
The Services Industry and its Potential for Youth and Women Employment in an African Context:

A review of the literature

by Franque Grimard
2019

Report commissioned by the "[*Building economic complexity in Africa: Laying the foundation for expanding economic opportunities for women and youth in Africa*](#)" project.

*Disclaimer: This work was carried out with the aid of a grant from the International Development Research Centre, Ottawa, Canada. The views expressed herein are those of their respective authors and do not necessarily represent those of IDRC or its Board of Governors, the Development Policy Research Unit, University of Cape Town, or any associated organisation/s.

The services industry and its potential for youth and women employment in an African Context: A review of the literature

Franque Grimard
McGill University

April 2019

Preliminary version.

Acknowledgements: The author thanks Francois Steenkamp for his thoughtful comments on an earlier draft.

Contents

1. Introduction.....	2
2. Review of Literature on Services in Africa	4
3. An examination of the various empirical evidence.....	9
3.1 Africa Sector Database (ASD).....	9
3.2 World Bank and ILO data bases	10
3.2.1 Observations on Mauritius.....	12
3.3.1 Mauritius.....	29
3.3.2 Ghana	30
3.3.3 Ethiopia.....	30
3.3.4 Rwanda	30
3.3.5 Nigeria.....	30
3.4 LSMS-ISA surveys	30
4. Discussion.....	34
Bibliography	37

1. Introduction

Manufacturing today has become much more capital- and skill-intensive, with greatly diminished potential to absorb large amounts of labor from the countryside. Can service industries¹ play the role that manufacturing did in the past, leading to economic growth and absorbing vast amounts of labor? Already, services contribute the bulk of GDP in developing countries, even in low-income countries where agriculture has traditionally played a big part. Young workers who leave the farm for the cities are increasingly absorbed into urban services jobs instead of manufacturing. In addition, international trade in services has tended to expand more rapidly than trade in goods.

There are two major views regarding the role of the services. First, there is the optimist camp represented by the paper by Ejaz Ghani and Stephen D. O’Connell of the World Bank suggesting that services have exhibited “unconditional convergence” in productivity recently (2014). That is, countries furthest away from the global frontier of labor productivity have seen the fastest productivity growth in services. The authors consider that service industries could serve as a growth escalator, the role traditionally assumed by manufacturing.

Some, however, are more pessimistic. Rodrik (2016) explains his pessimism by pointing two differences between services and manufacturing. First, the formal services sector, particularly its tradable component, requires highly skilled workers. But developing economies typically have predominantly low-skilled labor forces. In such economies, tradable services cannot absorb more than a fraction of the labor supply. The second important difference between services and manufacturing is that the services sector’s growth may be self-defeating: the expansion in the non-tradable service sector will lead to a decline of its terms of trade against the other sectors or the economy. This will then reduce the profitability unless the services sector’s expansion is accompanied by a complementary growth in the rest of the economy. Rodrik points out that in services, where market size is limited by domestic demand, continued success requires complementary and simultaneous gains in productivity in the rest of the economy. He claims that “growth therefore must rely on the much slower accumulation of economy-wide capabilities in the form of human capital and institutions.” Rodrik, therefore, is sceptical that a services-led model can deliver rapid growth and good jobs in the way that manufacturing once did. When one adds the degree of informality of the services sector that characterizes most developing countries in Africa, it forces one to have sobering thoughts on the potential of the services sector to be a growth engine and provide employment to millions of youth and women joining the labor force.

This scepticism, however, suggests directions that one should take to find empirical evidence to assess better, in an African context, the potential of the services

¹ A service is a transaction in which no physical goods are transferred from the seller to the buyer. More precisely, services correspond, in the United Nations’ International Standard Industrial Classification (ISIC) classification (in its revision 3) to ISIC divisions 50-99 and they include value added in wholesale and retail trade (including hotels and restaurants), transport, and government, financial, professional, and personal services such as education, health care, and real estate services.

sector to contribute to growth and be a youth and female employment intensive sector.

Consequently, this paper provides a critical review of the available literature on sectorial employment in African countries in order to assess the impact of the services sector on African economies and in particular on the implications for youth and women. The paper begins with a brief review of the main arguments for and against the role of services in determining economic growth and generating productive employment possibilities, influenced by Rodrik (2016) and papers such as Ghani and O'Connell (2014). Since the issue is essentially empirical, the paper then reviews and examines the evidence presented in recent research endeavours where the question concerning whether non-manufacturing industries (agriculture, services) can act as a catalyst for growth in African countries is considered directly or indirectly.

In particular, the paper will look at the various sources of African data sets as well as corresponding research papers that one may use in order to be able to shed more light on the role of services. First, The Africa Sector Database (ASD) developed by the Groningen Growth and Development Centre (GGDC), combines data from national accounts, census and various surveys is discussed. Second, we review the data coming from the International Labour Organization (ILO)'s database, ILOSTAT, looking at the availability of data for African countries. In addition, we examine more closely the case of Mauritius, a country that has enjoyed a long period of economic growth, with a structural transformation towards the services sector and that has had an active national statistics agency. Third, one looks at the employment patterns that one can gather from analyzing different types of surveys: the World Bank Enterprises Surveys with their hiring patterns as well as the World Bank LSMS-ISA household surveys with their information on off-farm employment of individuals. The micro analyses coming out of these surveys may then help understand better the various factors influencing the sectorial employment patterns across African countries.

Overall, this review finds that there is little evidence for the optimistic view on the role of the services sector: with the possible exception of Mauritius, the data and their corresponding analyses do not provide evidence that the services sector has been able to generate large effects, particularly when considering activities such as financial services and telecommunications. However, as is often the case, the story is more complicated: while one has not observed the services sector high productivity activities leading the growth of African economies, generating large spinoffs to women and youth in terms of employment, the services sector, including both formal and informal activities has generated employment opportunities and in some cases, remunerative ones even though they are in less "productive" activities such as food and retail sales. Yet, there are also suggestions in the data sets that a large number of services jobs for women and youth consist of informal and low remuneration occupations. The paper then concludes with a discussion of the need to understand the complex interactions between the agricultural, manufacturing and service sectors. Several factors on the demand side as well as on the supply side need to be taken into consideration before the services sector may reach the potential impact that the optimists maintain, particularly concerning the employment of women and youth.

2. Review of Literature on Services in Africa

McMillan, Rodrik and Verduzco-Gallo (2014) observe that a “central insight of the literature on economic development is that development entails structural change.” This change implies that as labor and other resources move from agriculture into modern economic activities, overall productivity rises and incomes expand. This reallocation will provoke a rise in a country’s productivity even if there is no productivity growth within sectors. However, they also point out that even though there may be an increase in the sectors’ productivity, the overall productivity growth may suffer if labor does not reallocate to the more productive activities.

They argue their point by first decomposing labor productivity growth in an economy in two terms. First, productivity can grow within economic sectors through capital accumulation, technological change, or reduction of misallocation across plants. The expression they use for this term is the “within” component of productivity growth. Second, they mention that labor can move across sectors, from low-productivity sectors to high-productivity sectors, increasing overall labor productivity in the economy. They call the second component of the productivity growth the “structural change” term. This term captures the productivity effect of labor re-allocations across different sectors. When changes in employment shares are positively correlated with productivity levels, this term will be positive, and structural change will increase economy-wide productivity growth. But if labor does not reallocate to more productive sectors, this term will be negative and will then reduce overall labor productivity.

McMillan, Rodrik and Verduzco-Gallo (2014) then uses a panel data set of 38 countries with data on employment, value added (in 2000 PPP US dollars), and labor productivity (also in 2000 PPP US dollars) disaggregated into nine economic sectors, starting in 1990 and ending in 2005. The main source of data is the 10-Sector Productivity Database, by Timmer and de Vries (2009), and they added data for Turkey, China, and nine African countries: Ethiopia, Ghana, Kenya, Malawi, Mauritius, Nigeria, Senegal, South Africa, and Zambia.

They use this data set to examine the labor productivity growth, dividing it into the within component and the structural change component and take a particular look at the differences between Africa, Latin America and Asian countries. Their results show that since 1990 structural change has been growth reducing in both Africa and Latin America, with the most striking changes taking place in Latin America. The bulk of the difference between these countries’ productivity performance and that of Asia is accounted for by differences in the pattern of structural change—with labor moving from low to high-productivity sectors in Asia, but in the opposite direction in Latin America and Africa. In other words, for countries in these two continents, the structural change component tends to be negative: labor does not reallocate to higher productivity activities.

However, when they divide the estimation in two different time periods, McMillan, Rodrik and Verduzco-Gallo (2014)’s results also show that things seem to be

turning around in Africa: after 2000, structural change contributed positively to Africa's overall productivity growth. For Africa, the authors claim that these results are encouraging. Furthermore they point out that the very low levels of productivity and industrialization across most of the continent indicate an enormous potential for growth through structural change. The question then becomes what can be done to unleash this potential.

In discussing possible ways that Africa can generate economic growth, Dani Rodrik (2016) points out that Africa's structural change does not appear to resemble the changes that occurred during Europe's industrialization and during the high growth period in Asia. Indeed, while labor is moving out of agriculture and the rural sector, "Urban migrants are being absorbed largely into services that are not particularly productive and into informal activities", rather than being absorbed by an expanding, high productivity sector that would be driving the structural transformation, as a simple Lewis model would offer.

Rodrik (2016) then offers four possible options that could generate a sustained and rapid growth for African countries. The first option is a revival of manufacturing. The second option is to generate agriculture-led growth, based on diversification into non-traditional agricultural products and the third option is rely on natural resources, a route that some African countries have taken already. The fourth option is the services sector one. After all, structural transformations end up with a large services sector. Perhaps the impetus for the growth of African economies and an increase in productivity will come from the services sector itself? Rodrik is rather pessimistic because of the constraints he perceives: first, the services that have the capacity to enhance productivity tend to require individuals with high skills and Rodrik mentions that "long years of education and institution building are required before farm workers can be transformed into programmers or even call centre operators." So, raising productivity in services has typically required steady and broad-based accumulation of capabilities in human capital, institutions and governance and unless the complementarities arise in the economy, there will be growth constraints. In addition, raising the productivity in one element of a sub-sector of services is possible, say by allowing foreign entry into retailing.

However, Rodrik cautions that achieving productivity and increased employment across the entire retail sector is difficult because of the heterogeneity of firms and institutional arrangements. He sees that these difficulties will impede the potential of the services sector to generate high-wage jobs for the majority of individuals. As he mentions: "Perhaps Africa will be the breeding ground of new technologies that will revolutionise services for broad masses, and do so in a way that creates high-wage jobs for all. Perhaps; but it is too early to be confident about the likelihood of this scenario"

Others are more optimistic. Ghani and O'Connell (2014) talk about the potential of the services sector. The authors do not see the constraints raised by Rodrik (2016) as impossible to overcome and provide some anecdotal evidence of the services sector's potential impact. Ghani and O'Connell (2014) believe that "as services produced and traded across the world expand with advances in technology and globalization, the

possibilities for low-income countries to grow faster based on their comparative advantage increases. That comparative can just as easily be in services as in Manufacturing. Growth escalators faced by the Lions in Africa² may turn out to be different than that experienced by the East Asian Tigers.”

The book *Industries Without Smokestacks: Industrialization in Africa Reconsidered*, edited by Newfarmer, Page and Tarp, challenges the pessimistic view that Africa will be unable to catch the wave of sustained rapid growth and rising incomes. It argues that other activities sharing the characteristics of manufacturing- including tourism, ICT, and other services as well as food processing and horticulture- are beginning to play a role analogous to that played by manufacturing in East Asia. These 'industries without smokestacks' offer new opportunities for Africa to grow in coming decades.

In looking for those industries and see if they can contribute to African growth, a chapter from the book (Spray and Wolf, 2017), uses a unique dataset built from tax administration data from the Uganda Revenue Authority (URA) and the Rwanda Revenue Authority (RRA). This dataset is unique in that “it covers the full population of formal sector firms on a monthly basis and holds information on their characteristics, their business networks and behaviour that allow to study different industries at the micro level and compare their development over time, features that no survey dataset holds at a similar level of detail.” However, the datasets cover only formal firms that report to the tax authorities. It is not a representative set of firms in these countries so it is not clear that one can generalize the results to the rest of the firms, likely very small and/or part of the informal sector of these countries. But this does not make the study less interesting as the authors’ goal is to analyse high-productivity formal firms interacting with the external sector.

Spray and Wolf (2017) use network analysis to find results that first, similar to their importance in the traditional manufacturing industries, firm size also appears to be of crucial importance for successful industries without smokestacks in services and agri-processing. Secondly, they find a high level of interconnectedness among firms, particularly those firms involved in the services sector.³ Furthermore, they show that productivity growth in these sectors is strongly associated with the performance of the whole economy. They argue that their results show that industries without smokestacks in manufacturing and services can play an important role in structural transformation, and that looking at finer levels of disaggregation illuminates a path toward growth and transformation that need not solely based on the manufacturing sector, as one needs to look at the interactions between the sectors. Whether the other firms in Rwanda and Uganda involved manufacturing and services can be transformed to be like those high-productivity ones found in the paper’s data set is not addressed but this is beside the point. The paper aims to demonstrate that there is a potential for an industry without

² The African Lions are Congo, Chad, Angola, Mozambique, Nigeria, Ivory Coast, Sierra Leone, Ghana, Ethiopia, and Rwanda.

³ Their results suggest that service sectors make up six of the top ten most interconnected sectors of the economy in Uganda and five in Rwanda, supporting their claim that services are vital to knitting the economy together.

smokestacks with high productive firms in manufacturing and services and this goal is certainly achieved. The question then becomes how to unleash this potential to have economy-wide consequences.

One possibility is that the services sector's expansion would be fuelled by an exogenous source: an exogenous increase in its demand, most likely from trade with other countries, perhaps using the example from India⁴. Indeed, several recent papers have advocated liberalising trade in services. First, Saez, McKenna and Hoffman (2015) suggests the importance of the services sector in Africa by first pointing out that services are used as inputs to other export activities in such sectors as agriculture, energy and manufacturing. Besides the complementarity of the service sectors, the paper also highlights the potential role that trade liberalisation and better governance may play in expanding the services sector and how a solid service sector may help connect countries to the global marketplace. The paper also calls for addressing the significant gaps in data and analysis in order to understand better how the activities of the service sector as well as complementary sectors can help African countries to boost their overall economic competitiveness.

Similarly, Hoekman (2017), in a chapter in *Industries Without Smokestacks: Industrialization in Africa Reconsidered*, recognizes that “the weakness of services data makes it difficult to analyse the effects of such developments (recent technological changes) on services trade. This is true even for OECD member countries, as much of what is exchanged digitally is not measured, and in part because it is very difficult to measure sales of services provided by suppliers that cross borders on a temporary basis. The data challenges are even greater for low-income countries. Data for many African countries are very weak; many countries do not report detailed statistics and some do not report at all. This implies that the analysis of available statistics is likely to give a misleading picture of the reality “on the ground” in Africa.” The paper then mentions some case studies on travel (tourism) being a major export category that is growing faster than other services, as well as mentioning studies on the role of ICT to help boost exchanges of professional and business services across African countries such as Kenya, Uganda, Rwanda and Tanzania.

Finally Hoekman (2017) cautions that the economic research literature makes clear that services liberalization is not a panacea. Opening up to trade in services without having the proper economic governance, institutions and regulatory authorities may not lead to the desired development outcomes. Thus, this article again, points out the potential role of services in providing economic growth without being able to assert that favouring services expansion through trade reforms will necessarily lead to positive outcomes because 1) the data do not allow to measure or verify and 2) that other complementary factors need also to develop favourably before an expansion of trade takes place.

A services sector expansion may also be beneficiary for women. Indeed, Lipowiecka and Kiriti-Nganga (2016) highlights the possible role that services can play

⁴ See for instance Eichengreen and Gupta, (2010).

in providing an alternative engine of growth for developing countries, as well as its importance in terms of female employment, citing the ILO's figure of almost 50% of female employment across all countries. The paper cites the potential role of the services sector in fostering not only growth but also of greater gender equality. It takes a look at the female employment in the services sub-sectors of communications technology (ICT), finance, tourism, health care industries, pointing out some of the gender-based constraints affecting women's participation in the service sectors in developing countries. The paper suggests the potential role of promoting gender equality in developing countries and offers recommendations to ensure that women and men benefit in an equitable manner from service sector growth. The paper does not say that the services sector actually plays that role: it highlights the potential that it may play. The reason for this is because the data to make such an assessment do not exist for most developing countries and, to be fair, the argument made is also prospective, rather than retrospective. It is about what an expansion of the services sector may do in the future.

Women are more likely to be found in the services sector than the manufacturing one, but this prevalence is not pervasive across of the services sub sectors. Amin and Islam (2014), in their analysis of firm-level data across 87 developing countries revealed not surprisingly that women are more prevalent in the services sector compared to the manufacturing sector, particularly when looking at the incidence of female managers. However, they find that this finding is entirely driven by the retail sector rather than service sectors such as wholesale, construction or other services. Furthermore the higher incidence of female managers is much higher for relatively small firms and in smaller cities.

Finally, Africa's population is relatively young. Young people within the 15–24 year age bracket comprise between 35% and 40% of the workforce in the various countries examined. An additional one-fourth of the work force is contained in the 25–34 age bracket. It could be that the employment structure among young people resembles that of the general population, as youth accounts for a large proportion of the labor force. Yet, it could also be different. Filmer and Fox (2014) mentions that African youth entering the labor force now have more schooling than previous generations. They may then join the labor force by engaging in more productive activities, which may then lead to a more productive labor force in the next several decades.

3. An examination of the various empirical evidence

Having presented an overview of the literature on the potential role of services in Africa, we now review the issues of sectorial employment by looking at the available databases and some of the corresponding research analyses linked to sectorial employment in African countries. We begin with a database that aims to have some macroeconomic consistency.

3.1 Africa Sector Database (ASD)

The Africa Sector Database (ASD) developed by the Groningen Growth and Development Centre (GGDC) is the first database to provide long-term series (from 1960 onwards) on sectorial developments in Africa. The database contains variables such as annual series of value added, deflators, and persons employed (split by gender) for ten broad sectors of the economy. It is constructed on the basis of an in-depth study of available statistical sources on a country-by-country basis for 11 countries.⁵ The de Vries, de Vries, Gouma and Timmer, (2013) paper discusses the contents of the database, the selection procedure of the sources, and the methods used to ensure intertemporal, international and internal consistency. Data on employment is typically not available from the National Accounts Statistics (NAS) and is therefore much scarcer than data on value added. Employment and labor productivity data were derived for particular years from national micro-surveys, and the remaining years were interpolated to arrive at annual data on employment for various sectors between 1960 and 2010.⁶

Whereas the database has macro data that is generally available and of good quality for each period, the data on employment for these countries are for a large portion imputed using a detailed and careful methodology. The database has been used to describe structural transformation in developing countries using macro growth accounting to compute productivity changes across time and decompose them across sectors. This exercise has been published in journals (de Vries, Timmer, and de Vries (2013), Timmer, de Vries, G& de Vries, (2015) and the authors' macroeconomic analyses find that the "process of structural change stalled in many African and Latin American countries during the mid-1970s and 1980s. When growth rebounded in the 1990s, workers mainly relocated to market services industries, such as retail trade and distribution. Though such services have higher productivity than much of agriculture, they are not technologically dynamic and have been falling behind the world frontier" (Timmer, de Vries, G& de Vries, 2015).

It would then appear that the transformation towards the services sector for the

⁵ Botswana, Ethiopia, Ghana, Kenya, Malawi, Mauritius, Nigeria, Senegal, South Africa, Tanzania and Zambia.

