The High 5

The Cost of Inaction: Obstacles and Lost Jobs in Africa

Andinet Woldemichael and Margaret Joldowski

AFRICAN DEVELOPMENT BANK GROUP

Working Paper Nº 328

Abstract

In a competitive market, the constant "churning" of firms into and out of business boosts productivity, economic growth, and net job creation. Without competitive markets, however, firm exit and the failures of firm entry could be due to obstacles other than competition and innovation. In African countries, incumbent firms and potential entrants face immense obstacles: a difficult political environment, burdensome business regulations, inadequate infrastructure, and limited access to finance. This report investigates the extent to which such obstacles hinder job creation in general and firm dynamism, particularly. Using World Bank Enterprise Survey (ES) panel data that covers 18 African countries, the report quantifies the number of jobs lost due to obstacles. It finds that a single obstacle reduces annual employment growth by 0.1–0.34 percentage point. Hence, by removing key business obstacles, Africa could boost new job creation and save many existing high-quality jobs.

This paper is the product of the Vice-Presidency for Economic Governance and Knowledge Management. It is part of a larger effort by the African Development Bank to promote knowledge and learning, share ideas, provide open access to its research, and make a contribution to development policy. The papers featured in the Working Paper Series (WPS) are those considered to have a bearing on the mission of AfDB, its strategic objectives of Inclusive and Green Growth, and its High-5 priority areas—to Power Africa, Feed Africa, Industrialize Africa, Integrate Africa and Improve Living Conditions of Africans. The authors may be contacted at workingpaper@afdb.org.

Produced by Macroeconomics Policy, Forecasting, and Research Department

Coordinator
Adeleke O. Salami

Correct citation: Woldemichael, A. and Joldowski, M. (2019), The Cost of Inaction: Obstacles and Lost Jobs in Africa, Working Paper Series N° 328, African Development Bank, Abidjan, Côte d'Ivoire.

The Cost of Inaction: Obstacles and Lost Jobs in Africa

Andinet Woldemichael[*] and Margaret Joldowski[†]

JEL Classification: D22; L11; L25; O43; J23.

Key Words: Unemployment; labor demand; constraints; firm dynamism; doing business.

[*] African Development Bank Headquarters, Abidjan, Cote d'Ivoire (corresponding author).
[†] Cornell University, Ithaca, USA.

1. Introduction

Africa has no shortage of labor supply. But it lacks high-productivity job opportunities in high-productivity nonagricultural sectors. Its relatively rapid and sustained economic growth over the past decade did not yield enough jobs for the growing wave of jobs seekers—mainly youth in urban areas. Nonagricultural employment continues to be dominated by the informal sector, where wages are low, benefits nonexistent, workplace safety absent, and labor exploitation common. With significant demographic change expected to bring pressure on African labor markets, the urgency of creating high-quality and remunerative jobs at a much faster pace is not only an economic issue but a political and social one. This report investigates the extent to which failure to remove business constraints hinders actual and potential job growth. In particular, using World Bank Enterprise Survey (ES) panel data, the report quantifies the number of actual jobs lost due to the impact of business obstacles on firm survival and employment growth.

In a competitive market, new firms continually come into existence, and existing ones readjust their factors of production—capital and labor—from less productive activities to more productive ones, or else they cease operation. The entry and exit of firms are outcomes of competition and innovation through which markets efficiently reallocate resources (Bakhtiari 2017; Clementi and Palazzo 2016; Schoar 2010; Aga and Francis, 2015). The literature refers to this creative destruction process as market "churning." As budding, more productive enterprises flourish, the market shakes off the less productive ones. In a competitive market, where there are few barriers to potential entrants and easy exit for less efficient firms, churning of firms is desirable. It increases productivity, economic growth, and net job creation (Hathaway and Litan, 2014).

When markets are not competitive, firms' exit, firms' failure to enter, and the consequent reduction in employment growth can be caused by artificial obstacles that lead to inferior business dynamism. This particularly happens in developing and emerging countries, where firms exit, and potential new firms fail to become operational just because they face insurmountable obstacles. The resulting high rate of firm exit, and low rate of entry lower the rate of net job creation. Among obstacles, strict labor regulations stifle firms' growth by raising the opportunity cost of hiring and firing (Botero et al. 2004; Heckman and Pages 2004). They are more burdensome for smaller firms than larger ones because the smaller ones have a more limited capacity to adhere to the regulations

(Aterido et al. 2009; Seker and Correa 2010). Similarly, Micco and Pages (2006) found a negative relationship between employment protection laws and labor turnover, while Mondino and Montoya (2004) showed that labor regulations can reduce labor market flexibility and generate societal inequalities.

In addition to business-friendly regulations and tax systems, property rights systems play important roles in firms' investment decisions. In China, for instance, entrepreneurs are more likely to invest if they are confident in the property rights system and have access to credit (Cull and Xu 2005). The unavailability of finance is also a key obstacle to firm dynamism, constraining profits and the expansion of productive capacity (Karlan and Valdivia 2011). In a study using data from 80 countries, the unavailability of finance, crime, and political instability were key obstacles to firm growth, finance being the most important, particularly for small firms (Ayyagari et al. 2005; Beck et al. 2005; Galindo and Micco 2007). Aterido et al. (2009) found that small firms have less access to formal finance, face greater interruptions in infrastructure services as measured by the number of days firms remained without electric power and the share of the average cargo's value lost while in transit, and pay more in bribes as a percentage of sales than larger firms. Beck and Demirguc-Kunt (2006) also found that small and medium-size firms have less access to formal source of finance.

Using the ES panel data, which cover 18 African countries, this study quantifies the effects of business obstacles on firm survival and growth. When confronted with severe obstacles, firms decide either to continue or to cease operation. If they continue, they decide on the optimal size of their labor force. Recognizing this sequence in firm dynamism, this empirical strategy uses a two-part model to distinguish the impacts of obstacles, first on firm survival and then, conditioned on survival, on the growth of the firm's workforce. The ES survey, in a second wave, followed firms that were part of an initial survey to analyze their survival status and growth trajectory. The analysis controls for firm characteristics and for year and country-level characteristics.

