Firms and Jobs Analyzing Private Sector Demand for Labor Outside Agriculture

World Bank Jobs Diagnostic 2017

The publication of this study has been made possible through a grant from the Jobs Umbrella Trust Fund, which is supported by the Department for International Development/UK AID, and the Governments of Norway, Germany, Austria, the Austrian Development Agency, and the Swedish International Development Cooperation Agency. © 2017 International Bank for Reconstruction and Development / The World Bank.

1818 H Street NW, Washington, DC 20433, USA. Telephone: 202-473-1000; Internet: www.worldbank.org.

Some rights reserved

This work is a product of the staff of The World Bank with external contributions. The findings, interpretations, and conclusions expressed in this work do not necessarily reflect the views of The World Bank, its Board of Executive Directors, or the governments they represent. The World Bank does not guarantee the accuracy of the data included in this work. The boundaries, colors, denominations, and other information shown on any map in this work do not imply any judgment on the part of The World Bank concerning the legal status of any territory or the endorsement or acceptance of such boundaries.

Nothing herein shall constitute or be considered to be a limitation upon or waiver of the privileges and immunities of The World Bank, all of which are specifically reserved.

Rights and Permissions



This work is available under the Creative Commons Attribution 3.0 IGO license (CC BY 3.0 IGO) http://creativecommons.org/licenses/by/3.0/igo. Under the Creative Commons Attribution license, you are free to copy, distribute, transmit, and adapt this work, including for commercial purposes, under the following conditions:

Attribution—Please cite the work as follows: Michael Weber. 2017. "The Jobs Agenda in Burkina Faso: Firms and Jobs - Analyzing private sector demand for labor outside agriculture." World Bank, Washington, DC. License: Creative Commons Attribution CC BY 3.0 IGO.

Translations—If you create a translation of this work, please add the following disclaimer along with the attribution: This translation was not created by The World Bank and should not be considered an official World Bank translation. The World Bank shall not be liable for any content or error in this translation.

Adaptations—If you create an adaptation of this work, please add the following disclaimer along with the attribution: This is an adaptation of an original work by The World Bank. Views and opinions expressed in the adaptation are the sole responsibility of the author or authors of the adaptation and are not endorsed by The World Bank.

Third-party content—The World Bank does not necessarily own each component of the content contained within the work. The World Bank therefore does not warrant that the use of any third-party-owned individual component or part contained in the work will not infringe on the rights of those third parties. The risk of claims resulting from such infringement rests solely with you. If you wish to re-use a component of the work, it is your responsibility to determine whether permission is needed for that re-use and to obtain permission from the copyright owner. Examples of components can include, but are not limited to, tables, figures, or images.

All queries on rights and licenses should be addressed to World Bank Publications, The World Bank Group,

1818 H Street NW, Washington, DC 20433, USA; fax: 202-522-2625; e-mail: pubrights@worldbank.org.

ACKNOWLEDGEMENTS

This report was prepared by a World Bank team led by Michael Weber (Sr. Economist, coauthor). Team members for this report were Carly Petracco (Consultant, co-author), Adrian Scutaru (Consultant), Jörg Langbein (Consultant, co-author), and Jennifer Nicole Jossell (Program Assistant). The analysis herein builds upon the analytical framework provided by the Job's Group Jobs Diagnostic Team led by Dino Merotto (Lead Economist). Reyes Aterido (Economist) provided helpful inputs on firm analysis.

The team gratefully acknowledges the support of this report by counterparts in the Ministry of Economy and Finance, the Ministry of Commerce, Industry, and Crafts, the Ministry of Agriculture and Water Management, and the Ministry for Livestock and Fisheries. The team is particularly thankful for the support of the National Institute of Statistics and Demography (INSD). Without their intense and trustful cooperation, this review would not have been possible.

The team furthermore thanks Nicolas Ahouissoussi (Sr. Agriculture Economist), Elisee Ouedraogo (Sr. Agriculture Economist), Inoussa Ouedraogo (Sr. Private Sector Specialist), Prospere R. Backiny-Yetna (Sr. Economist/Statistician), Mariam Diop (Sr. Economist), Ayaba Gilberte Kedote (Social Protection Specialist), Rebekka E. Grun (Sr. Economist), and Jacques Morisset (Program Leader), for their continued support and for their valuable suggestions, and to the stakeholders, and staff of various associations, agencies and institutions, as well as private sector representatives that contributed to this assessment by sharing their insights with the team.

Critical guidance during the original concept review and comments on the draft notes were provided by Azedine Ouerghi (Program Leader), David Robalino (Manager, GBSJP), Stefano Paternostro (Practice Manager), and Cheick Fantamady Kante (Country Manager). The report has benefited from the original peer reviews by Holger Kray (Lead Agriculture Economist), Qahir Dahani (Sr. Private Sector Specialist) and Abla Safir (Economist).

TABLE OF CONTENTS

EXE	CUTIVE SUMMARY	5			
INTRODUCTION9					
1.	PRIVATE SECTOR LABOR DEMAND1	1			
2.	LABOR DEMAND AND PRODUCTIVITY OF INFORMAL HOUSEHOLD ENTERPRISES AND FIRMS	8 8 3			
3.	LABOR DEMAND AND PRODUCTIVITY OF FORMAL FIRMS23.1.LABOR DEMAND OF FORMAL FIRMS23.2.PRODUCTIVITY IN THE FORMAL SECTOR3	8 8 5			
4.	TRADE AND LABOR DEMAND4	0			
5.	BUSINESS CLIMATE AND LABOR DEMAND 4 5.1. ACCESS TO FINANCE 4 5.2. SKILLS MISMATCH 5 5.3. ELECTRICAL INFRASTRUCTURE 5	7 8 1 2			
CONCLUSIONS					
BIBLIOGRAPHY					
Annex A. Understanding the data: EMC 201463					
Annex B. Understanding the data: The 2008 Enterprise Census66					
Annex C. Regression Results					

EXECUTIVE SUMMARY

Job creation through private sector development is key for Burkina Faso's economic growth and poverty reduction. The projected increase in the working age population over the coming years will put additional strain on the government's dual aim of generating economic growth and eliminating poverty. With a growing youth population, the economy will need to create an additional 300,000 jobs per year until 2020 to absorb new job-seekers—yet the key question is whether it can create *better quality* jobs. This highlights the need for understanding better the private sector demand for labor outside agriculture, as well as how this demand can be increased while ensuring better and more inclusive jobs.

Most jobs can be found in the agricultural sector but exhibit low levels of productivity. At present, agriculture represents the main economic activity for about 80 percent of the workforce in Burkina Faso and accounts for approximately one-third of its GDP. However, agriculture also registers substantially lower levels of productivity than services or industry. Thus, large numbers of Burkinabé workers continue to experience low incomes and the poverty incidence remains high, especially in rural areas. To boost economic growth and reduce poverty, the structural shift from agriculture to other sectors will need to gather pace. To be sustainable, it needs to be accompanied by substantial productivity gains in receiving sectors but also sending sectors such as agriculture. Both formal and informal enterprises will be key to achieve this.

INFORMAL ENTERPRISES

Informal enterprises in Burkina Faso dominate the private sector, especially commerce, are mainly located in rural areas, and play an important role in the provision of employment. In 2008, 88 percent of non-agricultural enterprises¹ were informal and they accounted for around 60 percent of all employment in the private sector, while generating only 11 percent of sales. Most of them are engaged in commerce (58 percent), followed by other services (21 percent) and manufacturing (20 percent). Nearly two-thirds of informal non-agricultural enterprises are located in rural areas.

Informal enterprises register low productivity which increases with age rather than size. The productivity of informal enterprises is lower than that of formal enterprises, with the average ratio of 1:4 in favor of formal enterprises. This ratio grows to 1:20 in the most extreme case (construction) and shows that informal enterprises are, in all sectors, less productive. There is no simple answer, but many partial explanations exist: reduced

¹ Note that the terms enterprises and firms are used interchangeably in this report.

economies of scale, use of outdated technologies, lack of access to capital, little judicial protection, less professional management and barriers to formal entry. There is also no evidence of increased productivity with size, quite the opposite: productivity drops in informal enterprises with more than one employee.

Informal enterprises are predominantly small and seldom expand. More than 90 percent of informal enterprises employ five or less people, almost evenly split between those employing just one and those employing between two and five workers. Even enterprises that have been in existence for more than ten years are only marginally larger than younger ones. The reasons for remaining small are manifold and interconnected. In some cases, these enterprises are simply not productive enough to afford formality, thus transformation is not an option. In other cases, these enterprises could make the transformation, but 'transformation' costs of formalizing operations are likely perceived to be larger than benefits. Finally, some firms may simply see no benefits in formalization.

FORMAL FIRMS

Formal firms operate in sectors that generate higher value added. The *legal* mining and quarrying sector is wholly operated by formal firms, as is the business and financial services sector, two of the sectors with highest value-added in Burkina Faso. Even within the manufacturing sector, there is a clear divide between the value-added of subsectors that feature formal firms and those with informal enterprises. For example, 57 percent of *informal* manufacturing enterprises are involved in the production of wearing apparel, while 31 percent of *formal* firms in the manufacturing sector produce fabricated metal products and further 18 percent manufacture transport equipment—these are subsectors with much higher value-added than the production of wearing apparel.

Formal firms are larger and appear to benefit from economies of scale. Formal firms on average employ nine workers. In contrast to the informal sector, large firms with hundred or more employees play a prominent role; they account for one-third of all jobs in the formal sector. While these large formal firms represent only 12 percent of non-agriculture firms, they account for almost 90 percent of all sales. Formal firms are also more productive than informal firms across all sector, region, size and age classification. However, there is a substantial variation in productivity levels of formal firms between sectors. For example, manufacturing firms are on average twice as large as service sector firms but are unable to generate larger sales.

Formal firms provide better jobs. Not only are jobs in the formal sector more productive, the jobs are also better paid. Even when accounting for industry, region and productivity levels, formal firms pay, on average, between 30 and 60 percent more than informal enterprises.

EXPORTS AND TRADE

Burkina Faso's exports contribute significantly to the GDP but are highlyconcentrated—in gold and cotton—and involve little labor. Exports made up 25.2 percent of GDP, while imports equaled 40.2 percent in 2015. Gold and cotton dominate exports, accounting together for 70 percent of total exports. Despite their significant contribution to GDP and exports, the jobs impact of the (non-artisanal) extractive industry and cotton remains low—only around 5 percent of the workers are employed in these two industries. The remaining share of exports is mainly made up of agricultural crops and raw materials with low labor intensity. The share of more labor-intensive manufacturing exports has declined from 12 percent in 2000 to 3.9 percent in 2014, but the composition of these exports has shifted toward more skill-intensive items. Mediumskill and technology-intensive goods accounted for 50 percent of manufacturing exports in 2014.

Foreign-owned and exporting firms in Burkina Faso are significantly more productive. Just 5 percent of firms are foreign-owned and only 4 percent are exporting (with little overlap between these two categories). At the same time, foreign-owned firms and exporting firms together employ about 14 percent of workers, but account for 22 percent of sales. Those firms that both export and are foreign-owned account for just 0.5 percent of all firms, yet generate 6 percent of all sales. The observed higher productivity is consistent with existing research and expectations: empirical evidence from developing countries shows that foreign-owned firms are more productive than their domestic competitors, while the most productive firms self-select into exporting.

BUSINESS CONSTRAINTS

Access to credit is named as the top constraint by Burkinabé firms. Over one-third of surveyed businesses list access to credit as the most important hindrance, while 75 percent list it as a major constraint, much larger proportions than in comparable countries of Sub-Saharan Africa. Financial inclusion is limited; only 14 percent of the population had a bank account in 2014. Access to credit is also limited and uneven—according to estimates, lending to firms with less than 100 employees amounted to just 10 percent of all bank lending. Thus, smaller firms face severe constraints in accessing funding, especially informal firms in rural areas, as well as agriculture enterprises.

Private sector employment in Burkina Faso is held back by a skills deficit and mismatch. Over one-third of employers report the lack of educated workforce as a business constraint. A similar skills gap applies to enterprise owners and managers. An example: 80 percent of owners of informal firms have never attended school. Limited skills seem to also hold back female entrepreneurship and, more generally, the skills deficit seems to limit the pool of female workers outside agriculture.

Firms are also constrained by underdeveloped and expensive electrical infrastructure. Burkina Faso compares unfavorably to other low-income countries in terms of electrification and cost of electricity—in fact, firms in Burkina Faso pay some of the highest connectivity fees and electricity prices in the region. While progress has been made in recent years, demographic trends and consumption projections raise questions about the sustainability of existing electricity infrastructure. Limited access to electricity, highlighted as major constraint to doing business by a little over 54 percent of Burkinabé firms, and its cost are of particular concern to firms.

A STRATEGY FOR BETTER JOBS

To achieve the dual aims of economic growth and poverty reduction, supporting increased productivity — in the formal and informal sector — will be key. Both agriculture and non-agriculture sectors suffer from low productivity with resulting low incomes and persistently high levels of poverty. A potential future Jobs Strategy should thus provide a cross-sectoral mix of productivity-enhancing measures that will support both formal, as well as informal firms, as the latter are most likely to remain the largest employer outside agriculture over the medium term.

INTRODUCTION

This report is part of a larger jobs diagnostic effort aimed at a better understanding of the labor market in Burkina Faso, its link to poverty reduction and prospects for the future. A jobs diagnostic is a tool for developing jobs strategies to unlock the economic potential, increase productive and inclusive employment opportunities, foster social cohesion, and provide pathways out of poverty. Jobs are central both to translating economic growth into poverty reduction, as well as to boosting shared prosperity.

The report focuses on the private sector demand for labor outside agriculture and is accompanied by three complementary studies. To support the Jobs Agenda in Burkina Faso, four perspectives on jobs challenges have been explored in parallel to help build a foundation for effective jobs strategies. In addition to the present report, there are important conclusions stemming from separate reports on: (i) *Growth and Jobs*; analyzing the drivers of economic growth and productivity from a macro-economic perspective; (ii) *Workers and Jobs*; looking at the supply side of labor markets and providing a profile of workers and their jobs to better target interventions; and (iii) *Agriculture and Jobs*; specific issues pertaining to employment and jobs in the agriculture sector as the largest contributor to GDP and employment. The combined ambition of these efforts is to provide the Government of Burkina Faso with evidence to consider when drafting policies for more and better jobs.

Data and Methodology. The data used to assess labor demand in the formal sector is derived mostly from the Enterprise Census conducted in 2008, while the examination of the informal sector relies mainly on the more recent Multi-Sector Household Survey (EMC) conducted in 2014. The EMC 2014 can contribute to the analysis of the informal sector because it contains data on household enterprises that represent an important portion of the informal sector. The Enterprise Census 2008 covers a representative sample of all formal and informal firms in Burkina Faso outside agriculture. The interpretation of the results assumes correct random sampling. However, as this is particularly difficult when sampling informal firms, the results need to be interpreted with care. Moreover, both datasets do not enable an analysis of firm dynamics. The analysis hence, relies on the age of firms to depict changes. The Government of Burkina Faso is currently concluding a new Enterprise Census, but data was not yet available at the time of writing. More information about the data used is provided in relevant sections, as well as in *Annex A* for the 2014 EMC and *Annex B* for the 2008 Enterprise Census.