⁶ The paper by de Vries, de Vries, Gouma, and Timmer, (2013) reveals that « Four different primary sources of employment exist, namely the Population Census (PC); the Labour Force Survey (LFS) and other Household Survey's (HS) with data collected at the household level; and Establishment Survey's (ES) which are based on firm-level questionnaires. Generally the methodology uses the PC to arrive at benchmark estimates and interpolate the data in between using ES data. In some cases the LFS and/or HS are used to adjust the PC data (collected on a ten-year cycle) with a series of methods to do back casting, interpolation and extrapolation in order to replace the missing values between the census years".

African countries included in the ASD does not appear to be in the high productivity service activities such as telecommunications and financial services, and/or the analysis has not been able to capture this effect yet on a macroeconomic basis.

Yeboah and Jayne (2018) also use the ASD, but do it as a starting point for understanding broad employment trends by sector for multiple African countries.⁷ They confirm that “for most countries, the declining share of labor in agriculture has been accompanied by higher labor shares in the service-related sectors such as commerce, transport and hospitality, making services the second largest contributor to total employment. The share of jobs in the manufacturing sector has generally either stagnated or declined over time in most countries, with a couple of exceptions such as Kenya and Ethiopia”.

3.2 World Bank and ILO data bases

The International Labour Organization (ILO) is the main source for labor force data in the world. For instance, The World Debt Indicators (WDI) tables present various indicators for the labor force by drawing from the ILOSTAT database.⁸ In turn, the ILO data are produced from two major exercises. First, the ILO, in association with a country’s statistical agency, will administer labor force surveys to directly capture the information to construct the labor force statistics. Second, when labor surveys are not available, the ILO provides labor force numbers for a particular country though time by inferring them from an econometric modelling exercise. In other words, when one does not have actual data, one uses econometric procedures to impute a value for missing observations.

The ILO (2010) paper from ILO’s Employment Trends Unit explains the elaborate modelling exercise in greater details using panel data techniques, predicting values that are missing from an economic model that is estimated using from collected surveys. Given that the collected data for developing countries are often missing, the model, estimated with data from developed countries, is used to impute values for developing countries. For African countries, it is clear that it imputes a lot of observations for a considerable amount of periods. Indeed, when looking at female and male unemployment rates, Figure 4 of the ILO (2010) reproduced below reveals that only 10% of the observations come from observed (i.e. initial) data. The remaining 90% of the observations from the African countries are imputed using various statistical methods. In the case of adult and youth employment data, figure 5 of the paper (reproduced here) reveals that the percentage of observed data is even less: close to 5%.

⁷ Yeboah and Jayne (2018) main empirical analysis utilises micro-level data from three other sources: 1) the Living Standards Measurement Study with its Integrated Surveys of Agriculture (LSMS-ISA); 2) Labour Force Surveys, and 3) the Integrated Public Use Microdata Series (IPUMS) that are based on 10% random samples of national population censuses conducted between 1990 and 2010 and managed by the University of Minnesota Population Center.

⁸ ILOSTAT can be accessed at

https://www.ilo.org/ilostat/faces/wcnav_defaultSelection?_afzLoop=2595443842708245&_afzWindowMode=0&_afzWindowId=null#!%40%40%3F_afzWindowId%3Dnull%26_afzLoop%3D2595443842708245%26_afzWindowMode%3D0%26_adf.ctrl-state%3Dxk7izvyrh 57

Figure 4 Male and Female unemployment rates - response rates at stages of the imputation process

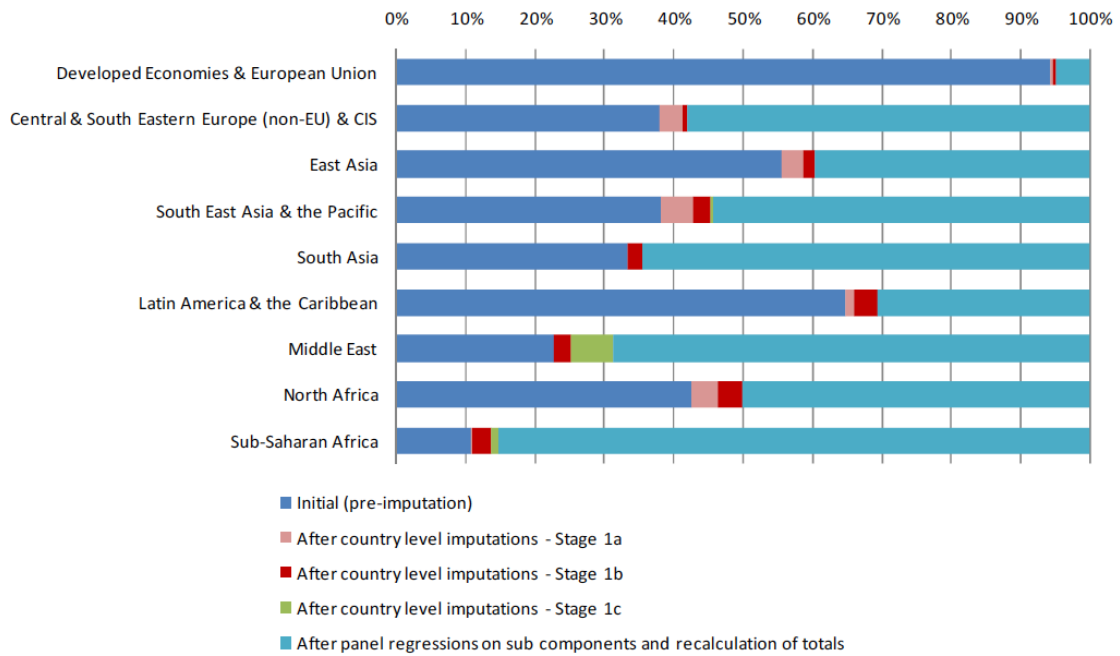
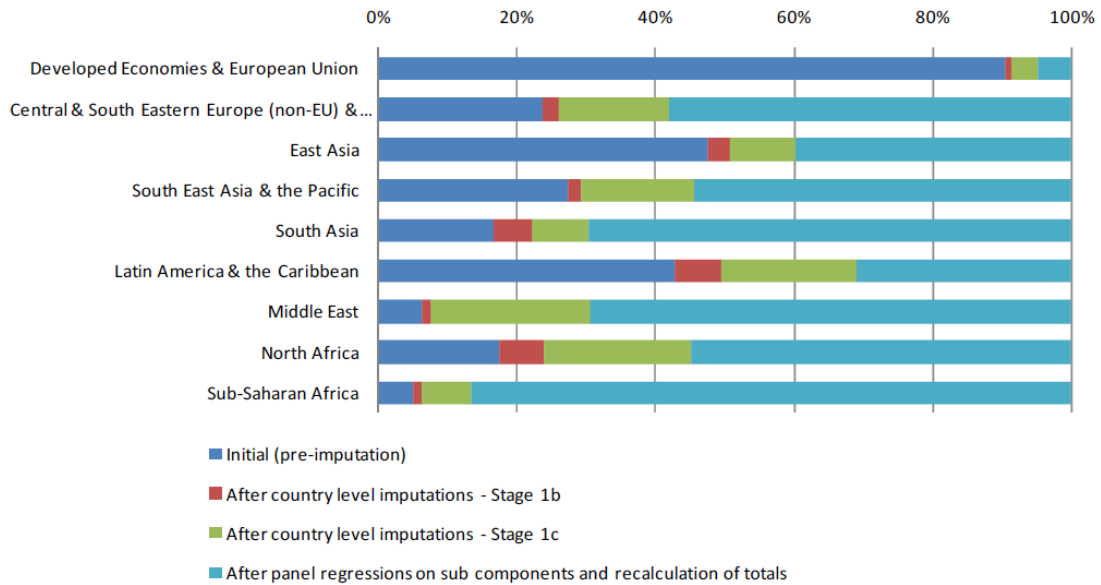


Figure 5 Adult and Youth unemployment rates - response rates at stages of the imputation process



While a modelling exercise is the best one could do in order to obtain data given the circumstance, it remains that this brings up an interesting issue: If one uses the imputed values on participation into the labor force and its various sectors in order to be able to analyse how the economies of developing countries undergo structural transformation through time, one needs to be aware that most of the data are not actually real: rather they are computed using data from developed countries where “adjustments” are made to make them more applicable to developing countries through time. In other words, the data cannot describe a process actually taking place. Rather, they come from a hypothesized model that one assumed might have taken place. This may then limit the usefulness of the imputed data and may suggest that one should only look at data coming from actual survey sources.

The imputation procedure leads to some striking differences. For instance, downloading ILOSTAT data on the percentage of females involved in the services sector from African countries, one is able to get 17 countries, with a complete period between 1990 and 2017. However, when one looks at the data that come from real surveys, one gets 18 African countries, where each country has data for 2 or 3 years between 2000 and 2015. In fact, Mauritius and South Africa are those countries where labor force surveys are more prevalent, allowing data collection annually: Mauritius between 2001 and 2016, South Africa, between 2007 and 2016. Namibia has four observations between 2000 and 2016 and Tanzania and Ghana have three observations. The rest of countries have two or one observation for the 2000-2016 period. Thus, if one looks for some evidence on what happened to the labor force composition in terms of sectors between 1990 and 2017 for African countries in the ILOSTAT database, the actual survey data are only for two countries, Mauritius and South Africa, and the longest real time period is from 2001 to 2016 in the case of Mauritius.

3.2.1 Observations on Mauritius

Mauritius is a very interesting case which has been held by the press as a star performer in Africa. Indeed, data from the IMF show that real per capita GDP (at purchasing power parity, 2011 dollars) has quadrupled from \$4,529 in 1980 to a projected \$20,404 this year, taking the nation of 1.3m people from 82nd in the world in terms of income per head to 53rd, based on countries included in the 1980 data. Here’s is how Steve Johnson, a journalist for the Financial Times, describes the transformation that Mauritius undertook:

Mauritius started to industrialise and diversify its economy in the 1970s, abandoning a policy of import-substitution that failed, in part, due to the small size of the domestic market. Instead, it embraced exports, with an ambitious export processing zone act that fast-tracked approvals for export-focused manufacturers, according to analysis by the World Bank.

Mauritius’ industrialisation and export push was founded on the textile industry, a relatively low-skilled sector that involved converting imported fabrics into finished goods. Simultaneously, though, the country embarked on a push to

improve its human development indicators, preparing the ground for a move up the skills chain. School enrolment rates were raised, life expectancy jumped from 62 in 1970 to 74.6 today, infant mortality fell from 64 per 1,000 live births in 1970 to 10 and the Gini coefficient, a measure of income inequality, dropped from 0.50 in 1962 to 0.36 (i.e. closer to perfect equality of 0), even as this measure has risen in many countries. This improvement in the quality of its workforce paved the way for Mauritius to move into higher-skilled, higher-value added sectors, such as business process outsourcing and financial services...

-Excerpt from Johnson (2018) in the Financial Times on June 14, 2018.

One way to validate the Financial Times ‘transformation story is to look at the data. The first possible step is use data from Mauritius coming from the Groningen Growth and Development Centre (GGDC) ASD data base. The GGDC 10-Sector Database provides a long-run internationally comparable dataset on sectorial productivity performance in Africa, Asia, and Latin America. Variables covered in the data set are annual series of value added, output deflators, and persons employed for 10 broad sectors (ISIC code 3.1).⁹ One can then group the various subsectors into the general categories of Agriculture, Manufacturing, Mining and Services. In addition, one can subdivide the general service category into a subsector that encompasses the “traditional” activities, often characterized as lower productivity activities¹⁰ and into another subsector with activities that are more technical and likely more productive.¹¹

The following graphs look at the real valued added and employment shares by sectors for the years 1980, 1990, 2000 and 2010 to show the structural transformation of the Mauritius economy over this 30-year period. The first set of graphs presents a familiar transformation, though one notes that already in 1980, Mauritius has a relatively prevalent services sector (64%). Whether looking at the gross value added in constant 2005 prices or at the share of employment, one sees that the services sector’s importance increases to the expense of the agriculture, the mining and the manufacturing sector. For instance, the service share of employment is about 55% in 1980 and goes to 74% in 2010, while agriculture reduces from 24% to 7%. Furthermore manufacturing share of employment rises from 21.3% to 32% in 1990, but then it reduces to 19% in 2010, underlying the fact that Mauritius’ transformation has indeed shifted towards services.

However, the GGDC data set suggests that this transformation is not simply a matter of the economy switching to a more productive service activity. While the 10-sector ISIC coding does not allow a finer examination, one can create broad subsector service activities to observe the transformation between 1980 and 2010. The second set of graphs shows the same number as the previous tables with the exception that the services category is broken up into the “traditional services activities (variable services1) and the “technical services” activities (variable services2). The graphs show that indeed, from

⁹ The ASD was discussed in more details in section 3.1 For the construction of the data set, one should consult https://www.rug.nl/ggdc/docs/10sector_sm_jan2015.pdf

¹⁰ These activities are construction; trade restaurants and hotels; community, social and personal services; and government services.

¹¹ These activities are finance, insurance, real estate and business; and in transport, storage, and communications.

1980 until 2010, the technical activities rise in prevalence (either in terms of value added or employment shares). For instance, employment share in technical activities raise from 7% in 1980 to 17.5% in 2010. However, over this period the traditional activities also see quite an increase in employment shares: from 48% in 1980 to 56% in 2010. In addition, the share of value added in these activities does not appear to decrease between 1990 and 2010.

In other words, the data suggest that the structural transformation in Mauritius indicates that somehow the rise in the value added and the employment shares are phenomena across all the services sub-sectors, including those deemed to be the traditional low-productivity ones. The story therefore appears to be more complicated than an overall increase in the services sector, fed by the rise of the high productivity sub-sectors. Rather, over the 1990-2010 period, the graphs suggest that most, if not all sub-sectors saw a relative increase in value-added and particularly in employment shares. As the transformation takes place, individuals maintain and some switch to the more traditional services activities and these do appear to be fairly productive. This could be due to several reasons: a reduction in informality, a greater contribution of human capital, general macro activities, measurement issues, etc. Without more precise data, it is difficult to say, but certainly the graphs point out to the need to consider more factors before making an assessment.

Fortunately, Mauritius is also blessed with a relatively sophisticated statistical office that has been collecting labor force surveys on an annual basis using the ILO methodology and these data are available on ILOSTAT.¹² Furthermore, one can also access the Statistics Mauritius website and obtain more information on the labor force statistics.¹³ Let's see if the information one can obtain from ILOSTAT and Statistics Mauritius allow to confirm the structural transformation towards the service sector that is pictured in the *Financial Times*. In particular, one will attempt to attest whether the higher-skilled, higher value added sectors have generated large employment changes.

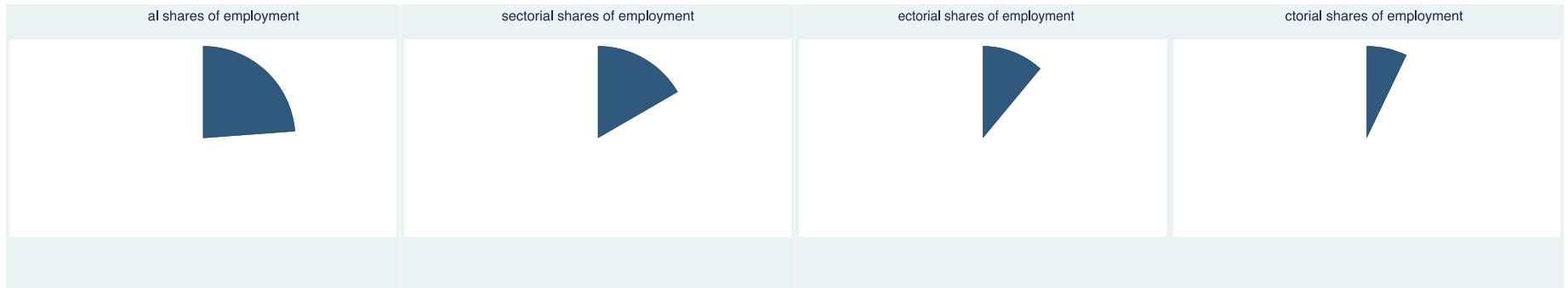
¹² The GGDC data set also uses data from the Mauritius Statistics office. But they only offer a 10 sector level information and they also use their own methodology to make the data consistent across the other countries.

¹³ One can access the website at <http://statsmauritius.govmu.org/English/StatsbySubj/Pages/Labour.aspx>

Mauritius: Sectorial Shares of Value Added at Constant 2005 Prices, 1980, 1990, 2000 and 2010



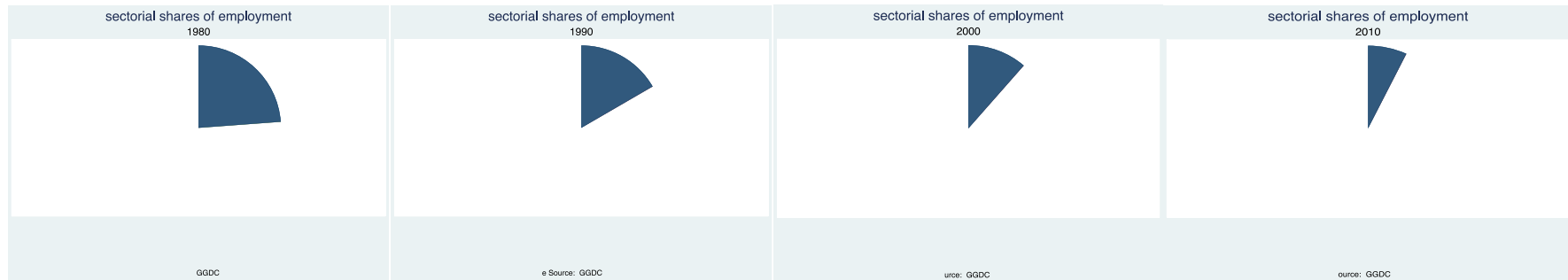
Mauritius: Sectorial Shares of Employment, 1980, 1990, 2000 and 2010



Mauritius: Sectorial Shares of Value Added at Constant 2005 Prices, 1980, 1990, 2000 and 2010
Subdividing Services into Services1 (traditional) and Services2 (more technical)



Mauritius: Sectorial Shares of Employment
Subdividing Services into Services1 (traditional) and Services2 (more technical)



Note: 1) The variable services1 includes the following service subsectors utilities; construction; trade restaurants and hotels; community, social and personal services; and government services.
 2) The variable services2 includes the service subcategories in finance, insurance, real estate and business; and in transport, storage, and communication.