2. The Literature

Employment growth is closely related to firm survival and firm productivity. Studies on the determinants of firm survival have shown that labor productivity has a highly significant negative relationship with firm exit (Aga and Francis 2015). In "creative destruction," low productivity

firms are the ones more likely to cease operation, paving the way for more productive or more capable firms to replace them. Using the same World Bank ES data as this study, Aga and Francis estimated that the exiting firms make up for around 3 to 4.2 percent of private sector employment a year (Aga and Francis 2015). Their study is among the first to estimate the magnitude of job loss using comparable, cross-country data on a wide swath of developing countries. They also found that, among a host of characteristics, a firm's productivity and age matter the most for exit, both in an inverse relationship. They also identified "firm exit as it relates to barriers to entry"—whether structural barriers to firm creation also encourage firm dissolution—as needing more study. This study aims to fill that gap by exploring the extent to which obstacles to doing business prevent firms from increasing employment and, therefore, increasing their productivity and chances of survival.

Other determinants have been found for firm survival and employment growth —not all limited to Sub-Saharan Africa or even to a developing country context. For example, in a survey of German firms, larger ones had a lower likelihood of exit, and young ones faced a higher likelihood. Younger firms were also more susceptible to obstacles common to all firms in a region, implying an increased vulnerability that dissipates with age and size (Fackler et al. 2013). Another study found that the business and regulatory environment of a country influences both which firms survive and which surviving firms create jobs. It also recommended that the wider regulatory framework provide an efficient path to exit for firms that are no longer viable, though it is unclear whether this recommendation is relevant to less developed economies (Cirmizi 2011). In a similar developed economy context, regulations that served as barriers to entry also delayed growth in incumbent firms, but the authors of that study suggested that in developing economies, regulations would not keep the "cheats" out and so might pose an undue burden on new firms (Klapper at al. 2006). Finally, during a macroeconomic crisis, productivity alone was not enough to determine which firms survived and which went out of business, and similarly, the correlation between productivity and employment growth did not strengthen during the East Asian financial crisis (Hallward-Driemeier and Rijkers 2013). These findings suggest that specific firm-level data will help explain firm survival and employment creation, since many characteristics, including the particular barriers firms face, are likely to play an important role.

In a specifically African context, Shiferaw analyzed firm-level survival for a sample of Ethiopian manufacturing firms, finding that industries with low entry barriers also had low exit rates, indicating that new entrants to an industry do not tend to challenge incumbents for their market power (Shiferaw 2009)[‡]. It is unclear whether the findings are reproducible beyond Ethiopia. Similarly, in a study of Côte d'Ivoire, a country with a particularly low World Bank Ease of Doing Business score, employment growth was inhibited by barriers to incumbent firm growth, rather than barriers to new firm entry (Klapper and Richmond, 2011). The barriers include "costly and timely procedures to obtain licenses, register property and collateral, and resolve disputes." This report will record and estimate the impact of many of these obstacles explicitly, while controlling for other firm level characteristics.

In addition to the empirical explorations, there have also been theoretical and conceptual models of firm survival and job creation. One models the "great variability" in firm-level outcomes, including entry and exit and firm-level job creation and destruction, and derives optimal policies for firms facing an uncertain business environment (Ericson and Pakes, 1995). The model is generalizable to a developing country context characterized by a loose regulatory framework and enhanced competition from the informal sector. Another study estimates parameters of a production function and then uses the estimates to analyze changes in firm level productivity during a period marked by firm restructuring and widespread entry and exit (Olley and Pakes 1992). A strong financial system is at the core of productive and efficient firm growth, creation, and destruction in an analysis of which financial system impediments most commonly affect Sub-Saharan firms, which firm characteristics mediate the impediments, and which impediments most hinder job creation (Levine, 2005).

3. Data

This report uses data from the World Bank ES project, one of the most comprehensive firm-level surveys in emerging markets and developing economies. The survey covers small, medium, and large enterprises in the nonagricultural formal private sector. The ES is a repeated cross-section survey, with data regularly collected every 4 to 5 years through face-to-face interviews in which

[‡] Given the data the author had access to, he could only use proxies for entry and exit barriers and other obstacles, rather than directly including them in the estimation. This study builds on the author's work through direct measurement and inclusion of a variety of business obstacles, from data on a variety of African countries.

owners and managers of enterprises are asked about their perceptions of key constraints. The study covers trade; finance; labor; infrastructure; innovation; regulations; taxes and business licensing; crime, informality, and corruption; and perceptions about obstacles to doing business[§].

ES panel data are available for almost 30,000 firms in 24 African countries (table 1). Before the full ES survey, a screening phase asks several questions on a firm's willingness to participate and its current operational status. The firm exit variable uses the information on survey eligibility of firms from the screening phase. This approach follows Aga and Francis 2015. Firm status is categorized into four groups: (1) confirmed operational; (2) confirmed exit; (3) engaged in ineligible activities, which according to the ES questionnaire include major sectors such as education, agriculture, finance, and government; and (4) incorrect address or no response. The analysis follows a strict definition of firm exit: a firm is considered to exit if it is confirmed as ceasing operation, is currently engaged in ineligible activities, or has incorrect contact information or is non-responsive to verification requests. This analysis focuses on firms interviewed in at least two rounds and, in cases where there are three or more rounds, uses only the latest two. After these criteria are applied, the study has data from only 18 countries.

[§] More information is available online at the World Bank ES project at www.enterprisesurveys.org

Table 1 The number of firms at risk, exited, and survived, by country

Country	Survey years	Whole sample (pooled)	At risk (wave 1)	Exit	Survived (wave 2)	Gap between waves (years)
Angola	2006, 2010	785	—	—	—	—
Benin	2009, 2016	300	—	—	—	—
Botswana	2006, 2010	610	—	—	—	—
Burkina Faso	2006, 2009	533	—	—	—	—
Cameroon	2009, 2016	724	363	105	258	7
Congo, Dem. Rep.	2010, 2013	857	359	80	279	3
Egypt	2013, 2016	4,724	1,372	528	844	3
Ethiopia	2011, 2015	1,492	644	190	454	4
Ghana	2007, 2013	1,213	—	—	—	—
Kenya	2007, 2013	1,409	657	310	347	6
Lesotho	2009, 2016	301	151	71	80	7
Liberia	2009, 2017	301	150	50	100	8
Malawi	2009, 2014	673	150	24	126	5
Mali	2010, 2016	545	360	52	308	6
Niger	2009, 2017	301	150	64	86	8
Nigeria	2009, 2014	5,833	1,136	322	814	5
Rwanda	2006, 2011	453	212	74	138	5
Senegal	2007, 2014	1,107	506	193	313	7
Sierra Leone	2009, 2017	302	150	28	122	8
South Africa	2003, 2007	1,660	—	—	—	—
Tanzania	2006, 2013	1,232	419	276	143	7
Uganda	2006, 2013	1,325	563	238	325	7
Zambia	2007, 2013	1,204	484	216	268	6
Zimbabwe	2011, 2016	1,199	599	164	435	8
Number of firms		29,083	8,425	2,985	5,440	5.94