The report examines the formal and informal sectors with the aim of identifying the pathways to better—more productive—jobs. The analysis aims to identify categorical

and structural differences that lead to diverging outcomes, as well as universal constraints faced by all types of firms. It focuses on the industry and services sectors from the perspective of the firm and attempts to identify what and who are the determinants of productivity and job creation. Special attention is given to the role of exporting firms. The analysis also discusses the constraints for both domestic and foreign investors. Specifically, it looks into business climate hindrances of labor demand by examining the lack of access to credit, skills mismatches, and burdens related to the electrical infrastructure.

The report is structured as follows. *Section 1* outlines the broad characteristics of the private sector labor demand outside agriculture for both the informal and formal sector. *Section 2* turns to the informal sector and first provides an outline of its main features, followed by the analysis of determinants of productivity. *Section 3* looks at the formal sector, identifying general characteristics and examining the determinants of productivity, before concluding with a comparison of productivity with the informal sector. *Section 4* addresses trade and the implications of highly-concentrated exports on labor demand. *Section 5* highlights the most pressing issues affecting negatively the business climate in Burkina Faso, both those affecting labor directly and indirectly.

1. PRIVATE SECTOR LABOR DEMAND

Until recently, the economy of Burkina Faso expanded quickly while registering almost full employment. However, most jobs remain in low productivity agriculture, particularly subsistence and semi-subsistence farming. Agriculture accounts for 79 percent of employment but produces just 32.4 percent of GDP. Outside agriculture, the private sector is dominated by commerce and other services accounting for 47.3 percent of Burkina's GDP. 88 percent of all firms are informal and account for more than 60 percent of nonagricultural employment. Most of the informal employment occurs in commerce, while other services account for most of the formal employment. Within the large informal sector, micro firms provide 90 percent of employment opportunities. In contrast, firms with 100 or more employees provide most employment in the formal sector. Overall, formal firms are more productive than informal ones.

Agriculture continues to dominate Burkina's economy, but services now account for a greater share of the GDP. As *Table 1* indicates, Agriculture remains the largest provider of jobs, accounting for 79 percent of total employment in Burkina Faso, and continues to represent a significant share of Burkina's GDP (32.4 percent in 2014). However, services now account for a greater share of the GDP (47.3 percent), while employing a considerably smaller share of labor (16.1 percent). Industry accounts for 4.9 percent of employment and 20.4 percent of GDP.

Table 1

Agriculture dominates emplo	yment, but services ac	count for the largest s	hare of output

Sector	Share in GDP	Share in Employment
Agriculture	32.4%	79.0%
Industry	20.4%	4.9%
Services	47.3%	16.1%

Note: Data for 2014.

Source: World Development Indicators

Outside agriculture, the vast majority of firms in Burkina Faso are informal and they account for the bulk of non-agricultural employment.² According to the Enterprise

² This study borrows the definition of informality of firms from the Burkinabe Government, whereby formality is in general determined on whether the firm has a tax number (*nombre IFU*). However, in case a business does not have an allocated tax number, it can still be considered formal if it uses a book of receipts and expenses (*Cahier de recettes et dépenses*) for the purposes of accounting. This is due to the fact that even if a firm with this type of accounting is not registered, it is still paying a special tax (*Contribution du Secteur Informel*).

Census data from 2008³, 88 percent of non-agricultural firms are informal. Out of a total of 36,109 enterprises in Burkina Faso just 4,266, or 12 percent, are formal firms (*Figure 1*). Informal enterprises also account for most of employment in the non-agricultural private sector (63 percent), but the gap in this case is smaller, as formal firms employ 37 percent of all workers (*Figure 2*).

Manufacturing Formal 1,935 (50%) 4,266 firms **Other Services** 1,205 (31%) (12%) Other non-Ag Total Number of Firms Manufacturing 36,109 5,899(19%) 16,742 (53%) Informal Other Services 31,843 firms (88%) Other non-Ag 185 (1%) 2,826 (9%)

Figure 1

Most non-agricultural firms are informal and operate in the services sector

Source: World Bank staff based on data from the 2008 Enterprise Census

Most firms outside agriculture, formal and informal alike, operate in the services sector. 81 percent of all *formal* firms in Burkina Faso operate in the commerce and other services sectors (*Figure 1*). Among the *informal* firms, these two sectors involve 72 percent of all firms. Only 12 percent of formal firms and 19 percent of informal ones are engaged in manufacturing.

The services sector also accounts for most of the employment outside agriculture, in formal and informal firms. Interestingly, commerce and other services account for the same amount of total employment among formal and informal firms: 68 percent (*Figure 2*). The distribution among these two subsectors differs, though, as: (a) commerce accounts for 25 percent of employment among formal firms and 48 among informal; and

³ The 2008 Enterprise Census is the most recent one, the Government of Burkina Faso is in the process of completing the next census wave.

(b) other services account for 43 percent of employment among formal firms and 20 percent among informal ones. Interesting to note is that while half of all formal firms operate in the commerce sector, these firms account for only one-quarter of formal employment—these shares are more aligned in the case of informal firms where 53 percent of all firms in the commerce sector employ 48 percent of informal workers.



Figure 2

Informal firms and services account for the bulk of employment outside agriculture

Source: World Bank staff based on data from the 2008 Enterprise Census

While micro firms are most numerous both in the informal and formal sector, they only account for most of the employment in the *informal* sector. Micro firms—firms with less than 10 employees—dominate both the formal and informal sector, accounting for 83 percent and 99 percent of all firms, respectively (*Figure 3*). An important difference emerges when looking at the relative distribution of employees by firm size, though. While around 90 percent of the workers in the informal sector are in micro firms, the formal sector employs the largest share of around 35 percent of the workers in firms with 100 or more employees.



Source: World Bank staff based on data from the 2008 Enterprise Census

Most formal and informal firms have been operating for less than five years—these firms also dominate employment in the informal sector, but less so in the formal sector. As *Figure 4* (left panel) shows, firms that have been in existence for five or less years account for the bulk of formal (37 percent) and informal firms (40 percent). There are important differences between the formal and informal sector, though, indicated by the right panel of *Figure 4*. While *younger*—established no more than five years ago—informal firms account also for most employment in the informal sector (40 percent), in the formal sector the shares of employment are more equally distributed, and it is the oldest firms—established ten or more years ago—that account for the largest individual share (28 percent). This is also supported by the fact that in the formal sector half of all

Figure 4

Figure 3



firms with 100 or more employees were established ten years ago or earlier.



Source: World Bank staff based on data from the 2008 Enterprise Census

In terms of employment, commerce dominates the informal sector, while other services (excluding commerce) employ the largest portion of people in the formal sector. A breakdown by sector of activity sheds light on some further differences between informal and formal firms, illustrated side-by-side in *Figure 5*. Informal firms are far more concentrated in commerce, both in terms of workers employed and total number of firms. Commerce also contains the largest share of formal firms, but it is the other services sector that employs the most workers.

Figure 5



The commerce sector contains most firms and together with services provides the bulk of employment

Note: MinUtilConstr = Mining, Utilities, Construction. Source: World Bank staff based on data from the 2008 Enterprise Census

Women account for less than a quarter of non-agriculture private sector employment. Overall, only 27 percent of workers in the formal sector and 23 percent in the informal sector are female. *Figure 6* shows that there are important differences between sectors. The services sector attracts the largest share of female employees, both in formal (around 24 percent) and informal firms (around 48 percent), followed by manufacturing for informal firms (around 18 percent) and commerce in the case of formal firms (around 22 percent). Looking at the average number of employees per firm and across gender, formality and sector (*Table 2*), a clear gender divide emerges: women are holding significantly fewer jobs outside agriculture than men, across all sectors. This indicates that women may miss out on more lucrative employment opportunities.

Figure 6



Women account for much smaller shares of employment across all sectors, except informal services

Note: MinUtilConstr = Mining, Utilities, Construction. Source: World Bank staff based on data from the 2008 Enterprise Census

Table 2

Average number of female and male employees per firm across formality and sectors

Sector	Average Number of Female Employees		Average Number of Male Employees	
	Formal	Informal	Formal	Informal
Mining/Utilities/Construction	3.5	0.1	16.2	2.1
Manufacturing	2.1	0.4	12.3	1.9
Commerce	0.9	0.2	3.5	1.5
Other services	3.4	0.9	9.0	1.0
Total	2.0	0.4	7.1	1.5

Source: World Bank staff based on data from the 2008 Enterprise Census

Productivity, measured as sales per worker, is overall higher in formal firms than in informal firms. The productivity distributions of formal and informal firms depicted in *Figure 7* show that productivity is higher among formal firms. This conclusion is further confirmed by the fact that while informal firms employ 60 percent of workers, they only generate 11 percent of sales—indicating a significant gap in productivity. An informal firm generates barely 10 percent of the sales of a similar formal firm and will likely be 66 percent less productive.⁴ The productivity gap between formal and informal firms will be further examined in *Section2.2 and 3.2*.

⁴ Comparing average sales of a micro informal firm in commerce with average sales of a micro formal firm in commerce.

Figure 7 The formal sector overall exhibits a higher level of productivity



Source: World Bank staff based on data from the 2008 Enterprise Census

2. LABOR DEMAND AND PRODUCTIVITY OF INFORMAL HOUSEHOLD ENTERPRISES AND FIRMS

Informal household enterprises outside of farming are scattered throughout Burkina Faso and provide work particularly in urban areas.⁵ The average informal household enterprise is headed by a male, has a majority of female workers, is eight years old, has 2.6 employees, operates in the commerce sector, and generates sales of 221,498 XOF (495 USD equivalent). Informality appears persistent, as one-third of the enterprises in the sample were established ten or more years ago. Productivity of informal household enterprises decreases significantly with size, but not with age. The highest productivity increases are reported for firms that employ temporary workers and firms that work either in the service or commerce sector.

2.1. LABOR DEMAND OF INFORMAL HOUSEHOLD ENTERPRISES

Informal household enterprises outside farming are scattered throughout Burkina Faso and the majority is engaged in commerce. Around 40 percent of all household enterprises are located in urban areas compared to only 23 percent of the population, demonstrating increased entrepreneurial activities in urban centers. More than 52 percent of all informal household enterprises and around 47 percent of workers employed by informal household enterprises participate in commerce (*Figure 8A, Figure 8B*⁶). The next largest sector is manufacturing which accounts for a quarter of both firms and employees. Nearly two-thirds of the firms in this sector are engaged in manufacturing of food products or beverages. In distant third is mining and quarrying, which accounts for one-tenth of firms and one-eighth of employees.

⁵ This section generally uses data from the 2014 Multi-Sector Household Survey (Enquete Multisectorielle Continue, EMC). Only in the sub-section on productivity and the international comparison of firms is the 2008 Enterprise Census used.

⁶ This is broadly comparable to the distribution based on the 2008 Enterprise Census, as shown in *Section 1*, through *Figure 1* and *Figure 2*, although some important differences exist, partly attributable to the different classification of sectors and the time difference between the two datasets.



Source: EMC 2014

A more disaggregated look shows that the number of firms in the mining/quarrying sector is growing. Without panel data it is not possible to observe the evolution of household enterprises over time, but it is possible to see when existing firms were established. In our dataset, 8 firms were established in 2003 and 1 firm that started operating in 2004 survived until 2014. These are modest numbers when compared to 65 firms that were launched in 2010, 52 firms in 2011 and 98 firms in 2012. After gold prices began to fall in 2012, the number of informal household enterprises being active in that industry dropped slightly with 67 enterprises starting in 2013 and another 69 in 2014. The gained importance of the mining sector over time is also confirmed by an estimate of the Ministry of Environment and Social Affairs of Burkina Faso. The ministry estimates that around 700,000 people work informally in the (gold) mining industry. This is contrasted by 9,000 people that are working in the formal mining companies (IMF 2014).

Most informal household enterprises employ less than five workers and they often make use of unpaid labor. 47 percent of all enterprises employ between two and five people, while almost as many, 43 percent, employ just one person. Firms with up to five employees dominate both the absolute number of firms (91 percent of all firms), as well as the share of employees (67.5 percent of total) (*Figure 9*). 33 percent of all informal household enterprises, irrespective of size, have at least one family member who is working as unpaid labor. This is consistent across all regions of the country.

Figure 9 Most informal household enterprises employ less than five workers

Note: HH = household. Firm size categories on x-axis. Source: EMC 2014.

The majority of informal household enterprises contain a majority of female workers.⁷ Nearly 70 percent informal household enterprises across various sectors contain a majority of female employees, the exceptions are mining, utilities, and construction *(Figure 10Error! Reference source not found.)*. A combination of factors, including the gender education gap, as well as limited access to credit, productive land, agricultural inputs and technology all lead to women selecting into less productive sectors and receiving less income from their work.

⁷ Note that this number is different to the information provided in the last section. There are several reasons for this: First of all the data used in the last section is from the enterprise survey in 2008 whereas this data is coming from 2014. Additionally, the 2008 survey does not include all sectors and agricultural or state-owned enterprises are excluded. The definition of formality is also different and problems with representativeness remain. See also Annex A. Understanding the data: EMC 2014 and Annex B. Understanding the data: The 2008 Enterprise Census for more information.





Note: MinUtilConstr = Mining, Utilities, Construction. Source: EMC 2014

Smaller household enterprises are more likely to engage in commerce than larger ones and less likely to engage in mining . Household enterprises that employ one person participate in commerce at a higher rate than those employing 2-5 workers (57 percent vs. 49 percent)—in fact, the larger the firm the less likely it is to participate in commerce. One-person enterprises engage significantly less in mining, utilities and construction than larger firms. Whereas engagement in mining and service sectors increases with the size of the firm, the share of firms in the construction sector is stable at around 20 percent (*Figure 11*).

Figure 11





Note: MinUtilConstr = Mining, Utilities, Construction. Firm size on x-axis. Source: EMC 2014 Smaller informal household enterprises—that is, those with less than five employees account for more than three quarters of the total sales of the informal sector. Informal household enterprises that employ 2-5 workers account for 49 percent of the firms in the dataset, but 60 percent of all sales (*Figure 12*). One-person firms, while representing almost the same share of firms (43 percent), account for a significantly smaller portion of sales, 16 percent. Together, these two categories of informal household enterprises account for more than 75 percent of all sales.

Figure 12



Informal household enterprises with fewer than five employees account for three quarters of all sales

Source: EMC 2014

Informal household enterprises in Burkina Faso are persistent and remain small as they age. While the available data does not allow tracking of firms over time, it is possible to gauge whether firms tend, on average, to be larger as they age. Looking at the Enterprise Census 2008 this is not the case as firms stay small. Unlike formal firms, informal firms in Burkina Faso hardly grow five years after their establishment (*Figure 13*). At 40 years of age or more, they have only slightly more employees than after the first five years.⁸ This can also be seen in comparison to selected regional peers—for example, Kenyan manufacturing firms, as well as formal firms in Zambia, Rwanda, Ghana, and Burkina Faso itself, that survive to 40 years or more have three times as many employees as after the first five years. On the other hand, informal household enterprises in Burkina Faso that reach the age of ten years or more are likely to be only slightly larger (3 vs. 2.5 employees) than younger enterprises. The longevity of these household enterprises and their

⁸ Regression includes surviving (beyond five years) informal household enterprises; run on size of firms (log of employment) on dummies for age categories.

persistent small size may provide evidence that families are trapped in this situation without a way out.