Table 1: Unemployment by percentage overall, by gender and age categories

Table 1.1 - Labour force, Employment and Unemployment, 16 years and over, 1983 - 2016

Both Sexes									'000
Year	Labour force			Employment (including foreign workers)			Unemployment		
	Mauritian	Foreign workers	Total	in large establishments ¹	outside large establishments	Total	Number	Rate ² (%)	
1983			365.1	195.8	97.3	293.1	72.0	19.7	
1984			374.5	200.1	108.4	308.5	66.0	17.6	
1985			383.5	214.0	110.8	324.8	58.7	15.3	
1986			393.0	235.4	114.6	350.0	43.0	10.9	
1987			402.5	257.1	121.4	378.5	24.0	6.0	
1988			411.5	272.4	123.1	395.5	16.0	3.9	
1989			421.4	275.4	130.6	406.0	15.4	3.6	
1990	432.0	1.0	433.0	284.5	136.3	420.8	12.2	2.8	
1991	439.2	2.2	441.4	289.0	140.4	429.4	12.0	2.7	
1992	448.8	4.1	452.9	291.0	146.9	437.9	15.0	3.3	
1993	457.0	6.9	463.9	290.5	155.4	445.9	18.0	3.9	
1994	467.5	8.3	475.8	292.7	162.1	454.8	21.0	4.5	
1995	475.0	9.8	484.8	289.2	171.3	460.5	24.3	5.1	
1996	482.3	8.2	490.5	286.8	175.8	462.6	27.9	5.8	
1997	490.8	8.6	499.4	287.8	179.4	467.2	32.2	6.6	
1998	499.4	10.0	509.4	294.7	180.3	475.0	34.4	6.9	
1999	506.6	12.9	519.5	297.4	183.1	480.5	39.0	7.7	
2000	503.0	14.6	517.6	298.7	186.2	484.9	32.7	6.5	
2001	505.8	16.5	522.3	302.0	185.2	487.2	35.1	6.9	
2002	509.8	17.0	526.8	297.2	191.0	488.2	38.6	7.6	
2003	514.1	18.2	532.3	296.9	193.3	490.2	42.1	8.2	
2004	519.0	17.5	536.5	293.3	199.5	492.8	43.7	8.4	
2005	528.6	16.6	545.2	292.2	202.5	494.7	50.5	9.6	
2006	532.4	16.7	549.1	295.1	205.9	501.0	48.1	9.0	
2007	527.5	21.6	549.1	302.0	202.4	504.4	44.7	8.5	
2008	531.8	24.0	555.8	311.6	206.1	517.7	38.1	7.2	
2009	540.2	21.0	561.2	306.0	215.9	521.9	39.3	7.3	
2010	551.9	22.0	573.9	310.1	221.6	531.7	42.2	7.6	
2011	548.6	23.0	571.6	310.7	218.2	528.9	42.7	7.8	
2012	556.3	24.0	580.3	311.5	224.2	535.7	44.6	8.0	
2013	571.2	26.3	597.5	312.5	239.5	552.0	45.5	8.0	
2014	575.7	28.3	604.0	313.5	245.7	559.2	44.8	7.8	
2015	584.6	28.3	612.9	314.1	252.5	566.6	46.3	7.9	
2016	581.0	28.6	609.6	314.2	253.0	567.2	42.4	7.3	

Male									'000
Year	Labour force			Employment (including foreign workers)			Unemployment		
	Mauritian	Foreign workers	Total	in large establishments ¹	outside large establishments	Total	Number	Rate ² (%)	
1983			268.9	143.1	73.9	217.0	51.9	19.3	
1984			273.5	141.5	85.0	226.5	47.0	17.2	
1985			278.0	146.5	91.5	238.0	40.0	14.4	
1986			283.0	156.8	96.2	253.0	30.0	10.6	
1987			287.5	170.2	99.3	269.5	18.0	6.3	
1988			291.5	178.6	100.9	279.5	12.0	4.1	
1989			296.2	179.5	105.0	284.5	11.7	4.0	
1990	301.4	0.7	302.1	185.7	107.2	292.9	9.2	3.1	
1991	304.4	1.8	306.2	187.2	110.0	297.2	9.0	3.0	
1992	309.8	3.4	313.2	188.4	114.8	303.2	10.0	3.2	
1993	313.8	4.9	318.7	187.9	119.8	307.7	11.0	3.5	
1994	318.6	5.2	323.8	189.6	122.2	311.8	12.0	3.8	
1995	321.7	5.6	327.3	185.7	128.5	314.2	13.1	4.1	
1996	325.2	4.2	329.4	184.4	130.0	314.4	15.0	4.6	
1997	329.7	3.7	333.4	184.3	130.6	314.9	18.5	5.6	
1998	333.8	3.7	337.5	186.4	130.7	317.1	20.4	6.1	

1999	338.0	4.4	342.4	187.7	130.9	318.6	23.8	7.0
2000	334.7	5.0	339.7	187.5	135.0	322.5	17.2	5.1
2001	335.7	5.8	341.5	188.3	135.6	323.9	17.6	5.2
2002	337.1	6.4	343.5	188.2	137.1	325.3	18.2	5.4
2003	338.5	7.9	346.4	188.2	138.6	326.8	19.6	5.8
2004	339.8	9.0	348.8	189.1	140.3	329.4	19.4	5.7
2005	340.0	9.1	349.1	189.3	140.3	329.6	19.5	5.7
2006	341.2	8.3	349.5	190.0	141.0	331.0	18.5	5.4
2007	339.4	12.1	351.5	195.6	138.2	333.8	17.7	5.2
2008	337.4	14.7	352.1	201.0	137.5	338.5	13.6	4.0
2009	341.0	13.0	354.0	198.0	141.2	339.2	14.8	4.3
2010	344.1	13.1	357.2	198.8	143.0	341.8	15.4	4.5
2011	343.3	13.4	356.7	197.8	141.6	339.4	17.3	5.0
2012	346.9	14.2	361.1	198.3	144.7	343.0	18.1	5.2
2013	350.4	16.5	366.9	199.1	149.2	348.3	18.6	5.3
2014	352.8	18.3	371.1	199.3	152.4	351.7	19.4	5.5
2015	353.3	18.6	371.9	198.5	153.9	352.4	19.5	5.5
2016	353.6	19.3	372.9	198.6	157.4	356.0	16.9	4.8

Female								'000	
Year	Labour force			Employment (including foreign workers)			Unemployment		
	Mauritian	Foreign workers	Total	in large establishments ¹	outside large establishments	Total	Number	Rate ² (%)	
1983			96.2	52.7	23.4	76.1	20.1	20.9	
1984			101.0	58.6	23.4	82.0	19.0	18.8	
1985			105.5	67.5	19.3	86.8	18.7	17.7	
1986			110.0	78.6	18.4	97.0	13.0	11.8	
1987			115.0	86.9	22.1	109.0	6.0	5.2	
1988			120.0	93.8	22.2	116.0	4.0	3.3	
1989			125.2	95.9	25.6	121.5	3.7	3.0	
1990	130.6	0.3	130.9	98.8	29.1	127.9	3.0	2.3	
1991	134.8	0.4	135.2	101.8	30.4	132.2	3.0	2.2	
1992	139.0	0.7	139.7	102.6	32.1	134.7	5.0	3.6	
1993	143.2	2.0	145.2	102.6	35.6	138.2	7.0	4.9	
1994	148.9	3.1	152.0	103.1	39.9	143.0	9.0	6.0	
1995	153.3	4.2	157.5	103.5	42.8	146.3	11.2	7.3	
1996	157.1	4.0	161.1	102.4	45.8	148.2	12.9	8.2	
1997	161.1	4.9	166.0	103.5	48.8	152.3	13.7	8.5	
1998	165.6	6.3	171.9	108.3	49.6	157.9	14.0	8.5	
1999	168.6	8.5	177.1	109.7	52.2	161.9	15.2	9.0	
2000	168.3	9.6	177.9	111.2	51.2	162.4	15.5	9.2	
2001	170.1	10.7	180.8	113.7	49.6	163.3	17.5	10.3	
2002	172.7	10.6	183.3	109.0	53.9	162.9	20.4	11.8	
2003	175.6	10.3	185.9	108.7	54.7	163.4	22.5	12.8	
2004	179.2	8.5	187.7	104.2	59.2	163.4	24.3	13.6	
2005	188.6	7.5	196.1	102.9	62.2	165.1	31.0	16.4	
2006	191.2	8.4	199.6	105.1	64.9	170.0	29.6	15.5	
2007	188.1	9.5	197.6	106.4	64.2	170.6	27.0	14.4	
2008	194.4	9.3	203.7	110.6	68.6	179.2	24.5	12.6	
2009	199.2	8.0	207.2	108.0	74.7	182.7	24.5	12.3	
2010	207.8	8.9	216.7	111.3	78.6	189.9	26.8	12.9	
2011	205.3	9.6	214.9	112.9	76.6	189.5	25.4	12.4	
2012	209.4	9.8	219.2	113.2	79.5	192.7	26.5	12.7	
2013	220.8	9.8	230.6	113.4	90.3	203.7	26.9	12.2	
2014	222.9	10.0	232.9	114.2	93.3	207.5	25.4	11.4	
2015	231.3	9.7	241.0	115.6	98.6	214.2	26.8	11.6	
2016	227.4	9.3	236.7	115.6	95.6	211.2	25.5	11.2	

¹ Employing 10 or more persons

² Unemployment as a percentage of Mauritian labour force

Note: Revised figures as from 2001 onwards in line with Population Census 2011

Table 2: Employment in numbers for economic sectors overall, by gender and age categories

Table 2: Mauritius: Employment (Numbers) for broad Sectors, for all and by Gender

Country	Sex	Economic activity	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Mauritius	Total (Sex)	Agriculture (Activity)		53	51	65	49	49	47		45	45	44	39	39					39
Mauritius	Total (Sex)	Agriculture (Broad sector)		53	51	65	49	49	47		45	45	44	39	39					39
Mauritius	Total (Sex)	Industry (Broad sector)		186	172	173	163	159	155	194	156	148	145	141	142	177	177	175	179	133
Mauritius	Total (Sex)	Non-Agriculture (Broad sector)		401	419	443	436	442	437		449	456	466	467	473					505
Mauritius	Total (Sex)	Services (Broad sector)		234	247	269	273	282	281	286	289	305	317	322	326	344	383	362	359	372
Mauritius	Total (Sex)	Total (Broad sector)		456	470	507	487	491	484	483	494	501	510	506	512	526	531	538	539	544
Mauritius	Total (Sex)	Not classified (Broad sector)		1	0	1	1	1	1	3	4	3	3	4	4	4	1	1	1	
Mauritius	Male (Sex)	Agriculture (Activity)		38	37	43	36	35	34		32	31	30	27	27					28
Mauritius	Male (Sex)	Agriculture (Broad sector)		38	37	43	36	35	34		32	31	30	27	27					28
Mauritius	Male (Sex)	Industry (Broad sector)		112	118	119	113	113	111	141	113	107	107	104	106	132	131	129	133	101
Mauritius	Male (Sex)	Non-Agriculture (Broad sector)		275	283	295	292	295	289		292	295	299	298	302					311
Mauritius	Male (Sex)	Services (Broad sector)		162	165	175	177	182	177	178	176	187	190	192	193	197	201	204	203	210
Mauritius	Male (Sex)	Total (Broad sector)		313	320	338	328	329	323	322	324	326	329	326	329	332	333	334	337	339
Mauritius	Male (Sex)	Not classified (Broad sector)		1	0	1	1	0	1	2	3	2	2	3	3	3	1	1	1	
Mauritius	Female (Sex)	Agriculture (Activity)		15	13	21	13	14	13		13	14	14	11	12					10
Mauritius	Female (Sex)	Agriculture (Broad sector)		15	13	21	13	14	13		13	14	14	11	12					10
Mauritius	Female (Sex)	Industry (Broad sector)		54	54	54	50	46	44	53	43	41	39	37	36	46	46	46	46	32
Mauritius	Female (Sex)	Non-Agriculture (Broad sector)		127	137	148	146	147	148		157	160	167	169	171					195
Mauritius	Female (Sex)	Services (Broad sector)		73	82	84	96	100	104	107	113	119	128	130	134	148	151	158	156	162
Mauritius	Female (Sex)	Total (Broad sector)		142	150	170	159	161	162	161	170	175	181	180	183	194	198	205	202	205
Mauritius	Female (Sex)	Not classified (Broad sector)		0		0	0		0	1	1	1	1	1	1	1	0	1	0	

Legend:

[U] Unreliable

[B] Break in series

Downloaded on MON, 23 JUL 2018 23:07 +0200 from ILOSTAT

First, the Table 1 shows that unemployment has remained more or less constant since 2011, with an unemployment rate over 7% for males and 10% for females. Second, the services sector in Mauritius' economy was already in 2001 more prevalent, making up 51.6% of the total work force and the industrial sector employed 36.5% of overall workers. By 2017, the services sector contained 68.5% of the workers, and only 24.4% of the workers were engaged in the industrial sector. For female workers, the services sector is even more prevalent, as 51.2% of female workers were involved in 2001, rising to 79.3% in 2017. The numbers suggest that in Mauritius, the services sector influence is for females arises early in the 2000 (towards 2004) and then increases gradually and constantly, 1 to 2 percent a year. And the increase is higher for females than males.

Table 3: Employment in percentage for broad economic sectors overall, by gender

[Table 3: Mauritius: Employment in percentage by broad Economic Sectors, Overall and by gender](#)

Dataset: Annual data
 Indicator: Employment distribution by economic activity (by sex) (%)
 Description: The employed comprise all persons of working age who, during a specified brief period, were in the following categories: a) paid employment (whether at work or with a job but not at work), or b) self-employment (whether at work or with an enterprise but not at work). Data are disaggregated by economic activity, which refers to the main activity of the establish person worked during the reference period and does not depend on the specific duties or functions of the person's job, but on the characteristics of the economic unit in which this person works.

Country	Sex	Economic activity	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Mauritius	Total (Sex)	Agriculture (Broad sector)	10	9.7		9.1	9	8.6	7.7	7.6					7.1
Mauritius	Total (Sex)	Industry (Broad sector)	32.4	32.1	40.2	31.5	29.5	28.5	27.9	27.8	33.7	33.4	32.6	33.2	24.4
Mauritius	Total (Sex)	Non-Agriculture (Broad sector)	90	90.3		90.9	91	91.4	92.3	92.4					92.9
Mauritius	Total (Sex)	Services (Broad sector)	57.5	50	59.2	50.6	61	62.3	63.6	63.8	65.5	66.4	67.2	66.6	68.5
Mauritius	Total (Sex)	Total (Broad sector)	100	100	100	100	100	100	100	100	100	100	100	100	100
Mauritius	Total (Sex)	Not classified (Broad sector)	0.1	0.3	0.6	0.8	0.5	0.6	0.8	0.9	0.8	0.2	0.3	0.2	
Mauritius	Male (Sex)	Agriculture (Broad sector)	10.5	10.5		9.8	9.5	9.2	8.4	8.3					8.4
Mauritius	Male (Sex)	Industry (Broad sector)	34.2	34.4	43.9	34.0	32.0	32.5	31.9	32.1	39.7	39.4	38.7	39.5	29.7
Mauritius	Male (Sex)	Non-Agriculture (Broad sector)	89.5	89.5		90.2	90.5	90.9	91.6	91.7					91.6
Mauritius	Male (Sex)	Services (Broad sector)	55.2	54.0	55.5	54.5	57.2	57.7	59.9	58.6	59.3	60.4	61.1	60.3	61.9
Mauritius	Male (Sex)	Total (Broad sector)	100	100	100	100	100	100	100	100	100	100	100	100	100
Mauritius	Male (Sex)	Not classified (Broad sector)	0.2	0.3	0.6	0.9	0.5	0.6	0.8	1	1.1	0.3	0.2	0.2	
Mauritius	Female (Sex)	Agriculture (Broad sector)	9	8.1		7.6	8.1	7.5	6.3	6.4					5
Mauritius	Female (Sex)	Industry (Broad sector)	28.8	27.9	33	25.2	23.5	21.4	20.0	19.9	23.5	23.3	22.5	22.7	15.7
Mauritius	Female (Sex)	Non-Agriculture (Broad sector)	91	91.9		92.4	91.9	92.5	93.7	93.6					95
Mauritius	Female (Sex)	Services (Broad sector)	62.2	64.4	66.6	66.4	68	70.6	72.2	73.1	76.1	76.6	77.1	77.1	79.3
Mauritius	Female (Sex)	Total (Broad sector)	100	100	100	100	100	100	100	100	100	100	100	100	100
Mauritius	Female (Sex)	Not classified (Broad sector)		0.2	0.5	0.8	0.4	0.5	0.7	0.6	0.4	0.2	0.4	0.1	

Legend:

[U] Unreliable
 [B] Break in series

[Downloaded on THU, 19 JUL 2018 20:58 +0200 from ILOSTAT](#)

The rise in services for females arises early in the 2000 (towards 2004) and then rises gradually and constantly, 1 to 2 percent a year. And the rise is higher for females rather than males.

Table 4: Employment (thousands) for specific economic sectors (ISIC level 2) overall, by gender

Table 4 Mauritius Employment in specific economic sectors (ISIC level 2), overall and by gender

Country	Sex	Economic activity	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Mauritius	Total	46. Wholesale trade, except of motor vehicles and motorcycles. (ISIC-Rev.4)							11	13	14	15	13	15	
Mauritius	Total	47. Retail trade, except of motor vehicles and motorcycles (ISIC-Rev.4)							59	60	55	53	57	54	
Mauritius	Total	49. Land transport and transport via pipelines (ISIC-Rev.4)							20	22	23	20	18	21	
Mauritius	Total	55. Accommodation (ISIC-Rev.4)							24	22	26	24	26	28	
Mauritius	Total	56. Food and beverage service activities (ISIC-Rev.4)							10	13	15	15	14	18	
Mauritius	Total	61. Telecommunications (ISIC-Rev.4)							3	4	5	5	4	4	
Mauritius	Total	64. Financial service activities, except insurance and pension funding. (ISIC-Rev.4)							11	11	8	9	11	11	
Mauritius	Total	65. Insurance, reinsurance and pension funding, except compulsory social security. (ISIC-Rev.4)							3	3	4	4	4	3	
Mauritius	Total	78. Employment activities (ISIC-Rev.4)													
Mauritius	Total	86. Human health activities (ISIC-Rev.4)							16	16	15	16	17	14	
Mauritius	Male	46. Wholesale trade, except of motor vehicles and motorcycles. (ISIC-Rev.4)							8	9	11	10	9	10	
Mauritius	Male	47. Retail trade, except of motor vehicles and motorcycles (ISIC-Rev.4)							31	30	28	27	28	27	
Mauritius	Male	49. Land transport and transport via pipelines (ISIC-Rev.4)							19	21	22	20	18	19	
Mauritius	Male	55. Accommodation (ISIC-Rev.4)							17	16	18	17	17	19	
Mauritius	Male	56. Food and beverage service activities (ISIC-Rev.4)							4	6	6	6	6	8	
Mauritius	Male	61. Telecommunications (ISIC-Rev.4)							2	3	3	3	3	3	
Mauritius	Male	64. Financial service activities, except insurance and pension funding. (ISIC-Rev.4)							6	6	4	5	6	6	
Mauritius	Male	65. Insurance, reinsurance and pension funding, except compulsory social security. (ISIC-Rev.4)							2	1	2	2	2	2	
Mauritius	Male	78. Employment activities (ISIC-Rev.4)													
Mauritius	Male	86. Human health activities (ISIC-Rev.4)							8	8	7	7	7	6	
Mauritius	Female	46. Wholesale trade, except of motor vehicles and motorcycles. (ISIC-Rev.4)							3	4	3	4	4	5	
Mauritius	Female	47. Retail trade, except of motor vehicles and motorcycles (ISIC-Rev.4)							29	29	28	26	28	27	
Mauritius	Female	49. Land transport and transport via pipelines (ISIC-Rev.4)							1	1	1	1	1	2	
Mauritius	Female	55. Accommodation (ISIC-Rev.4)							7	7	9	7	9	8	
Mauritius	Female	56. Food and beverage service activities (ISIC-Rev.4)							5	7	9	8	8	10	
Mauritius	Female	61. Telecommunications (ISIC-Rev.4)							1	1	2	1	1	1	
Mauritius	Female	64. Financial service activities, except insurance and pension funding. (ISIC-Rev.4)							5	5	4	4	5	5	
Mauritius	Female	65. Insurance, reinsurance and pension funding, except compulsory social security. (ISIC-Rev.4)							1	2	2	2	2	2	
Mauritius	Female	78. Employment activities (ISIC-Rev.4)													
Mauritius	Female	86. Human health activities (ISIC-Rev.4)							8	8	8	9	10	8	

The employed comprise all persons of working age who, during a specified brief period, were in the following categories:
a) paid employment (whether at work or with a job but not at work);
b) self-employment (whether at work or with an enterprise but not at work).
Data are disaggregated by economic activity according to the latest version of the International Standard Industrial Classification of All Economic Activities (ISIC) available for that year, and presented for a selection of categories at the 2-digit level of the classification.
) Economic activity refers to the main activity of the establishment in which a person worked during the reference period and does not depend on the specific duties or functions of the person's job, but on the characteristics of the economic unit in which this person works.