Firm survival

Of the 8,425 firms surveyed in wave 1, only 5,440 survived to the follow-up survey in wave 2. The average time between the two waves was 5.94 years. The annual rate of exit is therefore about 6.1 percent, ranging from 2.3% and 2.4% exit rate in Sierra Leon and Mali to 12.8% in Egypt (figure 1). Although the annual rate of firm entry is hard to capture using the ES data, the distribution of firm ages provides some picture. While the modal age is 8 years since firms started operation, half the firms are younger than 12 years. Clearly, firm age and the

probability of exit are inversely proportional, in that younger firms are more likely to exit than older ones (figure 2).

Figure 1 Annual firm exit rates

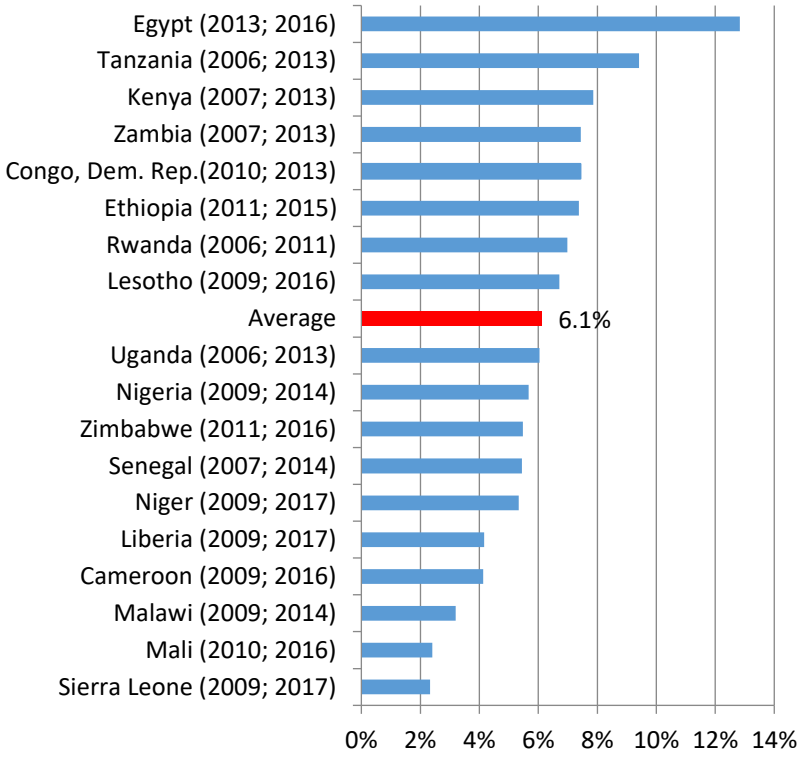
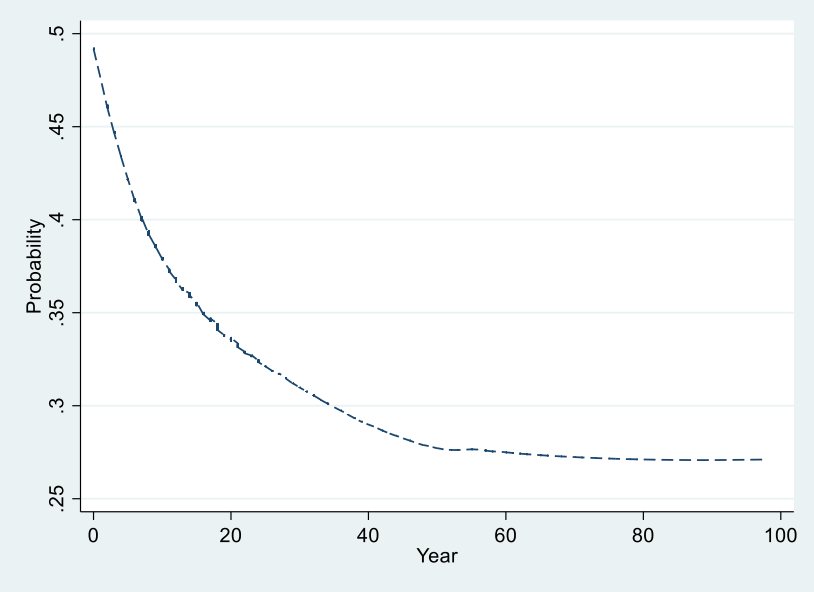