Figure 13

Informal household enterprises in Burkina Faso hardly grow with age



Note: Information on Burkina Faso is reported for both, informal and formal firms, using the Enterprise Census for 2008. Formal and informal firms are combined in Zambia (2010), Rwanda (2014), Uganda (2010), Lesotho (2015). The dataset for Kenya (2010) covers only manufacturing, and Ghana (2003) covers mainly manufacturing.

2.2. PRODUCTIVITY IN THE INFORMAL SECTOR⁹

Different levels of productivity are found by sector but not by location for informal firms. Looking at the distribution of sales per worker, informal firms located in the commerce and services sectors are more productive than their counterparts in the mining/utilities/construction and manufacturing (*Figure 14A*). Productivity examined at the regional level however does not visually demonstrate significant differences between the regions of the country (*Figure 14B*).

⁹ To investigate productivity and compare the performance of informal and formal firms, this section utilizes data from the 2008 Enterprise Census where both formal and informal information is collected in the same manner.

Figure 14 Different levels of productivity are found by sector but not by location for informal firms

A. Informal firms operating in the commerce and services sectors are most productive



B. Informal firms based in various regions of Burkina Faso show similar levels of productivity



Note: MinUtilConstr = Mining, Utilities, Construction. Source: 2008 Enterprise Census

Allocation of labor to more productive firms appears to occur only for the smallest firms. Looking at the relationship between firm productivity and labor allocation, as presented in *Figure 15*, one hopes to see an upward slope that denotes that labor is being allocated to productive firms even as firms increase in size.¹⁰ This relationship is nowhere visible amongst informal firms. Instead, there is a very apparently trend of labor being allocated to less productive firms as firm size increases. There is a slight upturn for the

¹⁰ Productivity is measured as sales per worker. A positive slope indicates a positive relationship between employment size and productivity, meaning that more productive firms are growing. The graphs are local polynomial smooth plot of output per worker versus employment with 95 percent confidence interval and local mean smoothing. The caveat is that standard errors are large—represented by the grey shading in the graphs—for very big firms as only few firms have more than 1000 employees.

largest firms in commerce and manufacturing, however it is not enough to bring the firms on par with the smallest informal firms.

Figure 15





Note: MinUtilConstr = Mining, Utilities, Construction. Source: 2008 Enterprise Census

The relationship between firm size and productivity is not linear: informal firms seem to improve their productivity only within some size categories and productivity sharply decreases for the largest firms. Once the informal firm grows beyond one employee the relationship between size and productivity becomes non-linear (*Figure 16*).¹¹ Informal firms that have between 2 and 5 employees are significantly less productive than the smallest firms. Only firms with more than 11 employees become significantly more productive. This increased productivity, however, falls sharply when the firm grows to 20 employees or more. These results are not entirely unexpected. As part of the World Bank Enterprise Survey¹² conducted in 2009, 120 informal firms in Burkina Faso were surveyed, and the analysis, along with data from six other African countries, concluded that smaller informal firms are more productive than large informal firms (Amin and Islam 2015). This can be related to formalization and transformation costs.^{13, 14}

¹¹ Full regression results shown in Annex C, Table 2.

¹² The World Bank 2009 Enterprise Survey is s firm level survey of the formal sector and was last administered in Burkina Faso in 2009 with 394 firms. For this exercise, an additional 120 informal firms were interviewed. Nearly half of these were in the manufacturing sector, while over half had between 5 and 19 employees, and 78 percent of them were in the capital. The Enterprise Survey seek to assess the business environment of a country, including topics such as corruption, informality, taxes and more.

¹³ As the informal firm grows it becomes more visible and must therefore pay more to avoid being a target of regulations. "Such evasion costs may include paying penalties when caught, or even announcing bankruptcy when discovered and then reappearing as another firm altogether" (Gelb et al. 2009). Other, more loosely defined evasion cost include: crimes committed against informal firm's property given poor or limited protection from the police and judicial courts, or difficulty in obtaining finance, contracting with the formal sector firms, accessing physical infrastructure and in accessing public services such as skill-training programs or government-sponsored credit facilities. ¹⁴ Transformation costs refers to transforming from an informal to formal firm and can include cost pertaining to: formalization of processes, improved book keeping as well as general record keeping, the registration fees, immediate taxes incurred, and increased managerial time spent on paper work.

Figure 16 Productivity of informal firms grows with age, but not always with size



Note: The results combine 6 separate regressions with firm size and age always included as variables. In a conservative way, the reported effect size represents the lowest estimated effect size in case of several regressions. Table 2 in Annex C provides the full range of coefficients. Base dummies for size are firms with size 1, for age, with age 5 years or younger, for Sectors the Manufacturing sector and for regions the central region. Error bars report 95 percent confidence intervals.

Source: World Bank staff based on data from the 2008 Enterprise Census

Higher productivity is associated with informal firms located outside the central region and with activities in sectors other than manufacturing. Informal enterprises located outside the central region of Burkina Faso, which includes the capital city Ouagadougou, are more productive compared to those in the capital when controlling for important determinants of productivity (*Figure 16*). Living in the Western region has the highest positive impact on productivity compared to the central region. This is likely influenced by Bobo-Dioulasso, Burkina Faso's second economic hub after Ouagadougou and biggest city in the Western region. Enterprises operating in sectors other than manufacturing are more productive than those in manufacturing. The overall highest effect size is reported for informal firms operating in the commerce sector compared to the manufacturing sector. Working in the commerce sector increases, in that scenario, the productivity by 108 percent compared to working in the manufacturing sector, holding all variables constant. The second highest effect size is reported for services.

Temporary workers seem to boost the productivity of informal firms while the firm's age does not seem to matter much. A greater share of temporary workers is associated with higher productivity (*Figure 16*). This suggests that temporary workers play a role in overcoming bottlenecks and thus help to increase productivity. Firms improve productivity only in the age group of 6 to 9 compared to 1 to 5 years. After that interval productivity is declining and firms aged 20 or older have around the same productivity level as firms aged 1 to 5 years when controlling for other confounding variables.

3. LABOR DEMAND AND PRODUCTIVITY OF FORMAL FIRMS

Most formal firms and most workers are registered in Burkina's capital city *Ouagadougou*.¹⁵ The average formal firm operates in the commerce sector, is 7 years old, has 9 employees and generates sales of 314,118 XOF (701 US-Dollar). The importance of larger firms in terms of employment is greater than in the informal sector: firms with more than 100 employees provide more than one-third of all formal jobs, while firms with more than 20 employees account for almost 70 percent of sales. In terms of output, the formal sector is dominated by commerce that contributes almost half, while the share of manufacturing is in decline. Employment is more evenly distributed among sectors of activity than is the case with informal firms. Commerce accounts for 27 percent of all formal employment, manufacturing for 20 and other services a further 13 percent. Formal service firms employ larger shares of female workers, while the share of women is lower in other sectors such as manufacturing, especially in relatively more productive subsegments. Unlike in the informal sector, a formal firm's productivity increases with size. Older firms also exhibit higher productivity, as do foreign-owned and exporting firms. High concentration of sales within several sectors suggest that a lack of competitiveness might be detrimental to increases in productivity.

3.1. LABOR DEMAND OF FORMAL FIRMS

More than two-thirds of formal firms are based in the central region which includes the capital city Ouagadougou. Historically Bobo-Dioulasso was the economic capital of the country until Burkina Faso gained independence and trade moved to Ouagadougou. Today, 71 percent of formal firms in Burkina Faso are located in the central region and the capital city alone is home to 68 percent of all firms. The Southwest region, which includes the second largest city Bobo-Dioulasso, hosts 17 percent of formal firms, while the remaining regions of the country contain just a fraction of formal firms.

The vast majority of formal firms have less than ten employees, but larger firms account for a greater share of employment. Over 80 percent of formal firms have less than ten employees (Figure 17Error! Reference source not found.). However, employment is distributed more evenly among formal than informal firms and micro firms do not account

¹⁵ Contrary to the last section that made use of the EMC 2014 and the 2008 Enterprise Census, the analysis in this section is only based on the 2008 Enterprise Census. The Enterprise Census includes 4,266 formal firms. The change of the data source prevents the comparison of the results for formal enterprise to informal household enterprises.

for such a commanding share of total employment. All size categories (1-9 employees, 10-19, 20-49, 50-99, 100-400 and 500 employees and more) individually account for more than 10 percent of total formal employment, whereby the two largest categories are firms with up to 9 employees that account for 28 percent and firms with 100-499 employees that account for 22 percent.





Source: 2008 Enterprise Census

Micro formal firms are more likely to engage in commerce than larger firms and are on average younger than larger firms. Formal firms with less than 10 employees participate in commerce at a higher rate than those employing 10 to 19 workers (56 vs. 36 percent). They engage significantly less in the mining, utilities and construction sector (8 vs. 17 percent) (*Figure 18*). Smaller formal firms also persist through time and represent the bulk of all formal firms in all age categories (*Figure 19*). However, they are on average younger than larger firms and their share declines as firms get older: from around 95 percent among firms that have existed for 1 year to around 66 percent among firms that were established 10 or more years ago.



Figure 18 Smaller formal firms mainly engage in commerce and services

Note: MinUtilConstr = Mining, Utilities, Construction. Source: 2008 Enterprise Census

Figure 19

Smaller formal firms are on average younger than larger firms



Source: 2008 Enterprise Census

The commerce sector accounts for one-half of all formal firms but employs only onequarter of all former workers. Manufacturing and construction, on the other hand, contain 12 and 6 percent of firms, respectively, but employ 18 and 11 percent of all workers (*Figure 20*). This is the result of a smaller average firm size in the commerce sector (4.8 employees) as compared to mining (66.4 employees) or manufacturing (15.3 employees).





The commerce sector accounts for over half of all formal firms but only one-quarter of all formal jobs

Source: 2008 Enterprise Census

Older, foreign-owned, exporting and more productive firms employ more workers. A formal firm that is in existence for 5 or less years is likely to be 20 percent smaller on average than a firm that is 6 to 9 years old. Foreign-owned firms and exporters are also likely to be larger, a characteristic common to other countries. Not unexpectedly, exporting firms in the commerce and services sectors, which constitute 5 and 3.4 percent of the respective sectors, are significantly smaller than exporting firms in the manufacturing sector.¹⁶

Larger firms account for most sales in the formal sector. Small formal firms with less than 10 employees account for 83 percent of all firms and 28 percent of employment, yet produce only 22 percent of sales (*Figure 21*). It is firms with more than 20 employees that dominate formal sales, in total they account for almost 70 percent. Firms with 20 to 49 employees produce 29 percent of sales, while accounting for just 5 percent of all firms and employing 15 percent of workers. Furthermore, firms with between 50 and 499 employees account for barely 2 percent of firms, but 38 percent of sales.

¹⁶ Regression analysis also shows that a larger share of temporary workers is correlated with a smaller total number of employees in an enterprise, and that firms that are more capital intensive are larger.



Figure 21 Larger firms account for the bulk of sales in the formal sector

Source: 2008 Enterprise Census

Highest presence of female workers is found among formal firms in the services sector, but overall women are less represented in sectors with higher productivity. Unlike informal household enterprises where women account for most employment, formal firms have fewer female workers (*Figure 22*). Only in the service sector, and to a lesser extent in the commerce sector, do firms with a majority of female workers comprise a sizeable fraction of firms, 35 and 23 percent, respectively. Formal firms in the services sector also employ on average the highest share of female employees (38 percent). In mining/utilities/construction sector, on the other hand, where the output per worker is three times higher than in the services sector, female workers account for just 20 percent.



Figure 22 Women are less represented than men in formal firms in all sectors

Note: MinUtilConstr = Mining, Utilities, Construction. Source: 2008 Enterprise Census

This pattern indicates that women are not yet integrated into sectors of higher productivity. Further disaggregation of the manufacturing sector provides an example for how women remain less represented in (sub)sectors with higher productivity. Manufacturing of tobacco products and manufacturing of other non-metallic mineral products—which feature the highest output per worker—have a comparatively low share of female employees (11 percent). In contrast, the segments of manufacturing with the highest shares of female employees such as manufacturing of wearing apparel (28 percent) and manufacturing of rubber and plastics products (24 percent) suffer from low levels of productivity. In fact, on average, these firms are nine times less productive than firms in manufacturing of tobacco products and other non-metallic mineral products.

BOX 1. ANALYZING TRENDS AMONG LARGE FORMAL FIRMS

Large formal firms, while not numerous, provide a significant number of formal jobs in Burkina Faso. The availability of new data also reveals that larger firms—those with more than 100 employees—are growing and increasing their share of total formal employment.

In order to make the observation of a trend possible, this study uses a new dataset of large and medium sized formal firms that reported financial statements to the tax authority of Burkina Faso in 2015 and compares it to the 2008 Enterprise Census. Only firms with more than 100 employees are taken from both datasets to make the data comparable.



Figure B.1 reveals the trend for growth in employment. Most notable is the growth in the employment of workers in large firms within the mining sector from a 3 to 9 percent share of total employment. The other sector that experienced large employment growth between 2008 and 2015 was the transport/storage/communications sector, growing from 3 percent to 10.5 percent whereas all other sectors also increased but on a lower level. Turning to sales by sector of large formal firms, *Figure B.2* demonstrates only a small decrease in the dominance of the commerce sector. However, the figure also highlights the increased sales generated by the mining sector and to a less extent the utilities.

Figure B.2

Sales share of large formal firms by sector of activity



Source: 2008 Enterprise Census

Source: 2015 Burkinabe Tax Authority

What are the sectors of most interest for new companies? While commerce attracts two-thirds of large younger firms—that have been existence for less than three years—construction is also attracting a significant share of new entrants (17 percent).

3.2. PRODUCTIVITY IN THE FORMAL SECTOR

Among formal firms, sector is a better predictor of productivity than location. Formal firms engaged in the mining/utilities/construction, commerce and services sectors are significantly more productive, as measured by sales per worker, than their counterparts in the manufacturing sector (*Figure 23*). Productivity examined at the regional level however does not demonstrate any significantly differences between the various regions (*Figure 23B*).

Figure 23

Among formal firms, sector is a better predictor of productivity than location



A. Formal manufacturing firms exhibit lowest levels of productivity

B. Formal firms exhibit similar levels of productivity in all regions



Source: World Bank staff based on data from the 2008 Enterprise Census

Allocation of labor to more productive firms is achieved up to a limit. As noted in the section dealing with informal firms, when looking at the relationship between firm productivity and labor allocation as presented in *Figure 24*, an upward slope denotes that

labor is being allocated to productive firms even as firms increase in size.¹⁷ In the case of formal firms in Burkina Faso, such a relationship is only visible in commerce. For firms in all other sectors, there seems to be a turning point beyond which labor is not being allocated to the most productive firms. Or in other words, additional employment does not lead to further increases in productivity. This indicates that there may be an optimal firm size. Further analysis could explore the optimal size in depth and link to competition and market structure.

