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Luc Christiaensen and Patrick Premand (editors)

Employment, Productivity, and Inclusion for Poverty Reduction

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

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Regional Vice President: Makhtar Diop
Country Director: Pierre Laporte
Senior Global Practice Director: Michal Rutkowski
Practice Manager: Stefano Paternostro
Task Team Leader: Patrick Premand

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- Patrick Premand and Bienvenue N. Tien led Chapter 1 on *The Challenge of Employment Quality and Productive Inclusion in Côte d'Ivoire*. Wael Mansour contributed to the analysis of macroeconomic data, and Robin Audy provided inputs to geographical data analysis.
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- Trang Thu Tran and Sarah Hebous led Chapter 5 on *Trends and Prospects for Formal Job Creation in Côte d'Ivoire*.
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The jobs diagnostic report is part of a broad World Bank analytical engagement on the jobs agenda in Côte d'Ivoire between 2013 and 2017, which included technical support to employment surveys, impact evaluation of selected employment interventions, analysis of new source of employment data, as well as facilitation of policy dialogue on employment with government counterparts. The jobs agenda activity informed the Systematic Country Diagnostic (SCD) and Country Partnership Framework (CPF) for Côte d'Ivoire, as well as provided the basis for an Economic Update on the topic of employment published in December 2015. At an operational level, engagement on the jobs agenda informed the scope and design of the additional financing for the Youth Employment and Skills Development project (*Projet Emploi Jeune et Développement des Compétences*, PEJEDEC).

The jobs diagnostic report has been shaped by ongoing dialogue on employment policy, strategy, and programs with Ivorian authorities, including (among other activities) a workshop in June 2013, internal consultations with the World Bank Group country team in February 2015, SCD dissemination on employment and skills in May 2015, technical consultations on preliminary results from this report in February 2016, and high-level discussions on the final report in November 2016. The many contributions from local counterparts during ongoing policy dialogue on the topic of employment are gratefully acknowledged.

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CONTENTS

ABBREVIATIONS

AET .....Agricultural Education and Training
AGI .....Adolescent Girls Initiative
BCEAO.....Central Bank (*Banque Centrale des Etats de l'Afrique de l'Ouest*)
CdB .....*Centrale des Bilans*
CIST .....Conference of Labor Statisticians
CNPS .....*Caisse Nationale de Prévoyance Sociale*
CPF .....Country Partnership Framework
CPIA .....Country Policy and Institutional Assessment
DB .....Doing Business
DGI .....Tax Administration (*Direction Générale des Impôts*)
DHS.....Demographic and Health Survey
ENV.....Household Survey (*Enquête Niveau de Vie des Ménages*)
ENSE .....National Employment Survey (*Enquête Nationale sur la Situation de l'Emploi*)
EPR.....Employment participation rate
FDI .....Foreign direct investment
GDP .....Gross domestic product
GER.....Gross enrollment rate
GPI.....Gender Parity Index
GUDEF.....*Guichet Unique de Dépôt des Etats Financiers*
HE .....Household Enterprise
ICLS .....International Conference of Labor Statisticians
ICT .....Information and communication technology
IFAD .....International Fund for Agricultural Development
IIASA.....International Institute for Applied Systems Analysis
ILO .....International Labour Organization
INS .....National Statistics Institute
LMD .....License-Master-Doctorate
LPI.....Logistic Performance Index
MDG .....Millennium Development Goal
NEET .....Not in education, employment or training
NRDS .....National Rice Development Strategy
PASEC .....*Programme d'analyse des systèmes éducatifs de la confemen*
PDE .....Population Development Environment
PEJEDEC .....*Projet Emploi Jeune et Développement des Compétences* (Youth Employment and Skills Development)
PROMER .....Promotion of Rural Entrepreneurship
R&D .....Research and Development
RRR .....Relative Risk Ratio
SCD.....Systematic Country Diagnostic
SDC.....Swiss Agency for Development and Cooperation
SME .....Small and Medium Enterprises
SNA.....System of National Accounts
SYSCOA .....West Africa accounting system standards (*Système Comptable Ouest Africain*)
TFP.....Total Factor Productivity
TFR.....Total Fertility Rate
WAAPP .....West African Agricultural Productivity Program
WBES.....World Bank Enterprise Survey
WDR .....World Development Report
WEF .....World Economic Forum

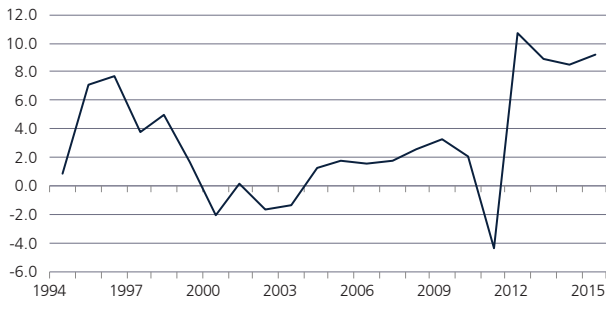
OVERVIEW AND EXECUTIVE SUMMARY

After economic growth until the mid-1990s, Côte d'Ivoire entered a decade of political and economic crises during the 2000s. Uprising and conflicts between 2002 and 2004 left the country divided until the Ouagadougou Political Agreement in 2007, with severe consequences for the economy, human capital, governance, and social cohesion. Presidential elections held in 2010 led to a post-electoral crisis until April 2011, and saw the economy contract by 4.7 percent in 2011. The decade of crisis took a heavy toll on the domestic economy and living standards, with gross domestic product (GDP) per capita in 2012 more than 10 percent below its mid-1990s peak (Figures 1 and 2).

Since mid-2011, the country has regained political stability and has started to tap its considerable social and economic potential again, eying to become an emerging economy by 2020. Economic recovery is proceeding at a rapid and sustained speed and Côte d'Ivoire is now completing its transition away from a post-conflict environment to one of political and economic stability. The country has embarked on an ambitious program of reforms and investments aimed at leveraging its considerable endowments of human capital, natural resources, and infrastructure to spur robust, broad-based, and sustainable economic growth. Since the end of the post-election crisis in 2011, economic growth has resumed through sound macroeconomic management combined with public and private investments. The GDP growth rate was 10.7, 8.7, and 8.0 percent, in 2012, 2013, and 2014, respectively.