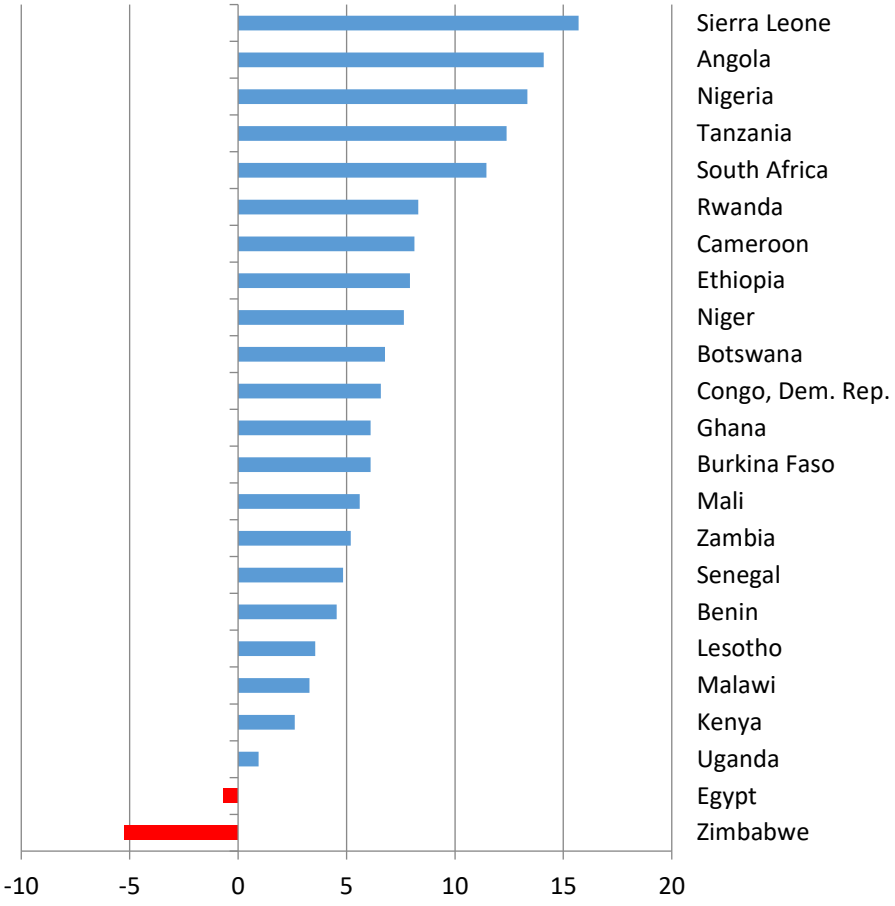
Figure 2 Probability of exit by firm age



Employment growth

The average annual employment growth was 6.56 percent during the latest ES wave (figure 3). We calculate a growth rate on the number of employees at the end of the last fiscal year and at the end of 3 fiscal years ago. $Annual\ Growth\ = \frac{log(Workers\ Last\ year) - log(Workers\ 3\ Yrs\ ago)}{2}$. There is however large variation across countries, with some performing well and others posting negative growth. For instance, in Sierra Leone, employment grew on average by 16 percent annually over the three-year period between 2014 and 2017, whereas growth was negative in Zimbabwe, declining by 5 percent a year, and in Egypt, declining by 0.6 percent a year, between 2013 and 2016.

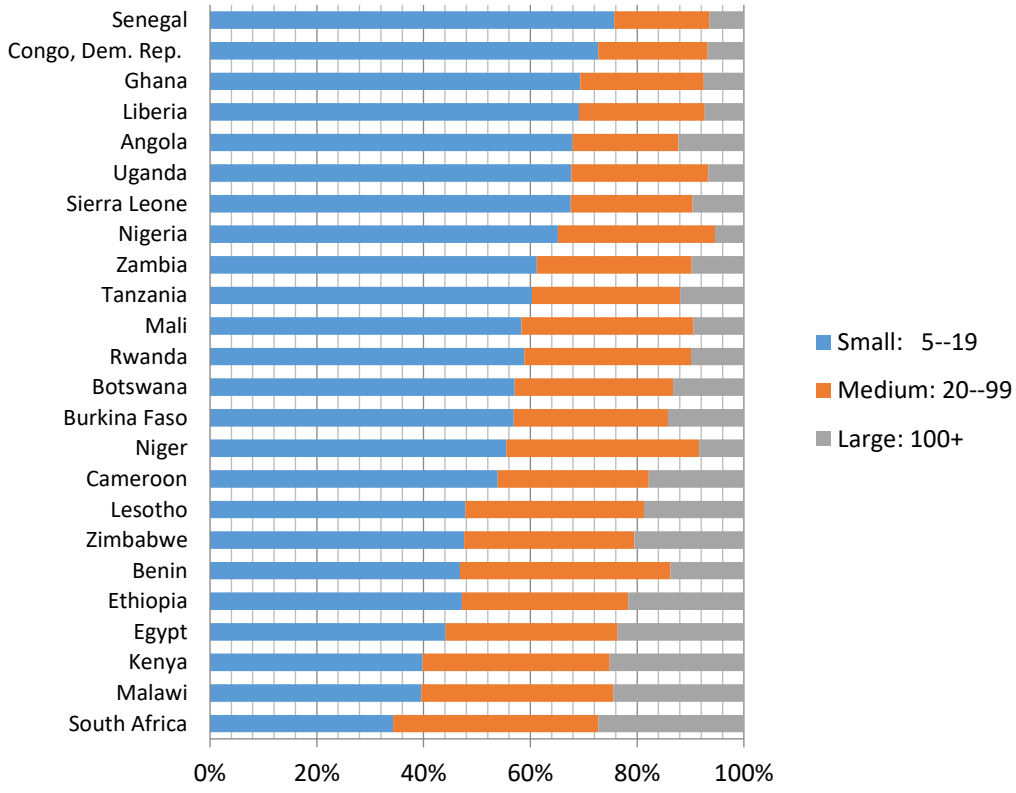
Figure 3 Annual employment growth, latest wave (percent)



Note: Employment growth is calculated using information on the reported number of employees at the end of the last fiscal year and by the end of the fiscal year three years ago: $growth\ = \frac{\log(Workers\ last\ year) - \log(Workers\ \text{three}\ 3\ \text{years}\ ago)}{2}$.

Firm survival and employment growth also depend on size. Empirical evidence from advanced countries shows that small manufacturing firms grow faster than larger firms. Similarly, firm survival generally increases with firm size, but employment growth conditional on survival decreases with size, partly due to diminishing returns to scale and the rate and direction of innovation. In the ES panel data for African countries, small enterprises hiring 5–19 workers predominate, accounting for 55 percent, followed by medium enterprises hiring 20–99 employees, with 28 percent, and large enterprises hiring more than 100, with 13 percent (figure 4). The distribution of firm size varies considerably across countries. In Senegal, small firms account for 75 percent of all the firms in the sample, whereas they account for only 34 percent in South Africa. Firm size also varies by sector. Firms in manufacturing tend to be larger, whereas firms in retail and other services tend to be smaller. In the pooled ES panel data, about 45.5 percent of the firms operate in manufacturing sector, with the rest in services.

Figure 4 Distribution of firm size



Firm ownership structure affects firm dynamism. It determines management, worker effort, access to capital, productivity growth through innovation and research and development

investment, and so on, which directly and indirectly affect firm survival and dynamism. About half of firms in the data are sole proprietorships, whereas about one-fifth are nontraded shareholder companies.