Figure 24



Only formal firms in the commerce sector continue to increase their productivity as they grow in size

Source: World Bank staff based on data from the 2008 Enterprise Census

Further analysis indicates an overall positive relationship between size and productivity among formal firms, but there is a turning point. When comparing smaller formal firms— those with less than 10 employees—with their larger counterparts, the larger firms are significantly more productive, until they reach the 500-employee market, at which point the productivity significantly falls off (*Figure 25*).

¹⁷ Productivity is measured as sales per worker. A positive slope indicates a positive relationship between employment size and productivity, meaning that more productive firms are growing. The graphs are local polynomial smooth plot of output per worker versus employment with 95 percent confidence interval and local mean smoothing. The caveat is that standard errors are large—indicated by the shaded areas in the figure—for very big firms as only few firms have more than 1000 employees.
Figure 25 Productivity regression results for formal firms



Note: The results combine 7 separate regressions with firm size and age always included as variables. In a conservative way, the reported effect size represents the lowest estimated effect size in case of several regressions. Table 4 in Annex C provides the full range of coefficients. Base dummies for size are firms with size 1, for age, with age 5 years or younger, for Sectors the Manufacturing sector and for regions the central region. Error bars report 95 percent confidence intervals.

Source: World Bank staff based on data from the 2008 Enterprise Census

Foreign-owned and exporting firms are significantly more productive, yet they represent only a fraction of formal firms. *Figure 25* also shows that foreign-owned firms are significantly more productive than domestically-owned firms and that exporting firms are more productive than non-exporting firms. However, both foreign-owned firms and exporting firms account for only small fractions of formal firms, where 5.2 percent are foreign-owned, and 4.3 percent are exporting. Interestingly, the overlap between these two variables is minimal with just half of a percent of firms falling into both categories. Empirical evidence from other developing countries confirms that foreign owned firms are more productive as compared to their domestic counterparts (De Mello Jr 1997; Aitken and Harrison 1999; Rasiah and Gachino 2005). Research also shows that more productive firms self-select into exporting (Delgado et al. 2002, Wagner 2007) and that while doing so they continue to increase productivity (Van Biesebroeck 2005).

The higher the capital to labor ratio, the lower the productivity in formal firms, whereas a higher share of temporary workers is associated with higher productivity. This relationship also holds in the informal sector and indicates decreasing efficiency of capital investments, meaning that there is an implicit limit to their returns.¹⁸ As capital factor intensity increases with firm size in Burkina Faso, this is particularly problematic for larger firms. Only one-quarter of formal firms engage temporary employees. However, within the firms that do engage temporary employees, mainly in manufacturing, they represent half of the total employment of the firm. Relative to regular workers, the output per worker is higher for firms with more temporary workers.

Lack of competition is found in many sectors of the economy in Burkina Faso and has a negative impact on productivity. Regression analysis reveals that sectors with higher concentration of sales or workforce are less productive (Figure 25). The sectors of mining/quarrying, transport/storage and manufacturing suffer from the highest overall rates of market concentration in terms of sales. More disaggregated data reveals that in several areas of the economy more than 90 percent of sales are concentrated in four or fewer firms (*Table 3*). *Table 3* highlights the difference in sales concentration, as calculated by the Herfindahl-Hirschman Index, in these various areas. Such high levels of concentration highlight possible barriers to entry for new formal firms resulting in a lack of competition. Separate regression analysis of wages reveals that as the concertation of sales increases, a firm pays significantly less to its workers.¹⁹

Table 3

Sector		Firms	Herfindahl-Hirschman Index of Sales
	# of all firms	% of sales by top 4 firms	Formal
Mining of metal ores	9	100%	0.37
Motion picture, video and television program production, sound recording and music	162	100%	0.71
Financial service activities	25	99%	0.17
Wholesale trade	470	99%	0.17
Computer programming, consultancy and related activities	101	98%	0.72
Postal and courier activities	1332	98%	0.37
Specialized construction activities	359	97%	0.04
Wholesale and retail trade and repair of motor vehicles and motorcycles	3339	96%	0.21

Concentration of sales by top sectors²⁰

Source: World Bank staff based on the data from 2008 Enterprise Census

¹⁸ The full results of the regression are available in Annex C, Table 4.

¹⁹ The full results of the wage regression are available in Annex C, Table 5.

²⁰ Top is determined by the percentage of sales earned by the top four firms. All sectors have at least nine firms.

There is little divergence in the productivity of formal firms across regions. Although two-thirds of the formal firms in Burkina Faso (as well as three-quarters of the formal jobs) are registered in and around the capital, there is no measurable difference in productivity when these are compared with firms elsewhere. This is surprising, given that in more urbanized areas, it is expected that firms would experience lower costs of transportation, better access to inputs, better educated workforce and greater demand.

4.TRADE AND LABOR DEMAND

Export-oriented industrialization has played a crucial role in the success stories of many developing economies. Unlocking the potential of firms in tradable sectors in Burkina Faso can be a key lever for the creation of better jobs and more inclusive growth. At present, Burkina Faso's exports are highly concentrated, both in terms of export items (number and their respective shares) and in terms of export destinations. Just two products, cotton and gold, account for 70 percent of exports, which makes Burkina particularly vulnerable to fluctuations in the prices of these commodities. However, despite their high share of total exports, the cotton and extractive industry account for small shares of total employment and job creation. Diversification and a shift to higher-value products—for example from raw cotton to textiles—are possible, but challenging, pathways for ensuring greater and more inclusive job creation.

Intermediate goods and raw materials account for the majority of Burkina Faso's exports, while consumer and capital goods dominate imports. Overall, intermediate goods and raw materials account for 96 percent of Burkina Faso's exports (67 and 29 percent, respectively). Total exports amounted to US\$2,177 million in 2015 with gold and cotton accounting for more than 70 percent (*Table 4*). In absolute terms, the value of exported gold in 2015 was almost US\$1,300 million; the value of exported cotton was around US\$285 million. In contrast, total imports amounted to US\$2,980 million in 2015. The imports largely cover consumer goods and capital goods—these two categories account for 76 percent of imports (52 and 24 percent respectively). Imports are more diverse than exports and the two main import items, petroleum and medicaments, accounted for around 30 percent of the overall imports.

Table 4

Burkina Faso's five top	export and import it	tems (HS 6-digit level,	2015)
-------------------------	----------------------	-------------------------	-------

Exports	Value (US\$ '000)	Imports	Value (US\$ '000)
Gold in other semi-manufactured forms, non-monetary	1,298,067.58	Petroleum oils and oils (excl. crude);	716,481.39
Cotton, not carded or combed	285,427.18	Other medicaments of mixed or unmixed products,	131,596.16
Sesamum seeds	169,857.06	Cement clinkers	85,354.83
Cashew nuts, fresh or dried	86,044.58	Mineral or chemical fertilizers with nitrogen	51,001.43
Zinc not alloyed unwrought	55,332.03	Broken rice	50,288.16
All exports	2,177,496.62	All imports	2,979,784.87

Source: WITS Database, World Bank

Burkina Faso's gold exports are concentrated in a few markets while the export structure for cotton is more diverse. Switzerland accounted for roughly 90 percent of all gold exports in 2014 and often acts as an intermediary (*Figure 26*). Cotton exports on the other hand are dispersed across more trade partners with no one trade partner importing a particularly large share—the largest share goes to Singapore which only accounts for 9 percent of total cotton exports. Among WAEMU countries, Burkina Faso has a strong export market concentration of 0.44, the second highest after Niger as measured by the Hirschman-Herfindahl Index.²¹

Figure 26





Source: UNCTADStat, United Nations Conference on Trade and Development

While representing the bulk of exports, extractive industries and cotton production account for a low share of regular employment. The number of workers for whom employment in the extractive industries and cotton production represents the main job is low.²² Only around 2.3 percent of workers in Burkina Faso are primarily employed in the extractive industry and around 2.9 percent in the cotton industry (*Table 5*). In the cotton industry, the vast majority (88 percent) of workers is engaged in cultivation.

However, when incorporating secondary employment, the shares of the extractive industries and cotton production increase. When accounting also for secondary jobs, the importance of the extractive industry and cotton production increases. This is especially the case in the extractive industry where 2.31 percent or 113,911 workers are employed in their primary occupation, but after the inclusion of those who hold secondary the total number of workers increases to 9.9 percent or 500,514 when including those who hold a

²¹ In this case, the Hirschman-Herfindahl Index is used to measure the dispersion of trade value across export partners. Countries that have their exports concentrated in very few markets have an index value closer to 1, while a perfectly diversified export portfolio will have an index value of 0.

²² The values on jobs presented in this section are calculated using the second wave of the EMC (2014). They differ to those obtained in other waves due to seasonality.

secondary job in the sector. ²³ In the cotton sector, the inclusion of secondary employment increases the share in total employment from 2.9 to 4.6, or from 141,887 workers to 228,171.

Table 5

Employment in the extractive industry and cotton production (2014)

	Extractive Industry				Cotton Sector	
	Metallic	Non- Metallic	Total	Cultivation	Manufacturing	Total
Number working in sector as first job	57,935	55,976	113,911	124,370	17,517	141,887
Share (% of total employment) working in sector <i>as first job</i>	1.17	1.13	2.31	2.52	0.36	2.88
Number working in sector as first or second job	224,323	276,190	500,514	190,875	37,447	228,171
Share (%of total employment) working in sector as first or second job	4.46	5.45	9.91	3.86	0.76	4.6

Note: Working in sector as *first* or *second* job refers to workers holding either their primary or secondary employment in the respective sector. Source: EMC (2014), 2nd wave.

Jobs in the manufacturing industry—and to a lesser extent jobs in metallic ores mining—are associated with somewhat better employment conditions. Overall, 71 percent of all jobs in Burkina Faso are seasonal, indicating high income vulnerability (*Table 6*). The high level of seasonal work is influenced by the majority of Burkinabé working in agriculture. Not unexpectedly, seasonality is above average in agriculture. An example would be the cultivation of cotton that relies to 82 percent on seasonal work. However, among those workers employed in the refinement of cotton—which belongs to the manufacturing sector—the share of seasonal work decreases to 41 percent only and the share of permanent employment increases from the average of 27.4 percent across all industries to 57.1 percent. Similarly, those working in mining metallic ores, such as gold, also report lower levels of seasonality (60 percent) and a higher likelihood of permanent employment (37.5 percent) when compared with those working with non-metallic ores (68 and 28.9 percent, respectively).

²³ Note that this includes workers in informal and formal employment and does not differentiate between primary or secondary occupation. Other studies such as IMF (2014) include only formal workers.

Table 6

	Permanent position	Fixed-term contract	Seasonal Work
Cotton			
Cultivation	17.9	0.1	82
Manufacturing	57.1	1.6	41
Total	22.7	0.3	77
Extractive Industry			
Metallic ores	37.5	2.4	60
Non-Metallic ores	28.9	3.1	68
Total	33.3	2.8	64
Burkina Faso (overall)	27.4	1.8	71

Jobs in the cotton and extractive industries are predominantly seasonal, those in manufacturing less so

Source: EMC (2014), 2nd wave.

Considerable import growth, mostly of consumer goods such as fuel, marked the period from 1995 to 2014. There has been strong demand for imports in recent years and the structure of imports shifted somewhat to an increased share of consumer goods which accounted for 57.8 percent of all imports in 2014 (*Figure 27*). The main reason for this shift is the increased demand for fuel that composed 14 percent of imports in 1995 and 31 percent in 2014. The share of capital and intermediate goods declined over the period, from 49.5 percent to 40.1. The machinery and other transportation means may be imported in support of the expansion of mining projects, but there are no sufficient data to draw firm conclusions.



Figure 27 The imports of consumer goods, mainly fuel, has increased considerably since 1995





Source: WITS Database, World Bank

Diversification of firms into exports, specifically higher value manufactured goods, could be an important driver of future inclusive growth. Weakening terms of trade have dampened Burkina Faso's growth prospects for the coming years due to its reliance on gold and cotton exports. However, this could also be recognized as an opportunity as it could shift comparative advantage and prompt diversification out of exporting basic commodities. Research highlights the importance of export diversification in resource rich countries and finds evidence that diversification eventually leads to higher incomes per capita (Hesse 2009). This also holds for countries belonging to the West African Economic and Monetary Union (WAEMU). Plotting the Hischman-Herfindahl Index of WEAMU countries in relation to the log of their GDP suggests that a more diversified export structure is associated with higher levels of GDP (*Figure 28*).²⁴ However, Burkina Faso remains strongly dependent on revenues from gold exports. At the same time mining has not contributed to inclusive growth as formal job creation in the sector remains low.



Figure 28

Sources: UNCTADStat, United Nations Conference on Trade and Development; WITS Database, World Bank

There is a stronger positive relationship between GDP and manufactured exports than exports of agricultural raw materials. *Figure 29* shows evidence that supports the case for developing a manufacturing export sector as a step towards sustaining growth—a development strategy that was crucial to the success of the East Asian economies (Hesse 2009). Hence, policies are needed that help enable firms in their transition to higher value-added exports. Examples could be the cotton production and gold mining, where potential for a transition into textile manufacturing or gold refinement exists. In 2014, cotton with its low job quality accounted for nearly a quarter of exports whereas cotton textiles, which provides better quality jobs, made up less than 1 percent.

²⁴ The same is true for a larger sample of Sub-Saharan African Countries (Songwe and Winkler 2012).





Note: A steeper slope in the trend line implies a stronger positive relationship. Sources: UNCTADStat, United Nations Conference on Trade and Development; WITS Database, World Bank

5. BUSINESS CLIMATE AND LABOR DEMAND

Globally, Burkina Faso remains one of the least desirable locations to engage in business. Despite recent economic reforms, Burkina still scores poorly in the World Bank Doing Business Report, ranking 146th out of 190 countries in 2017. Apart from political risk and regional stability/security concerns, businesses report three particular issues as potentially hindering investment and thus increased labor demand. First, limited access to credit is hampering the development of both formal and informal firms, whereby smaller firms are most affected. Second, there is a large skills mismatch between firms' needs and job seekers. Third, electrical infrastructure is underdeveloped and electricity expensive.²⁵ These issues are not only affecting local business development, but also foreign investment.

The lack of labor demand in dynamic areas can be attributed to hindrances in the business environment. A large body of literature points to the fact that business environment reforms that improve functioning of markets can affect the pattern of firm growth and job creation.²⁶ However, as the analysis of the World Bank's 2009 Enterprise Survey and the Doing Business Report 2017 show, demand for labor in Burkina Faso continues to face several hindrances—this is even more the case in dynamic sectors with higher levels of productivity. The IMF (2014) cites several obstacles to greater labor demand: lack of access to affordable and reliable electricity; gaps in transportation infrastructure; labor market mismatch; and lack of financial services.

The World Bank Doing Business Report for 2017 ranks Burkina Faso as 146 of 190 countries surveyed, down from 142 in 2016. Regardless of the reforms made to date, Burkina Faso is still seen as one of the least favorable locations for doing business. Most important hindrances to business climate relate to the areas of contract enforcement (rank 161), the administrative burden of complying with and paying taxes (rank 150) and registering property (rank 136).