When one further breaks down the employment figures by activity level and by gender, one sees that the rise of the service sectors happened across most of the sub-sector activities (wholesale and retail trade, accommodation, food and beverage,). High productivity activities such as financial services and telecommunications also show an increase in the number of female workers, but their importance overall is relatively small compared to the traditional service activities of food, wholesale and retail trade. Indeed, in 2017, 2000 female workers are in telecommunications, up from 1000 in 2001, and the bank services employs 5000 female workers, relatively unchanged compared to 2001.

Now, when one goes deeper into the ILOSTAT numbers, one can also look at whether the employment has come from the formal sector or whether the employment has been within the informal sector. Indeed, as growth took place in the 2000s, one would presume that growth allowed an increasing formalization of employment à la Lewis model, attracting individuals from the informal sector (also self-employment) into the formal sector.

Table 5: informal employment and informal sector as percentage of employment by sex

Table 5: Mauritius: Informal Employment and Informal Sector as percentage of Employment by Gender

Dataset: Annual data
 Indicator: Informal employment and informal sector as a percent of employment by sex – Harmonized series (%)
 Description: The harmonized series for informal employment and informal sector are derived using the same set of criteria across countries to improve comparability. The criteria used are based on employment status, institutional sector, destination of production, bookkeeping, registration, social security contribution, places of work and size. For more information, refer to 1 description.

Country	Sex	Economic activity	Type of informal employment	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Mauritius	Total (Sex)	Non-agriculture (Activity)	Informal employment (Component)					49.7	51.5	54.7	53.3	52.9	
Mauritius	Total (Sex)	Non-agriculture (Activity)	Employment outside the formal sector (Component)					36.1	38.8	41.8	40.6	40.8	
Mauritius	Total (Sex)	Total (Activity)	Informal employment (Component)					51.3	51.5	54.7	53.3	52.9	
Mauritius	Total (Sex)	Total (Activity)	Employment outside the formal sector (Component)					38.4	38.8	41.8	40.6	40.8	
Mauritius	Male (Sex)	Non-agriculture (Activity)	Informal employment (Component)					50.9	52.8	55.4	54.4	53.9	
Mauritius	Male (Sex)	Non-agriculture (Activity)	Employment outside the formal sector (Component)					35.9	39.3	41.8	40.2	40.7	
Mauritius	Male (Sex)	Total (Activity)	Informal employment (Component)					52	52.8	55.4	54.4	53.9	
Mauritius	Male (Sex)	Total (Activity)	Employment outside the formal sector (Component)					37.8	39.3	41.8	40.2	40.7	
Mauritius	Female (Sex)	Non-agriculture (Activity)	Informal employment (Component)					47.8	49.3	53.6	51.6	51.1	
Mauritius	Female (Sex)	Non-agriculture (Activity)	Employment outside the formal sector (Component)					36.4	37.9	41.8	41	41.1	
Mauritius	Female (Sex)	Total (Activity)	Informal employment (Component)					50.1	49.3	53.6	51.6	51.1	
Mauritius	Female (Sex)	Total (Activity)	Employment outside the formal sector (Component)					39.3	37.9	41.8	41	41.1	

Downloaded on THU, 19 JUL 2018 20:40 +0200 from ILOSTAT

The data for Mauritius are only available starting in 2012, so it is not possible to see what happened when the economy took off from the 1980s. However, what one can see is that in 2012 for non-agricultural activities, the informal employment as percentage of total employment represents 49.7% and in fact increases slightly to 52.9% in 2016. For females, numbers are similar (47.8% to 51.1%).

So in fact the nature of employment is still quite informal (roughly half) and it does not seem to become more formal, even though there is an on-going structural transformation towards a relatively service economy. In fact, it becomes slightly less formal over the last 5 years. So, interestingly enough, the basic stylized facts in development textbooks of increased formalization do not appear to hold for Mauritius, at least over the last 5 years, for both male and female individuals.

Table 6: share of youth not in employment, education or training, total and by gender

Table 6: Mauritius: Share of Youth Not in Employment, Education or Training, by Gender

Dataset: Annual data
 Indicator: Share of youth not in employment, education or training (NEET) by sex (%)
 Description: This indicator refers to the proportion of youth who are not in employment and not in education or training. For statistical purposes, youth are defined as persons between the ages of 15 and 24 years.

Country	Sex	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Mauritius	Total (Sex)	28.5	22.2	20.6	21.3	21.8	21.5	21.5	21.6	21.2	66.3	65.4	64.9	
Mauritius	Male (Sex)	16.6	13.2	13.7	13.1	14.7	15.2	15.4	16.2	15	57.6	58.3	57.7	
Mauritius	Female (Sex)	40.9	31.5	27.7	29.7	29.1	27.9	27.7	27.1	27.4	75.1	72.4	72.2	

Downloaded on THU, 19 JUL 2018 21:18 +0200 from ILOSTAT

Furthermore, another interesting variable from the ILOSTAT is the share of youth not in employment, education or training (NEET), where youth are defined as between the age of 15 and 24 years. For Mauritius, one can see that the female share of NEET has come down, from 40.9% to 27.4% in 2013. Though in 2014, the numbers shoot up to 75.1% to 72.2% in 2016.¹⁴ The decline in NEET would indicate an absorption of the youth in employment (either formal or informal), but this appears to be done by all sectors, as the previous tables do not indicate any particular (or abnormal) employment growth in a specific sector (or even sub-sectors (ISIC2, or ISIC-Rev.4)).

Mauritius is a star example here in terms of macroeconomic and growth performance. However, when one uses the information obtained via labor force surveys to document the changes that occur in terms of economic activities and participation of women and youth, the picture that emerges becomes blurrier. GDP per capita growth takes place, with unemployment being stable or going down for everyone and women and yes, the services sector becomes the leading sector of the economy, particularly for women. But this expansion of the service sector is gradual, not linked to a particular sub-sector that would absorb a very large proportion of the female and youth labor force. In fact, the higher productivity sub sectors such as financial sectors and telecom sectors do increase in terms of employment shares, but they are relatively small compared to the other service categories (wholesale and retail trade, food and accommodation). Furthermore, the nature of employment did not formalize over the period: the degree of informal employment appears to have remained the same over the last 15 years, even though the economy has improved markedly.

What does this point out? The simple growth story of Mauritius is blurrier when one looks at the data emanating from actual labor force surveys (ILOSTAT) or even from the Mauritius government own data set. The manufacturing sector's importance in terms of employment has gradually come down, as the other sector: the service sector, has absorbed more workers in absolute as well as relative terms. But no particular service sub-sector appears to have been a leading absorber of workers, particularly in terms of female employment. This suggests that there is no single linkage force in the economy, and that probably that the manufacturing sector and the services sector are linked in various general terms, both in the formal and in the informal economic activities. It does not appear that the high productivity service subsector such as financial services can readily on its own pull a lot of employees, be they male or female into its activities as only about 5 to 10 thousand employees. This does not imply that the high productivity service sub sector cannot have important linkages with other activities and generate a concurring economic impulsion via its linkages. But if so, its contribution will not be in terms of directly employing women and youth. In fact, women and youth do participate more in the services sector, but in activities that appear to be of lower productivity (wholesale and retail trade, accommodation) either in terms of employment or self-employment.

In other words, FT article's claim that "*This improvement in the quality of its workforce paved the way for Mauritius to move into higher-skilled, higher-value added*

¹⁴ An email has been sent to Statistics Mauritius to get corroboration of these figures.

sectors, such as business process outsourcing and financial services” might be valid in terms of economic activity, but this has not so far translated into a sizeable increase in absolute employment, neither in terms of male or female workers. The macroeconomic impact, if it exists, might be that the higher-skilled sectors have a complementary effect on the other sectors: they generate demand for other sectors’ activities. It could also be that these higher value added sectors are important but that previous activities such as manufacturing and other activities of the services sector are still driving most of the employment impact, either directly by continuing employing workers or by generating complementarities with other sectors. This being said, the broader question of whether the services sector can absorb employment of women and youth can be answered positively in the context of Mauritius. Indeed the services sector is the major source of employment for all workers in Mauritius. But one cannot easily detect a pull factor from a specific sub-sector such as financial services or other high productivity activity.

3.3 Enterprise Surveys data on African Countries:

Another potential source of evidence to document the employment patterns of African workers across economics sectors comes from the World Bank’s Enterprise Surveys. This data bank on Enterprise Surveys (ES) offers an expansive array of economic data on 135,000 firms in 139 countries.¹⁵ One should exercise caution when comparing raw data and point estimates between surveys that did and did not adhere to the Enterprise Surveys Global Methodology, as the surveys are not identical, but one can certainly learn something by examining the various trends across countries.¹⁶

We concentrate on the African countries and we retrieve the information from the ES pertaining to employment. The tables report four main indicators: Employment Share, Employment Expansion, Employment Contraction, and Net Employment Change.¹⁷ In particular, the variable **Net Employment Change** measures the annual rate of net change in the aggregate stock of permanent, full-time employment. It takes all firms and computes net change of the aggregate stock, i.e. employment expansion less employment contraction. As the ES methodology points out, this indicator is different from the Annual Employment Growth, a performance indicator which measures average firm-level growth in permanent, full-time employment. Rather, it provides a suggestion of what has happened in terms of net employment for all the firms surveyed in a given country that particular year, compared to the previous one. To the extent that the survey may or may not fully capture what happens to the private sector in a given country, information from the ES surveys might provide some evidence on structural transformation. Presumably, one would hope that firms involved in services would be involved in employment expansion rather than in employment contraction so that they would lead to positive net employment changes. Furthermore, if some countries encounter a structural change in terms of a dynamic service sector that is creating employment, one would hope to see that

¹⁵ See <http://www.enterprisesurveys.org/data>

¹⁶ For more on the methodology, one should see <http://www.enterprisesurveys.org/methodology>

¹⁷ These indicators are based on Aga, Francis, and Rodriguez Meza (2015), which investigates what types of firms are the key employers, and what types of firms create or lose jobs at a faster rate

firms involved in services would contribute a relatively large share of the net employment changes.

Instead of looking at particular surveys, let's look at what these surveys say on average for each country in terms of employment and sectors in order to get a general picture of where the private firms operate and see the extent to which private firms may be involved in the services sector as well as some of the sub-sectors, when that information is available.

Table 7: Employment Indicators' Enterprise Surveys for African Countries

Table: Enterprises Surveys for African Countries				Employment Share	Employment Expansion			Employment Contraction			Net Employment Change			
Income Group	Region	Sector	Indicator	N	Firms that Expanded	Expansion	Share in Expansion	Firms that Contracted	Contraction	Share in Contraction	Net Change	Share	N	
Angola 2005	LMI	AFR	All	100.0%	417	72.5%	19.4%	100.0%	7.1%	0.8%	100.0%	18.6%	100.0%	415
Angola 2006	LMI	AFR	Food	26.1%		73.1%	17.9%	24.6%	13.5%	0.7%	25.6%	17.2%	24.6%	
Angola 2006	LMI	AFR	Garments	3.3%		69.8%	14.0%	2.6%	11.8%	1.1%	4.9%	12.9%	2.5%	
Angola 2006	LMI	AFR	Other Manufacturing	30.7%		76.5%	21.2%	33.1%	6.0%	1.1%	43.8%	20.1%	32.7%	
Angola 2006	LMI	AFR	Other Services	20.7%		70.3%	17.5%	18.9%	2.9%	0.4%	10.6%	17.1%	19.3%	
Angola 2006	LMI	AFR	Retail	19.2%		68.8%	21.5%	20.8%	6.2%	0.6%	15.0%	20.9%	21.0%	
Angola 2010	LMI	AFR	All	100.0%	349	68.3%	13.8%	100.0%	13.2%	2.2%	100.0%	11.6%	100.0%	255
Angola 2010	LMI	AFR	Manufacturing	45.3%		68.4%	13.6%	38.5%	13.7%	2.2%	39.6%	11.4%	38.3%	
Angola 2010	LMI	AFR	Other Services	47.0%		71.7%	15.0%	56.9%	12.8%	2.3%	56.4%	12.7%	57.0%	
Angola 2010	LMI	AFR	Retail	7.7%		55.3%	7.2%	4.6%	13.4%	1.0%	4.1%	6.2%	4.7%	
Benin 2009	LI	AFR	All	100.0%	145	62.0%	17.0%	100.0%	16.9%	3.1%	100.0%	13.8%	100.0%	134
Benin 2009	LI	AFR	Manufacturing	25.1%		59.9%	9.1%	14.0%	10.4%	2.1%	17.6%	7.0%	13.2%	
Benin 2009	LI	AFR	Services	74.9%		62.4%	19.7%	86.0%	18.1%	3.5%	82.4%	16.2%	86.8%	
Benin 2016	LI	AFR	All	100.0%	149	33.0%	6.8%	100.0%	14.6%	2.1%	100.0%	4.7%	100.0%	149
Benin 2016	LI	AFR	Manufacturing	22.3%		38.8%	5.1%	17.1%	16.9%	2.9%	30.9%	2.2%	10.8%	
Benin 2016	LI	AFR	Services	77.7%		31.7%	7.4%	82.9%	14.1%	1.9%	69.1%	5.5%	89.2%	
Botswana 2006	UMI	AFR	All	100.0%	336	70.0%	13.1%	100.0%	16.6%	4.8%	100.0%	8.4%	100.0%	325
Botswana 2006	UMI	AFR	Food	2.5%		79.5%	14.5%	2.8%	6.8%	3.9%	2.1%	10.6%	3.2%	
Botswana 2006	UMI	AFR	Garments	11.3%		65.0%	42.8%	27.1%	24.8%	5.4%	9.4%	37.4%	37.2%	
Botswana 2006	UMI	AFR	Other Manufacturing	23.0%		68.6%	10.5%	17.2%	15.6%	3.1%	14.0%	7.4%	19.0%	
Botswana 2006	UMI	AFR	Other Services	31.0%		67.0%	9.5%	25.4%	18.7%	8.7%	63.8%	0.8%	3.5%	
Botswana 2006	UMI	AFR	Retail	32.1%		72.3%	11.2%	27.5%	15.3%	1.6%	10.7%	9.6%	37.2%	
Botswana 2010	UMI	AFR	All	100.0%	265	55.0%	8.9%	100.0%	19.9%	7.0%	100.0%	1.9%	100.0%	258
Botswana 2010	UMI	AFR	Manufacturing	20.7%		56.2%	9.1%	21.4%	27.8%	7.1%	21.2%	2.0%	22.1%	
Botswana 2010	UMI	AFR	Other Services	44.9%		46.3%	6.3%	34.8%	21.9%	10.9%	76.5%	-4.6%	-118.9%	
Botswana 2010	UMI	AFR	Retail	34.3%		65.2%	12.8%	43.8%	13.1%	0.5%	2.3%	12.3%	196.8%	
Burkina Faso 2009	LI	AFR	All	100.0%	388	55.4%	10.3%	100.0%	14.1%	2.4%	100.0%	7.9%	100.0%	372
Burkina Faso 2009	LI	AFR	Manufacturing	35.4%		43.8%	7.2%	28.3%	26.6%	3.5%	57.9%	3.7%	19.1%	
Burkina Faso 2009	LI	AFR	Other Services	50.1%		60.0%	11.5%	49.6%	11.6%	1.9%	33.9%	9.6%	54.4%	
Burkina Faso 2009	LI	AFR	Retail	14.6%		59.2%	15.0%	22.1%	5.7%	1.3%	8.2%	13.7%	26.5%	
Burundi 2006	LI	AFR	All	100.0%	268	73.5%	12.2%	100.0%	3.9%	0.6%	100.0%	11.6%	100.0%	255
Burundi 2006	LI	AFR	Food	14.4%		82.3%	5.2%	6.2%	0.0%	0.0%	0.0%	5.2%	6.6%	
Burundi 2006	LI	AFR	Garments	2.9%		80.0%	8.3%	1.9%	0.0%	0.0%	0.0%	8.3%	2.0%	
Burundi 2006	LI	AFR	Other Manufacturing	19.2%		60.2%	4.2%	7.2%	14.7%	1.9%	63.4%	2.3%	4.2%	
Burundi 2006	LI	AFR	Other Services	45.6%		75.8%	17.8%	63.6%	3.3%	0.5%	31.7%	17.3%	65.4%	
Burundi 2006	LI	AFR	Retail	17.9%		71.0%	14.4%	21.0%	2.6%	0.2%	4.9%	14.2%	21.9%	
Burundi 2014	LI	AFR	All	100.0%	152	54.6%	7.6%	100.0%	20.3%	2.8%	100.0%	4.8%	100.0%	152
Burundi 2014	LI	AFR	Manufacturing	27.8%		49.5%	7.8%	29.0%	35.3%	5.1%	51.8%	2.6%	15.6%	
Burundi 2014	LI	AFR	Services	72.2%		55.4%	7.5%	71.0%	18.0%	1.9%	48.2%	5.6%	84.4%	
Cabo Verde 2009	LMI	AFR	All	100.0%	152	36.7%	7.2%	100.0%	9.2%	1.6%	100.0%	5.9%	100.0%	140
Cabo Verde 2009	LMI	AFR	Manufacturing	22.8%		33.2%	5.7%	18.9%	20.3%	1.3%	19.1%	4.4%	18.8%	
Cabo Verde 2009	LMI	AFR	Services	77.2%		37.8%	7.6%	81.1%	5.5%	1.7%	80.9%	5.9%	81.2%	
Cameroon 2009	LMI	AFR	All	100.0%	361	50.9%	7.1%	100.0%	21.3%	2.6%	100.0%	4.5%	100.0%	352
Cameroon 2009	LMI	AFR	Manufacturing	48.1%		57.7%	7.6%	51.4%	19.1%	2.0%	36.5%	5.6%	60.2%	
Cameroon 2009	LMI	AFR	Other Services	41.1%		43.7%	6.5%	38.2%	27.2%	3.7%	57.6%	2.9%	26.7%	
Cameroon 2009	LMI	AFR	Retail	10.9%		56.8%	7.1%	10.4%	13.6%	1.5%	5.8%	5.6%	13.1%	
Cameroon 2016	LMI	AFR	All	100.0%	355	48.8%	8.2%	100.0%	17.0%	1.8%	100.0%	6.5%	100.0%	347
Cameroon 2016	LMI	AFR	Manufacturing	50.4%		57.1%	8.7%	53.2%	14.3%	2.0%	56.8%	6.7%	52.2%	
Cameroon 2016	LMI	AFR	Other Services	38.5%		40.1%	5.8%	27.4%	17.1%	1.3%	29.4%	4.5%	26.9%	
Cameroon 2016	LMI	AFR	Retail	11.0%		62.6%	15.3%	19.4%	21.6%	2.3%	13.8%	12.9%	20.9%	
Central African Republic 2011	LI	AFR	All	100.0%	147	70.2%	8.6%	100.0%	5.8%	1.0%	100.0%	7.6%	100.0%	136
Central African Republic 2011	LI	AFR	Manufacturing	37.5%		71.6%	4.1%	18.7%	5.2%	1.6%	61.3%	2.5%	13.1%	
Central African Republic 2011	LI	AFR	Services	62.5%		69.9%	11.4%	81.3%	5.9%	0.6%	38.7%	10.8%	86.9%	