At the same time, Côte d'Ivoire is undergoing rapid demographic changes. Like other Sub-Saharan African countries, demographic growth in Côte d'Ivoire creates a significant youth bulge (Figure 3). In 2005, the youth population was estimated at 5.9 million. Only 10 years later, it increased to approximately 7.3 million. The youth bulge is expected to continue for the next decades, reaching 9.1 million in 2025 and 11.3 million in 2035.[1] Overall, between 350,000 and 400,000 young people are estimated to join the working-age population each year (AGEPE and INS, 2014). This new workforce brings an opportunity for the country to benefit from a demographic dividend. At the same time, without better employment opportunities, many fear that a *jeunesse désoeuvrée* may present a risk for the country.

Figure 1
GDP growth rate (1994–2015)



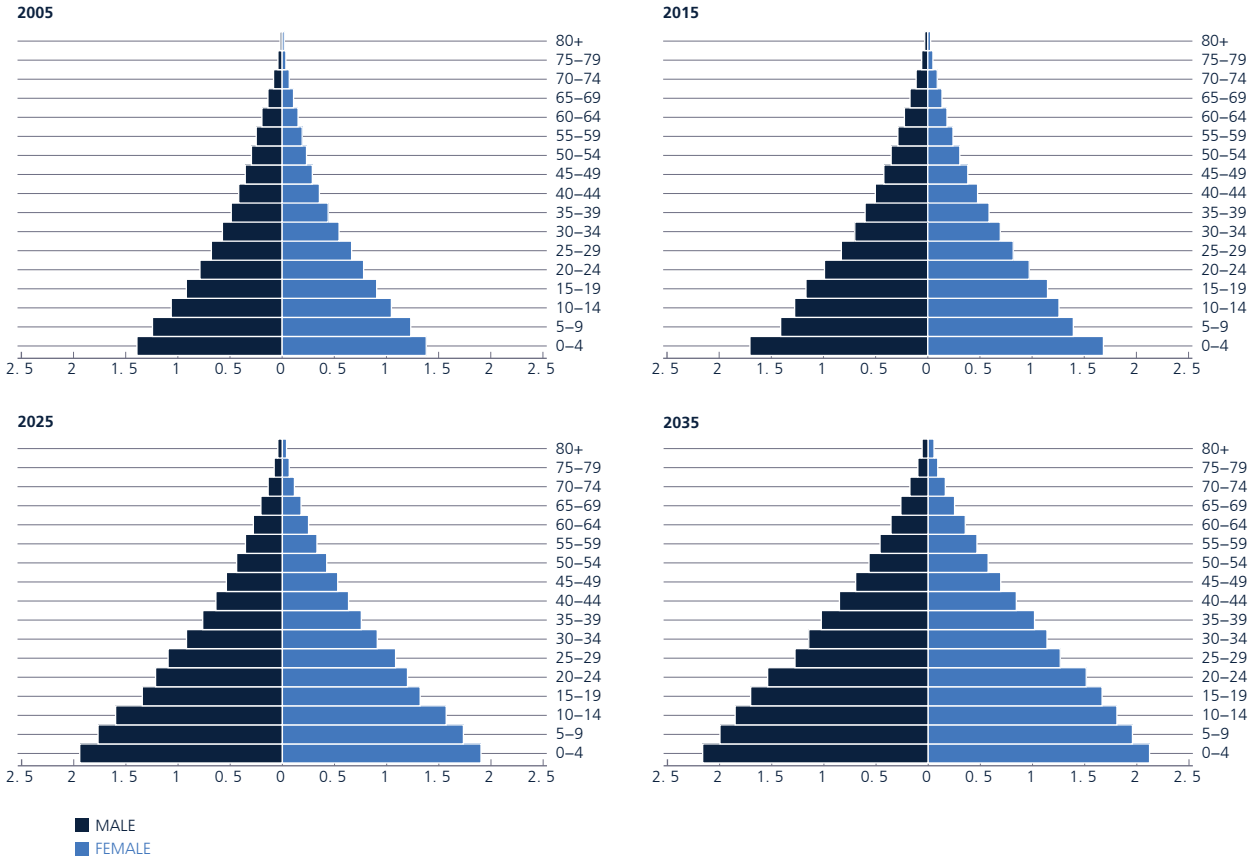
Source: World Development Indicators.

Figure 2
GDP per capita (constant 2010 US$)

Source: World Development Indicators.

[1] The estimates are from the United Nations (UN) population estimates (World Population Prospects: The 2012 Revision). The 2014 population census in Côte d'Ivoire indicates that the total population is estimated at 22,671,331 of which 36.2 percent are between 15 and 34 years old (see: http://www.plan.gouv.ci/accueil.php?page=actu&id=242).

Figure 3
Population pyramids for Côte d'Ivoire, in millions



Source: World Population Prospects: The 2012 Revision; authors' presentation.
Note: Values for 2005 are estimates, and those thereafter are projections (medium variant).

The issue of employment, and in particular youth employment, is a top policy priority in Côte d'Ivoire. Seen through the lens of the World Development Report (WDR) 2013 *Jobs* (World Bank, 2012), jobs drive development by supporting living standards, contributing to productivity, and building social cohesion. The Systematic Country Diagnostic for Côte d'Ivoire identifies the creation of better jobs as one of the main pathways to reduce poverty and a source of sustainable growth (World Bank, 2015). The 2012–2015 national employment strategy for Côte d'Ivoire (République de Côte d'Ivoire, 2012) seeks to expand employment opportunities for decent work to contribute to poverty reduction. It is based on three pillars: (a) support to private enterprises to foster growth and job creation, (b) investment in human capital and labor productivity, and (c) rationalizing governance of employment policy. A follow-up strategy note was issued in 2013 to outline how sectoral strategies, structural measures, specific programs, and business climate improvements could lead to employment creation. These strategic documents link to an initially announced presidential objective of creating 200,000 jobs per year between 2012 and 2015. A new strategy for 2016–2020 is being finalized.