Foreign Direct Investment (FDI) has moved in tandem with commodity prices, indicating the lack of FDI beyond the extractive sector. *Figure 30* illustrates FDI net inflows in Burkina Faso between 1990 and 2015. Gold aided in the increase of FDI, which between 1985 and 2002 averaged US\$ 7.4 million per year. During the period of 2003 to 2012 that

²⁵ This section makes extensive use of the World Bank's Enterprise Survey, last conducted in 2009 on 394 formal firms in Burkina Faso.

²⁶ Ciccone and Papaioannou 2007; Jalilian et al. 2007; Eifert 2009; Bruhn 2011.

average increased nearly tenfold, though it is important to note that the period from 2010 to 2012 was most substantial to growth (AfDB 2013). Gold mining exports also grew rapidly and reached 39 tons in 2013, accounting for 71 percent of exports and 16 percent of fiscal revenues (IMF 2014). When commodity prices plunged after 2012, Burkina Faso experienced a sharp decline in FDI (*Figure 30*). The relationship between commodity prices and FDI points to a possible lack of FDI beyond the extractive sectors.



Figure 30

The trend in FDI inflows in Burkina Faso closely follows the price of gold

Source: IMF, Balance of Payment database, 2015

5.1. ACCESS TO FINANCE

Formal firms in Burkina Faso highlight access to finance as the biggest obstacle to their business they face. Over one-third (35.5 percent) of the formal firms participating in the 2009 Enterprise Survey identified access to finance as the *biggest* obstacle they faced (*Figure 31*). In a separate question in the survey, formal firms were asked to rate how important of a constraint is access to finance and 75 percent of firms in Burkina Faso identified access to finance as a *major* constraint, twice as many as the average in Sub-Saharan Africa.



Figure 31 Formal enterprises in Burkina Faso report access to finance as the biggest obstacle they face

Source: 2009 Enterprise Survey

Note: Question in the survey read: Can you tell me which of the elements of the business environment included in the list, if any, currently represents the biggest obstacle faced by this establishment?

The vast majority of Burkinabé remain unbanked. The development of financial institutions and the ability of firms to access credit can impact firm entry (Klapper et al. 2006). For Burkina Faso, though, the World Bank's Global Financial Inclusion Database reports that in 2014 only 14.3 percent of the inhabitants had a bank account, up only one percent since 2011.²⁷ The average for Sub-Saharan Africa rose from 23.8 percent to 34.2 percent over the same period.

Access to credit in Burkina Faso is important for setting up a formal business, since the process of registration remains costly. Over the past decade and a half, improvements have been made to the process for starting a business in Burkina Faso. Most recently, the improvements introduced in 2016 provided for a reduction of minimum capital required and simplified the collection of documents. Following these changes, starting a business requires on average 3 procedures and 13 days, as compared to the Sub-Saharan averages of 7.8 and 27.3, respectively. The process is still costly. According to the Doing Business 2017 report, starting a formal business in Burkina Faso costs 43 percent of the annual

²⁷ World Bank's Global Financial Inclusion Database: http://www.worldbank.org/en/programs/globalfindex

income per capita, while in neighboring Ghana, Cote d'Ivoire and Niger costs are lower with 19.7, 18.9, and 32.4 percent of the annual income per capita, respectively. As long as the high costs remain an obstacle for the establishment of firms, speeding up procedures will have little impact, especially among the poorest.

Lack of credit hurts smaller firms more. Lending to firms with less than 100 employees accounts for just 10 percent of all bank lending in the country, however these firms account for 98 percent of all firms and employ 65 percent of workers in the formal sector (World Bank 2017a).²⁸ In general, there is strong evidence that SMEs suffer from obstacles to growth, mainly access to financing, which hinders their ability to contribute to the economy (Beck and Demirgüç-Kunt 2006; Rahaman 2011). The lack of access to finance and the resulting limitation on growth is, both in developed and developing countries, more severe for small firms (Berger and Udell, 1998; Galindo and Schiantarelli, 2003; Beck et al. 2006a). In fact, small firms' inability to access financing has been shown to have twice as large a negative effect than that of large firms (Beck et al. 2005).²⁹

The informal sector fares even worse in terms of access to credit, especially in rural areas. Analysis of representative samples of informal firms from the capitals of seven West African countries, including Burkina Faso, finds that "constrained gazelles"—firms with high potential that is currently restricted—suffer most from business environment constraints consisting of lack of access to credit, insurance and infrastructure (Grimm et al. 2012). Access to formal credit in rural areas of West Africa is severely limited due to the lack of collateral of households (Reardon et al. 1992; Fafchamps et al. 1998). A survey of household enterprises across Africa concluded that start-up capital is one of the first and most serious obstacles they face, and that 84 percent of household enterprises used either their own capital or that of the family (Fox and Sohnesen 2012).³⁰

Enterprises engaged in agriculture remain largely left out of commercial crediting. The latest Systematic Country Diagnostic report for Burkina Faso reports limited access to credit as one of the top three constraints to higher productivity in the agricultural sector (World Bank 2017a). According to available data, less than one percent of commercial

²⁸ Calculations of percentage of firms and workers based on the 2008 Economic Census.

²⁹ Firms were asked to rate, on a scale of one to four, how problematic different financing issues are for the operation and growth of their business. The list of issues included: (a) collateral requirements of banks and financial institutions, (b) bank paperwork and bureaucracy, (c) high interest rates, (d) need for special connections with banks and financial institutions, (e) banks lack money to lend, (f) access to foreign banks, (g) access to non-bank equity, (h) access to export finance, (i) access to financing for leasing equipment, (j) inadequate credit and financial information on customers, and (k) access to long term loans.

³⁰ The survey included Burkina Faso, Cameroon, Republic of Congo (urban areas only), Ghana, Mozambique, Rwanda, Tanzania, and Uganda.

credit is extended to the sector and is concentrated on commercial enterprises engaged in cotton production.

5.2. SKILLS MISMATCH

Over one-third of employers reported the lack of an educated workforce as a business constraint when interviewed for the World Bank Enterprise Survey in 2009. As the World Development Report on Jobs emphasizes, jobs are key to economic development and skills are key to better jobs (World Bank 2012b). 37.5 percent of the surveyed firms in Burkina Faso reported an inadequately educated workforce as a major constraint, while the average for the rest of Sub-Saharan Africa was 19 percent. Assessment of the Burkinabé employment and skill level finds that for businesses and the economy as a whole to shift to more productive activities, the labor market must also be capable obtaining new skills (World Bank 2012a).

When compared with the average values for Sub-Saharan Africa, enterprises in Burkina Faso have higher shares of unskilled workers in addition to offering less training. According to the World Bank's 2009 Enterprise Survey, firms in Burkina Faso report having higher shares of unskilled production workers (32.8 percent) when compared to the average value for Sub-Saharan Africa (27.2 percent). In addition, these firms also offer less opportunity in terms of on-the-job training. Only 24.8 percent of firms offer formal training, which is in turn offered to just 37.4 percent of workers (*Table 7*).

Table 7

Enterprises in Burkina Faso hold higher shares of unskilled workers and offer less on-the-job training

Indicator	Burkina Faso	Sub-Saharan Africa
Share of firms offering formal training (%)	24.8	30.2
Proportion of workers offered formal training (%)	37.4	45.8
Proportion of unskilled workers (%)	32.8	27.2
Share of firms identifying an inadequately educated workforce as a major constraint (%)	37.5	19.0

Source: 2009 Enterprise Survey

Managers suffer from lack of education as well. The absence of formal educational attainment in the country not only affects workers, but also business owners and managers of SMEs that lack appropriate education and training (Soubeiga and Strauss 2013). This is especially the case in the informal sector where in Burkina Faso it is estimated that 80 percent of owners of household enterprises have never attended school (Fox and Sohnesen 2012).

The lack of skills may negatively affect women's entrepreneurship. 19.2 percent of firms in Burkina Faso have female participation in ownership and 11.3 percent have a woman in the position of top manager (*Table 8*). These are rather low values for female entrepreneurship when compared to the average for Sub-Saharan Africa (36.2 and 16.3 percent, respectively). With respect to the share of women in various types of employment, Burkina Faso is consistently behind the average rates for Sub-Saharan Africa again. This indicates that the situation is unlikely to substantially improve quickly as there is a comparatively small reservoir of women that may be moving up the ranks and gather experience to qualify for higher positions. Besides cultural factors, the main reasons for such comparatively low importance of women in leading positions in firms in Burkina Faso are the lack of education, work experience outside of agriculture and access to credit in the absence of collateral.³¹

Table 8

Women in Burkina Faso are seldom owners or top managers of firms and they are also less represented in better employment positions than women in the rest of Sub-Saharan Africa

Indicator	Burkina Faso	Sub-Saharan Africa
Percent of firms with female participation in ownership	19.2	36.2
Percent of firms with a female top manager	11.3	16.3
Percent of firms with majority female ownership	8.1	12.6
Proportion of permanent full-time workers that are female (%)	21.6	29.9
Proportion of permanent full-time production workers that are female (%)	12.1	20.5
Proportion of permanent full-time non-production workers that are female (%)	23.4	33.4

Source: 2009 Enterprise Survey

5.3. ELECTRICAL INFRASTRUCTURE

Electricity in Burkina Faso is relatively expensive, its supply unreliable, and infrastructure mostly serving urban areas. The price of electricity in Burkina Faso is US\$0.254 per kWh which is high in comparison with neighboring countries where, for example, in Cote d'Ivoire the price per kWh is US\$0.139, in Mali US\$0.153, and in Ghana US\$0.193 (World Bank 2017c). The network infrastructure is mostly serving urban areas. In 2012, it was estimated that just 16 percent of the rural population had access to electricity (REN21 2015). Peri-urban areas also suffer, with "around 1500 non-electrified

³¹ As discussed in the note on Workers and Jobs.

communities with a total of 2.5 million people within 5 km of distribution lines" (Moner-Girona et al. 2016). Apart from being disjointed, the electricity network is also aging. 50 percent of transmission lines and 32 percent of distribution lines are more than 30 years old (Moner-Girona et al. 2016). The electricity grid will need substantial investments to increase electrification of the rural areas and, hence rural enterprises and households.

Even for formal businesses, the process of obtaining electricity represents a burden in terms of time and money. To access energy, firms and households in Burkina Faso must complete four procedures³² and wait a median of 169 days to obtain an electricity connection (World Bank 2017c). In Ghana and Mali, four procedures are also required, but the median wait times are 79 days and 120 days, respectively. In terms of cost, initiating an electrical connection in Burkina Faso costs over 10,000 times per capita annual income, as compared to the average of Sub-Saharan Africa of 3,800 times (World Bank 2017c).

Domestic electricity generation is insufficient to serve the current (comparatively low) demand. The installed generation capacity in Burkina Faso is 13 megawatts per one million people, as compared to the Sub-Saharan average of 91 megawatts per million people (Eberhard et al. 2011). Burkina Faso imports energy from its neighbors even to supply the small share of the country that has access to electricity. Up to 20 percent of electricity is imported from neighbors leaving the country at risk of disruptions in supply due to unrest elsewhere (Eberhard et al. 2011; Moner-Girona et al. 2016).

Affordable, reliable and extensive access to electricity can lead to greater demand for labor and raise productivity. Research on the effects of a mass roll-out of electrification to rural South African communities finds that electrification resulted in higher female employment and the number of hours worked by both men and women; electrification acts as a labor-saving technology releasing women from the household, which in turn results in an increase in micro-enterprises (Dinkelman 2011). Household data from rural Indonesia show that access to and the quality of electricity and roads positively affected both employment in non-farm enterprises and the income derived from these enterprises (Gibson and Olivia 2010). With access to electricity, firms can increase their productivity and expand.

BOX 2. INVESTMENTS INTO RENEWABLES IN BURKINA FASO

Different projects are currently either being implemented or developed in Burkina Faso that will increase and diversify domestic electricity generation, while also making

³² Submit application, receive external inspection, await and receive external works, and finally obtain meter installation and connection.

energy generation more sustainable. The construction of a 33-megawatts solar power plant located in the village of Zagtouli, outside the capital Ouagadougou, is considered one of the most important. It is financed by a grant from the European Union and a loan from the French Development Agency and its 129,600 solar panels will cover an area of 60 hectares (Akwei 2016). Once completed, the new plant is estimated to generate 10 percent of all energy produced in Burkina Faso.

In parallel, the government's Electrification Development Fund has been working on the implementation of the rural electrification program. The Fund aims for equitable electricity coverage of the country, specifically rural areas, and support pilot projects that contribute to the electrification of rural areas. To achieve these aims, the Fund utilizes a mix of approaches (mini-grids, individual solar kits, larger individual photovoltaic systems) with a focus on renewable resources.

There are also some private firms that are taking the responsibility for their energy consumption into their own hands. lamgold's Essakane gold mine in northeastern Burkina Faso is located in such a remote area that it is completely off the grid and relies on its own power generation. The mine—which is also the largest privately held company in Burkina—announced in January 2017 a construction of a solar power plant and its eventual integration with the existing thermal power plant, possibly making it the largest hybrid fuel project in the world (Dougherty 2017).

This two-pronged approach of the public and private sectors identifying new avenues for energy production mark a strong move towards country-wide electrification.

CONCLUSIONS

As non-agriculture output and employment outcomes remain limited, the development of a healthy private sector in Burkina Faso will only gain in importance. The transition out of agriculture toward sectors with higher productivity has already resulted in modest improvements in earnings and reduced poverty rates. It is thus important to understand what constraints are limiting further labor demand in sectors that offer the potential of better, more inclusive jobs. This report sheds light on these constraints by drawing on the 2008 Enterprise Census, the 2014 EMC, the 2009 World Bank Enterprise Survey, the Doing Business database, research publications, and a sample of medium and large-sized formal firms that reported financial statements. It provides an insight into the informal and formal sectors in Burkina Faso, analyzing their main characteristics—size, age, sector of activity, location, ownership and workforce structure—but also their trade profile and the constraints to the business climate.

An integrated jobs strategy can guide interventions for better and more inclusive jobs. The jobs challenges facing Burkina Faso are numerous. A comprehensive and broad discussion that eventually focuses on the most effective actions will thus be key. This report provides only a partial assessment of which areas might be pivotal and is one out of four Jobs Diagnostic notes for Burkina Faso. Further accompanying notes are on macroeconomic aspects, labor supply, and agriculture. The note provides an identification of constraints from a firm's perspective that—together with the other notes—can form the basis for informing a comprehensive Jobs Strategy. A separate note entitled *Jobs Diagnostic: Burkina Faso – Overview and Suggestions for a Jobs Strategy Framework*, summarizes all perspectives and provides a preliminary policy framework with initial suggestions to guide a potential future Jobs Strategy for Burkina Faso.

BIBLIOGRAPHY

AfDB (African Development Bank). 2013. *African Economic Outlook: Structural Transformation and Natural Resources*. Abidjan: African Development Bank.

-----. 2015a. Country Policy and Institutional Assessment: Burkina Faso.

———. 2015b. Economic Empowerment of African Women through Equitable Participation in Agricultural Value Chains. Abidjan: African Development Bank.

Akouwerabou, Denis B. (2016). "What determines enterprises' technical efficiency? An empirical investigation of informal enterprises in Burkina Faso." *International Journal of Entrepreneurship and Small Business* 28(2-3): 359-379.