Chad 2009	LI	AFR	All	100.0%	149	64.4%	11.4%	100.0%	9.0%	1.3%	100.0%	10.1%	100.0%	143
Chad 2009	LI	AFR	Manufacturing	23.4%		57.8%	7.7%	14.5%	17.6%	2.4%	40.9%	5.2%	11.2%	
Chad 2009	LI	AFR	Services	76.6%		65.9%	12.4%	85.5%	7.2%	1.0%	59.1%	11.4%	88.8%	
Congo, Dem. Rep. 2006	LI	AFR	All	100.0%	334	62.9%	10.9%	100.0%	11.7%	1.4%	100.0%	9.4%	100.0%	339
Congo, Dem. Rep. 2006	LI	AFR	Food	20.6%		40.9%	10.7%	20.5%	10.6%	2.3%	33.3%	8.4%	18.6%	
Congo, Dem. Rep. 2006	LI	AFR	Garments	1.9%		48.1%	4.2%	0.8%	20.1%	1.5%	2.1%	2.7%	0.6%	
Congo, Dem. Rep. 2006	LI	AFR	Other Manufactur	26.7%		68.5%	10.1%	25.2%	15.4%	1.6%	29.1%	8.6%	24.6%	
Congo, Dem. Rep. 2006	LI	AFR	Other Services	27.0%		59.8%	13.0%	31.6%	15.1%	1.4%	26.3%	11.6%	32.4%	
Congo, Dem. Rep. 2006	LI	AFR	Retail	23.8%		65.6%	10.0%	21.9%	6.5%	0.6%	9.4%	9.4%	23.9%	
Congo, Dem. Rep. 2010	LI	AFR	All	100.0%	353	46.0%	14.0%	100.0%	27.5%	3.7%	100.0%	10.3%	100.0%	343
Congo, Dem. Rep. 2010	LI	AFR	Manufacturing	40.4%		49.2%	6.0%	17.6%	32.3%	3.1%	34.3%	2.9%	11.5%	
Congo, Dem. Rep. 2010	LI	AFR	Other Services	41.8%		47.4%	26.8%	74.0%	29.4%	4.6%	47.4%	22.2%	83.6%	
Congo, Dem. Rep. 2010	LI	AFR	Retail	17.8%		41.0%	5.9%	8.4%	20.0%	3.4%	18.3%	2.5%	4.9%	
Congo, Dem. Rep. 2013	LI	AFR	All	100.0%	520	46.6%	8.6%	100.0%	11.6%	2.2%	100.0%	6.4%	100.0%	508
Congo, Dem. Rep. 2013	LI	AFR	Manufacturing	39.1%		52.8%	7.4%	33.9%	10.4%	1.6%	28.6%	5.8%	35.7%	
Congo, Dem. Rep. 2013	LI	AFR	Other Services	35.0%		42.4%	8.3%	34.3%	16.2%	3.3%	53.2%	5.0%	27.8%	
Congo, Dem. Rep. 2013	LI	AFR	Retail	25.8%		46.6%	10.9%	11.8%	7.9%	1.6%	18.2%	9.3%	26.5%	
Congo, Rep. 2009	LMI	AFR	All	100.0%	142	56.4%	10.9%	100.0%	14.4%	1.4%	100.0%	9.5%	100.0%	108
Congo, Rep. 2009	LMI	AFR	Manufacturing	21.8%		74.4%	11.8%	18.4%	11.2%	1.4%	17.0%	10.4%	18.7%	
Congo, Rep. 2009	LMI	AFR	Services	78.2%		53.2%	10.7%	81.6%	14.9%	1.4%	83.0%	9.3%	81.3%	
Côte d'Ivoire 2009	LMI	AFR	All	100.0%	519	55.1%	14.7%	100.0%	6.9%	2.3%	100.0%	12.4%	100.0%	427
Côte d'Ivoire 2009	LMI	AFR	Manufacturing	43.0%		64.5%	12.6%	42.5%	10.3%	3.4%	71.7%	9.2%	37.0%	
Côte d'Ivoire 2009	LMI	AFR	Other Services	46.0%		46.9%	15.3%	41.5%	5.6%	1.0%	16.5%	14.3%	46.2%	
Côte d'Ivoire 2009	LMI	AFR	Retail	11.0%		60.4%	22.9%	16.0%	4.9%	2.7%	11.8%	20.2%	16.8%	
Côte d'Ivoire 2016	LMI	AFR	All	100.0%	345	48.1%	8.9%	100.0%	16.1%	2.3%	100.0%	6.6%	100.0%	313
Côte d'Ivoire 2016	LMI	AFR	Manufacturing	46.4%		42.2%	7.1%	37.5%	21.9%	2.2%	45.0%	4.9%	34.9%	
Côte d'Ivoire 2016	LMI	AFR	Other Services	36.7%		46.3%	11.5%	48.2%	14.7%	2.1%	35.0%	9.3%	52.7%	
Côte d'Ivoire 2016	LMI	AFR	Retail	16.9%		54.6%	8.0%	14.4%	13.0%	2.8%	20.0%	5.1%	12.4%	
Djibouti 2013	LMI	MNA	All	100.0%	256	63.8%	11.3%	100.0%	7.9%	1.5%	100.0%	9.8%	100.0%	229
Djibouti 2013	LMI	MNA	Manufacturing	12.7%		57.5%	12.0%	14.3%	7.9%	1.1%	10.0%	10.9%	15.0%	
Djibouti 2013	LMI	MNA	Other Services	74.4%		67.2%	11.8%	77.4%	8.9%	0.5%	23.8%	11.3%	85.6%	
Djibouti 2013	LMI	MNA	Retail	12.9%		59.8%	7.5%	8.3%	4.4%	7.9%	66.2%	-0.4%	-0.5%	
Egypt, Arab Rep. 2013	LMI	MNA	All	100.0%	2814	43.2%	7.0%	100.0%	25.7%	3.2%	100.0%	3.8%	100.0%	2752
Egypt, Arab Rep. 2013	LMI	MNA	Chemicals & Chemi	3.9%		57.7%	16.7%	8.1%	22.1%	1.6%	1.7%	15.1%	13.3%	
Egypt, Arab Rep. 2013	LMI	MNA	Construction	3.4%		31.5%	4.8%	2.3%	30.0%	3.4%	3.7%	1.4%	1.2%	
Egypt, Arab Rep. 2013	LMI	MNA	Fabricated Metal P	2.1%		22.0%	2.1%	0.7%	52.3%	7.2%	5.3%	-5.1%	-3.1%	
Egypt, Arab Rep. 2013	LMI	MNA	Food	14.7%		43.9%	5.4%	11.6%	29.0%	3.0%	14.1%	2.4%	9.5%	
Egypt, Arab Rep. 2013	LMI	MNA	Furniture	5.5%		28.9%	3.2%	4.4%	42.4%	5.7%	9.5%	-1.1%	-1.6%	
Egypt, Arab Rep. 2013	LMI	MNA	Garments	9.4%		33.5%	4.1%	5.0%	32.6%	2.8%	6.4%	1.7%	3.8%	
Egypt, Arab Rep. 2013	LMI	MNA	Hotels & Restauran	13.1%		47.2%	14.9%	24.7%	14.1%	1.0%	3.6%	13.9%	42.2%	
Egypt, Arab Rep. 2013	LMI	MNA	IT & IT Services	0.0%		64.3%	5.9%	0.0%	33.3%	2.3%	0.0%	3.6%	0.0%	
Egypt, Arab Rep. 2013	LMI	MNA	Leather Products	1.1%		14.2%	1.7%	0.4%	63.4%	17.7%	8.5%	-16.0%	-6.4%	
Egypt, Arab Rep. 2013	LMI	MNA	Non-Metallic Miner	4.1%		35.3%	4.5%	2.8%	25.8%	3.5%	4.7%	1.0%	1.2%	
Egypt, Arab Rep. 2013	LMI	MNA	Other Manufactur	12.2%		47.1%	7.0%	12.1%	15.9%	2.4%	9.1%	4.6%	14.5%	
Egypt, Arab Rep. 2013	LMI	MNA	Printing & Publishi	0.8%		31.9%	4.8%	0.6%	29.9%	3.1%	0.9%	1.6%	0.4%	
Egypt, Arab Rep. 2013	LMI	MNA	Retail	6.3%		61.6%	14.4%	11.6%	11.4%	1.4%	2.5%	13.0%	19.1%	
Egypt, Arab Rep. 2013	LMI	MNA	Rubber & Plastics P	2.6%		45.3%	5.5%	2.1%	32.9%	2.3%	1.9%	3.1%	2.2%	
Egypt, Arab Rep. 2013	LMI	MNA	Services of Motor V	0.8%		34.4%	3.2%	0.4%	20.1%	2.5%	0.6%	0.7%	0.1%	
Egypt, Arab Rep. 2013	LMI	MNA	Textiles & Garment	7.1%		30.4%	3.8%	4.2%	40.1%	5.2%	12.7%	-1.4%	-2.8%	
Egypt, Arab Rep. 2013	LMI	MNA	Transport, Storage,	8.0%		36.6%	3.2%	3.6%	30.6%	3.2%	8.7%	0.0%	-0.1%	
Egypt, Arab Rep. 2013	LMI	MNA	Wholesale	3.3%		60.8%	9.6%	4.3%	18.6%	2.6%	6.6%	7.0%	5.8%	
Egypt, Arab Rep. 2013	LMI	MNA	Wood Products	1.7%		27.9%	7.3%	1.8%	45.7%	5.9%	3.3%	1.4%	0.6%	
Egypt, Arab Rep. 2016	LMI	MNA	All	100.0%	1795	32.3%	4.1%	100.0%	25.6%	4.0%	100.0%	0.1%	100.0%	1714
Egypt, Arab Rep. 2016	LMI	MNA	Basic Metals & Met	4.7%		16.5%	3.3%	4.0%	32.4%	4.5%	5.5%	-1.2%	-70.8%	
Egypt, Arab Rep. 2016	LMI	MNA	Chemicals & Chemi	7.0%		33.8%	1.9%	3.5%	27.1%	3.3%	6.1%	-1.4%	-126.4%	
Egypt, Arab Rep. 2016	LMI	MNA	Construction	1.8%		42.3%	5.9%	2.2%	23.8%	2.3%	0.8%	3.7%	68.0%	
Egypt, Arab Rep. 2016	LMI	MNA	Food	15.2%		43.2%	5.1%	20.5%	25.5%	7.3%	30.1%	-2.2%	-452.3%	
Egypt, Arab Rep. 2016	LMI	MNA	Hospitality & Touri	8.4%		19.5%	2.3%	4.9%	27.3%	1.8%	3.9%	0.5%	50.9%	
Egypt, Arab Rep. 2016	LMI	MNA	IT & IT Services	0.7%		52.3%	7.5%	1.2%	9.2%	0.4%	0.1%	7.1%	0.1%	
Egypt, Arab Rep. 2016	LMI	MNA	Leather Products	0.7%		16.3%	2.9%	0.5%	28.7%	4.8%	0.8%	-1.9%	-16.0%	
Egypt, Arab Rep. 2016	LMI	MNA	Machinery & Equip	6.8%		26.6%	5.8%	6.1%	16.1%	2.2%	2.4%	3.5%	189.7%	
Egypt, Arab Rep. 2016	LMI	MNA	Non-Metallic Miner	7.1%		35.3%	6.5%	10.5%	32.1%	1.6%	2.7%	4.9%	397.8%	
Egypt, Arab Rep. 2016	LMI	MNA	Petroleum product	2.6%		33.2%	2.5%	1.7%	24.7%	3.4%	2.3%	0.9%	-30.1%	
Egypt, Arab Rep. 2016	LMI	MNA	Services of Motor V	17.2%		35.4%	5.3%	22.6%	17.1%	4.4%	19.1%	0.9%	194.0%	
Egypt, Arab Rep. 2016	LMI	MNA	Textiles & Garment	20.0%		31.8%	2.6%	13.1%	35.4%	1.9%	9.9%	0.7%	171.3%	
Egypt, Arab Rep. 2016	LMI	MNA	Transport, Storage,	5.1%		44.8%	3.2%	4.2%	44.8%	5.2%	7.1%	1.0%	-137.8%	
Egypt, Arab Rep. 2016	LMI	MNA	Wood products, fur	2.8%		36.2%	7.1%	5.1%	33.4%	12.5%	9.2%	-5.4%	-195.6%	
Eritrea 2009	LI	AFR	All	100.0%	177	18.1%	4.3%	100.0%	48.3%	11.0%	100.0%	-6.9%	-100.0%	172
Eritrea 2009	LI	AFR	Manufacturing	53.3%		25.3%	6.1%	81.0%	52.8%	13.5%	66.9%	-7.5%	-58.6%	
Eritrea 2009	LI	AFR	Services	46.7%		14.6%	1.7%	19.0%	45.0%	8.0%	33.1%	-6.3%	-41.4%	
Ethiopia 2011	LI	AFR	All	100.0%	620	80.9%	14.5%	100.0%	2.7%	0.6%	100.0%	13.9%	100.0%	609
Ethiopia 2011	LI	AFR	Manufacturing	23.9%		80.7%	9.7%	16.1%	6.3%	1.4%	57.4%	8.3%	14.3%	
Ethiopia 2011	LI	AFR	Services	76.1%		80.9%	15.9%	83.9%	2.2%	0.3%	42.6%	15.6%	85.7%	
Ethiopia 2015	LI	AFR	All	100.0%	828	63.0%	9.4%	100.0%	10.0%	1.8%	100.0%	7.6%	100.0%	768
Ethiopia 2015	LI	AFR	Food	10.7%		46.7%	5.3%	6.2%	8.2%	3.4%	21.4%	1.9%	2.7%	
Ethiopia 2015	LI	AFR	Non-Metallic Miner	2.1%		80.3%	14.9%	3.1%	7.0%	0.7%	0.8%	14.2%	3.6%	
Ethiopia 2015	LI	AFR	Other Manufactur	14.7%		60.0%	8.6%	13.3%	16.0%	1.8%	14.7%	6.8%	13.0%	
Ethiopia 2015	LI	AFR	Other Services	53.5%		67.7%	10.2%	58.2%	5.9%	1.4%	42.2%	8.8%	61.9%	
Ethiopia 2015	LI	AFR	Retail	6.2%		34.3%	8.0%	5.5%	38.9%	2.8%	10.5%	5.1%	4.4%	
Ethiopia 2015	LI	AFR	Textiles & Garment	2.5%		73.2%	6.3%	1.8%	14.1%	3.6%	5.6%	2.7%	1.0%	
Ethiopia 2015	LI	AFR	Transport	10.4%		67.0%	11.8%	11.8%	5.0%	0.9%	4.8%	10.9%	13.4%	
Gabon 2009	LMI	AFR	All	100.0%	168	67.7%	12.0%	100.0%	10.6%	4.7%	100.0%	7.3%	100.0%	137
Gabon 2009	LMI	AFR	Manufacturing	39.4%		71.2%	5.7%	19.0%	11.9%	1.1%	9.7%	4.5%	25.0%	
Gabon 2009	LMI	AFR	Services	60.6%		66.4%	16.4%	81.0%	10.0%	7.1%	90.3%	9.2%	75.0%	
Gambia 2006	LI	AFR	All	100.0%	171	74.3%	14.1%	100.0%	12.6%	2.2%	100.0%	11.9%	100.0%	169
Gambia 2006	LI	AFR	Food	10.7%		100.0%	18.2%	13.0%	0.0%	0.0%	0.0%	18.2%	15.5%	
Gambia 2006	LI	AFR	Garments	0.8%		100.0%	18.2%	1.0%	0.0%	0.0%	0.0%	18.2%	1.1%	
Gambia 2006	LI	AFR	Other Manufactur	15.1%		73.7%	11.6%	12.8%	9.8%	0.9%	6.0%	10.7%	14.1%	
Gambia 2006	LI	AFR	Other Services	54.9%		72.4%	14.3%	55.9%	16.6%	3.5%	86.1%	10.8%	50.2%	
Gambia 2006	LI	AFR	Retail	18.5%		73.9%	13.4%	17.4%	8.6%	1.0%	7.9%	12.4%	19.2%	
Ghana 2007	LI	AFR	All	100.0%	487	66.9%	8.8%	100.0%	23.4%	3.5%	100.0%	4.3%	100.0%	480
Ghana 2007	LI	AFR	Food	10.4%		68.2%	11.6%	15.7%	18.5%	1.5%	3.8%	10.1%	28.4%	
Ghana 2007	LI	AFR	Garments	18.0%		76.9%	11.1%	27.8%	18.8%	3.2%	15.8%	7.8%	40.7%	
Ghana 2007	LI	AFR	Other Manufactur	64.1%		54.7%	4.4%	43.3%	36.4%	4.0%	77.4%	0.3%	7.0%	
Ghana 2007	LI	AFR	Other Services	4.1%		79.5%	13.7%	7.2%	6.7%	0.8%	0.8%	12.9%	14.1%	
Ghana 2007	LI	AFR	Retail	3.4%		68.8%	12.7%	5.9%	5.9%	2.4%	2.2%	10.3%	9.8%	
Ghana 2013	LMI	AFR	All	100.0%	710	52.6%	9.9%	100.0%	18.2%	2.6%	100.0%	7.4%	100.0%	666
Ghana 2013	LMI	AFR	Basic Metals/fabric	12.8%		50.8%	5.8%	7.8%	15.5%	2.0%	10.6%	3.8%		