Table 2 Firm characteristics by exit status

	Exit	Survive	Pooled
Annual employment growth, wave 1 (%)	—	—	6.5
Annual employment growth, wave 2 (%)	—	3.90	—
Age of firm (years)	14.32	17.66	16.47
	(13.36)	(15.71)	(15.00)
Experience of top manager (years)	13.29	14.84	14.29
	(9.667)	(10.38)	(10.16)
Female manger (%)	11.4	9.81	10.3
Internationally certified (%)	12.3	17.3	15.5
Top manager's education (%)			
Unknown	17.5	17.1	17.2
Primary	6.11	5.45	5.69
Secondary	10.5	7.65	8.69
University	55.2	60.3	58.5
Direct exporter (%)	8.14	9.96	9.32
Manufacturing (%)	43.6	50.2	47.9
Location (%)			
Capital city	30.3	20.5	24
City with 1 million plus people	24.1	34	30.5
City with 250,000–1 million people	14.6	17.7	16.6
City with 50,000–250,000 people	15.1	14.7	14.8
City with fewer than 50,000 people	2.61	2.68	2.66
Firm Size (%)			
Micro (1–4 employees)	0.101	0.404	0.297
Small (5–19 employees)	59.6	50.9	54
Medium (20–99 employees)	21.6	29.7	26.8
Large (100+–employees)	7.77	15.6	12.8
Ownership Structure (%)			
Shareholder (traded)	2.01	3.93	3.25
Shareholder (nontraded)	25.9	26	26
Sole proprietorship	52.2	50.1	50.9
Partnership	11.8	9.54	10.3
Limited partnership	6.5	7.7	7.28
Other	6.5	7.7	7.28
Number of firms	2,985	5,440	8,425

Good management practices, such as setting targets, monitoring achievement, and implementing appropriate incentive mechanisms have large positive effects on firm productivity. In the literature, such practices are strongly correlated with managerial human capital such as education and experience (Queiro 2016). In the ES panel data, firms with university-educated managers are more likely to survive than firms with managers with lower levels of education.

In traditional theory, economic liberalization results in increased trade, improved efficiency, accelerated technological change, and growth. Trade liberalization's long-run impact, through efficient allocation of resources, is increased welfare and more jobs, though the short-run impact could be a loss of jobs (Ernst 2005). Labor-intensive export firms would generate more employment. In the ES data, firms that are direct exporters are more likely to survive than firms that are not direct exporters.

Major constraints on doing business

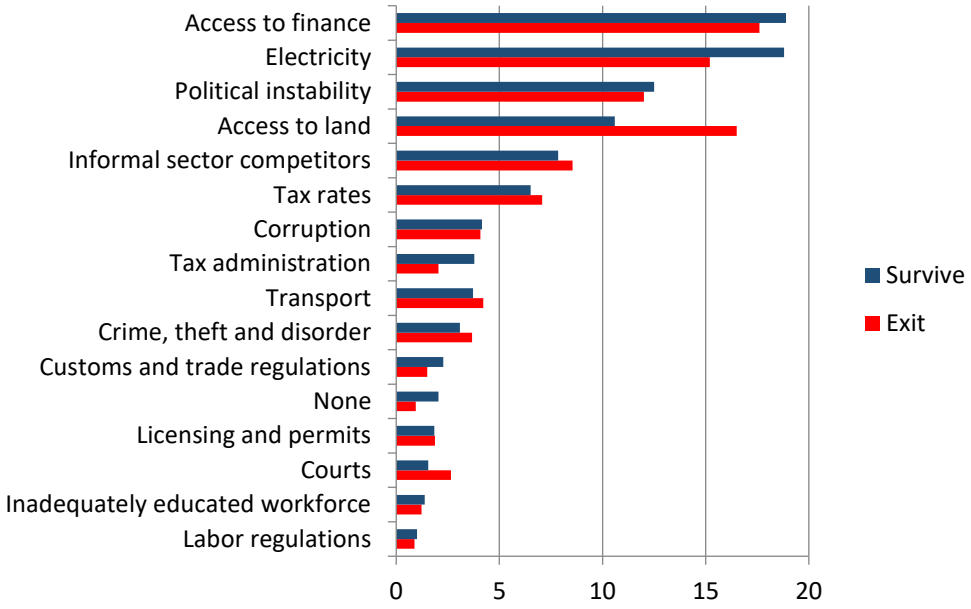
Firm survival and employment growth also depend on business constraints. In the ES survey, firms are asked, in a "list of elements of the business environment, can you tell me which one, if any, currently represents the biggest obstacle faced by this establishment." The list includes 15 obstacles that can be broadly categorized into six groups:

- Political environment (corruption, political instability, and crime, theft, and disorder).
- Business regulation (tax rates, access to land, trade registration, tax administration, and business licensing and permits.
- Infrastructure (transport, electricity, and telecommunications).
- Access to finance.
- Practice of competitors in the informal sector.
- Inadequately educated work force.

About 19 percent of firms listed limited access to finance as their biggest of the 15 obstacles (figure 5). The obstacle listed second most (18 percent) was limited access to electricity. Limited access to land followed with 13 percent, and political instability with 12 percent. Countries varied widely, with limited access to finance reported as the biggest obstacle by 45 percent of firms in Zimbabwe but only 0.5 percent in Tanzania. And sectors of operation vary. Limited access to

finance was reported as the biggest obstacle by 18 percent of firms in manufacturing but 16 percent in retail and services. Similarly, limited access to land was reported as the biggest obstacle by 14 percent of the firms in services but only 6 percent in manufacturing.