- Akwei, Ismail. 2016. "Burkina Faso to build \$53m solar plant, largest in the Sahel region." Africa News, June 17. http://www.africanews.com/2016/06/17/burkinafaso-to-build-53m-solar-plant-largest-in-the-sahel-region/.
- Albrecht, James, Lucas Navarro, and Susan Vroman. 2009. "The Effects of Labour Market Policies in an Economy with an Informal Sector." *The Economic Journal* 119(539): 1105–1129.
- Ali, Daniel Ayalew, Klaus Deininger, and Markus Goldstein. 2014. "Environmental and gender impacts of land tenure regularization in Africa: pilot evidence from Rwanda." Journal of Development Economics 110(September 2014): 262-275.
- Amaral, Pedro S. and Erwan Quintin. 2006. "A competitive model of the informal sector." *Journal of Monetary Economics* 53 (7): 1541-1553.
- Amin, Mohammad and Asif Islam. 2015. "Are Large Informal Firms More Productive than the Small Informal Firms? Evidence from Firm-Level Surveys in Africa." World Development 74(October 2015): 374-385.
- Bagaya, Ousseni and Jinbo Song. 2016. "Empirical Study of Factors Influencing Schedule Delays of Public Construction Projects in Burkina Faso." *Journal of Management in Engineering* 32(5).
- Beck, Thorsten and Asli Demirguc-Kunt. 2006. "Small and medium-size enterprises: Access to finance as a growth constraint." *Journal of Banking & Finance* 30(11): 2931-2943.
- Beck, Thorsten, Asli Demirguc-Kunt, and Vojislav Maksimovic. 2005. "Financial and legal constraints to firm growth: Does firm size matter?" *Journal of Finance* 60(1): 137– 177.

- Beck, Thorsten, Asli Demirguc-Kunt, and Vojislav Maksimovic. 2006b. "The influence of financial and legal institutions on firm size." *Journal of Banking & Finance* 30(11): 2995-3015.
- Beck, Thorsten, Asli Demirguc-Kunt, Luc Laeven, and Vojislav Maksimovic. 2006a. "The determinants of financing obstacles." *Journal of International Money and Finance* 25(6): 932-952.
- Benjamin, Nancy C. and Ahmadou Aly Mbaye. 2012. "The Informal Sector, Productivity, and Enforcement in West Africa: A Firm-level Analysis." *Review of Development Economics* 16(4): 664-680.
- Benjamin, Nancy and Ahmadou Aly Mbaye. 2012. The Informal Sector in Francophone Africa: Firm Size, Productivity, and Institutions. Africa Development Forum.
 Washington, DC: World Bank and Agence Française de Développement.
- Berger, Allen N. and Gregory F. Udell. 1998. "The economics of small business finance: The roles of private equity and debt markets in the financial growth cycle." *Journal* of Banking & Finance 22(6-8): 613–673.
- Borensztein, E., De Gregorio, J., and Lee, J. W. 1998. "How does foreign direct investment affect economic growth?" *Journal of International Economics* 45(1): 115-135.
- Briceño-Garmendia, Cecilia and Carolina Dominguez-Torres. 2011. Burkina Faso's infrastructure: a continental perspective. Africa Infrastructure Country Diagnostic.
 Washington, DC: World Bank.
- Bruhn, Miriam. 2011. License to Sell: The Effect of Business Registration Reform on Entrepreneurial Activity in Mexico. Policy Research Working Paper 4538. Washington, DC: World Bank.
- Calderón, Cesar. 2009. *Infrastructure and Growth in Africa*. Policy Research Working Paper 4914. Washington, DC: World Bank.
- Calvès, Anne-Emmanuèle Calvès and Bruno Schoumaker. 2004. "Deteriorating economic context and changing patterns of youth employment in urban Burkina Faso: 1980–2000." *World Development* 32(8): 1341-1354.
- CEDAW (Convention on the Elimination of All Forms of Discrimination against Women). 2009. Consideration of reports submitted by States parties under article 18 of the Convention on the Elimination of All Forms of Discrimination against Women, Sixth periodic report of States parties: Burkina Faso. CEDAW/C/BFA/6. New York: CEDAW. http://www2.ohchr.org/english/bodies/cedaw/cedaws47.htm.

- Ciccone, Antonio and Elias Papaioannou. 2007. "Red Tape and Delayed Entry." *Journal of the European Economic Association* 5(2-3): 444-58.
- De Mello Jr, Luiz R. 1997). "Foreign direct investment in developing countries and growth: A selective survey." *The Journal of Development Studies* 34(1): 1-34.
- de Soto, Hernando. 2000. The Mystery of Capital: Why Capitalism Triumphs in the West and Fails Everywhere Else. London: Bantam Press.
- Delgado, Miguel A., Jose C. Farinas, and Sonia Ruano. 2002. "Firm productivity and export markets: a non-parametric approach." *Journal of International Economics* 57(2): 397-422.
- Dinkelman, Taryn. 2011. "The effects of rural electrification on employment: New evidence from South Africa." *The American Economic Review* 101(7): 3078-3108.
- Distinguin, Isabelle, Clovis Rugemintwari, and Ruth Tacneng. 2016. "Can Informal Firms Hurt Registered SMEs' Access to Credit?" *World Development* 84(August 2016): 18-40.
- Djankov, Simeon, Tim Ganser, Caralee McLiesh, Rita Ramalho, and Andrei Shleifer. 2010. "The effect of corporate taxes on investment and entrepreneurship." *American Economic Journal: Macroeconomics* 2(July 2010): 31-64.
- Eberhard, Anton, Orvika Rosnes, Maria Shkaratan, and Haakon Vennemo. 2011. Africa's Power Infrastructure: Investment, Integration, Efficiency. Washington, DC: World Bank.
- Dougherty, Kate. 2017. "Powering lamgold's Essakane mine in Burkina Faso with solar." *Energy and Mines,* January 18. http://energyandmines.com/2017/01/poweringiamgolds-essakane-mine-in-burkina-faso-with-solar/.
- Eifert, Benjamin. 2009. Do Regulatory Reforms Stimulate Investment and Growth? Evidence from the Doing Business Data 2003-07. Working Paper 159. Washington, DC: Center for Global Development.
- Fafchamps, Marcel, Christopher Udry, and Katherine Czukas. 1998. "Drought and saving in West Africa: Are livestock a buffer stock?" *Journal of Development Economics* 55(2): 273–305.
- FAO (Food and Agriculture Organization). 2016. Gender and Land Rights Database: Country Profile for Burkina Faso. http://www.fao.org/gender-landrightsdatabase/country-profiles/countries-list/generalintroduction/en/?country_iso3=BFA

- Feder, Gershon and Tongroj Onchan. 1987. "Land Ownership Security and Farm Investment in Thailand." American Journal of Agricultural Economics 69(2): 311-320.
- Fenasse, C., P. Jaeger and P. White. 2011. Evaluation de l'intérêt du secteur privé pour le pôle de croissance de Bagré et identification des besoins et contraintes à l'investissement. Washington, DC: World Bank.
- Fenske, James. 2011. "Land tenure and investment incentives: Evidence from West Africa." *Journal of Development Economics* 95(2): 137-156.
- Fox, Louise and Thomas Pave Sohnesen. 2012. Household enterprises in Sub-Saharan Africa: Why they matter for growth, jobs, and livelihoods. Policy Research Working Paper 6184. Washington, DC: World Bank.
- Galiani, Sebastian and Federico Weinschelbaum. 2012. "Modeling Informality Formally: Households and Firms." *Economic Inquiry* 50(3): 821-838.
- Galindo, Arturo and Fabio Schiantarelli, eds. 2003. *Credit constraints and investment in Latin America*. Washington, DC: Inter-American Development Bank.
- Gelb, Alan, Taye Mengistae, Vijaya Ramachandran, and Manju Kedia Shah. 2009. To Formalize or Not to Formalize? Comparisons of Microenterprise Data from Southern and East Africa. Working Paper Number 175. Washington, DC: Center for Global Development.
- GEM/IFC. 2005. Gender and Growth Assessment for Uganda: Gender Perspective on Legal and Administrative Barriers to Investment. Washington, DC: The World Bank.
- Gibson, John and Susan Olivia. 2010. "The effect of infrastructure access and quality on non-farm enterprises in rural Indonesia." *World Development* 38(5): 717-726.
- Gindling, T. H. and David Newhouse. 2014. "Self-Employment in the Developing World." World Development 56(April 2014): 313-331.
- Goldstein, Markus and Christophe Udry. 2008. "The profits of power: land rights and agricultural investment in Ghana." *Journal of Political Economy* 116(6): 980–1022.
- Grimm, Michael, Peter Knorringa, and Jann Lay. 2012. "Constrained gazelles: High potentials in West Africa's informal economy." *World Development* 40(7): 1352-1368.
- Hesse, Heiko. 2009. "Export Diversification and Economic Growth." In Breaking into new Markets – Emerging Lessons for Export Diversification, edited by Richard Newfarmer, William Shaw, and Peter Walkenhorst. Washington, DC: The World Bank.

- ILO (International Labor Organization). 2013. *Women and Men in the Informal Economy: A Statistical Picture.* Geneva: International Labour Office.
- IMF (International Monetary Fund). 2014. IMF Country Report No. 14/230: Burkina Faso.Washington, DC: International Monetary Fund.
- INSD (Institut National de la Statistique et de la Démographie). 2010. Enquête Démographique et de Santé Demographic and Health survey-EDS.
- INSD, Ministère de l'Économie et des Finances, and ICF International. 2012. Enquête Démographique et de Sante (EDSBF-MICS IV) – Burkina Faso 2010. Institut National de la Statistique et de la Démographie (INSD), Ministère de l'Économie et des Finances and ICF International. Calverton, Maryland, USA, http://www.measuredhs.com/what-we-do/survey/survey-display-329.cfm.
- Jacoby, Hanan G., Guo Li, and Scott Rozelle. 2002. "Hazards of Expropriation: Tenure Insecurity and Investment in Rural China." *The American Economic Review* 92 (5): 1420-1447.
- Jalilian, Hossein, Colin Kirkpatrick, and David Parker. 2007. "The Impact of Regulation in Developing Countries: A Cross-Sectional Analysis." World Development 35(1): 87-99.
- Klapper, Leora, Luc Laeven, and Raghuram Rajan. 2006. "Entry Regulation as a Barrier to Entrepreneurship." *Journal of Financial Economics* 82(3): 591–629.
- Limao, Nuno and Anthony J. Venables. 2001. "Infrastructure, geographical disadvantage, transport costs, and trade." *The World Bank Economic Review* 15(3), 451-479.
- Linkow, Benjamin. 2016. "Causes and consequences of perceived land tenure insecurity: Survey evidence from Burkina Faso." *Land Economics* 92(2): 308-327.
- Moner-Girona, M., K. Bódis, T, Huld, I. Kougias and S. Szabó. 2016. "Universal access to electricity in Burkina Faso: scaling-up renewable energy technologies." *Environmental Research Letters* 11(8).
- PNDES (National Plan for Economic and social Development) 2016-2020. 2016. http://www.pndes2020.com/pdf/06-en.pdf
- OECD (Organisation for Economic Co-operation and Development). 2012. Women's economic empowerment: The OECD DAC Network on Gender Equality (GENDERNET). Paris: Organisation for Economic Co-operation and Development. https://www.globalgiving.org/pfil/19932/Promoting_propoor_growth_Womens_e conomic_empowerment.pdf

- Rahaman, Mohammad. M. 2011. "Access to financing and firm growth." *Journal of Banking & Finance* 35(3): 709-723.
- Rasiah, Rajah and Geoffrey Gachino. 2005. "Are foreign firms more productive and export-and technology-intensive than local firms in Kenyan Manufacturing?" Oxford Development Studies 33(2): 211-227.
- Reardon, Thomas, Christopher Delgado, and Peter Matlon. 1992. "Determinants and effects of income diversification amongst farm households in Burkina-Faso." *The Journal of Development Studies* 28(2): 264–296.
- REN21. 2015. Renewables 2015 Global Status Report. Paris: REN21. http://www.ren21.net/wp-content/uploads/2015/07/REN12-GSR2015 Onlinebook low1.pdf
- Roy, Marc-Andre and David Wheeler. 2006. "A survey of micro-enterprise in urban West Africa: drivers shaping the sector." *Development in Practice* 16(5): 452-464.
- Songwe, Vera and Deborah Winkler (2012). Exports and Export Diversification in Sub-Saharan Africa: A Strategy for Post-crisis Growth. Africa Growth Initiative Working Paper 3 (December 2012). Washington, DC: The Brookings Institution. https://www.brookings.edu/wp-content/uploads/2016/06/12-exports-africasongwe.pdf
- Soubeiga, Sidiki and Jeremy Strauss. 2013. *Financial Sector Policy Note: Financing Small and Medium-Sized Businesses in Burkina Faso.* Washington, DC: World Bank.
- Van Biesebroeck, Johannes. 2005. "Exporting raises productivity in sub-Saharan African manufacturing firms." *Journal of International Economics* 67(2): 373-391.
- Wagner, Joachim. 2007. "Exports and productivity: A survey of the evidence from firmlevel data." *The World Economy* 30(1): 60-82.
- World Bank. 2007. *Tanzania Gender and Economic Growth Assessment.* Washington, DC: The World Bank.
 - ——. 2008. Finance for All? A World Bank Policy Research Report: Policies and Pitfalls in Expanding Access. Washington DC: World Bank.
 - ——. 2012a. Burkina Faso: Employment and Skills Development. Washington, D.C.: World Bank Group.
- -----. 2012b. World Development Report 2013: Jobs. Washington, DC: World Bank.
- ————. 2013. International Development Association Project Appraisal Document on a Proposed Credit to Burkina Faso for an Electricity Sector Support Project (ESSP).

 2015. "Evaluation of the World Bank Group's investment climate programs: Burkina Faso case study - positive results in a number of areas but limited influence on growth." Washington, DC: World Bank.

- -----. 2016a. Breaking down barriers: unlocking Africa's potential through vigorous competition policy (English). Washington, DC: World Bank.
- ———. 2016b. Burkina Faso Bagre Growth Pole Project: P119662 Implementation Status Results Report : Sequence 11. Washington, DC: World Bank.
- ------. 2017a. Burkina Faso Priorities for Poverty Reduction and Shared Prosperity: Systematic Country Diagnostic. Washington, DC: World Bank.
 - ——. 2017b. Post-Primary Education Development in Burkina Faso: Achievements, Challenges and Prospects. Education Global Practice Africa. Washington, DC: World Bank.
 - -----. 2017c. *Doing Business 2017: Equal Opportunity for All.* Washington, DC: World Bank
- Zampaligré, Nouhoun, Luc Hippolyte Dossa, and Eva Schlecht. 2014. "Climate change and variability: Perception and adaptation strategies of pastoralists and agropastoralists across different zones of Burkina Faso." *Regional Environmental Change* 14(2): 769-783.

Annex A. Understanding the data: EMC 2014

Research shows that across Sub-Saharan Africa, household enterprises are the largest, non-farm employer—household data thus provides the most accurate depiction of the sector. Fox and Sohnesen (2012) estimate that across this part of Africa salaried employees in private, non-agriculture firms account for around 9 percent of total employment and that household enterprise are the more common non-farm employer. This has important implications for the selection of data used. While the Enterprise Census data from 2008, discussed in *Annex B*, provides an overview of the whole economy, including informal firms, the more recent Multi-Sector Household Survey, or the *Enquete Multisectorielle Continue 2014* (EMC 2014)³³, that comprises a sample of 6,718 household enterprises is the dataset of choice for the analysis of informal firms, as it is more up-to-date and enables more detailed analysis.

