinvestment of earnings, other long-term capital, and short-term capital) to acquire 10% or more of a firm in the host nation. The level of development is measured by real GDP per capita. Governance is measured along six dimensions-- control of corruption, government effectiveness, political stability, regulatory quality, rule of law, and voice & accountability. These six governance indicators are measured on a scale ranging from -2.5 to 2.5, with higher values corresponding to better outcomes, and the average of the six indicators is used in the estimation. The data on measures of entrepreneurship and start-up regulations is available starting in 2004. As a result, the dataset used in the analysis covers the period 2004 to 2012 (the most recent year with data on most of the variables) for a sample of 26 African countries (see Table I). Definitions and summary statistics of the data are shown in Table II.

To examine more precisely the effect that FDI and its interaction with the entry regulatory environment has on entrepreneurship in Africa, a panel data model was estimated for the sample countries using annual data for the period 2004 to 2012. The benchmark model specification is as follows:

$$NewBus_{it} = \beta_1 FDI_{it} + \beta_2 StartupReg_{it} + \beta_3 FDI_{it} * StartupReg_{it} + \beta_4 Governace_{it} + \beta_5 GDP\ per\ capita_{it} + \alpha_i + \lambda_t + \varepsilon_{it}, \quad (1)$$

where subscripts i and t represent country and time respectively. Two measures of entrepreneurship ($NewBus$) are used as the dependent variable: new firms and new firms per capita. The focal independent variables are FDI, business start-up regulations ($StartupReg$) and the interaction term ($FDI * StartupReg$). In addition to these variables of main interest, other country level factors that could affect new business creation are also included as control variables. These include the level of development (measured by real GDP per capita) and the governance measures. Previous studies including Munemo (2012), Klapper *et al*. (2010, 2006), and Djankov *et al.* (2010) have also used these country measures as predictors of entrepreneurial

activity. The estimation strategy also takes into account country fixed effects (α_i) and time fixed effects (λ_t). Country fixed effects control for unobserved time-invariant differences between countries that affect new business formation in the country, while time fixed effects control for unobserved time varying factors that might affect new business creation in all countries. The variable ε_{it} is the disturbance term.

3. Preliminary Findings

3.1. Benchmark Results

Equation (1) was estimated using the longitudinal data that was collected over the period 2004 to 2012 for 26 African countries, and the results are reported in Table III. To ensure robustness of the results, two specifications are used in the estimation. In the first specification estimated using OLS, the dependent variable is the natural log of the number of newly registered firms per capita, and the results are shown in columns (1) and (3). The second specification uses the number of newly registered firms as the dependent variable, and is therefore estimated as a Poisson regression model by maximum likelihood, and the results are shown in columns (2) and (4). Robust standard errors (shown in parentheses) are used in the estimation of all specifications.

From the results, FDI has a positive impact on both measures of entrepreneurship, and the estimated coefficient on FDI is statistically significant in columns (2), (3), and (4). Turning to business start-up regulations, the estimated coefficient on startup procedures is negative and statistically significant in column (1). This implies that lengthy and cumbersome procedures to register a business significantly impede new firm creation per capita. Also, time consuming procedures to legally operate a business have a dampening effect on entrepreneurship, as shown in the last two columns. More importantly, the coefficient of the interaction term is negative and statistically significant in three of the estimations, implying that FDI yields a higher increase in entrepreneurship when bureaucratic entry regulations are fewer and have lower opportunity cost in terms of the time it takes to complete them.

The institutional or governance environment is another important element that clearly affects entrepreneurship. For example, an effective government that is free from political influence or corruption lowers the costs of doing business, thereby encouraging the entry of new firms. Not surprisingly, the estimated coefficient on governance is positive and statistically significant in all estimations, implying that on average, strengthening the six dimensions of good governance (control of corruption, government effectiveness, political stability, regulatory quality, rule of law, and voice & accountability) has a significant positive impact on new firm creation. We would also expect an increase in economic development to be accompanied by greater opportunities for new business start-ups. Not surprisingly, the estimated coefficient on a country's level of development (measured by real GDP per capita) is positive and also statistically significant in columns (2) and (4).