The objective of this Côte d'Ivoire jobs diagnostic is to provide a comprehensive empirical analysis and solid evidence-base of employment challenges and opportunities in Côte d'Ivoire to inform strategies and policy actions. The report has six chapters. This first chapter presents an in-depth analysis of employment patterns and trends in Côte d'Ivoire, drawing on a wide range of data, including national employment and household surveys collected by the government (Premand and Tien, 2017a). Chapter 2 then analyzes the relative potential of the various sectors of employment for inclusive and productive employment within Côte d'Ivoire's ongoing structural transformation (Christiaensen and Lawin, 2017a). Chapter 3 discusses how agriculture's contribution to Côte d'Ivoire's jobs agenda can be maximized (Christiaensen and Lawin, 2017b). Chapter 4 elaborates on the challenge of raising productivity in nonagricultural self-employment, which is set to become the

major form of employment in the coming decade, while the formal wage sector continues to expand (Premand and Tien, 2017b). The trends and perspectives for developing wage employment in formal firms are further discussed in Chapter 5 (Hebous and Tran, 2017). With skills identified as a cross-cutting constraint, Chapter 6 assesses the role of education, skills and training for making Côte d'Ivoire's workforce more competitive (Feda and Ralston, 2017). The key insights and messages of the report are summarized in this overview.

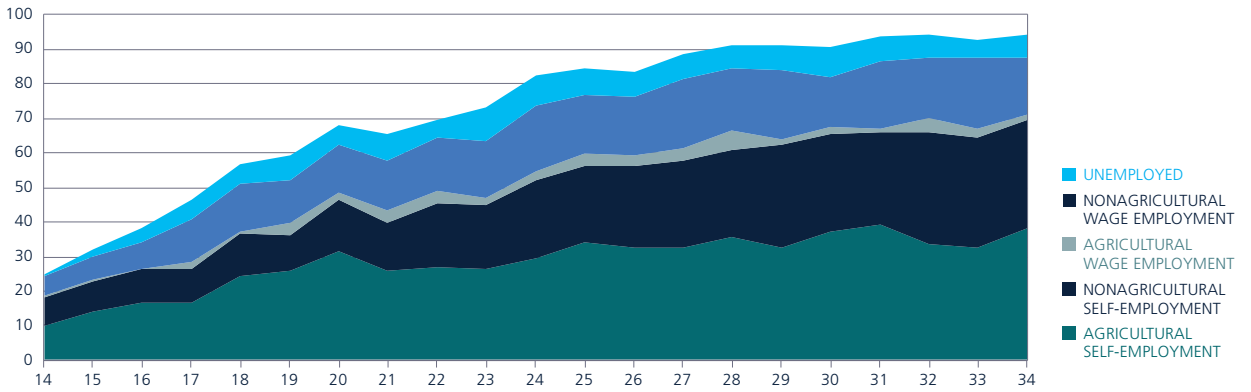
Recent employment data for Côte d'Ivoire reveals some disconnect between the employment situation and the main focus of prevalent policy actions. While the employment strategy acknowledges the broad scope of the employment challenge, including in agricultural and nonagricultural self-employment where most people are employed, the issues of reducing unemployment and creating jobs are used to drive many policy actions on employment. The implementation of concrete actions on employment often tends to focus on formal jobs, including with an emphasis on the numbers of jobs created and reducing unemployment. Yet unemployment is relatively low and most of the labor force is self-employed, which means that they are creating jobs for themselves and in fact account for most 'new jobs' in the economy. While growing the modern wage sector is necessary in the long term, projections of the future composition of employment show that the low base of wage employment combined with rapid demographic growth implies that even strong growth of that sector would only absorb a small share of the population over the next decade. The poor, who have less education and often live in rural areas, have particularly limited opportunities to access (formal) wage jobs.

A broader jobs strategy that centers on 'better jobs' and the issue of 'productive inclusion' for the poor, women, and rural populations could address more directly the central challenges of reducing poverty and boosting shared prosperity in the short to medium term. In line with recent data from Côte d'Ivoire, evidence from the 2013 WDR on Jobs, and the Regional Report on Youth Employment in Sub-Saharan Africa (Filmer et al., 2014), a more inclusive jobs strategy would also have as a core objective to improve earnings and quality of employment across all occupations, including in agricultural and nonagricultural self-employment where the majority of the population will remain employed for the foreseeable future. As such, this report invites to expand policy discussions on employment from a focus on the number of jobs and unemployment to a broader attention to the quality, inclusiveness, and productivity of jobs. This would include sharpening the poverty lens in employment policies.

Better jobs providing higher earnings is the key employment challenge for the near future

Analysis of recent data on the employment profile in Côte d'Ivoire shows that the biggest employment challenge relates to the quality, inclusiveness, and productivity of jobs. Figure 4 provides the breakdown of the employment status of the working-age population by age. As youths complete their school-to-work transition, their labor-force participation increases steadily, to reach over 80 percent by age 24 and over 95 percent by age 34. Most youths transition into the labor force by working in agricultural self-employment and nonagricultural

Figure 4
Youths transition into the labor force and employment type, by age



Source: National Employment Survey (*Enquête Nationale sur la Situation de l'Emploi et du Travail des Enfants*, ENSETE 2013); authors' display.

self-employment. Youth who join the labor force after a longer time in school contribute to increase the share of wage employment, as well as unemployment. Still, these phenomena are much less common than self-employment.