Guinea-Bissau 2006	LI	AFR	Garments	1.1%		100.0%	45.2%	3.1%	0.0%	0.0%	0.0%	45.2%	5.0%
Guinea-Bissau 2006	LI	AFR	Other Manufacturing	21.2%		62.9%	11.2%	20.1%	22.9%	2.0%	9.6%	9.1%	26.6%
Guinea-Bissau 2006	LI	AFR	Other Services	35.3%		53.8%	7.3%	25.8%	19.2%	6.5%	59.7%	0.8%	4.7%
Guinea-Bissau 2006	LI	AFR	Retail	34.5%		69.8%	17.8%	50.0%	11.3%	1.8%	13.2%	16.0%	72.8%
Jordan 2013	UMI	MNA	All	100.0%	569	54.7%	5.9%	100.0%	13.4%	1.7%	100.0%	3.8%	100.0%
Jordan 2013	UMI	MNA	Food	10.1%		46.1%	5.0%	9.2%	11.3%	0.4%	2.6%	4.5%	12.1%
Jordan 2013	UMI	MNA	Garments	16.1%		36.0%	7.2%	21.1%	11.3%	0.3%	3.0%	6.9%	29.2%
Jordan 2013	UMI	MNA	Other Manufacturing	40.0%		60.9%	5.2%	36.5%	17.4%	1.5%	34.6%	3.7%	37.3%
Jordan 2013	UMI	MNA	Other Services	28.5%		59.4%	4.9%	26.7%	15.2%	3.4%	59.3%	1.6%	12.1%
Jordan 2013	UMI	MNA	Retail	5.2%		37.2%	7.0%	6.5%	2.5%	0.1%	0.5%	6.8%	9.2%
Kenya 2007	LI	AFR	All	100.0%	652	78.2%	7.7%	100.0%	9.7%	1.8%	100.0%	5.8%	100.0%
Kenya 2007	LI	AFR	Food	13.3%		82.0%	7.7%	15.1%	10.7%	4.2%	33.9%	3.4%	8.9%
Kenya 2007	LI	AFR	Garments	7.5%		82.8%	5.2%	5.7%	6.6%	0.2%	0.9%	5.0%	7.3%
Kenya 2007	LI	AFR	Other Manufacturing	28.9%		75.0%	7.6%	31.5%	16.9%	2.0%	34.0%	5.6%	30.6%
Kenya 2007	LI	AFR	Other Services	35.7%		76.6%	8.1%	32.6%	11.0%	1.1%	17.4%	7.0%	37.6%
Kenya 2007	LI	AFR	Retail	14.6%		82.7%	8.5%	15.1%	6.2%	1.9%	13.7%	6.6%	15.6%
Kenya 2013	LI	AFR	All	100.0%	767	38.6%	6.0%	100.0%	18.5%	2.4%	100.0%	3.7%	100.0%
Kenya 2013	LI	AFR	Chemicals, Plastics	6.1%		60.0%	8.0%	7.3%	14.9%	1.1%	2.4%	7.0%	10.4%
Kenya 2013	LI	AFR	Food	21.3%		31.6%	4.8%	16.7%	24.9%	1.7%	15.5%	3.0%	17.4%
Kenya 2013	LI	AFR	Other Manufacturing	27.8%		42.2%	8.8%	39.9%	21.8%	2.2%	24.9%	6.6%	49.6%
Kenya 2013	LI	AFR	Other Services	29.8%		29.6%	4.0%	20.6%	15.3%	2.4%	30.8%	1.7%	14.0%
Kenya 2013	LI	AFR	Retail	9.3%		34.9%	4.4%	6.9%	18.5%	5.4%	21.7%	-1.0%	-2.7%
Kenya 2013	LI	AFR	Textiles & Garment	5.8%		45.5%	9.1%	8.6%	17.3%	1.9%	4.7%	7.2%	11.2%
Lesotho 2009	LMI	AFR	All	100.0%	144	56.5%	14.3%	100.0%	14.7%	3.6%	100.0%	12.9%	100.0%
Lesotho 2009	LMI	AFR	Manufacturing	57.0%		65.5%	18.6%	64.3%	3.4%	1.3%	19.7%	17.4%	77.0%
Lesotho 2009	LMI	AFR	Services	43.0%		54.1%	12.9%	35.7%	17.7%	6.4%	80.3%	6.5%	23.0%
Lesotho 2016	LMI	AFR	All	100.0%	147	38.6%	5.1%	100.0%	10.8%	2.2%	100.0%	2.9%	100.0%
Lesotho 2016	LMI	AFR	Manufacturing	75.4%		36.4%	4.1%	58.0%	31.0%	2.2%	74.0%	1.5%	46.3%
Lesotho 2016	LMI	AFR	Services	24.6%		38.9%	7.5%	42.0%	7.6%	2.0%	26.0%	5.5%	53.7%
Liberia 2009	LI	AFR	All	100.0%	147	60.0%	15.7%	100.0%	21.9%	5.8%	100.0%	5.9%	100.0%
Liberia 2009	LI	AFR	Manufacturing	28.7%		39.4%	7.2%	16.0%	46.1%	18.6%	66.4%	-11.4%	-67.3%
Liberia 2009	LI	AFR	Services	71.3%		70.0%	20.2%	84.0%	10.0%	5.0%	33.6%	15.2%	167.3%
Liberia 2017	AFR	All	All	100.0%	150	96.0%	19.2%	100.0%	3.0%	0.3%	100.0%	18.9%	100.0%
Liberia 2017	AFR	Manufacturing	40.0%		90.7%	23.8%	48.0%	9.0%	0.6%	100.0%	23.2%	47.3%	
Liberia 2017	AFR	Services	60.0%		98.6%	16.2%	52.0%	0.0%	0.0%	0.0%	16.2%	52.7%	
Madagascar 2009	LI	AFR	All	100.0%	444	46.6%	9.9%	100.0%	18.3%	3.4%	100.0%	5.9%	100.0%
Madagascar 2009	LI	AFR	Food	3.0%		33.8%	9.7%	3.3%	20.6%	2.6%	2.4%	7.1%	3.8%
Madagascar 2009	LI	AFR	Garments	40.3%		47.8%	11.9%	47.8%	18.7%	2.4%	26.1%	9.5%	60.2%
Madagascar 2009	LI	AFR	Manufacturing	0.3%		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Madagascar 2009	LI	AFR	Other Manufacturing	20.7%		47.2%	7.3%	17.3%	24.8%	3.4%	22.2%	3.9%	14.5%
Madagascar 2009	LI	AFR	Other Services	26.9%		49.3%	7.1%	21.1%	22.7%	4.0%	32.6%	3.1%	14.6%
Madagascar 2009	LI	AFR	Retail	8.8%		41.5%	10.2%	10.5%	4.0%	5.9%	16.7%	4.3%	7.0%
Madagascar 2013	LI	AFR	All	100.0%	511	34.1%	12.2%	100.0%	14.9%	6.0%	100.0%	6.3%	100.0%
Madagascar 2013	LI	AFR	Food	15.9%		47.8%	10.0%	12.6%	20.5%	1.9%	4.8%	8.1%	20.3%
Madagascar 2013	LI	AFR	Hospitality & Tourism	5.7%		47.2%	8.1%	3.9%	6.5%	0.8%	0.8%	7.3%	6.9%
Madagascar 2013	LI	AFR	Mining Related Manufacturing	9.8%		33.5%	28.5%	20.5%	3.9%	0.9%	1.3%	27.6%	39.4%
Madagascar 2013	LI	AFR	Other Manufacturing	13.6%		53.7%	21.3%	18.3%	8.4%	1.8%	3.1%	19.5%	33.3%
Madagascar 2013	LI	AFR	Other Services	15.5%		23.0%	3.6%	6.4%	19.0%	22.8%	83.4%	19.2%	69.3%
Madagascar 2013	LI	AFR	Textiles	39.5%		43.2%	12.4%	38.3%	17.2%	1.1%	4.7%	11.3%	69.4%
Malawi 2009	LI	AFR	All	100.0%	148	69.6%	15.4%	100.0%	19.3%	5.7%	100.0%	9.9%	100.0%
Malawi 2009	LI	AFR	Manufacturing	53.3%		47.5%	14.8%	47.7%	29.7%	4.3%	38.1%	10.5%	53.2%
Malawi 2009	LI	AFR	Services	46.7%		72.1%	16.4%	52.3%	15.8%	7.1%	61.9%	9.4%	46.8%
Malawi 2014	LI	AFR	All	100.0%	495	39.8%	5.2%	100.0%	15.4%	3.2%	100.0%	2.0%	100.0%
Malawi 2014	LI	AFR	Manufacturing	44.0%		39.4%	5.0%	43.2%	17.1%	3.4%	47.7%	1.6%	36.0%
Malawi 2014	LI	AFR	Other Services	40.9%		43.3%	5.9%	43.3%	16.1%	1.9%	22.7%	4.0%	75.7%
Malawi 2014	LI	AFR	Retail	15.1%		34.2%	4.5%	13.5%	11.5%	6.0%	29.6%	-1.5%	-11.8%
Mali 2007	LI	AFR	All	100.0%	478	65.1%	11.0%	100.0%	8.7%	1.4%	100.0%	9.6%	100.0%
Mali 2007	LI	AFR	Food	26.0%		65.8%	17.3%	37.7%	11.5%	1.3%	23.0%	16.0%	39.8%
Mali 2007	LI	AFR	Garments	15.5%		62.0%	12.7%	17.3%	5.7%	0.6%	6.4%	12.1%	18.9%
Mali 2007	LI	AFR	Rest of Universe	47.1%		64.9%	7.2%	32.4%	12.4%	3.8%	66.0%	5.3%	27.6%
Mali 2007	LI	AFR	Retail & IT	11.4%		48.3%	12.5%	12.6%	4.7%	0.6%	4.6%	11.9%	13.7%
Mali 2010	LI	AFR	All	100.0%	948	45.0%	6.3%	100.0%	17.9%	3.0%	100.0%	3.4%	100.0%
Mali 2010	LI	AFR	Manufacturing	47.8%		41.0%	4.8%	37.2%	20.9%	3.7%	61.2%	1.1%	16.0%
Mali 2010	LI	AFR	Other Services	51.7%		48.5%	8.0%	62.8%	16.3%	2.3%	38.8%	5.6%	84.0%
Mali 2010	LI	AFR	Retail	0.5%		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Mali 2016	LI	AFR	All	100.0%	182	39.3%	6.7%	100.0%	21.4%	1.5%	100.0%	5.2%	100.0%
Mali 2016	LI	AFR	Manufacturing	37.7%		49.5%	6.6%	40.8%	12.9%	1.3%	36.6%	5.3%	42.0%
Mali 2016	LI	AFR	Services	62.3%		34.9%	6.7%	59.2%	25.0%	1.6%	63.4%	5.1%	58.0%
Mauritania 2006	LI	AFR	All	100.0%	234	76.9%	10.9%	100.0%	8.9%	0.8%	100.0%	10.1%	100.0%
Mauritania 2006	LI	AFR	Food	29.4%		59.5%	10.4%	25.3%	8.0%	0.1%	2.8%	10.3%	27.0%
Mauritania 2006	LI	AFR	Garments	1.0%		100.0%	11.9%	1.1%	0.0%	0.0%	0.0%	11.9%	1.2%
Mauritania 2006	LI	AFR	Other Manufacturing	27.0%		70.5%	7.2%	19.1%	11.8%	0.9%	32.9%	6.3%	18.1%
Mauritania 2006	LI	AFR	Other Services	33.2%		83.3%	13.2%	41.5%	7.6%	1.2%	53.2%	12.0%	40.7%
Mauritania 2006	LI	AFR	Retail	9.4%		74.9%	15.3%	12.9%	10.6%	0.9%	11.1%	14.4%	13.0%
Mauritania 2014	LMI	AFR	All	100.0%	146	57.0%	12.5%	100.0%	17.4%	4.1%	100.0%	8.3%	100.0%
Mauritania 2014	LMI	AFR	Manufacturing	46.1%		35.3%	11.1%	44.4%	30.6%	5.1%	61.7%	6.0%	35.9%
Mauritania 2014	LMI	AFR	Services	53.9%		67.1%	13.8%	55.6%	11.3%	3.2%	38.3%	10.7%	64.1%
Mauritius 2009	UMI	AFR	All	100.0%	396	45.4%	14.4%	100.0%	20.8%	2.2%	100.0%	12.2%	100.0%
Mauritius 2009	UMI	AFR	Food	14.7%		49.5%	9.4%	9.5%	7.6%	1.8%	12.2%	7.6%	9.0%
Mauritius 2009	UMI	AFR	Garments	1.1%		81.0%	28.8%	2.0%	5.7%	0.5%	0.2%	28.3%	2.3%
Mauritius 2009	UMI	AFR	Other Manufacturing	47.5%		38.8%	12.4%	42.5%	35.3%	2.5%	56.0%	9.9%	40.1%
Mauritius 2009	UMI	AFR	Other Services	23.8%		51.4%	24.2%	35.7%	3.2%	1.9%	18.7%	22.3%	38.8%
Mauritius 2009	UMI	AFR	Retail	12.9%		45.5%	10.9%	10.3%	25.3%	2.1%	12.9%	8.8%	9.8%
Morocco 2013	LMI	MNA	All	100.0%	400	56.7%	9.4%	100.0%	16.4%	1.5%	100.0%	7.9%	100.0%
Morocco 2013	LMI	MNA	Food	22.0%		66.0%	21.9%	45.1%	12.0%	0.8%	3.8%	21.2%	51.8%
Morocco 2013	LMI	MNA	Garments	10.5%		53.9%	6.6%	8.0%	24.7%	2.3%	17.9%	4.3%	63%
Morocco 2013	LMI	MNA	Other Manufacturing	28.2%		58.0%	7.0%	20.4%	22.6%	1.3%	24.5%	5.7%	19.6%
Morocco 2013	LMI	MNA	Other Services	35.4%		55.4%	5.5%	22.0%	13.6%	1.8%	45.3%	3.7%	17.6%
Morocco 2013	LMI	MNA	Retail	3.9%		55.3%	10.7%	4.4%	14.1%	1.1%	2.8%	9.6%	4.7%
Mozambique 2007	LI	AFR	All	100.0%	475	64.9%	11.3%	100.0%	11.8%	1.5%	100.0%	9.8%	100.0%
Mozambique 2007	LI	AFR	Food	22.0%		62.8%	14.5%	26.0%	6.9%	0.4%	5.9%	14.0%	29.1%
Mozambique 2007	LI	AFR	Furniture	7.7%		48.2%	7.9%	5.6%	10.4%	1.3%	7.0%	6.6%	5.4%
Mozambique 2007	LI	AFR	Garments	3.5%		68.1%	11.6%	3.6%	14.2%	2.5%	5.7%	9.2%	3.3%
Mozambique 2007	LI	AFR	Rest of Universe	49.6%		70.3%	11.2%	49.9%	14.0%	1.9%	63.3%	9.3%	47.8%
Mozambique 2007	LI	AFR	Retail	17.3%		71.8%	9.4%	14.9%	13.8%	1.5%	18.1%	7.9%	14.4%
Namibia 2006	LMI	AFR	All	100.0%	323	69.9%	12.8%	100.0%	6.7%	0.8%	100.0%	12.0%	100.0%
Namibia 2006	LMI	AFR	Food	15.1%		82.2%	15.1%	13.2%	8.2%	0.2%	2.8%	15.4%	13.9%
Namibia 2006	LMI	AFR	Garments	0.3%		100.0%	58.3%	0.9%	0.0%	0.0%	0.0%	58.3%	0.9%
Namibia 2006	LMI	AFR	Other Manufacturing	7.8%		76.4%	9.8%	6.1%	7.4%	1.4%	14.8%	8.4%	5.5%
Namibia 2006	LMI	AFR	Other Services	38.6%		69.4%	13.2%	41.0%	6.3%	1.1%	57.4%	12.1%	40.0%
Namibia 2006	LMI	AFR	Retail	42.2%		69.2%	11.9%	38.8%	6.9%	0.5%	24.9%	11.5%	39.7%
Namibia 2014	UMI	AFR	All	100.0%	557	36.4%	7.8%	100.0%	11.5%	1.9%	100.0%	5.9%	100.0%
Namibia 2014	UMI	AFR	Manufacturing	22.7%		37.9%	3.2%	10.0%	17.4%	1.4%	24.6%	1.3%	5.3%
Namibia 201													