3.2. GMM Results

There is a possibility that FDI is endogenous, either due to reverse causality or because of variables omitted from the model that explain both FDI inflows and firm creation. The same problem could also affect some of the other explanatory variables included in equation (1). To address this problem of potential endogeneity of FDI and some of the variables used to explain firm creation, a dynamic version of equation (1) is estimated using generalized method of moments (GMM), which is a consistent estimator for the parameters of a model in the presence

of endogenous covariates. The GMM estimator is also designed for panel datasets with a shorter time dimension and a larger country dimension such as the one used in this study. GDP per capita is treated as an exogenous variable, while the remaining covariates are treated as endogenous variables. Only the third lag of the endogenous variables is used as instruments. Given the small number of countries in the sample, using a larger number of instruments would weaken the Sargan and Hansen tests of over-identifying restrictions (Roodman, 2009a), and in addition, using deeper lags would further reduce the sample size.

It is well known that difference GMM suffers from weak instruments. Therefore the two-step system GMM is performed. However, there is still the problem that application of GMM estimators leads to instrument proliferation, which in the case of system GMM, also weakens the Hansen test of instrument validity. To limit the number of instruments generated in system GMM and avoid bias in the results, the two-step GMM is performed using collapsed instruments, following Roodman (2009b), who describes in detail how this technique can be implemented. As before, business startup regulations are measured by startup procedures and by startup time. The results are shown in Table IV. Columns (1) and (2) show results using third lag instruments only, and the reported instrument count is quite high in both estimations. As a result, the Sargan test of instrument validity shown in the bottom panel of Table IV is seriously weakened, which brings into question the validity of the results in these two columns.

Implementing the collapsing technique reduces the instrument count from 60 in column (1) to 12 in column(3) and from 59 in column (2) to 11 in column (4), and both the Sargan and Hansen tests now support the null hypothesis that the over-identifying restrictions are valid. Based on these results, FDI has a positive and statistically significant effect on firm creation in both estimations, and it significantly reduces firm entry in the presence of excessive startup procedures and long delays in starting a business. Good governance has a favorable impact on firm entry as expected, and its estimated coefficient is statistically significant as well in column (3). The results also show evidence of dynamic gains from measures to improve firm entry-- the estimated coefficient on the lagged dependent variable is positive and statistically significant. It is also worth noting that the value of the test for second order autocorrelation in Table IV provides evidence in favor of the null hypothesis of zero autocorrelation and no model misspecification.

4. Summary and Implications

This paper sought to examine how FDI and its interaction with business start-up regulations affect the formation of new domestic firms in a sample of African countries. The paper's preliminary findings obtained from longitudinal data analysis suggest that the complementarity between FDI and entrepreneurial activity of new domestic firms significantly depends on the existing regulatory environment for business startups. More specifically, the results show that FDI significantly crowds-in new domestic firms when business start-up regulations are lower. In other words, excessive startup regulations in the African countries are inefficient, and thus dissuade new firm creation by increasing the costs of doing business and impeding the crowding-in effect of FDI in domestic product and labor markets, as well as in foreign markets. From a policy standpoint, reforms to establish the level of regulation that is most beneficial for the successful entry of new local firms can therefore play a critical role in enhancing the complementarity between foreign and domestic enterprises. These reforms will not only increase the entry of new domestic firms, but will also generate positive externalities from FDI which

arise from transmission of new ideas, entrepreneurial skills, and other knowledge transfers and lead to higher productivity and growth. The results also reveal the positive impacts that a good governance system and economic development can have on the establishment of domestic firms.