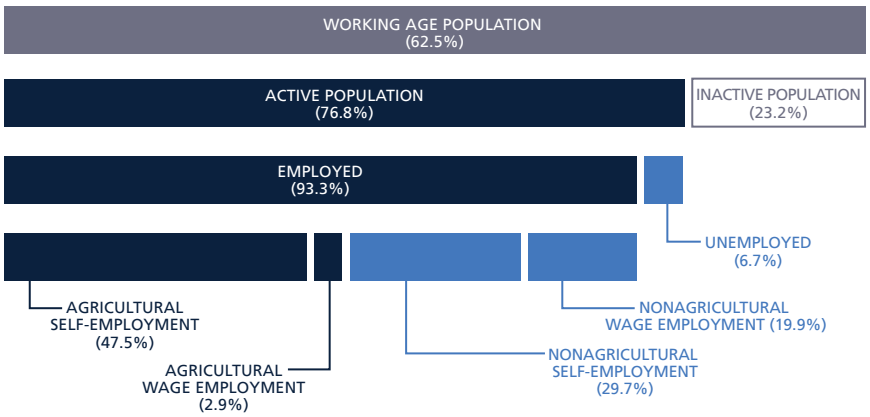
A major challenge stems from the high concentration of employment in low-productivity occupations in agricultural and nonagricultural self-employment. Figure 5 provides an overall picture of the working-age population in Côte d'Ivoire. As of February 2014, unemployment affects 6.7 percent of individuals in the labor force, and is more prevalent among the more educated in urban areas. A limited number of individuals hold nonagricultural wage jobs (19.9 percent of the employed population), and less than half of them have formal wage jobs, which are concentrated among the more educated in urban areas. In contrast, the majority of individuals are employed in agricultural or nonagricultural self-employment (47.5 percent, respectively 29.7 percent of the employed population). Almost all the poor and individuals living in rural areas work in these self-employed occupations. On average, self-employment tends to have relatively low-productivity and earnings, although there are also substantial variations and opportunities for growth in earnings within these sectors.

Analysis of recent trends shows that the low-quality and low-earning jobs are largely a structural issue. There are some indications that the share of nonagricultural self-employment has increased over the period of the crisis, while the share of the formal wage employment in the economy decreased. However, despite these variations, the overall structure of employment has remained relatively stable. The structural transformation process is taking place in Côte d'Ivoire, but in presence of very strong demographic changes. In this context, future forecasts of the employment composition show that the structure of employment is likely to remain relatively stable till 2025, in the sense that most individuals are projected to remain employed in agricultural and nonagricultural self-employment, even under scenarios of very high growth in the service or industry sectors. Nonagricultural self-employment in services may in fact well become the most common type of employment within a decade.

There is substantial scope for labor productivity gains within the sectors where the poor work

Increasing earnings can be done by raising intrasectoral labor productivity and by facilitating labor transitions across sectors (structural transformation). Broadly speaking, earnings of the poorer and more marginalized segments of society can be increased either by increasing productivity within the sectors where the poor currently work (mostly in agriculture and nonagricultural self-employment) and where they are located (mostly in rural areas), or by facilitating transitions to sectors where labor productivity is higher. Agricultural and informal activities are often seen as less productive, and nonagricultural and formal activities as more productive. Fostering intrasector productivity and facilitating movements across sectors require somewhat different approaches.

Figure 5
Overview of the employment situation in Côte d'Ivoire in February 2014



Source: ENSETE 2013, indicators based on the international norms adopted by the International Labor Organization (ILO) during the 13th Conference of Labor Statisticians (CIST) held in 1982, see Chapter 1 for details and definitions.

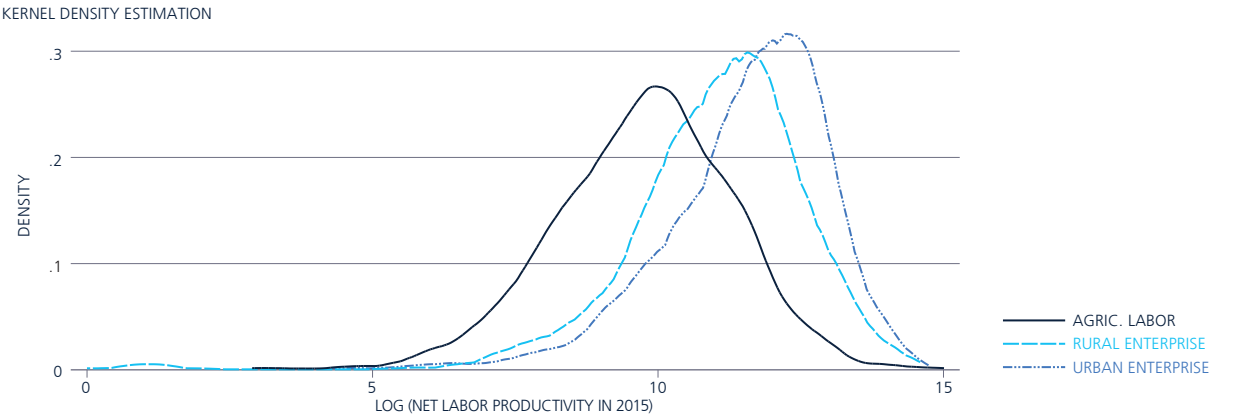
What is the right balance between these different policy approaches for Côte d'Ivoire today? Historically, as countries developed, the share of labor in agriculture decreased, first counterbalanced by a corresponding increase in nonagricultural self-employment, and over a longer period also formal wage employment. Similar patterns of structural and occupational transformation have started to take place in Côte d'Ivoire and are expected to continue over the next decade. These transformations usually also come along with urbanization, through rural-urban migration as well as in situ urbanization of rural centers, and formalization. How much movement between sectors, across space, and toward more formal forms of employment can and should thus be strived for today, especially when taking inclusive employment as the overarching objective?

It may appear that there is a 'Jobs Paradox' in agriculture. As households get richer, the demand for food as a share of total spending goes down and so does employment in agriculture. On the supply side, labor is generally found to be more productive outside agriculture than in it. These large productivity gaps at the initial stages of development and the subsequent convergence process suggest that a lot can be gained from moving people out of agriculture. So, what can then be the contribution of agriculture to a country's jobs agenda, besides releasing labor?

Both the traditional labor supply and demand side concerns regarding agriculture's jobs potential come with important caveats. On the supply side, recent micro evidence adjusting labor efforts for differences in human capital and time use obtained from household surveys indicates that the commonly reported unadjusted agricultural productivity gap from the national accounts[2] is exaggerated, and more in the order of a factor 2 as opposed to 6 (as observed from the national accounts). This implies that the gains from intersectoral movement are substantially less than commonly purported, and, with a significant part of the gap explained by underemployment in agriculture, that agriculture is not intrinsically less productive. These observations also hold for Côte d'Ivoire. Large heterogeneity in agricultural labor productivity further points to important opportunities for earnings gains within agriculture (Figure 6). Finally, income generation in agriculture has been convincingly shown to be more poverty reducing, although agricultural policies and initial conditions (such as equal land distribution) matter to ensure that growth in the agricultural sector does promote inclusive employment and poverty reduction. Raising agricultural labor productivity thus emerges as an important other policy entry point to increase earnings, in addition to removal of impediments to migration and increasing productivity outside agriculture.