There are important differences between the available data on informal firms in Burkina Faso. While, the household enterprises included in the EMC 2014 dataset are not representative, they do provide greater insight as they connect enterprise information with household characteristics. *Table A.1* provides a comparison between the 2008 Enterprise Census and the EMC 2014 and shows that household enterprises in 2014 are older, larger, more heavily involved in manufacturing and mining, and with greater sales and increased productivity. The dataset used in this report is composed of 12,352 entries collected from the EMC 2014.

Table A.1

Firm characteristics	Share (%) according to 2008 Enterprise Census	Share (%) according to 2014 Multi-Sector Household Survey
1 year	33 percent	11 percent
2 - 5 years	40 percent	42 percent
6 - 10 years	18 percent	27 percent
10+ years	9 percent	20 percent
0 employees	10 percent	1 percent
1 employee	40 percent	43 percent
2 - 5 employees	44 percent	49 percent
6 - 10 employees	4 percent	6 percent
11 - 19 employees	2 percent	2 percent
20+ employees	1 percent	1 percent

Comparing the 2008 Enterprise Census and the 2014 Multi-Sector Household Survey

³³ Administered by the Ministry of Economics and Finance and the National Institute of Statistics and Demographics.

Mining/Utilities/Construction	1 percent	14 percent
Manufacturing	19 percent	28 percent
Commerce	57 percent	53 percent
Services	23 percent	6 percent
Average sales (2010 XOF)	47,900	221,747
Average sales per worker (2010 XOF)	3,837	61,819

Sources: 2008 Enterprise Census; EMC 2014

To be able to answer the section on Family Businesses (SECTION EF: ENTREPRISES FAMILIALES), on which this analysis is based, the respondent had to answer 'yes' to one of the following questions:

- Au cours des 7 derniers jours, [NOM] a-t-il travaillé au moins une heure, avec ou sans rémunération, dans un champ ou jardin lui appartenant ou appartenant à un autre membre du ménage? Ou [NOM] a-t-il élevé des animaux? (During the past 7 days, did [NAME] work at least one hour, with or without pay, in a field or garden belonging to him or belonging to another member of the household? Or did [NAME] raise animals?)
- 2. Au cours des 7 derniers jours, [NOM] a-t-il travaillé au moins une heure comme un travailleur occasionnel ou à temps partiel? (During the past 7 days, has [NAME] worked at least one hour as a casual or part-time worker?)

Within families there were many duplicates, as a household can be engaged in several activities and/or manage several informal enterprises. To clean the data, the following steps were taken:

- 1. Only the interviews marked as "Accepted" or "Accepted with Reticence" were kept (49 observations dropped).
- 2. Households which reported having enterprises engaging only in agricultural activities were dropped. This is according to the design of the survey (16 observations dropped).
- 3. At this point, there were 3,638 households that had only one activity (about 30 percent of the sample). With the goal of having only one observation per household, "duplicate" activities needed to be removed in order to remove occurrences of households having multiple activities.
- 4. The approach was to keep only the main activity (ISIC code) of households that reported managing several enterprises.

- 5. To determine the main activity of the household a progressive approach is undertaken to determine which activity:³⁴
 - a. generates the most sales;
 - b. uses the most assets;
 - c. is the oldest one; and
 - d. generates the most expenses.

For about 95 percent of sample one main activity can be identified using this method.

 After all the variables of interest were summed up for each household and missing ISIC codes (not the main activity) were dropped, the remaining duplicates are dropped using "duplicates drop" as the entries are the same. (129 observations deleted)

Other issues addressed including Age being reported as 0, which was changed to 1 in the case of 337 observations or around 5 percent of the dataset. For the 16 observations where total employment was 0 the values were replaced with 1. The final sample contains 6,718 household enterprises/entries.

RECODE of al (REGION)						
REGION	Center	South-Wes	West	North	East	Total
Boucle de Mouhoun	0	0	633	0	0	633
Cascades	0	661	0	0	0	661
Centre	483	0	0	0	0	483
Centre-Est	0	0	0	0	357	357
Centre-Nord	0	0	0	512	0	512
Centre-Ouest	0	0	549	0	0	549
Centre-Sud	528	0	0	0	0	528
Est	0	0	0	0	426	426
Hauts Basins	0	508	0	0	0	508
Nord	0	0	0	559	0	559
Plateau Central	642	0	0	0	0	642
Sahel	0	0	0	446	0	446
Sud-Ouest	0	414	0	0	0	414
Total	1,653	1,583	1,182	1,517	783	6,718

Table A.2

The 13 administrative regions were aggregated into 5 regions for visualization purposes

³⁴ First the activity with most sales is identified, then, if there are still duplicates, the activity which uses the most assets, then, if there are still duplicates, the one with highest value of assets, then, if there are still duplicates, the oldest activity, and finally, if there are still duplicates, the activity which generates the most expenses.

Annex B. Understanding the data: The 2008 Enterprise Census

The original 2008 Enterprise Census data covers formal and informal firms. Based on the documentation, the data represents a census of industrial and commercial firms collected in 2008. There are about 4,266 formal and around 31,843 informal firms. The original questionnaire does not contain an explicit question about formality; instead, it is determined based on a set of questions.

The first questions ask if the enterprise has either (i) Unique Identifying Financial number (*Identifiant financier unique IFU*); (ii) Number of commercial registry (*numéro du registre du commerce*); or (iii) National Social Security number (*Caisse nationale de sécurité sociale*). If the enterprise confirms that it has one of these numbers, it is considered a formal enterprise.

However, if the answers are negative in all cases, the firm can still be considered formal based on the second condition, which is whether they have a formal system of accounting. If the enterprise confirms that they have a formal accounting system, then they are considered to be formal.

The data does not cover agriculture or public-sector firms. There are no formal firms engaged in agricultural activities. There are very few firms (4) reported to be state-owned (*Société d'Etat*).

Table A.3

Enterprises by legal status

Statut juridique	Freq.	Percent	Cum.
Entreprise individuelle Association de personnes sarl	3,171 99 550	74.33 2.32 12.89	74.33 76.65 89.55
Société par actions simplifiées Société anonyme	4	0.09	89.64 92.08
epe Société d économie Mixte Société d'Etat nd	2	0.20	92.33 92.38 92.48
Total	4,266	100.00	

Source: 2008 Enterprise Census

"Exporters" are defined as firms which report that are engaged in both solely exporting and importing/exporting activities. Age is recorded as "year of registration" or, in case not reported, as "year of activity commencement". As a result, there are two variables in the data set: year of registration and the year the company began its operations. The variable used to calculate age is "year of registration". In case this variable is missing for the formal firms, age is calculated based on the reported year in which the company began its operations.

Annex C. Regression Results

Annex C Table 1. Informal Firm Productivity Regressions

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Age 6to9	0.0955***	0.108***	0.0996***	0.0926***	0.0971***	0.0782***	0.0775***
	(0.0223)	(0.0257)	(0.0235)	(0.0221)	(0.0252)	(0.0212)	(0.0212)
Age 10to19	0.145***	0.158***	0.154***	0.144***	0.138***	0.136***	0.134***
	(0.0348)	(0.0350)	(0.0339)	(0.0340)	(0.0355)	(0.0343)	(0.0343)
Age 20to29	0.155***	0.162***	0.174***	0.155**	0.151**	0.149**	0.147**
	(0.0570)	(0.0533)	(0.0556)	(0.0583)	(0.0588)	(0.0559)	(0.0554)
Age 30plus	0.304***	0.319***	0.340***	0.305***	0.295***	0.265***	0.262***
	(0.0726)	(0.0711)	(0.0738)	(0.0716)	(0.0781)	(0.0756)	(0.0752)
South_West		-0.00854					
		(0.0220)					
West		0.0200					
		(0.0237)					
North		0.0416*					
		(0.0228)					
East		0.00587					
		(0.0330)					
Agriculture			0.0695				
			(0.118)				
MinUtilConstr			0.363***				
			(0.0346)				
Commerce			0.00677				
Carriera			(0.0158)				
Services			0.222***				
Majority of fomale			(0.0347)				
				0 0700**			
employees				-0.0788			
Herfindahl Index of sales				(0.0313)	0 579**		
incrimulatin much of sales					(0 224)		
Sales ner worker -log					(0.227)	-0 0117	-0 169*
sales per tronker log						(0.0110)	(0.0899)

squared							0.00768* (0.00438)
Constant	0.726*** (0.142)	0.677*** (0.121)	0.645*** (0.0630)	0.769*** (0.140)	0.710*** (0.128)	0.825*** (0.133)	1.621*** (0.479)
Observations	6,282	6,282	6,282	6,275	6,280	5,574	5,574
R-squared	0.105	0.065	0.088	0.107	0.062	0.112	0.113
Sector dummies	YES	YES	NO	YES	NO	YES	YES
Location dummies	YES	NO	YES	YES	YES	YES	YES
Year Dummies	NO	NO	NO	NO	NO	NO	NO

Data source: 2014 EMC

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Annex C Table 2. Informal Firm Productivity Regressions

Variables	(1)	(2)	(3)	(4)	(5)	(6)
Size 2to5	-0.618***	-0.619***	-0.721***	-0.611***	-0.585***	-0.358**
	(0.174)	(0.172)	(0.234)	(0.179)	(0.170)	(0.142)
Size 6to10	0.0288	0.0264	-0.0158	0.0310	0.0587	0.220
	(0.376)	(0.375)	(0.501)	(0.375)	(0.356)	(0.348)
Size 11to19	0.698***	0.699***	0.868***	0.758***	0.727***	0.313***
	(0.101)	(0.101)	(0.0308)	(0.112)	(0.0977)	(0.0783)
Size 20plus	-3.347***	-3.346***	-3.177***	-3.386***	-3.319***	-2.935***
	(0.101)	(0.101)	(0.0308)	(0.0985)	(0.0977)	(0.101)
Age 6to9	0.171***	0.171***	0.161***	0.168***	0.168***	0.184***
	(0.0125)	(0.0124)	(0.0111)	(0.0137)	(0.0124)	(0.0118)
Age 10to19	0.0973***	0.0973***	0.0825*	0.0924***	0.0932***	0.182***
	(0.0336)	(0.0335)	(0.0435)	(0.0330)	(0.0328)	(0.0321)
Age 20to29	0.0560	0.0568	0.0260	0.0519	0.0495	0.201*
	(0.100)	(0.100)	(0.129)	(0.0983)	(0.0926)	(0.107)
Age 30plus	0.0307	0.0301	0.0877	0.0229	0.0239	0.103
	(0.0952)	(0.0956)	(0.0860)	(0.0980)	(0.0951)	(0.0938)
Foreign		0.0661	-0.0281	0.0699	0.0594	-0.00741
		(0.0839)	(0.112)	(0.0846)	(0.0820)	(0.0881)
South_West		0.126**				
		(0.0462)				
West		0.421***				
		(0.0492)				
North		0.242***				
		(0.0792)				
East		0.159*				
Ministiconstr		(0.0873)	0 1 0 0 * * *			
Minotilconstr			(0.0454)			
Commorco			(0.0454)			
commerce			1.080			
Services			0.0473)			
Services			(0.0521)			
Female majority of workers			(0.0551)	-0 0987*		
remaie majority of workers				(0.0539)		
Share of temporary workers				(0.0000)	0 854***	
share of temporary workers					(0 118)	
					(0.110)	

70

Capital factor						-0 797***
						(0.0674)
Constant	6.656***	6.655***	6.043***	6.671***	6.637***	7.039***
	(0.0690)	(0.0691)	(0.0441)	(0.0732)	(0.0704)	(0.0806)
Observations	14,586	14,585	14,585	14,585	14,585	14,568
R-squared	0.175	0.175	0.114	0.176	0.186	0.262
Sector dummies	YES	YES	NO	YES	YES	YES
Location dummies	YES	NO	YES	YES	YES	YES
Year Dummies	NO	YES	YES	YES	YES	YES

Data Source: 2008 Enterprise Census, Informal firms only

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

ŀ	Annex (21	a	b	le 3	3. I	Fc	orma	l F	irm	Emp	lo	yment S	Siz	ze	Re	gr	'es	si	or	۱S
																	_				

Age 6to90.201***0.201***0.218***0.196***0.192***0.206***0.210***0.127***0.121**(0.0315)(0.0315)(0.0393)(0.0298)(0.0304)(0.0318)(0.0304)(0.0342)(0.0355Age 10to190.341***0.341***0.373***0.342***0.333***0.353***0.325***0.244***0.243**Age 20to290.374***0.374***0.443***0.372***0.358***0.368***0.381***0.315**0.308**(0.119)(0.119)(0.137)(0.111)(0.111)(0.117)(0.124)(0.118)(0.118)
Age 10to19 0.341*** 0.341*** 0.373*** 0.342*** 0.333*** 0.353*** 0.325*** 0.244*** 0.243** Age 20to29 0.374*** 0.3611) (0.0771) (0.0616) (0.0560) (0.0607) (0.0637) (0.0557) (0.0558** Age 20to29 0.374*** 0.374*** 0.443*** 0.372*** 0.358*** 0.368*** 0.381*** 0.315** 0.308** (0.119) (0.119) (0.137) (0.111) (0.117) (0.124) (0.118) (0.118)
Age 20to29 0.374*** 0.374*** 0.443*** 0.372*** 0.358*** 0.368*** 0.381*** 0.315** 0.308** (0.119) (0.119) (0.137) (0.111) (0.111) (0.117) (0.124) (0.118) (0.118)
Age 30plus 1.024*** 1.024*** 1.159*** 1.015*** 0.997*** 1.037*** 1.079*** 0.908*** 0.919** (0.232) (0.232) (0.268) (0.227) (0.216) (0.233) (0.251) (0.237) (0.238)
Foreign0.523***0.523***0.663***0.499***0.502***0.516***0.556***0.469***0.440**(0.148)(0.148)(0.194)(0.136)(0.140)(0.140)(0.140)(0.136)(0.136)
South_West -0.200* (0.101)
West -0.188** (0.0910)
North -0.145 (0.132)
East -0.0717 (0.0973)
MinUtilConstr 0.317 (0.299)
Commerce -0.371 (0.242)
Services -0.132 (0.287)
Exporter 0.504*** (0.140)
workers -0.292***
Share of temporary -0.365***
(0.0509)
Capital factor intensity 0.411 (0.0418) (0.0418) 0.0812*** _0.506*;
Sales per worker -log

squared
Constant
Observations
R-squared
Sector dummies
Location dummies
Year Dummies

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Annex C Table 4. Formal Enterprise Productivity Regressions