The data on entrepreneurship is limited to newly established firms in the formal sector. This implies that the results of this study may not be applicable in countries where the informal sector is an important component of entrepreneurship. This problem is not easy to address, given that data is unavailable on the number of firms operating in the informal sector. In spite of this limitation, the paper does make a contribution to the empirical literature examining the crowding-in and/or crowding-out effects of FDI, and to the relatively more recent empirical literature on business entry regulations and entrepreneurship.

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Table I: List of 26 countries in the Sample

Algeria (DZA)	Morocco (MAR)
Botswana (BWA)	Namibia (NAM)
Burkina Faso (BFA)	Niger (NER)
Congo, Dem. Rep. (ZAR)	Nigeria (NGA)
Ethiopia (ETH)	Rwanda (RWA)
Gabon (GAB)	Sao Tome and Principe (STP)
Ghana (GHA)	Senegal (SEN)
Guinea (GIN)	Sierra Leone (SLE)
Kenya (KEN)	South Africa (ZAF)
Lesotho (LSO)	Togo (TGO)
Madagascar (MDG)	Tunisia (TUN)
Malawi (MWI)	Uganda (UGA)
Mauritius (MUS)	Zambia (ZMB)

Table II: Definitions and Summary Statistics

Variable	Obs.	Description	Mean	Standard Deviation
New firms per capita	172	The number of newly registered companies with limited liability divided by population	1000.55	1695.56
New Firms	192	The number of newly registered companies with limited liability	17486.63	48971.93
Start-up procedures	488	Number of procedures to register a business	9.74	3.16
Start-up time	488	The number of calendar days needed to complete the procedures to legally operate a business	47.47	42.74
FDI	617	Foreign direct investment, net inflows (% of GDP)	4.98	8.19
Governance*	583	Average of six governance indicators (control of corruption, government effectiveness, political stability, regulatory quality, rule of law, and voice and accountability)*	-0.66	0.61
GDP per capita	607	GDP per capita, PPP (constant 2005 international $)	3564.24	5031.81

*Voice and accountability captures perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media. Political Stability and Absence of Violence/Terrorism measures perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism. Government effectiveness captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. Regulatory quality captures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development. Rule of law captures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence. Control of Corruption: the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests.

Source: World Bank, Worldwide Governance Indicators.

Table III: Benchmark Results

VARIABLES	(1) Log new firms per capita	(2) New firms	(3) Log new firms per capita	(4) New firms
Startup procedures	-0.138***	0.049		
	(0.049)	(0.058)		
Startup time			-0.002	-0.002
			(0.005)	(0.008)
FDI	0.031	0.182***	0.019*	0.069**
	(0.019)	(0.054)	(0.010)	(0.029)
Startup procedures*FDI	-0.005**	-0.017***		
	(0.002)	(0.006)		
Startup time*FDI			-0.000*	-0.001
			(0.000)	(0.001)
Governance	1.302***	1.327**	1.658**	1.561***
	(0.306)	(0.568)	(0.731)	(0.590)
GDP per capita	0.0002	0.0004***	0.0003	0.0003***
	(0.000)	(0.000)	(0.000)	(0.000)
Constant	6.656		5.157	
	(0.901)		(0.852)	
Observations	164	162	164	162
R-squared	0.480		0.246	
Number of countries	26	24	26	24
#obs	164	162	164	162