On the demand side, global demand for Côte d'Ivoire's agricultural export commodities and dietary transformation at home following income growth and urbanization open up opportunities for adding new productive jobs and increasing earnings in agriculture. In Côte d'Ivoire the value of agricultural exports has been expanding rapidly over the past years. Given the predominance of smallholder and outgrower

Figure 6
Substantial heterogeneity in labor productivity within sectors suggests substantial scope for intrasectoral labor earnings gains, also in agriculture



Source: Authors calculations, *Enquête Niveau de Vie des Ménages* (ENV) 2015.
Note: Net labor productivity is measured as the ratio of net output per person primarily employed per year. In the self-employment sector, net output is the value of annual profit.

[2] The ratio of the valued added in agriculture per person primarily employed in agriculture over the value added in nonagriculture per person primarily employed outside agriculture.

production model for most cash crops, many can benefit from the expansion of export crops. At the same time, part of the declining demand for labor in agriculture following the lower (relative) demand for staples as incomes rise can also be offset by catering to the increasing demand for higher-value and processed agricultural products as countries get richer. This can create new jobs on the farm, but increasingly also off farm, in the expanding agricultural value chains and agribusiness. It is countries that complement a successful structural transformation (declining share of agriculture in the economy as they develop) with a successful agricultural transformation (declining share of staples in agricultural value added) which experience the fastest decline in (rural) poverty.

Despite good prospects for new jobs and better earnings within agriculture, over time, most jobs will be generated outside agriculture. It is often youth that is inclined to leave agriculture first and in greater numbers. So far, the pace of youth's exit out of agriculture has been in line with Côte d'Ivoire's level of development. An important share of the demand for nonagricultural products and services and thus nonagricultural employment, especially for the poorer segments of society, will come from broad-based agricultural growth in the rural hinterlands (and less so from formal wage employment in modern manufacturing). In fact, even during the fast-growth period in the years after the post-electoral crisis, the majority of new 'jobs' generated were in self-employment (most of which were in agriculture on family farms). Only a minority of new jobs were wage jobs (mostly still informal). In this sense, many of the new jobs for youths will also be indirectly linked to agriculture and agribusiness. Labor productivity increases across the agricultural subsectors will thus be equally necessary to keep agriculture competitive with other nonagricultural sectors, so as to retain youth, reap the job opportunities that growth in domestic and external demand for agricultural products presents, and also to pace the transition of labor out of agriculture and foster demand for nonagricultural products and nonfarm employment generation.

The development of rural areas and secondary towns in Côte d'Ivoire is further called for to productively absorb labor exiting agriculture. About four in five rural workers are engaged in agriculture, which is consistent with the ratios observed in other countries at similar levels of development. Yet only a very small (and relatively smaller) share of the rural population (4 percent) holds nonagricultural *wage* jobs, pointing to limited employment opportunities in the rural economy, and consistent with the high degree of urbanization and urban concentration in Côte d'Ivoire. Households also tend to be more specialized, either in agriculture or in nonagricultural self-employment. In this context, nearby access to off-farm self- and wage employment in the rural economy and secondary towns is especially important for better and more inclusive employment.

How much movement between the main employment types can realistically be expected in Côte d'Ivoire? Projections suggest a continuing diminution of the share of labor in agriculture, which is mostly counterbalanced by an increase in nonagricultural self-employment. Even by taking a rather pessimistic outlook on agricultural growth, by 2025, wage employment is still projected to remain the smallest employment category compared to agricultural and nonagricultural self-employment. In fact, the projections highlight that nonagricultural self-employment is likely to become the main source of employment by 2025. Faster growth in agriculture, reflecting productivity gains within the sector, would slow the exit of labor from agriculture and its entry into nonagricultural self-employment.

In sum, to address the employment challenge of promoting productive inclusion in Côte d'Ivoire, a three-pronged approach is needed. First, with approximately two-thirds of Côte d'Ivoire's poor living in rural areas and almost half of the poor living in households whose head is primarily engaged in agriculture, modernizing and raising labor productivity in agriculture has to be a key entry point for more, better, and inclusive employment generation in Côte d'Ivoire. Second, expanding productive employment opportunities off the farm will be equally important. Off-farm employment generation will be more inclusive and poverty reducing when it happens nearby. The poor are concentrated in the rural economies and secondary towns, drawing attention to the challenge of Côte d'Ivoire's high rate of urban concentration and its corresponding low rate of rural off-farm wage employment. Expanding productive employment opportunities off the farm will require not only accelerating jobs creation in formal firms, but also putting in place policies to raise productivity in nonagricultural self-employment in the informal sector, while expansion of the formal sector continues. Finally, the occupational transformation typically lags the economic transformation, and social protection will be needed for those unable to seize opportunities

and access more productive employment opportunities. An in-depth discussion of social protection policies falls beyond the scope of the report, though it remains a key part of a comprehensive approach to the jobs issue.

Maximizing agriculture's contribution to the jobs agenda

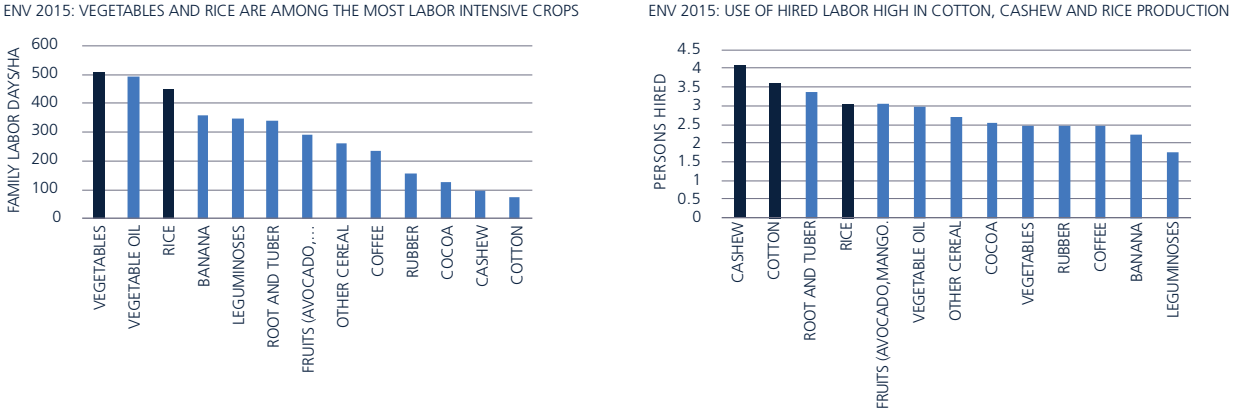
Increasing agricultural labor productivity is key to the jobs agenda in Côte d'Ivoire. It plays to the country's comparative advantage, it raises earnings of the poor directly, and it helps generate demand for nonagricultural goods and services and thus off-farm employment. Given the large share of employment in agriculture, even fast growth of urban wage jobs will not suffice to absorb all new entrants in the working-age population. Nonetheless, not all agricultural strategies perform equally at generating inclusive employment.