Figure 5 Biggest obstacle (percent)



4. Econometric analysis

This section models firm dynamism using a two-part model in which the firm first decides whether to continue of cease operation. Then, if it has decided to continue, the firm decides on whether to expand, reduce, or maintain the same number of workers. The analysis treats this sequential decision in a hurdle (two-part) model. To model firm dynamism, the analysis uses a two-part model in which the firm first decides whether to continue of cease operation. Then, if it decides to continue, the firm decides whether to expand, reduce, or maintain the same number of workers. The analysis treats this sequential decision in a hurdle (two-part) model. It estimates the roles of obstacles in overall firm dynamism given by:

$$E(g|\boldsymbol{X}) = P(s = 1|\boldsymbol{X}) \times E(g|\boldsymbol{X}, s = 1), -\infty < g < \infty, \quad (1)$$

where $-\infty < g < \infty$ is employment growth of the firm, s is dummy variable indicating whether the firm continued or ceased operation, $E(\cdot)$ is the expectation operator, and $\boldsymbol{X}$ is a vector of

covariates. The first part of the RHS of equation (1) is the probability of firm survival, and the second part is firm employment growth conditional on survival. There are several approaches to estimate equation (1). This paper estimates firm survival using logit model as:

$$P(s_i = 1|\boldsymbol{X_i}, \boldsymbol{\beta}, \boldsymbol{\gamma}) = \frac{1}{1 + exp(-\boldsymbol{\beta Obs_i} - \boldsymbol{\gamma X_i})}, i = 1, \dots, N, \quad (2)$$

where $\boldsymbol{Obs_i}$ is a vector of dummy variables indicating whether the k^{th} obstacle is reported as the biggest obstacle and $\boldsymbol{X_i}$ is as defined above but also includes a vector of ones, and $\boldsymbol{\beta} = [\beta_1, .., \beta_k]'$ and $\boldsymbol{\gamma}$ are vectors of coefficients to be estimated. Likewise, we estimate the linear part of the hurdle model using simple OLS as:

$$g_i = \boldsymbol{\delta Obs_i} + \boldsymbol{\theta W_i} + \varepsilon_i, i = 1, \dots, n_1, \quad (3)$$

where, $n_1 \in N$ is the number of surviving firms, $\boldsymbol{W_i}$ is a vector of covariates, $\boldsymbol{\delta}$ and $\boldsymbol{\theta}$ are vectors of parameters to be estimated, and ε_i is random i.i.d error term. Then, the expected employment growth can be obtained from the predicted probabilities given in equation (2), and the predicted employment growth conditional on survival given in equation (3). Assuming reported obstacles are exogenous, we calculate the total effect of the kth obstacle on employment growth, keeping all other factors constant, as:

$$\frac{\partial E(g|\boldsymbol{X}, \hat{\boldsymbol{\Gamma}})}{\partial Obs^k} = \{E(g|\boldsymbol{X}, \hat{\boldsymbol{\Gamma}}, Obs^k = 1) - E(g|\boldsymbol{X}, \hat{\boldsymbol{\Gamma}}, Obs^k = 0)\}, \quad (4)$$

where $\hat{\boldsymbol{\Gamma}} = [\hat{\boldsymbol{\beta}}, \hat{\boldsymbol{\gamma}}, \hat{\boldsymbol{\delta}}, \hat{\boldsymbol{\theta}}]$ is a vector of estimated coefficients and $E(g|\boldsymbol{X}, \hat{\boldsymbol{\Gamma}}, Obs^k = 1)$ and $E(g|\boldsymbol{X}, \hat{\boldsymbol{\Gamma}}, Obs^k = 0)$ are calculated by, respectively, switching the kth obstacle on and off. The predicted survival probabilities and employment growth are annualized by adjusting for the number of years elapsed between waves.

5. Results and discussions

The effects of business obstacles on both survival and employment growth of firms conditioned on survival are all negative (table 3). When the analysis controls for year, country, location, and firm-level characteristics, the magnitude and statistical significance of some obstacles' effect on

survival decreases, and the effects on employment growth in the surviving firms becomes statistically insignificant, though still negative for all obstacles. When all covariates are controlled for, courts seem to deliver the biggest blow to the survival of firms. Firms that reported courts as the biggest obstacle have about 0.17 percentage point lower probability of surviving. Limited access to finance also reduces the survival probability of firms by 0.14 percentage point compared with firms that did not report limited access to finance as the biggest obstacle.

Similarly, firms that reported tax rates; corruption; transport costs; limited access to land; political instability; crime, theft, and disorder; limited access to electricity; or competition from illegal/informal operators as their biggest obstacle have significantly lower survival rates, reduced by 0.09–0.125 percentage point. When conditioned on survival, however, these factors do not have significant effects on firm employment growth. So, the main channel of impacts on firm dynamism is through the very survival of firms. The surviving firms, after controlling for age, seem to manage well despite facing the obstacles they reported. These expected results are in line with findings in the literature that surviving or older firms are better positioned to withstand the effects of obstacles than are younger firms.

Table 3 Two-part estimation of the impacts of the biggest obstacles on employment growth

	Specification (1)		Specification (2)		Specification (3)	
	Pr(Survive)	Growth | Survived	Pr(Survive)	Growth | Survived	Pr(Survive)	Growth | Survived
Access to finance	−0.133***	−12.204***	−0.137***	−9.525***	−0.142***	−3.235
	(0.037)	(2.720)	(0.039)	(2.711)	(0.046)	(2.915)
Access to land	−0.258***	−10.420***	−0.199***	−10.384***	−0.103**	−1.890
	(0.038)	(2.818)	(0.040)	(2.798)	(0.049)	(3.175)
Licensing and permits	−0.153***	−13.798***	−0.122**	−13.344***	−0.055	−5.015
	(0.052)	(3.697)	(0.054)	(3.687)	(0.059)	(3.836)
Corruption	−0.146***	−11.449***	−0.153***	−10.010***	−0.099*	−3.912
	(0.043)	(3.161)	(0.046)	(3.154)	(0.052)	(3.321)
Courts	−0.280***	−13.567***	−0.222***	−11.631**	−0.174***	−4.550
	(0.052)	(4.080)	(0.062)	(4.616)	(0.067)	(4.705)
Crime, theft, and disorder	−0.191***	−8.897***	−0.173***	−8.150**	−0.094*	−2.161
	(0.045)	(3.344)	(0.047)	(3.332)	(0.052)	(3.431)
Customs, trade regulations	−0.061	−10.813***	−0.047	−9.071***	−0.024	−1.047
	(0.049)	(3.522)	(0.051)	(3.450)	(0.057)	(3.597)
Electricity	−0.104***	−9.935***	−0.121***	−10.001***	−0.094**	−3.696
	(0.037)	(2.739)	(0.038)	(2.690)	(0.047)	(2.940)
Inadequately educated workforce	−0.123**	−5.930	−0.138**	−5.843	−0.088	1.600
	(0.056)	(4.002)	(0.060)	(3.983)	(0.063)	(4.109)
Labor regulations	−0.121*	−5.778	−0.104	−10.326**	−0.075	−3.052
	(0.063)	(4.417)	(0.065)	(4.379)	(0.070)	(4.496)
Political instability	−0.140***	−16.630***	−0.159***	−12.418***	−0.093*	−3.993
	(0.038)	(2.760)	(0.041)	(2.813)	(0.049)	(3.086)
Informal sector competitors	−0.170***	−12.421***	−0.171***	−8.748***	−0.115**	−0.811
	(0.039)	(2.907)	(0.042)	(2.933)	(0.049)	(3.160)
Tax administration	−0.025	−10.379***	−0.019	−9.886***	−0.030	−2.932
	(0.043)	(3.264)	(0.045)	(3.196)	(0.054)	(3.434)
Tax rates	−0.170***	−11.618***	−0.161***	−10.704***	−0.092*	−2.703
	(0.040)	(2.969)	(0.042)	(2.925)	(0.049)	(3.144)
Transport	−0.180***	−4.882	−0.185***	−3.056	−0.120**	5.132
	(0.044)	(3.258)	(0.046)	(3.224)	(0.053)	(3.453)
Observations	8,287	3,151	7,241	2,681	7,241	2,681
R-squared		0.022		0.035		0.073
Firm Characteristics	—	—	X	X	X	X
Year and Country Dummies	—	—	—	—	X	X