Nigeria 2007	LI	AFR	Other Manufactur	34.3%	82.1%	7.5%	31.9%	2.5%	0.0%	4.1%	7.4%	33.3%
Nigeria 2007	LI	AFR	Other Services	27.8%	79.3%	9.1%	27.6%	8.1%	0.9%	52.6%	8.2%	26.3%
Nigeria 2007	LI	AFR	Retail	15.2%	87.0%	9.7%	16.2%	5.5%	0.9%	30.2%	8.8%	15.5%
Nigeria 2014	LMI	AFR	All	100.0%	48.2%	13.6%	100.0%	20.0%	4.9%	100.0%	8.7%	100.0%
Nigeria 2014	LMI	AFR	Fabricated Metal Pr	3.3%	41.5%	14.2%	4.3%	23.0%	24.6%	20.7%	10.4%	-4.9%
Nigeria 2014	LMI	AFR	Food	8.6%	42.6%	16.9%	10.7%	28.9%	9.5%	16.7%	7.4%	7.3%
Nigeria 2014	LMI	AFR	Furniture	1.9%	44.0%	13.3%	1.9%	27.2%	9.4%	3.7%	3.9%	0.9%
Nigeria 2014	LMI	AFR	Garments	4.4%	83.0%	28.2%	7.3%	6.8%	2.9%	2.1%	25.3%	10.2%
Nigeria 2014	LMI	AFR	Hotels & Restauran	14.4%	42.4%	8.7%	10.2%	15.4%	2.8%	9.0%	6.0%	10.9%
Nigeria 2014	LMI	AFR	Manufacturing Pane	6.0%	39.8%	16.5%	7.0%	26.3%	5.5%	6.4%	11.0%	7.3%
Nigeria 2014	LMI	AFR	Non-Metallic Miner	2.5%	33.7%	12.2%	2.3%	31.9%	8.0%	4.2%	4.2%	2.2%
Nigeria 2014	LMI	AFR	Other Manufactur	9.8%	50.4%	14.6%	9.9%	15.9%	3.5%	6.6%	11.1%	11.8%
Nigeria 2014	LMI	AFR	Other Services	1.6%	48.9%	7.5%	1.0%	15.6%	2.5%	0.9%	5.0%	1.0%
Nigeria 2014	LMI	AFR	Other Services Pane	3.3%	33.8%	10.9%	3.0%	25.2%	6.9%	5.2%	4.0%	1.7%
Nigeria 2014	LMI	AFR	Printing & Publishi	2.9%	33.8%	20.9%	4.0%	11.2%	1.8%	1.0%	19.1%	5.7%
Nigeria 2014	LMI	AFR	Retail	13.6%	57.9%	11.2%	10.3%	5.8%	1.6%	4.2%	9.5%	13.7%
Nigeria 2014	LMI	AFR	Retail Panel	1.7%	38.9%	16.5%	2.2%	22.3%	9.3%	3.4%	7.2%	1.5%
Nigeria 2014	LMI	AFR	Services of Motor V	16.3%	47.0%	13.8%	16.9%	28.3%	3.0%	10.1%	10.8%	26.7%
Nigeria 2014	LMI	AFR	Transport	4.7%	62.5%	15.0%	5.2%	10.0%	1.5%	1.5%	13.5%	7.3%
Nigeria 2014	LMI	AFR	Wholesale	4.8%	42.3%	12.3%	4.0%	26.7%	4.8%	4.3%	7.5%	3.8%
Rwanda 2006	LI	AFR	All	100.0%	84.9%	12.0%	100.0%	7.4%	0.9%	100.0%	11.1%	100.0%
Rwanda 2006	LI	AFR	Food	34.0%	86.9%	13.1%	39.3%	8.7%	0.3%	12.4%	12.8%	41.5%
Rwanda 2006	LI	AFR	Garments	0.4%	100.0%	32.6%	0.9%	0.0%	0.0%	0.0%	32.6%	1.0%
Rwanda 2006	LI	AFR	Other Manufactur	39.5%	84.5%	7.7%	23.3%	9.2%	0.8%	33.3%	6.9%	22.5%
Rwanda 2006	LI	AFR	Other Services	21.9%	83.2%	16.2%	30.7%	7.6%	2.1%	53.0%	14.2%	29.0%
Rwanda 2006	LI	AFR	Retail	4.2%	86.6%	16.0%	5.8%	4.5%	0.3%	1.3%	15.8%	6.1%
Rwanda 2011	LI	AFR	All	100.0%	60.3%	13.9%	100.0%	9.5%	1.6%	100.0%	12.3%	100.0%
Rwanda 2011	LI	AFR	Manufacturing	34.7%	64.5%	6.4%	15.6%	9.0%	1.4%	29.2%	5.0%	13.8%
Rwanda 2011	LI	AFR	Services	65.3%	59.4%	17.8%	84.4%	9.6%	1.7%	70.8%	16.1%	86.2%
Senegal 2007	LI	AFR	All	100.0%	77.6%	12.9%	100.0%	5.9%	0.6%	100.0%	11.7%	100.0%
Senegal 2007	LI	AFR	Chemicals & Chemi	8.6%	88.9%	16.1%	10.7%	0.0%	0.0%	0.0%	16.1%	11.2%
Senegal 2007	LI	AFR	Fabricated Metal Pr	4.1%	50.0%	4.6%	1.7%	18.1%	0.4%	3.3%	4.2%	1.6%
Senegal 2007	LI	AFR	Food	21.5%	68.8%	8.3%	15.3%	7.3%	0.4%	18.0%	7.8%	15.1%
Senegal 2007	LI	AFR	Garments	2.1%	80.3%	12.1%	2.1%	4.9%	1.0%	3.9%	11.0%	2.0%
Senegal 2007	LI	AFR	Rest of Universe	40.0%	73.1%	10.7%	35.6%	8.6%	0.8%	60.0%	9.9%	34.5%
Senegal 2007	LI	AFR	Retail	23.8%	84.9%	19.8%	34.6%	2.8%	0.4%	14.8%	19.4%	35.6%
Senegal 2014	LMI	AFR	All	100.0%	51.9%	5.7%	100.0%	19.9%	5.2%	100.0%	0.5%	100.0%
Senegal 2014	LMI	AFR	Food	12.6%	39.0%	4.1%	11.6%	28.2%	19.2%	59.1%	15.1%	492.5%
Senegal 2014	LMI	AFR	Other Manufactur	16.7%	46.8%	6.4%	19.4%	24.9%	1.0%	3.5%	5.4%	189.5%
Senegal 2014	LMI	AFR	Other Services	55.5%	54.6%	4.4%	40.7%	17.2%	3.2%	32.4%	1.2%	128.7%
Senegal 2014	LMI	AFR	Retail	7.4%	61.8%	15.8%	18.8%	10.9%	1.0%	1.2%	14.9%	205.6%
Senegal 2014	LMI	AFR	Tourism	7.9%	35.5%	8.1%	9.5%	38.1%	3.1%	4.0%	5.0%	68.7%
Sierra Leone 2009	LI	AFR	All	100.0%	40.8%	9.8%	100.0%	22.8%	3.4%	100.0%	6.4%	100.0%
Sierra Leone 2009	LI	AFR	Manufacturing	18.3%	66.9%	15.7%	27.2%	19.8%	3.6%	18.3%	12.1%	31.9%
Sierra Leone 2009	LI	AFR	Services	81.7%	45.4%	8.6%	72.8%	23.0%	3.3%	81.7%	5.3%	68.1%
Sierra Leone 2017	AFR	All	100.0%	81.1%	17.5%	100.0%	4.9%	0.5%	100.0%	16.9%	100.0%	
Sierra Leone 2017	AFR	Manufacturing	35.3%	72.0%	17.2%	33.9%	10.1%	0.8%	51.4%	16.3%	33.4%	
Sierra Leone 2017	AFR	Services	64.7%	82.1%	17.6%	66.1%	1.4%	0.4%	48.6%	17.2%	66.6%	
South Africa 2007	LMI	AFR	All	100.0%	79.9%	7.7%	100.0%	4.6%	1.1%	100.0%	6.9%	100.0%
South Africa 2007	UMI	AFR	Manufacturing	86.6%	80.8%	7.4%	84.4%	5.0%	1.2%	65.6%	6.2%	82.4%
South Africa 2007	UMI	AFR	Rest of Universe	7.2%	81.5%	9.4%	8.5%	4.1%	0.4%	2.3%	9.0%	9.5%
South Africa 2007	UMI	AFR	Retail	6.2%	73.6%	9.4%	7.2%	3.3%	0.4%	2.2%	9.0%	8.0%
South Sudan 2014	LI	AFR	All	100.0%	75.5%	34.7%	100.0%	7.8%	1.9%	100.0%	32.8%	100.0%
South Sudan 2014	LI	AFR	Manufacturing	11.5%	75.9%	47.8%	14.3%	3.5%	0.9%	5.0%	46.9%	14.8%
South Sudan 2014	LI	AFR	Other Services	61.2%	75.9%	32.8%	58.7%	9.2%	2.0%	65.6%	30.8%	58.3%
South Sudan 2014	LI	AFR	Retail	27.2%	74.8%	34.2%	27.0%	6.7%	2.0%	29.4%	32.2%	26.9%
Sudan 2014	LMI	AFR	All	100.0%	24.7%	4.0%	100.0%	4.5%	0.9%	100.0%	3.1%	100.0%
Sudan 2014	LMI	AFR	Manufacturing	19.7%	31.0%	4.9%	23.2%	11.4%	1.0%	20.6%	3.9%	24.0%
Sudan 2014	LMI	AFR	Other Services	23.8%	23.6%	3.7%	22.0%	5.5%	1.1%	29.1%	2.6%	19.9%
Sudan 2014	LMI	AFR	Retail	19.8%	32.8%	6.3%	31.0%	4.1%	1.4%	30.5%	4.9%	31.2%
Sudan 2014	LMI	AFR	Services	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sudan 2014	LMI	AFR	Wholesale	36.6%	19.5%	2.6%	23.7%	2.4%	0.5%	19.8%	2.1%	24.9%
Swaziland 2006	LMI	AFR	All	100.0%	79.7%	13.5%	100.0%	5.2%	1.5%	100.0%	12.5%	100.0%
Swaziland 2006	LMI	AFR	Food	12.6%	62.7%	3.7%	4.1%	16.7%	2.5%	55.6%	1.2%	1.4%
Swaziland 2006	LMI	AFR	Garments	36.7%	93.2%	21.6%	53.2%	0.0%	0.0%	0.0%	21.6%	57.8%
Swaziland 2006	LMI	AFR	Other Manufactur	22.6%	70.3%	5.5%	10.6%	12.4%	2.4%	57.6%	3.2%	6.6%
Swaziland 2006	LMI	AFR	Other Services	13.0%	87.7%	19.1%	17.3%	3.5%	0.4%	4.5%	18.7%	18.4%
Swaziland 2006	LMI	AFR	Retail	15.2%	76.5%	14.7%	14.7%	4.3%	0.2%	2.4%	14.5%	15.8%
Swaziland 2016	LMI	AFR	All	100.0%	53.1%	7.4%	100.0%	7.1%	0.2%	100.0%	7.2%	100.0%
Swaziland 2016	LMI	AFR	Manufacturing	46.0%	59.6%	7.3%	45.5%	4.3%	0.1%	22.2%	7.2%	46.3%
Swaziland 2016	LMI	AFR	Services	54.0%	51.8%	7.5%	54.5%	7.7%	0.4%	77.8%	7.2%	53.7%
Tanzania 2006	LI	AFR	All	100.0%	75.8%	10.4%	100.0%	10.4%	1.5%	100.0%	9.0%	100.0%
Tanzania 2006	LI	AFR	Food	8.8%	73.0%	9.1%	7.7%	9.3%	0.6%	3.5%	8.5%	8.4%
Tanzania 2006	LI	AFR	Garments	7.0%	79.8%	12.5%	8.2%	8.6%	0.3%	1.6%	12.2%	9.3%
Tanzania 2006	LI	AFR	Other Manufactur	37.5%	83.3%	8.1%	25.5%	30.0%	6.8%	33.8%	6.8%	28.8%
Tanzania 2006	LI	AFR	Other Services	36.2%	72.7%	11.0%	38.1%	12.2%	7.2%	36.4%	8.7%	35.2%
Tanzania 2006	LI	AFR	Retail	10.6%	86.5%	17.6%	16.4%	7.5%	0.7%	4.7%	16.9%	18.3%
Tanzania 2013	LI	AFR	All	100.0%	47.2%	7.9%	100.0%	9.1%	1.3%	100.0%	6.4%	100.0%
Tanzania 2013	LI	AFR	Food	15.6%	41.6%	3.8%	8.3%	13.5%	0.3%	5.0%	3.4%	8.8%
Tanzania 2013	LI	AFR	Furniture	8.4%	55.7%	8.9%	8.4%	4.1%	1.0%	6.6%	7.9%	8.7%
Tanzania 2013	LI	AFR	Other Manufactur	21.4%	58.9%	6.6%	20.5%	11.8%	1.0%	20.9%	5.6%	20.5%
Tanzania 2013	LI	AFR	Other Services	31.8%	44.6%	9.6%	40.9%	8.3%	0.7%	21.2%	8.9%	44.2%
Tanzania 2013	LI	AFR	Retail	15.0%	45.7%	7.6%	15.9%	11.7%	2.9%	42.4%	4.7%	11.5%
Tanzania 2013	LI	AFR	Textiles & Garment	7.7%	45.0%	7.6%	6.1%	5.3%	0.7%	3.9%	6.9%	6.4%
Togo 2009	LI	AFR	All	100.0%	58.4%	12.6%	100.0%	14.4%	3.9%	100.0%	8.7%	100.0%
Togo 2009	LI	AFR	Manufacturing	25.7%	40.2%	6.7%	14.8%	25.2%	3.2%	22.3%	3.6%	11.4%
Togo 2009	LI	AFR	Services	74.3%	61.7%	14.9%	85.2%	12.4%	4.2%	77.7%	10.7%	88.6%
Togo 2016	LI	AFR	All	100.0%	48.6%	8.7%	100.0%	12.3%	4.4%	100.0%	4.3%	100.0%
Togo 2016	LI	AFR	Manufacturing	51.6%	60.9%	6.9%	41.3%	10.1%	1.7%	19.7%	5.2%	63.2%
Togo 2016	LI	AFR	Services	48.4%	45.9%	10.6%	58.7%	13.0%	7.3%	80.3%	3.3%	36.8%
Tunisia 2013	UMI	MNA	All	100.0%	36.9%	5.9%	100.0%	24.8%	2.8%	100.0%	2.6%	100.0%
Tunisia 2013	UMI	MNA	Food	6.7%	33.5%	10.1%	11.7%	25.4%	0.9%	2.0%	9.2%	22.2%
Tunisia 2013	UMI	MNA	Garments	19.0%	36.8%	4.3%	16.4%	35.4%	4.1%	30.3%	0.2%	1.3%
Tunisia 2013	UMI	MNA	Other Manufactur	38.6%	40.2%	7.2%	52.1%	28.4%	2.4%	33.4%	4.8%	72.4%
Tunisia 2013	UMI	MNA	Other Services	32.7%	34.3%	2.9%	16.2%	21.0%	2.5%	26.9%	0.4%	4.7%
Tunisia 2013	UMI	MNA	Retail	3.0%	37.7%	5.8%	3.6%	28.1%	6.3%	7.4%	-0.5%	-0.6%
Uganda 2006	LI	AFR	All	100.0%	68.5%	8.9%	100.0%	13.9%	2.0%	100.0%	6.9%	100.0%
Uganda 2006	LI	AFR	Food	17.9%	75.8%	10.4%	20.6%	12.4%	1.7%	14.6%	8.7%	22.3%
Uganda 2006	LI	AFR	Garments	1.4%	54.9%	16.3%	2.3%	36.6%	0.6%	0.4%	15.6%	2.9%
Uganda 2006	LI	AFR	Other Manufactur	29.1%	73.0%	7.5%	25.9%	11.8%	3.8%	57.1%	3.8%	18.7%
Uganda 2006	LI	AFR	Other Services	38.3%	66.7%	9.0%	37.6%	15.6%	1.1%	19.3%	8.0%	43.0%
Uganda 2006	LI	AFR	Retail	13.3%	66.1%	9.3%	13.7%	12.7%	1.3%	8.7%	7.9%	15.2%
Uganda 2013	LI	AFR	All	100.0%	32.9%	7.2%	100.0%	19.8%	3.9%	100.0%	3.3%	100.0%
Uganda 2013	LI	AFR	Food	15.3%	10.9%	2.8%	4.5%	26.6%	5.9%	17.3%	-3.1%	-10.8%
Uganda 2013	LI	AFR	Other Manufactur	23.4%	39.5%	12.7%	40.6%	12.0%	1.5%	9.1%	11.2%	78.5%
Uganda 2013	LI	AFR	Other Services	37.5%	32.7%	6.2%	33.3%	17.1%	3.5%	34.8%	2.7%	31.5%
Uganda 2013	LI	AFR	Retail	21.6%	35.0%	6.3%	21.1%	23.1%	5.9%	36.0%	0.4%	3.2%
Uganda 2013	LI	AFR	Textiles & Garment	2.2%	16.2%	1.3%	0.5%	50.9%	4.2%	2.8%		

Yemen, Rep. 2010	LMI	MNA	Food	13.4%		44.6%	4.0%	8.4%	20.4%	2.6%	14.1%	1.4%	4.9%
Yemen, Rep. 2010	LMI	MNA	Garments	2.5%		56.8%	11.5%	3.7%	7.6%	1.6%	1.3%	9.9%	5.2%
Yemen, Rep. 2010	LMI	MNA	Non-Metallic Miner	4.8%		60.0%	9.7%	5.6%	16.4%	1.8%	2.8%	7.9%	7.4%
Yemen, Rep. 2010	LMI	MNA	Other Manufactur	14.2%		38.9%	6.3%	13.3%	21.7%	3.5%	19.5%	2.8%	9.5%
Yemen, Rep. 2010	LMI	MNA	Other Services	45.3%		32.3%	7.2%	53.8%	28.7%	2.9%	56.8%	4.3%	52.0%
Yemen, Rep. 2010	LMI	MNA	Retail	8.7%		56.7%	10.5%	9.2%	6.3%	0.5%	1.2%	10.0%	14.1%
Yemen, Rep. 2013	LMI	MNA	All	100.0%	349	28.5%	3.2%	100.0%	44.1%	5.4%	100.0%	-2.2%	-100.0%
Yemen, Rep. 2013	LMI	MNA	Manufacturing	35.3%		23.1%	3.9%	47.4%	45.0%	5.9%	42.4%	-2.0%	-35.2%
Yemen, Rep. 2013	LMI	MNA	Other Services	35.9%		12.1%	1.9%	24.3%	56.8%	5.5%	41.1%	-3.6%	-65.5%
Yemen, Rep. 2013	LMI	MNA	Retail	20.8%		67.7%	4.4%	28.3%	19.7%	4.3%	16.5%	0.1%	0.7%
Zambia 2007	LI	AFR	All	100.0%	481	68.1%	7.3%	100.0%	15.9%	3.3%	100.0%	4.0%	100.0%
Zambia 2007	LI	AFR	Fabricated Metal Pr	3.1%		78.0%	6.3%	2.6%	13.3%	2.0%	1.9%	4.2%	3.2%
Zambia 2007	LI	AFR	Food	8.8%		77.4%	12.8%	13.6%	12.0%	1.5%	3.5%	11.3%	21.7%
Zambia 2007	LI	AFR	Garments	1.2%		76.0%	16.5%	2.3%	10.9%	1.5%	0.5%	15.0%	3.7%
Zambia 2007	LI	AFR	Printing & Publishin	2.4%		68.4%	8.8%	2.8%	23.6%	3.8%	2.7%	5.0%	2.9%
Zambia 2007	LI	AFR	Rest of Universe	72.4%		67.7%	5.9%	60.2%	19.7%	3.9%	88.1%	2.0%	37.6%
Zambia 2007	LI	AFR	Retail	12.3%		65.7%	12.2%	18.6%	11.1%	1.0%	3.4%	11.2%	30.9%
Zambia 2013	LMI	AFR	All	100.0%	706	38.0%	6.4%	100.0%	21.6%	4.2%	100.0%	2.3%	100.0%
Zambia 2013	LMI	AFR	Basic Metals/Fabric	5.4%		46.4%	13.2%	10.1%	12.9%	1.1%	1.3%	12.1%	26.1%
Zambia 2013	LMI	AFR	Food	5.8%		39.3%	8.8%	13.1%	25.2%	4.0%	9.2%	4.8%	20.1%
Zambia 2013	LMI	AFR	Other Manufactur	15.9%		45.4%	4.5%	11.3%	19.1%	4.2%	16.5%	0.3%	1.9%
Zambia 2013	LMI	AFR	Other Services	47.5%		36.3%	5.5%	39.8%	18.3%	2.1%	24.1%	3.3%	68.4%
Zambia 2013	LMI	AFR	Retail	15.0%		36.3%	7.1%	22.1%	28.3%	9.8%	46.9%	-2.6%	-23.2%
Zambia 2013	LMI	AFR	Textiles & Garment	2.4%		46.6%	10.2%	3.6%	15.9%	3.6%	2.0%	6.6%	6.6%
Zimbabwe 2011	LI	AFR	All	100.0%	596	28.6%	5.4%	100.0%	56.1%	14.4%	100.0%	-9.0%	-100.0%
Zimbabwe 2011	LI	AFR	Food	16.6%		29.2%	4.5%	13.3%	63.1%	15.0%	16.8%	-10.5%	-18.9%
Zimbabwe 2011	LI	AFR	Other Manufactur	36.7%		21.0%	5.1%	34.6%	65.2%	14.1%	35.6%	-8.9%	-36.3%
Zimbabwe 2011	LI	AFR	Other Services	27.3%		27.6%	4.0%	21.0%	54.0%	11.8%	23.3%	-7.8%	-24.8%
Zimbabwe 2011	LI	AFR	Retail	10.9%		43.8%	12.9%	21.6%	36.7%	12.2%	7.7%	0.7%	0.7%
Zimbabwe 2011	LI	AFR	Textiles & Garment	8.6%		24.2%	5.1%	9.5%	70.7%	23.6%	16.5%	-18.5%	-20.8%
Zimbabwe 2016	LI	AFR	All	100.0%	595	20.7%	5.7%	100.0%	32.4%	6.9%	100.0%	-1.2%	-100.0%
Zimbabwe 2016	LI	AFR	Food	13.1%		40.8%	8.1%	18.4%	79.7%	4.1%	7.8%	3.9%	43.0%
Zimbabwe 2016	LI	AFR	Other Manufactur	27.4%		19.2%	3.4%	17.5%	43.7%	8.1%	35.0%	-4.8%	-119.0%
Zimbabwe 2016	LI	AFR	Other Services	36.5%		18.0%	3.5%	20.1%	33.3%	7.5%	35.4%	-4.0%	-108.8%
Zimbabwe 2016	LI	AFR	Retail	25.1%		23.3%	12.2%	42.1%	25.4%	5.2%	14.9%	7.0%	115.5%
Zimbabwe 2016	LI	AFR	Textiles & Garment	3.9%		9.9%	2.5%	1.9%	34.8%	10.7%	6.9%	-8.2%	-30.7%

The table 7 with 17 countries shows that in terms of employment creation, looking at most recent year of data collection, one sees that for those African countries where there is positive employment creation, that the services sector did participate but the effect is not overwhelmingly strong. First, one sees that the employment creation comes from firms involved in manufacturing and mining. Second, the services sector is also a source of employment creation, though it is in the subsectors of retailing and food that one finds more employment creation rather than the “other services” category. This category entails, presumably, more of the higher productivity activities (financial services, call centres, etc.) as well as low productivity ones. Unfortunately, very few countries appear to have a finer classification of sectors of economic activities.

The overall evidence from the enterprises surveys in Africa would be that employment creation of private firms, when it occurs, appears to be across the manufacturing and services sectors, without one particular sector, or sub-sector, being the main driver of employment creation. Perhaps a closer look at the employment situation of private enterprises in some specific countries may yield more insight on whether there are noticeable net employment changes in the service sector and its subsectors. We look first at the data for Mauritius and then some of the so-called African Lions (Ghana, Ethiopia, Rwanda and Nigeria that are part of the overall table.

3.3.1 Mauritius

The enterprise survey for Mauritius was administered in 2009 and covered 396 firms. Overall, based on these figures, in 2009, the private firms involved in the Mauritius economy had a net change in full employment of 12.2%.

The food sector had a net expansion of 7.6% and the garments sector had a net expansion of 28.3%. The retail sector also had a net increase of 8.8%. The main increase in full employment of firms involved in “other services” was 22.3%. Given that “other services” relative importance, it contributed 38.8% of the overall expansion.

3.3.2 Ghana

710 firms were interviewed in 2013 and the survey reveals that these firms claim a net expansion of full employment by 7.4%. Firms involved in food had an impressive net expansion of employment by 24.2%, those involved in chemical and plastic production increased their employment by 7.7%, and those involved in retail had a 5.3% net expansion, while those involved in “other services” had a net expansion equal to the overall average that is 7.4%.