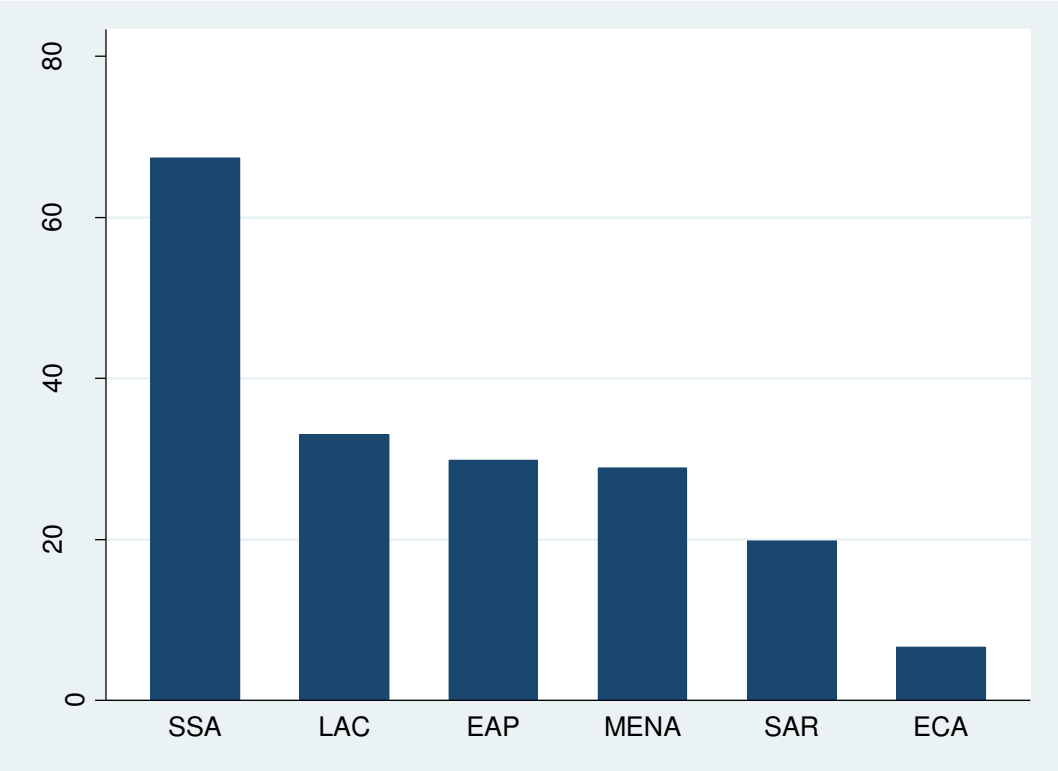
Robust standard errors in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

Table IV: Dynamic Panel Data Estimation (Two-Step System GMM)

VARIABLES	(1) Third-lag instruments only	(2) Third-lag instruments only	(3) Collapsed third-lag instruments	(4) Collapsed third-lag instruments
FDI	0.159*	0.035	0.226***	0.132*
	(0.080)	(0.041)	(0.057)	(0.072)
Startup procedures	0.030		0.055	
	(0.033)		(0.040)	
Startup time		0.001		0.011
		(0.003)		(0.008)
Startup procedures*FDI	-0.017**		-0.022***	
	(0.008)		(0.005)	
Startup time*FDI		-0.001		-0.002*
		(0.000)		(0.001)
Governance	0.288	0.020	1.180*	0.236
	(0.549)	(0.326)	(0.587)	(0.709)
Log GDP per capita	0.049	0.058	-0.045	0.123
	(0.272)	(0.089)	(0.320)	(0.290)
Log new firms per capita lagged	0.859***	0.923***	0.867***	0.749**
	(0.157)	(0.136)	(0.187)	(0.320)
Number of instruments	60	59	12	11
Arellano-Bond test for AR (2) in first differences	0.270	0.320	0.410	0.330
P value	*0.789*	*0.750*	*0.683*	*0.740*
Sargan test of overid. restrictions	68.860	74.320	5.810	6.630
P value	*0.070*	*0.028*	*0.325*	*0.249*
Hansen test of overid. restrictions	19.020	20.670	5.970	6.880
P value	*1.000*	*1.000*	*0.309*	*0.230*
Number of countries	24	24	24	24
Observations	139	139	139	139

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Figure 1: Mean Cost of Business Start-up Regulation in 2013 by Region



Notes: SSA (Sub-Saharan Africa), LAC (Latin America & Caribbean), EAP (East Asia & Pacific), MENA (Middle East & North Africa), SAR (South Asia), and ECA (Europe & Central Asia).

Figure 2: New Business Density for Selected African Countries in 2012