*** p<0.01, ** p<0.05, * p<0.1. Standard errors are in parentheses. *Note:* Specification (1) does not include any control. Specification (2) controls for firm size, firm age, firm age squared, export status, ownership structure, dummy for sector of operation, gender of the top manager, education of the top manager, experience of the top manager in years, and the type and population size of the city in which the firm is located. Specification (3) further controls for year and country-level characteristics by including year and country dummies.

The ES survey also asked about a set of objective business obstacles. Among them, the effects of wave 1 power outages on wave 2 firm survival and employment growth are not significant (table 4). But the percentage of time spent in dealing with regulations and the percentage of annual sales paid as bribes have significant impacts on the probability of firm survival. Surprisingly, the more time top managers spend on government regulations, the higher the probability of survival—specifically, when management time spent on dealing with government regulations increases by 1 percent, survival probability increases by 0.001 percentage point. Corruption significantly reduces firms' survival probability. A 1 percent increase in informal payments as a share of sales reduces survival probability by 0.003 percentage point. No significant impacts on employment growth at surviving firms appear for any of these factors.

Table 4 Two-part estimation of the impacts of objective obstacles

	Pr(Survive)	Growth | Survived	Pr(Survive)	Growth | Survived	Pr(Survive)	Growth | Survived	Pr(Survive)	Growth | Survived	Pr(Survive)	Growth | Survived
Number of power outages	0.001	−0.025								
	0.000	(0.025)								
Duration of power outages			−0.001	0.002						
			(0.001)	(0.071)						
Percent of loss due to power outages					0.000	−0.023				
					(0.001)	(0.037)				
Percent of management time spent on government regulation							0.001**	−0.042		
							0.000	(0.027)		
Share of sales used to bribe officials									−0.003***	0.060
									(0.001)	(0.083)
Observations	7,372	2,722	7,372	2,722	7,372	2,722	7,372	2,722	7,372	2,722
R-squared		0.066		0.066		0.066		0.066		0.066
Firm characteristics	X	X	X	X	X	X	X	X	X	X
Year and country dummies	X	X	X	X	X	X	X	X	X	X

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

Size of effects on employment growth

Of the 15 biggest constraints discussed above, 10 had negative and statistically significant impacts on employment growth, mainly through their detrimental impact on the very survival of firms. The loss in annual employment growth due to a particular type of obstacle varies (table 5).1 On average, court cases lead to a 0.34 percentage point decline in annual employment growth. To put that figure in perspective, imagine a typical firm with employment growing 5 percent a year. These back-of-the-envelope estimates imply that a new court case, keeping all other factors constant, reduces annual employment growth to only 4.66 percent. Similarly, the political environment, particularly political instability, corruption, and crime, theft, and disorder, lead to a reduction in annual employment growth by 0.17 to 0.32 percentage point. Moreover, obstacles such as tax rates and limited access to land, finance, and electricity significantly reduce annual employment growth.

Table 5 Predicted decline in annual employment growth due to a specific obstacle

Obstacle	Percentage points	Standard deviation.
Licensing and permits	−0.36	(0.16)
Courts	−0.34‡	(0.16)
Political instability	−0.32†	(0.15)
Corruption	−0.30†	(0.13)
Electricity	−0.29†	(0.13)
Access to finance	−0.28†	(0.13)
Labor regulations	−0.24	(0.10)
Tax rates	−0.22†	(0.10)
Tax administration	−0.21	(0.09)
Access to land	−0.18†	(0.08)
Crime, theft, and disorder	−0.17†	(0.09)
Informal sector competitors	−0.12†	(0.08)
Customs and trade regulations	−0.10	(0.05)
Inadequately educated workforce	0.04	(0.07)
Transport	0.19†	(0.15)

‡ Estimated coefficient is statistically significant.

6. Conclusion

Africa's jobs challenge is enormous. The buoyant economic growth that the continent enjoyed in the past decade and a half has not yielded enough high-productivity jobs. Most people are stuck in agriculture. And nonagricultural employment continues to be dominated by the informal sector, where wages are low and benefits nonexistent. With major demographic change expected to bring pressure on African labor markets, the urgency to create high-quality remunerative jobs at a much faster pace is not only an economic issue but a political and social one, as well. This report investigated how failure to remove business obstacles hampers job growth in the formal private sector. Using the World Bank Enterprise Survey (ES) panel data in a two-part model, the study quantified the percent of jobs lost due to the impact of business obstacles on firm survival and employment growth.