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Size 10to19	0.483**	0.653***	0.458**	0.501**	0.590***	0.572***	0.572***
	(0.195)	(0.145)	(0.194)	(0.187)	(0.189)	(0.151)	(0.154)
Size 20to49	0.659***	0.908***	0.619***	0.714***	0.703***	0.840***	0.787***
	(0.196)	(0.183)	(0.198)	(0.188)	(0.185)	(0.238)	(0.263)
Size 50to249	0.708***	1.092***	0.681**	0.779***	0.750***	0.845***	0.837***
	(0.246)	(0.298)	(0.262)	(0.236)	(0.248)	(0.292)	(0.291)
Size 250to499	1.078**	1.467***	0.975**	1.144***	1.093**	1.442**	1.279**
	(0.412)	(0.474)	(0.367)	(0.417)	(0.437)	(0.549)	(0.477)
Size 500plus	-1.364***	-1.007***	-1.348***	-1.607***	-1.080***	-1.413***	-1.530***
	(0.112)	(0.141)	(0.110)	(0.117)	(0.154)	(0.0742)	(0.108)
Age 6to9	0.272***	0.286***	0.263***	0.253***	0.239***	0.266***	0.268***
	(0.0649)	(0.0643)	(0.0648)	(0.0664)	(0.0573)	(0.0688)	(0.0668)
Age 10to19	0.279***	0.317***	0.283***	0.255***	0.264***	0.312***	0.328***
	(0.0661)	(0.0686)	(0.0668)	(0.0621)	(0.0663)	(0.0789)	(0.0717)
Age 20to29	0.0777	0.147	0.0854	0.0879	0.0413	0.0684	0.0712
	(0.134)	(0.155)	(0.127)	(0.134)	(0.130)	(0.135)	(0.129)
Age 30plus	0.285*	0.401**	0.285*	0.200	0.139	0.430**	0.413**
	(0.161)	(0.163)	(0.161)	(0.155)	(0.149)	(0.178)	(0.172)
Foreign	0.671***	0.747***	0.647***	0.688***	0.609***	0.728***	0.686***
	(0.0911)	(0.0977)	(0.0857)	(0.0856)	(0.108)	(0.123)	(0.118)
Mining/Utilities/Construction		1.189***					
		(0.160)					
Commerce		1.016***					
		(0.138)					
Services		0.359*					
		(0.183)					
Exporter			0.510***				
			(0.114)				
Share of temporary employees				1.204***			
				(0.102)			
Capital factor intensity					-0.582***		

					(0.0879)		
Herfindahl Index Labor						-2.688***	
						(0.399)	
Herfindahl Index Sales							-1.021***
							(0.214)
Constant	8.913***	7.185***	8.921***	8.931***	6.609***	8.077***	8.083***
	(0.0514)	(0.145)	(0.0526)	(0.0499)	(0.0525)	(0.0925)	(0.106)
Observations	2,217	2,217	2,217	2,217	2,184	2,217	2,217
R-squared	0.211	0.122	0.215	0.237	0.255	0.089	0.071
Sector dummies	YES	NO	YES	YES	YES	NO	NO
Location dummies	YES	YES	YES	YES	YES	YES	YES
Year Dummies	YES	YES	YES	YES	YES	YES	YES

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

(0.0879)

75

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Size 10to19	0.233**	0.233**	0.316***	0.207*	0.277**	0.354***	0.403***	0.134*	0.138*
	(0.112)	(0.112)	(0.115)	(0.108)	(0.120)	(0.115)	(0.117)	(0.0746)	(0.0743)
Size 20to49	0.634***	0.634***	0.761***	0.598***	0.731***	0.840***	0.803***	0.382**	0.386**
	(0.171)	(0.171)	(0.202)	(0.170)	(0.158)	(0.244)	(0.250)	(0.172)	(0.172)
Size 50to249	0.478	0.478	0.767	0.451	0.588	0.820*	0.840*	0.244	0.244
	(0.407)	(0.407)	(0.464)	(0.429)	(0.394)	(0.461)	(0.423)	(0.271)	(0.274)
Size 250to499	0.705**	0.705**	0.950**	0.594*	0.785**	1.043**	1.002**	0.207	0.213
	(0.333)	(0.333)	(0.362)	(0.320)	(0.344)	(0.392)	(0.402)	(0.352)	(0.355)
Age 6to9	0.173***	0.173***	0.188***	0.168***	0.142***	0.182***	0.0969*	-0.00256	-0.000817
	(0.0364)	(0.0364)	(0.0369)	(0.0371)	(0.0350)	(0.0366)	(0.0533)	(0.0386)	(0.0388)
Age 10to19	0.370***	0.370***	0.389***	0.373***	0.325***	0.378***	0.300***	0.202***	0.202***
	(0.0506)	(0.0506)	(0.0491)	(0.0516)	(0.0547)	(0.0563)	(0.0587)	(0.0373)	(0.0372)
Age 20to29	0.331***	0.331***	0.338***	0.344***	0.350***	0.322***	0.233**	0.189**	0.190**
	(0.0834)	(0.0834)	(0.0943)	(0.0791)	(0.0772)	(0.0952)	(0.105)	(0.0766)	(0.0763)
Age 30plus	0.420***	0.420***	0.482***	0.422***	0.319**	0.481***	0.417***	0.167	0.163
	(0.139)	(0.139)	(0.128)	(0.141)	(0.150)	(0.139)	(0.142)	(0.114)	(0.113)
Foreign	0.418***	0.418***	0.520***	0.400***	0.449***	0.518***	0.660***	0.353***	0.358***
	(0.133)	(0.133)	(0.152)	(0.128)	(0.128)	(0.149)	(0.141)	(0.0930)	(0.0938)
South_West		-0.0346							
		(0.110)							
West		-0.345**							
Nesth		(0.136)							
North		-0.264***							
Fast		(0.0976)							
East		-0.302							
Sizo 500 plus		(0.0955)							
Size Soopius									
MinUtilConstr			0.421***						
			(0.116)						
Commerce			-0.0292						
			(0.106)						
Services			0.156						
			(0.150)						
Exporter				0.554***					
				(0.0536)					

Annex C Table 5. Regression Results including Foreign-Owned Enterprises

Share of temporary workers					1.508*** (0.137)				
Herfindahl index of labor					()	-0.434			
Herfindahl index of sales						(0.424)	-0.225**		
Sales per worker -log							(0.0974)	0.348***	0.460***
Sales per worker -log squared								(0.0367)	(0.0930) -0.00662 (0.00542)
Constant	7.662*** (0.355)	7.662*** (0.355)	5.680*** (0.0921)	7.233*** (0.348)	7.626*** (0.378)	5.757*** (0.126)	5.831*** (0.118)	2.666*** (0.233)	4.802*** (0.458)
Observations	2,338	2,338	2,338	2,338	2,338	2,338	1,867	1,826	1,826
R-squared	0.222	0.222	0.115	0.233	0.308	0.105	0.111	0.431	0.431
Sector dummies	YES	YES	YES	YES	YES	NO	NO	YES	YES
Location dummies	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year Dummies	NO	NO	NO	NO	NO	NO	NO	NO	NO

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

77

Annex C Table 6. Re	gression Results includin	ig Foreign-Owned	Enterprises
---------------------	---------------------------	------------------	-------------

	Employment	Wages	Productivity
Age 6to9	0.196***	0.174***	0.483**
	(0.0298)	(0.0399)	(0.195)
Age 10to19	0.342***	0.369***	0.659***
	(0.0616)	(0.0513)	(0.196)
Age 20to29	0.372***	0.330***	0.708***
	(0.111)	(0.0898)	(0.246)
Age 30plus	1.015***	0.423***	1.078**
	(0.227)	(0.141)	(0.412)
Size 10to19		0.225**	-1.364***
		(0.109)	(0.112)
Size 20to49		0.629***	0.272***
		(0.172)	(0.0649)
Size 50to249		0.478	0.279***
		(0.312)	(0.0661)
Size 250to499		0.691**	0.0777
		(0.332)	(0.134)
Size 500plus			0.285*
			(0.161)
Foreign	0.499***	0.409***	0.671***
	(0.136)	(0.132)	(0.0911)
Constant	3.574***	7.686***	8.913***
	(0.314)	(0.370)	(0.0514)
Observations	3,242	2,328	2,217
R-squared	0.223	0.221	0.211
Sector dummies	YES	YES	YES
Location dummies	YES	YES	YES
Year Dummies	NO	NO	YES

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Size 10to19	0.0345	0.0202	0.0202	0.0105	0.00487	0.0415	0.276**
	(0.132)	(0.132)	(0.132)	(0.140)	(0.128)	(0.132)	(0.113)
Size 20to49	0.599**	0.587**	0.587**	0.728***	0.556**	0.602**	0.672***
	(0.247)	(0.249)	(0.249)	(0.243)	(0.247)	(0.240)	(0.238)
Size 50to249	0.933***	0.816***	0.816***	1.100***	0.779***	0.810***	0.920***
	(0.159)	(0.178)	(0.178)	(0.162)	(0.180)	(0.145)	(0.185)
Size 250to499	0.919*	0.899*	0.899*	1.083**	0.831*	0.937*	0.895*
	(0.449)	(0.482)	(0.482)	(0.419)	(0.459)	(0.480)	(0.513)
Size 500plus	0.241**	-0.930***	-0.930***	-1.147***	-0.910***	-1.175***	-0.470***
	(0.0880)	(0.141)	(0.141)	(0.0789)	(0.140)	(0.128)	(0.150)
Age 6to9	0.173***	0.173***	0.173***	0.166***	0.172***	0.167***	0.185***
	(0.0216)	(0.0215)	(0.0215)	(0.0247)	(0.0216)	(0.0212)	(0.0163)
Age 10to19	0.130***	0.132***	0.132***	0.127***	0.131***	0.125***	0.203***
	(0.0240)	(0.0231)	(0.0231)	(0.0291)	(0.0241)	(0.0242)	(0.0166)
Age 20to29	0.0161	0.0181	0.0181	0.0138	0.0181	0.0188	0.148**
	(0.0697)	(0.0686)	(0.0686)	(0.0877)	(0.0693)	(0.0655)	(0.0686)
Age 30plus	0.0668	0.0681	0.0681	0.150***	0.0690	0.0468	0.112*
	(0.0587)	(0.0594)	(0.0594)	(0.0536)	(0.0590)	(0.0618)	(0.0636)
Formal	0.938***	0.932***	0.932***	1.037***	0.917***	0.890***	0.789***
	(0.0833)	(0.0828)	(0.0828)	(0.0890)	(0.0823)	(0.0857)	(0.0676)
Foreign		0.273***	0.273***	0.225**	0.261***	0.269***	0.186**
		(0.0770)	(0.0770)	(0.0927)	(0.0751)	(0.0764)	(0.0763)
Bobo_Dioulasso			0.158**				
			(0.0619)				
Other			0.266***				
			(0.0481)				
MinUtilConstr				0.907***			
				(0.143)			
Commerce				1.049***			
				(0.0474)			
Services				0.816***			

Annex C Table 7. Productivity Regression Analysis with Formal Variable

				(0.0609)			
Exporter					0.517***		
					(0.132)		
Share of temporary workers						0.971***	
						(0.103)	
Capital factor intensity							-0.835***
							(0.0620)
Constant	7.133***	7.139***	7.139***	6.020***	7.154***	7.181***	5.704***
	(0.0833)	(0.0828)	(0.0828)	(0.0342)	(0.0823)	(0.0857)	(1.63e-06)
Observations	15,051	15,043	15,043	15,043	15,043	15,043	14,928
R-squared	0.223	0.224	0.224	0.167	0.225	0.237	0.307
Sector dummies	YES	YES	YES	NO	YES	YES	YES
Location dummies	YES	YES	NO	YES	YES	YES	YES
Year Dummies	NO	YES	YES	YES	YES	YES	YES

Data source: 2008 Enterprise Census

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Annex C Table 8. Wage Regression Analysis with Formal Variable

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Size 10to19	0.0388	0.0273	0.0273	0.0547	0.0107	0.0313	0.0608
	(0.122)	(0.119)	(0.119)	(0.132)	(0.119)	(0.0965)	(0.0827)
Size 20to49	0.666***	0.658***	0.658***	0.696***	0.632***	0.518**	0.541**
	(0.211)	(0.212)	(0.212)	(0.246)	(0.214)	(0.204)	(0.200)
Size 50to249	0.757***	0.631***	0.631***	0.676***	0.609***	0.405***	0.410***
	(0.150)	(0.188)	(0.188)	(0.217)	(0.201)	(0.106)	(0.106)
Size 250to499	0.953***	0.594*	0.594*	0.687**	0.494	0.244	0.298
	(0.324)	(0.345)	(0.345)	(0.335)	(0.295)	(0.350)	(0.351)
Size 500plus	-1.552	-5.401***	-5.401***	-5.370***	-5.397***		
	(2.761)	(0.0638)	(0.0638)	(0.0652)	(0.0648)		
Age 6to9	0.217***	0.220***	0.220***	0.218***	0.219***	-0.00991	-0.00855
	(0.0187)	(0.0185)	(0.0185)	(0.0180)	(0.0188)	(0.0170)	(0.0172)
Age 10to19	0.292***	0.298***	0.298***	0.300***	0.297***	0.0683***	0.0700***
	(0.0197)	(0.0184)	(0.0184)	(0.0180)	(0.0188)	(0.0170)	(0.0170)
Age 20to29	0.278***	0.253***	0.253***	0.264***	0.254***	0.0346	0.0356
	(0.0781)	(0.0686)	(0.0686)	(0.0711)	(0.0690)	(0.0462)	(0.0457)
Age 30plus	0.353***	0.366***	0.366***	0.394***	0.368***	0.150*	0.161*
	(0.0956)	(0.0946)	(0.0946)	(0.101)	(0.0955)	(0.0824)	(0.0843)
Formal	0.697***	0.685***	0.685***	0.739***	0.668***	0.295***	0.306***
	(0.0485)	(0.0476)	(0.0476)	(0.0586)	(0.0466)	(0.0513)	(0.0509)
Foreign		0.310***	0.310***	0.322***	0.299***	0.179***	0.188***
		(0.0396)	(0.0396)	(0.0429)	(0.0390)	(0.0511)	(0.0545)
Bobo_Dioulasso			0.201***				
			(0.0567)				
Other			0.00800				
			(0.0322)				
MiningQuarrying				2.347***			
				(0.256)			
Utilities				-0.648***			
				(0.0641)			
Construction				0.366***			
				(0.0647)			
WholesaleRetail				0.0901**			
				(0.0364)			
TransportStorageComm				-0.0634			
				(0.117)			

HotelsRestaurants				-0.243***			
				(0.0169)			
BusinessFinance				1.341***			
				(0.208)			
OtherServices				0.455***			
				(0.110)			
Exporter				. ,	0.518***		
					(0.0727)		
Sales per worker -log					· · ·	0.311***	0.590***
						(0.0279)	(0.126)
Sales per worker -log						. ,	. ,
squared							-0.0188**
							(0.00779)
Constant	7.608***	7.016***	7.016***	4.867***	6.621***	2.762***	1.714***
	(0.208)	(0.350)	(0.350)	(0.0252)	(0.313)	(0.169)	(0.496)
Observations	13,123	13,110	13,110	13,110	13,110	9,547	9,547
R-squared	0.171	0.172	0.172	0.159	0.174	0.328	0.331
Sector dummies	YES	YES	YES	YES	YES	YES	YES
Location dummies	YES	YES	YES	YES	YES	YES	YES
Year Dummies	NO	NO	NO	NO	NO	NO	NO

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, *

p<0.1