Export crops make up about a quarter of total agricultural output, with food crops making up the rest (75 percent). There is a fair degree of market orientation in agriculture in Côte d'Ivoire. Four in five smallholders sell at least some of their output, with one in five reporting that they sell their complete harvest. Farming is dominated by smallholders who are relatively well endowed with land. Given high land/labor ratios and little mechanization, hiring labor is common, often migrant labor to make up for family labor shortages. Use of non-family labor is especially high on cotton, rice, and cashew (grown in the north), the production of which has been expanding over the past 5 years.

The overall objectives of an 'Agriculture for Jobs Agenda' would be to enhance agricultural productivity, to diversify, and to add value. In recent years, a beginning has been made on each of these fronts. Among staple crops, progress has been especially noticeable for rice. Yield growth was negative however among other staple crops (such as roots and tubers). It reflects a longstanding neglect of staple crops in favor of cash crops and presents an area of attention, also in light of the higher poverty rates among food crop growers. Among cash crops, yield growth has also been revived, especially among cotton and cashew, indicating diversification beyond cocoa, though the production of coffee and pineapples declined.

Strong productivity growth in rice, cashew, and cotton diversified the cash crop mix, but there has been no real diversification yet into high-value agricultural products. The expansion of rice, cotton, and cashew production is promising from a jobs perspective (Figure 7). Rice emerges as one of the most labor-intensive crops in Côte d'Ivoire. Cotton and cashew producers make most extensive use of hired labor. Both crops are grown widely in the north, where poverty rates are highest. The expansion of their production also holds promise for inclusive employment. An increasing share of cashew nuts are also processed locally (especially in the central region), creating potential off-farm employment opportunities in secondary towns. Vegetable production is also highly labor intensive, but its potential has so far not been fully exploited. Overall, these trends are promising, but scope for improvement remains.

Figure 7
Rice and vegetable production are most labor intensive; cotton and cashew make extensive use of hired labor



Source: Authors' calculations based on ENSETE 2013 and ENV 2015.

Large heterogeneity in net returns per hectare across crops suggests substantial scope for productivity gains. The net value of production per hectare for farmers producing at the 75th percentile is typically three to four times higher than the net value of production per hectare for farmers producing at the 25th percentile. Controlling for labor inputs and other factors, results also suggest substantial scope for productivity gains from increased use of modern inputs. Nonetheless, inorganic fertilizer use is low and its profitability deserves further investigation. But the use of agrochemicals is relatively higher, raising concerns about health hazards and job quality.

An analysis of the rice value chain highlights challenges and opportunities for growth both among producers and further down the value chain, and echoes similar challenges encountered along other value chains. Stakeholders in the rice value chain (producers, processors, input providers, storage, and traders) are generally poorly endowed with productive resources, under-equipped, poorly trained, and poorly organized and coordinated. Among processors, both the lack of sufficient supply of rice and cost and shortage of electricity are also frequently mentioned as major constraints. This holds back investment and quality processing needed to compete with imports. There is little optimal use of agricultural inputs and water control. As a result, producer gross margin per hectare is often low and highly variable across sites and seasons. The overall lack of financial depth in the chain, with each actor facing credit constraints and largely financing him/herself, is combined with poor coordination and contractual arrangements among the different actors. Better coordination among and organization in the chain is needed, a challenge the National Rice Development Strategy is working on.

Several policy entry points can be considered to maximize agriculture's contribution to the jobs agenda in Côte d'Ivoire. First, continued support to productivity growth in labor-intensive rice, cotton, and cashews could be complemented with additional support to other labor-intensive staples and high-value crops. Second, smallholder agriculture holds most promise for inclusive employment generation, in particular as there are no signs that larger farmers in Côte d'Ivoire are more efficient than smaller ones. There is substantial scope for modernization to take place in smallholder agriculture, including through mechanization. Third, Côte d'Ivoire would need strong additional investments in agricultural research and development, including on staple crops. Fourth, low educational levels and poor training among actors in agricultural value chains hold technological innovation back. Rehabilitating the national agricultural education and training centers could contribute to leverage gains in access to primary education and improve supply of agricultural knowledge and training opportunities. Finally, improving rural land tenure security and overcoming financing constraints will continue to be critical to catalyze agricultural investment and raise productivity both for farmers and agribusinesses. This will often require a more integrated value chain approach where the government can play an important coordinating role.

Raising productivity in nonagricultural self-employment through a more supportive business environment

Despite constituting a sizable share of jobs in Côte d'Ivoire, nonagricultural self-employment remains largely unaddressed in employment strategies. In 2014, nonagricultural self-employment in microenterprises accounted for 29.7 percent of employment in the country, compared to 47.5 percent in agriculture and 19.9 percent in wage jobs. Projections of the future employment profile in Côte d'Ivoire indicate that nonagricultural self-employment is likely to become the largest employment category by 2025. Yet policy strategies for the sector in the country are limited, and often focused on formalization. A clearer and more comprehensive strategy to create a more supportive business environment and raise productivity in the sector would be directly relevant to ensure better employment opportunities as well as to contribute to poverty reduction and productive inclusion.