The analysis found that business such obstacles as limited access to finance, competitors in the informal sector, an inadequately educated work force, business regulation (tax rates, limited access to land), infrastructure (transportation and electricity), and the political environment (corruption, political instability, and crime, theft, and disorder) significantly reduced formal private sector employment growth. A single reported business obstacle reduced annual growth by 0.1–0.34 percentage point. By removing key business obstacles, African policymakers could not only increase new job creation but also save existing jobs from disappearing. Several reported obstacles could be removed or mitigated if the right institutions and infrastructure are put in place.

References

Aga, G., and D. Francis. 2015. "As the Market Churns: Estimates of Firm Exit and Job Loss Using the World Bank's Enterprise Surveys." World Bank Policy Research Working Paper No. 7218. Washington, DC.

Aterido, R., M. Hallward-Driemeier, and C. Pagés. 2011. "Big Constraints to Small Firms' Gowth? Business Environment and Employment Growth Across Firms." *Economic Development and Cultural Change* 59 (3): 609–647.

Ayyagari, M., T. Beck, and A. Demirguc-Kunt. 2007. "Small and Medium Enterprises Across the Globe." *Small Business Economics* 29 (4): 415–434.

Bakhtiari, S. 2017. *Entrepreneurship Dynamics in Australia: Lessons from Micro-Data.* Amsterdam, Netherlands: Elsevier. Available at: SSRN: https://ssrn.com/abstract=2940093 or http://dx.doi.org/10.2139/ssrn.2940093.

Beck, T., and A. Demirguc-Kunt. 2006. "Small and Medium-size Enterprises: Access to Finance as a Growth Constraint." *Journal of Banking & Finance* 30 (11): 2931–2943.

Botero, J. C., S. Djankov, R.L. Porta, F. Lopez-de-Silanes, and A. Shleifer. 2004. "The Regulation of Labor." *The Quarterly Journal of Economics* 119 (4): 1339–1382.

Clementi, G.L., and B. Palazzo. 2016. "Entry, Exit, Firm Dynamics, and Aggregate Fluctuations." *American Economic Journal: Macroeconomics* 8 (3): 1–41.

Cirmizi, E., L. Klapper, and M. Uttamchandani. 2011. "The Challenges of Bankruptcy Reform." *The World Bank Research Observer* 27 (2): 185–203.

Cull, R., and L.C. Xu. 2005. "Institutions, Ownership, and Finance: The Determinants of Profit Reinvestment among Chinese Firms." *Journal of Financial Economics* 77 (1): 117–146.

Djankov, S., E. Miguel, Y. Qian, G. Roland, and E. Zhuravskaya. 2005. "Who are Russia's entrepreneurs?" *Journal of the European Economic Association* 3 (2-3): 587–597.

Ericson, R., and A. Pakes. 1995. "Markov-perfect industry dynamics: A framework for empirical work." *The Review of Economic Studies* 62 (1): 53–82.

Ernst, C. 2005. "Trade Liberalization, Export Orientation and Employment in Argentina, Brazil, and Mexico." ILO Employment Strategy Paper 2005/15. Geneva, Switzerland.

Fackler, D., C. Schnabel, and J. Wagner. 2013. "Establishment Exits in Germany: The Role of Size and Age." *Small Business Economics* 41 (3): 683–700.

Galindo, A.J., and A. Micco. 2007. “Creditor Protection and Credit Response to Shocks.” *The World Bank Economic Review* 21 (3): 413–438.

Hall, B.H. 1986. “The Relationship Between Firm Size and Firm Growth in the US Manufacturing Sector.” NBER Working Paper No. 1956. Cambridge, MA.

Hallward-Driemeier, M., and B. Rijkers. 2013. “Do Crises Catalyze Creative Destruction? Firm-level Evidence from Indonesia.” *Review of Economics and Statistics* 95 (1): 1788–1810.

Hathaway, I., and R.E. Litan. 2014. “Declining Business Dynamism in the United States: A Look at States and Metros.” Washington, DC: Brookings Institution.

Heckman, J.J., and C. Pagés. 2004. “Law and Employment: Introduction.” In *Law and Employment: Lessons from Latin America and the Caribbean*, ed. JJ. Heckman and C. Pagés. Chicago, IL: University of Chicago Press.

Karlan, D., and M. Valdivia. 2011. “Teaching Entrepreneurship: Impact of Business Training on Microfinance Clients and Institutions.” *Review of Economics and Statistics* 93 (2): 510–527.

Klapper, L., L. Laeven, and R. Rajan. 2006. “Entry Regulation as a Barrier to Entrepreneurship.” *Journal of Financial Economics* 82 (3): 591–629.

Klapper, L., and C. Richmond. 2011. “Patterns of Business Creation, Survival and Growth: Evidence from Africa.” *Labour Economics* 18 (1): S32–S44.

Levine, R. 2005. “Finance and Growth: Theory and Evidence.” *Handbook of Economic Growth* 1 (1): 865–934.

Loayza, N. V., and R. Ranciere. 2006. “Financial Development, Financial Fragility, and Growth. *Journal of Money, Credit and Banking* 38 (4): 1051–1076.

Mondino, G., and S. Montoya. 2004. “The Effects of Labor Market Regulations on Employment Decisions by Firms: Empirical Evidence for Argentina.” In *Law and Employment: Lessons from Latin America and the Caribbean*, ed. JJ. Heckman and C. Pagés. Chicago, IL: University of Chicago Press.

Olley, G.S., and A. Pakes. 1992. “The Dynamics of Productivity in the Telecommunications Equipment Industry.” National Bureau of Economic Research Technical Report. Cambridge, MA.

Pages, C., and A. Micco. 2006. “The Economic Effects of Employment Protection Laws.” IZA/World Bank Conference on Employment and Development.

Queiro, F. 2016. “The Effect of Manager Education on Firm Growth.” Harvard University Working Paper. Cambridge, MA.

Reinecke, G., and S. White. 2004. *Policies for Small Enterprises: Creating the Right Environment for Good Jobs.* Geneva, Switzerland: International Labour Organization (ILO).

Schoar, A. 2010. “The Divide Between Subsistence and Transformational Entrepreneurship.” *Innovation Policy and the Economy* 10 (1): 57–81.

Seker, M., and P.G. Correa. 2010. Obstacles to growth for small and medium enterprises in Turkey.

Shiferaw, A. 2009. Survival of private sector manufacturing establishments in Africa: The role of productivity and ownership. World Development, 37(3):572–584.