3.3.3 Ethiopia

The 2015 enterprises survey was administered to 828 firms. Overall the net expansion of full employment was 7.6% compared to the previous year. Firms in the following sub-sectors non-metallic minerals (14.2%), transport (10.9%), retail (5.1%) and other services (8.8%) represent the major forces behind this 7.6% net expansion in employment.

3.3.4 Rwanda

For the 236 Rwandan enterprises surveyed in 2011, there is a net full employment expansion of 12.3%, which came about because of a net expansion of 16.1% in the services sector and a 5% net expansion in the manufacturing sector.

3.3.5 Nigeria

The Nigerian survey performed in 2014 with more than 2526 firms offers a more detailed information on the various sectors. Overall the net expansion of full employment over the year was 8.7%, but the survey reveals a diversity of responses across the sub-sectors. For instance, firms involved in fabricated metal production reduced their employment by 10.4%, while those in garments increased theirs by 25.3%. Printing and publishing firms had a net expansion of employment by 19.1%, other manufacturing had 11.1% net expansion. Firms involved in services of motor vehicles had a 10.8% net expansion of employment and those involved in the category of “other services” had a 5% net expansion.

Looking at these countries individually reveal that private firms do expand employment in the services sector for Rwanda, Mauritius and to some extent Ethiopia at higher rate than the country’s overall average, but that other sectors are also expanding their employment. So, the services sector employment does grow, but it is not clear whether it is pulled or pushed as other sectors are growing as well.

3.4 LSMS-ISA surveys

Lastly, another source of information on sectorial employment is the Living Standards Measurement Study with its Integrated Surveys of Agriculture (LSMS-ISA).

These surveys have information on the various economic activities that are undertaken by the household as well as some of the individual members. The surveys do contain information on sectorial employment of these individuals, whether it is on-farm or whether it is off-farm employment¹⁸, and some authors have used the various data sets to understand more the various employment patterns that are arising out of the economic transformation of several African economies. We look first at Van den Broeck and Kilic (2018) and then, McCullough (2017).

Van den Broeck and Kilic (2018) uses the nationally-representative longitudinal household survey data generated as part of the World Bank Living Standards Measurement Study – Integrated Surveys on Agriculture (LSMS-ISA) initiative and provides recent empirical evidence on off-farm employment¹⁹ participation rates that is representative for five countries in SSA, namely Ethiopia, Malawi, Nigeria, Tanzania and Uganda. Using the LSMS-ISA panel data sets, the analysis covers two survey rounds from Malawi (2010 and 2013), Nigeria (2013 and 2016), and Tanzania (2011 and 2013); three survey rounds from Ethiopia (2012, 2014 and 2016); and four survey rounds from Uganda (2010, 2011, 2012 and 2014). Statistically speaking, these surveys are representative of a population of more than 150 million people.

The paper examines both on off-farm wage and self-employment in the rural and urban sectors by providing two levels of analysis. First, it presents some general evidence on labor market participations for both men and women in each of the five countries. Second, it uses the panel structure by country to analyse the drivers of entry into employment and continued employment. This allows the paper to shed more light on the dynamics of the labor market to understand better the determinants behind the choices of men and women to enter or exit off-farm employment in each country, whether in the rural or urban areas.

For our purposes, Van den Broeck and Kilic (2018) presents some interesting information in terms of the employment participation by sector and by gender. In addition, the regression results offer some suggestions on the roles of age and education in determining the off-farm employment, whether it is self or wage employment across the five countries.

The first finding is the prevalence of off-farm employment in these African countries. The share of the working-age population that is involved in off-farm employment, either self-employment or for wage, is quite relatively high. The paper reports that in the latest survey round the share is 34% in Ethiopia, 40% in Uganda, 47% in Nigeria, 52% in Tanzania and 58% in Malawi, which corresponds to a cross-country weighted overall share of 44%. These shares imply, using the sampling weights, that approximately 68 million people are off-farm employed across these five countries.²⁰

¹⁸ Though not necessarily at the same level of precision of the ISIC coding procedure, either across countries or time, which, as one will see, limits the granularity of the analysis.

¹⁹ Off-farm employment is defined in the paper as all economic activities that take place outside the agricultural household, hence excluding on-farm self-employment activities but including off-farm salaried and casual wage employment, and off-farm self-employment. The data sets cover both rural and urban areas.

²⁰ Not surprisingly, Table 1 of the paper shows the off-farm employment rates are consistently higher in urban areas

Moreover, over time, there is an increased incidence of off-farm employment, suggesting a transformation of activities. Indeed, the table shows significant increases in off-farm employment rates in some countries; specifically, in Ethiopia (from 26% in 2012 to 34% in 2016), Malawi (from 51% in 2010 to 58% in 2013), and Tanzania (from 49% in 2011 to 52% in 2013). The authors take this to be evidence for the ongoing structural transformation in Africa and the resulting job creation in off-farm employment activities that is described in Reardon et al. (2007).

Women are less likely to participate in off-farm employment, and this difference is consistent over time, and across and within countries.²¹ In terms of age, the paper finds that participation rates in the latest survey round are lowest for adolescents (aged 15-24) and range from 20% in Nigeria to 45% in Malawi. The paper's table 1 also shows that young adults (aged 25-34) are more likely to be off-farm employed than adults (aged 35-64) in Ethiopia (40% versus 35%), Malawi (64% versus 60%), Tanzania (60% versus 57%) and Uganda (44% versus 42%). Only in Nigeria adults are more likely to be off-farm employed (61%) than young adults (47%). This evidence is in line with other studies that point to the importance of off-farm employment for young people in SSA (Yeboah and Jayne, 2018).

The analysis also considers the sectorial composition of off-farm employment and the paper finds that the services sector is relatively important: it provides the bulk of the off-farm wage jobs in rural Ethiopia, Malawi and Nigeria, and in all urban areas. Unfortunately, the analysis does not present a finer degree of granularity in terms of sub-sectors, so it is not possible to identify whether employment is in subsectors such as food, retail, wholesale or financial services. Even if the information were available, one suspects that imposing a finer degree of sectorial activity would not have allowed a comparison across countries. Instead the analysis is restricted to the broad categories of agriculture, manufacturing and services. Not surprisingly, within rural areas, the agricultural sector provides most of the off-farm wage employment in Uganda (79% for women and 64% for men) and Tanzania (79% for women and 54% for men).

In general, the sectorial composition of off-farm employment does not change much over time, except for rural Ethiopia and Nigeria where importance of agricultural employment declined while this increased for women in rural Tanzania. Gender differences in sectorial composition are smaller for self-employment, with the majority of non-farm enterprises (NFEs) being active in services. Women are less likely to work in industry than men in Tanzania (11% versus 13%), while women are less likely to work in services in Ethiopia (66% versus 69%) and Malawi (67% versus 69%).

So, the tables 1 and 2 of the paper tend to support the stylized facts of employment in Africa: individuals do more than one activity (i.e. more than agriculture

(ranging from 53% in Uganda to 73% in Malawi) than in rural areas (ranging from 24% in Ethiopia to 54% in Malawi).

²¹ The gender difference in off-farm employment in the latest survey round stands at 4 percentage points (pp) in Nigeria, 12 pp in Ethiopia, 14 pp in Tanzania, 18 pp in Malawi, and 19 pp in Uganda, which corresponds to a cross-country weighted gender gap of 9 pp. If women have the same probability to participate in off-farm employment as men, about 7.8 million women would be employed in addition to the 33 million that are currently employed.

and farming) and involve themselves in self and wage employment in other activities and different sectors. The services sector is often where one can find women, though not necessarily the only one, and young people (18 to 34) are also involved in off-farm employment, whether in the rural or urban areas.

What becomes really interesting is the dynamic analysis of what determines continued off-farm employment for men and women in both rural and urban areas of these five countries. The regression analysis takes into account among other things individual characteristics (age, education) and sectorial occupation to see what determines whether individuals continue their off-farm employment throughout the years. Table 7 in the paper looks at the rural areas of the 5 countries whereas table 8 looks at the urban areas.

A look at both tables suggests that there are only a handful of determinants that explain entry into and continued participation in off-farm employment on a cross-country basis, pointing to the high heterogeneity within the region. However some insights emerge from the analysis. First, the sectorial composition of off-farm employment does not change much over time, except for rural Ethiopia and Nigeria where importance of agricultural employment declined while this increased for women in rural Tanzania. So, over the short time period, conditional on being employed in the first year of the survey, an individual's occupation stays within the sector they start with. Second, the authors find that women are less likely to continue employment than men in most countries, which the paper argues is linked to the lower quality of jobs in which women participate. Third, it is interesting to note that education is not an important factor in determining off-farm employment. Indeed, education drives the transition into employment only in Tanzania and for women in Ethiopia, suggesting that most of the jobs in other countries are low-skilled. Furthermore, Education does not have a major influence on stability of employment, again suggesting that most of the off-farm jobs do not require a higher degree. When the analysis is restricted to the urban areas, education plays a more important role in ensuring continued employment, but the effect is still quite limited. The authors suggest that most of the jobs are low-skilled and of low productivity, likely associated with little remuneration. Finally, age appears to matter as well. For instance, table 8 shows that that 15-24-year-olds in urban areas are much less likely to continue employment. This is particularly the case in Nigeria, and for women in Ethiopia, Malawi and Tanzania. The authors suggest that (female) youth's unstable employment is more problematic in urban areas than rural areas.

Data on non-farm employment from the LSMS-ISA data sets on Ethiopia, Malawi, Nigeria, Tanzania and Uganda and the estimation results from Van den Broeck and Kilic (2018) then suggest that there is a high proportion of individuals in non-farm employment, either through self or wage employment, but that most of these jobs are not in high productivity occupations, whether in the service, manufacturing or agricultural sectors. Furthermore, the service sector is more important in urban (and in some rural) areas. Though they are also present in the manufacturing and agriculture sectors, women and youth find themselves involved in the services sector, likely in low-productivity activities, since the analysis does not pinpoint the subsector activities.

These results are in accordance with McCullough (2017) who also used the LSMS-ISA data sets from Ethiopia, Malawi, Tanzania and Uganda. McCullough's paper measures the labor productivity and the employment gaps in these countries by constructing micro-based measures of productivity of workers' activities that include not only whether someone participates in an activity but also her time use. The paper finds that measures of cross-sector productivity gaps between agriculture, manufacturing and the service sectors disappear almost entirely when they are based on time inputs by sector workers. The author then points out "that the usual cross-sector productivity gaps observed in national accounts data may reflect gaps in employment levels rather than gaps in the returns to hours worked between sectors." The author then suggests that, in terms of structural transformation of the African economies, the lack of difference in cross-sector productivities based on time use of workers implies that "that the forces pulling labor into non-agriculture sectors may be weaker than many believe them to be". Indeed, tables 4 and 5 and their respective (a, b) panels suggest that it not clear that workers are being pulled into one sector such as services or manufacturing. Rather, workers appear to diversify their activities across sectors, partly because they are pushed by the agriculture sector conditions, partly by diversifying their activities.

4. Discussion

The evidence from the macro productivity models using the ASD data sets suggested that African countries underwent a structural transformation towards services activities that were not technologically dynamic. We then look at labor force surveys from the ILOSTAT database to realize that few African countries collected regularly employment statistics. One exception is Mauritius. Its data on sectorial employment by gender from 2001 also indicate a shift towards the service activities for both male and female workers. However, the number of service jobs in high productivity activities such as financial services is quite small compared to the overall services employment.

When we look at different sources, the role of the services sector becomes more diffuse. Data from the Enterprises surveys from African countries show that the net expansion in employment from private African firms appears to be in broad sectorial activities, sometimes in the services sector, others in manufacturing. When one also examines further the determinants of off-farm employment of individuals from LSMS-ISA panel surveys, the importance of the service sector, either informal or formal remains, but the analysis points out that these jobs are likely in low-productivity activities. Furthermore, one notes that the individual choices of employment in one activity are dependent on other activities: many individuals perform multitasking and their choice of working in one activity and sector is dependent on what happens in the other activity performed by the individual. If so, it is hard to assess whether a worker is pulled by the services sector or if she is pushed there because of external conditions. In fact, it may depend on both push and pull factors at the same time. Furthermore, when one takes into account time use the way McCullough (2017) does, the difference in productivity across sectorial activities is no longer clear.

As a result, while it is impossible to make a definitive statement about the services sector, it is unlikely that the effects described in Ghani, and O'Connell (2014) have taken place at a level strong enough to be captured by the available data from African countries, with perhaps the potential exception of Mauritius. The available evidence would then support Rodrik's (2016) scepticism about the role of services. This does not necessarily mean that the services sector does not have the potential described in Dihel, N. and A. G. Goswami, (2016) and in Newfarmer, Page and Tarp (eds.) (2018) *Industries without Smokestacks* book. However, the reviewed evidence in this paper points out that several conditions should be put in place before that potential may materialize.

For example, the papers by McCullough (2017), Yeobah and Jayne (2018) and Van den Broeck, and Kilic (2018) point out the performance of the agricultural sector is found to significantly influence the rate of job growth in the rest of the economy. As such the service sector is dependent on agricultural productivity growth for employment growth and so does the diversification of the work force associated with economic transformation. The linkages with other sectors need to be taken into consideration as push factors towards the services sectors and these need not be negative factors. Indeed, higher productivity in the agriculture sector appears to be a favourable determinant on whether one does enter employment in the services sector.

Other factors are important and those involve supply issues. The LSMS-ISA surveys show that education levels in most African countries are not high, though there have been progress over the last 20 years. Whether the education levels are high enough among the labor force to allow the implementation of a high productivity services sector is an important question. Even in the case of Mauritius with its relatively well educated population, the activities on telecommunications and financial services did not show large employment numbers. Particular care should be taken so that women and the youth can be trained with sufficient levels of human capital through the availability of primary, secondary and tertiary education, vocational and technical schools, and soft skills. Other supply factors such as infrastructure, roads, electricity might also be important pre-conditions that need to exist before, without forgetting clear governance and regulation oversight, as discussed in Dihel and Goswani (2016).

The combination of these factors may facilitate the transformation of the services sector towards more productive activities, but the sector expansion will need to be ignited by some external force. As was discussed before, World Bank experts such as Ghani and Dihel and Goswani and researchers like Hoekman (2017) think that this expansion will be spurred by increasing trade in services between nations. This is certainly possible, as Eichengreen and Gupta (2012) has discussed in the case of India. But, as mentioned by McMillan, Rodrik and Verduzco-Gallo (2014), one will need to make sure that the structural change component of productivity breaks the pre-2000 negative pattern so that labor does reallocate to higher productivity activities. Furthermore, one will need to also take into account the various effects that trade may have on our population of interest: women and the youth. Indeed, Juhn, Ujhelyi, and Villegas-Sanchez, (2016) discussed the

effect of trade and manufacturing on gender inequality and showed that in some instances, inequality rose. Bussman (2009) looks at the effect of trade openness on women's welfare and work and she has found that trade openness in developing countries has increased women's participation into agriculture and industrial jobs. As it is not clear that one can only open trade in a particular sector (i.e. services), more research needs to be done on the potential impacts of increased trade in services and in other sectors on African women and youth.

Bibliography

Aga, Gemechu A.; Francis, David C.; Rodriguez Meza, Jorge Luis (2015). “SMEs, Age, and Jobs: A Review of the Literature, Metrics, and Evidence”, Policy Research Working Paper, WPS 7493. Washington, D.C., World Bank Group.

Amin, Mohammad; Islam, Asif (2014). Are There More Female Managers in the Retail Sector? Evidence from Survey Data in Developing Countries. Policy Research Working Paper; No. 6843. World Bank, Washington, DC.

Bussman, M. (2009). The Effect of Trade Openness on Women’s Welfare and Work Life, *World Development* 37(6) pp.1027-1038.

de Vries, G.J., M.P. Timmer, and K. de Vries (2013). “Structural Transformation in Africa: Static gains, dynamic losses.” [GGDC research memorandum 136](#). Forthcoming in the *Journal of Development Studies*.

de Vries, K., G. J. de Vries, R. Gouma, and M. Timmer (2013). “Africa Sector Database: Contents, sources and methods”, Mimeo. Groningen Growth and Development Centre.

Dihel, N. and A. G. Goswami, (eds) (2016). From Hair Stylists and Teachers to Accountants and Doctors: The Unexplored Potential of Trade in Services in Africa, Washington, The World Bank.

Eichengreen, Barry and Poonam, Gupta (2011). The Service Sector as India's Road to Economic Growth.

Felix Kwame Yeboah and Thomas S. Jayne (2018). Africa’s Evolving Employment Trends, *The Journal of Development Studies*, 54:5, 803-832.

Filmer, D., & Fox, L. (2014). *Youth employment in sub-Saharan Africa. Africa development series*. Washington, DC: World Bank.

Fox, L. W. Senbetb, and W. Simbanegavib (2016). Youth Employment in Sub-Saharan Africa: Challenges, Constraints and Opportunities. *Journal of African Economies*, Vol. 25, AERC Supplement 1, pp. i3–i15.

Ghani, E. and S. O’Connell (2014). “Can Service Be a Growth Escalator in Low Income Countries?” Policy Research Working Paper 6971, The World Bank.

Hoekman, B. (2017). “Trade in services: Opening markets to create opportunities”, WIDER Working Paper 2017/31. February 2017.

ILO Employment Trends Unit (2010). “Trends Econometric Models: A Review of the Methodology”. Accessed: https://www.ilo.org/wcmsp5/groups/public/---ed_emp/---emp_elm/---trends/documents/publication/wcms_120382.pdf

Johnson, Steve (2018). “Mauritius ‘miracle’ puts Australia in the shade,” *Financial Times*, June 14 2018. Accessible at: <https://www.ft.com/content/5b047cb8-6f03-11e8-852d-d8b934ff5ffa>

Juhn, C., G. Ujhelyi, and C. Villegas-Sanchez (2016). Men, women, and machines: How trade impacts gender inequality. *Journal of Development Economics*, 106(2014) pp.179-193.

Lipowiecka, Julia, and Tabitha Kiriti-Nganga (2016). *The Gender Dimensions of Services*. Geneva: International Centre for Trade and Sustainable Development (ICTSD).

McCullough, E.B. (2017). Labor productivity and employment gaps in Sub-Saharan Africa. *Food Policy*, 67, pp.133-152.

McMillan, M., D. Rodrik and I. Verduzco-Gallo (2014). Globalization, Structural Change, and Productivity Growth, with an Update on Africa, *World Development* Vol. 63, pp.11-32.

Newfarmer, R., J. Page and F. Tarp (2018). *Industries without Smokestacks: Industrialization in Africa Reconsidered*. Oxford University Press.

Reardon, T., Stamoulis, K., Pingali, P. (2007). Rural nonfarm employment in developing countries in an era of globalization. *Agricultural Economics* 37(1): 173–183.

Rodrik, D. (2016). An African Growth Miracle? *Journal of African Economies*, 2016, 1-18.

Saez, McKenna and Hoffman (2015). “Valuing Trade in Services in Africa” in World Bank and World Economic Forum. *The Africa Competitiveness Report 2015*, Geneva.

Spray, J. and S. Wolf (2017). Industries without smokestacks in Uganda and Rwanda, WIDER Working Paper 2017/12.

Timmer, M. P., de Vries, G. J., & de Vries, K. (2015). “Patterns of Structural Change in Developing Countries”. In J. Weiss, & M. Tribe (Eds.), *Routledge Handbook of Industry and Development*. (pp. 65-83). Routledge.

Van den Broeck, Goedele; Kilic, Talip. (2018). Dynamics of off-farm employment in Sub-Saharan Africa: a gender perspective. Policy Research working paper; no. WPS 8540. Washington, D.C.: World Bank Group. <http://documents.worldbank.org/curated/en/445771533566076752/Dynamics-of-off-farm-employment-in-Sub-Saharan-Africa-a-gender-perspective>