Almost all nonagricultural household enterprises in Côte d'Ivoire are in the informal sector, and many operate at the margin of existing laws on small-medium enterprises. Nonagricultural household enterprises fit the legal definition of microenterprises in Côte d'Ivoire. However, an important caveat is that most nonagricultural self-employment activities are not registered and do not undertake any form of accounting. In general, such informal employment behaves counter-cyclically and can act as a buffer in case of crisis and shocks. In Côte d'Ivoire, while the informal sector expanded during the crisis years, a large part of the informal sector is rather structural and it includes a large number of businesses with many years of operation. The median owner of a nonagricultural microenterprises is a young female with no formal education. The majority of nonagricultural individual enterprises are in small-scale service activities, with approximately two out of three operating in urban areas.

Employment in nonagricultural self-employment is not only the result of push factors, and a range of pull factors contribute to entry into household enterprises. In fact, many individuals express preferences for work in the sector over other employment opportunities. These patterns may reflect a constrained choice set, particularly for the low-educated individuals for whom formal wage jobs are unattainable. Clearly, not all individuals are in the informal sector by choice, but quantitative and qualitative data provide a somewhat more nuanced view compared to the negative connotation the sector often elicits.

The fact that many find employment in nonagricultural self-employment desirable is consistent with wide heterogeneity in earnings and productivity in the sector. While some individuals are just surviving in the sector, for many, nonagricultural self-employment can offer a better job, a source of higher earnings, or a pathway out of poverty. Overall, enterprises owned by men and operating in Abidjan are the most productive, while operators in rural areas are much less productive. Sectors that are relatively more capital intensive such as transport, wholesale trading, or bar and restaurants also tend to be more productive.

Individuals face multiple constraints to create and operate nonagricultural household enterprises. Analysis from both quantitative and qualitative data indicate that there is a distinct hierarchy of constraints. Capital constraints are the most binding for individuals in the sector. The very limited or nonexistent financial services compel (potential) entrepreneurs to mostly rely on personal savings or on family and friends networks for financing. The lack of safe working environment or access to markets represent an impediment. For instance, many business operators complain of problematic relations with local authorities. Despite paying taxes, micro-enterprise owners do not receive many services. Finally, with regard to education and skills, although formal education is not necessary conducive to higher productivity in nonagricultural self-employment, the number of years of experience as well as basic business skills matter for operating a business successfully. Entrepreneurs in the sector also mention challenges related to behavioral skills, in particular for youths.

Several policy entry points can be considered to build a more supportive business environment for nonagricultural self-employment. At a policy level, there is no clear national strategy for the sector. Many actions regarding informal enterprises tend to start with the question of how to 'formalize' them. The facilitation of procedures for starting a formal business in recent years has contributed to an increase in small registered firms (see Chapter 5). Still, formalization cannot be seen as an end in itself, particularly since international evidence on the effectiveness of policies to encourage formalization on firm productivity or taxes collected are rather mixed, showing only a small number of firms may able to formalize. Recent innovations suggest that formalization can be incentivized through complementary benefit packages that seek to address constraints to firm productivity. In this sense, finding effective policies to address constraints to productivity can come first, with attempts to formalize coming later. One real challenge to set up a more supportive enabling environment for nonagricultural self-employment in Côte d'Ivoire is a lack of clear roles or responsibilities with respect to the sector. A multitude of government agencies have relations to the sector but focus on particular issues, for instance on building registries to better regulate or tax the sector, with relatively less attention to the provision of services needed to address constraints to productivity.

New actions are possible to address the multiple constraints to a more supportive business environment for nonagricultural self-employment. A three-step approach is suggested. First, at a policy level, it is essential to articulate a strategy to provide voice for micro- enterprise operators, as well as institutional coordination and accountability for public agencies dealing with the sector. Second, at a programmatic level, specific interventions can be undertaken to relax binding constraints for household operators facing market failures. Easing access to capital through effective mechanisms is clearly a top priority, followed by the facilitation of access to markets and suitable work location. With regard to skills, the direct scope for intervention might be more limited, although providing access to training on business skills and skills upgrading opportunities could be considered. This could include leveraging and incentivizing existing private training providers, such as those in the traditional apprenticeship system, which are quite common for youths. Overall, based on international evidence, integrated interventions that address several of these binding constraints hold most promise. Lastly, given the heterogeneity in the sector, social protection may still be the only option for those that may not be able to grow or become more productive.

Encouraging formal job creation by expanding the number, size, and spatial distribution of formal firms

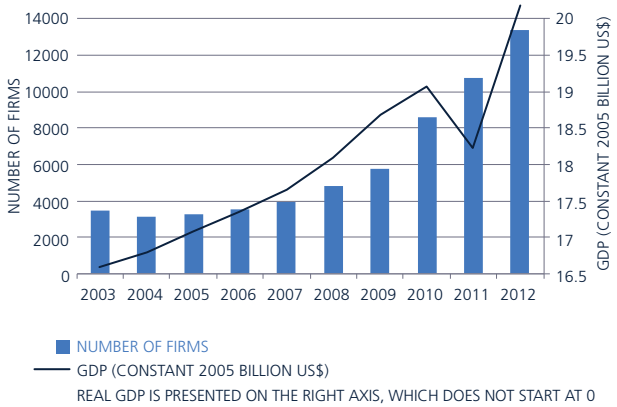
Given the higher quality of jobs in the modern formal sector, expanding the size of the formal sector is key to *more* and *better* jobs. Côte d'Ivoire's economy is characterized by a relatively developed and diversified industrial sector by Sub-Saharan African standards, but competitiveness and the overall investment climate eroded during the decade-long civil strife. Government and political stability were long ranked as one of the most important obstacle to doing business, but instability is no longer perceived as a major constraint. The country is now eying emergence, and could capitalize on the peace dividends to focus on other constraints limiting competitiveness and growth of the private sector.

Firm-level analysis reveals that, in the years after the Ouagadougou accord in 2007, Côte d'Ivoire has seen sustained progress in business activities, entry of new firms, and formal employment growth. The total number of registered formal firms increased more than threefold between 2007 and 2012 (Figure 8). Compared to other countries with available data, the Ivorian formal economy has displayed relatively more dynamism in business creation and growth: job creation is concentrated in young firms but also large firms, indicating the importance of both entry and growth in incumbent firms. The pattern of firm employment over the life cycle also suggests that firms do grow over time, indicating a relatively well-functioning market.

However, as the economy just started recovering during the period covered by the available firm panel census, and since the numbers of firms and formal jobs are low to start with, there is still limited evidence of structural changes. Based on *Centrale des Bilans* data, the formal sector went from employing approximately 200,000 individuals in 2003 to approximately 300,000 individuals in 2012. At the same time, formal jobs creation has been small in the aggregate: the highest number of formal jobs created in a year is only approximately 40,000 (Figure 9). Since there are more than 10 million employed individuals in the country, this means there is limited potential for the formal sector to absorb a large amount of labor in the *short term*. As discussions in Chapter 3 also highlight, it will take a sustained period of fast growth in the industry and service sectors for the share of formal wage employment in the economy to substantially increase. In addition, despite signs of regional diversification, over 90 percent of firms and jobs are still concentrated in Abidjan, creating challenges related to the inclusiveness of formal jobs. In terms of output, new sectors such as oil and gas have become the most important contributor to value added but their contribution to employment is negligible. The continued concentration of employment in agribusiness activities, including in agriculture and food processing, implies that these sectors will remain important engines for job creation in the foreseeable future.

Observed patterns of firm and formal job dynamics in Côte d'Ivoire suggest several key constraints for growth in the formal sector. Firms, especially small and young, endure very high job churning and low survival rates. While entry of foreign firms seems to create a positive competition effect that favors more productive firms to survive, the ability of local firms to compete with foreign firms also appears limited. This result indicates potentially important capability constraints. For those that do manage to survive, employment growth is concentrated

Figure 8
Total number of firms in the formal sector, by year



Source: Authors' calculations, *Centrale des Bilans* data (see Chapter 5 for details).

Figure 9
Total number of jobs in the formal sector, by year and sector

Source: Authors' calculations, *Centrale des Bilans* data (see Chapter 5 for details).

among a subset of firms, and growth rate is higher among more capital-intensive and productive firms and sectors, suggesting access to capital, firm capabilities, and output demand as potential constraints for job growth. At the same time, there is substantial heterogeneity in job quality as measured by differences in the average wages across sectors and firm sizes. Interestingly, medium and large firms tend to pay significantly higher labor costs. This appears to be driven by a different organizational structure which includes more organizational layers and managerial positions. High labor cost due to high skill premium could be one of the constraints for firms to grow.

Comparisons of firm dynamics patterns and business climate with a set of comparator countries lead to a range of potential policy actions. Access to finance is a constraint, as indicated by the relatively low levels of capital intensity and high rate of returns to capital in Ivorian firms. Within Côte d'Ivoire's formal sector, there seems to be substantial heterogeneity in capital constraints across sectors and firm size. In contrast to conventional wisdom, smaller firms are not necessarily more capital constrained. At the institutional level, Côte d'Ivoire still has margin for improvements in its access to finance regulations, due to a lack of a credit registry or credit information sharing, and a movable collateral registry. Doing Business reforms in these areas could reduce the overall cost of lending and improve access to finance especially for smaller and less-established firms. In addition, for the small and medium firms in particular, combating corruption and lack of competition in the transport sector, will help improve their access to regional markets. Indeed, in the short run, growth in output demand is most likely to come from tradable sectors, but high transportation costs due to outdated infrastructure and inefficient logistics are limiting Ivorian firms' ability to reach regional and global markets.

Beyond institutional reforms at the economy level, Côte d'Ivoire can also consider more targeted direct support to compensate for some shortcomings in the investment climate. The country already has a long history of strong foreign presence and sophisticated entrepreneurs. It can capitalize on the recent returns of foreign investments to maximize the potential benefits from the capital inflows as well as learning and linkages spillovers. While the government is implementing a generous incentives program to encourage foreign direct investment (FDI), the existing incentives are not sufficiently well targeted to promote job creation or exports. The government could consider linking incentives to more labor-intensive sectors or to firm activities that would encourage upgrading of skills and management practices, exports, or local hiring and procurement. Targeted support can also be at the spatial level to reduce existing regional disparities in economic and job opportunities.

Finally, the overall average labor costs in Côte d'Ivoire are at the low end based on international comparisons, but its labor force no longer appears competitive after accounting for labor productivity. Low labor productivity can in part reflect some demand constraints. Low labor productivity in Ivorian firms can also be a result of skill supply constraints: low education attainment and convex returns to education might contribute to high skill premium and inability of firms to absorb labor costs to grow. In this context, Chapter 6 discusses in more details education, skills, and training for a more competitive workforce in Côte d'Ivoire.

Education, skills, and training for a competitive workforce in Côte d'Ivoire

To achieve its objective of becoming a leading emerging economy in Sub-Saharan Africa and being globally competitive, Côte d'Ivoire faces substantial challenges to rapidly make its workforce competitive. The years of crisis affected the quality of education services and the ability for children to acquire the skills they need to be productive in the labor force. As mentioned above and in Chapter 5, although wages are not necessarily very high in the formal sector compared to other countries, low worker productivity likely contributes to push up relative labor costs and may constrain expansion of formal firms. At the same time, and as mentioned in Chapters 3 and 4, education and skills also matter for productivity in agricultural and nonagricultural self-employment, in particular to ensure that individuals are able to seize opportunities such as improved technologies or business practices. In this context, Côte d'Ivoire faces an urgent challenge to ensure today's children acquire the skills that tomorrow's labor force will need, as well as in finding opportunities for the current workforce to effectively upgrade their skills.

Participation in primary education has been negatively affected by the crisis, and Côte d'Ivoire has not yet fully caught up with other countries in the region. Gross enrollment rates (GERs) deteriorated between 2002 and 2010. While there was some catch-up in enrollment after 2008 (and in particular after 2011) and the government declared schooling compulsory for children up to 16 years in 2015, enrollment still remains below the average enrollment rate for Sub-Saharan African developing countries. Enrollment in secondary and tertiary education also remains relatively low, although Côte d'Ivoire achieves the regional average enrollment in secondary education and exceeds the regional average in enrollment of post-secondary education. Overall there is substantial variation in the access to education across the country, with the poor, females, and those living in rural areas lagging in educational attainment.

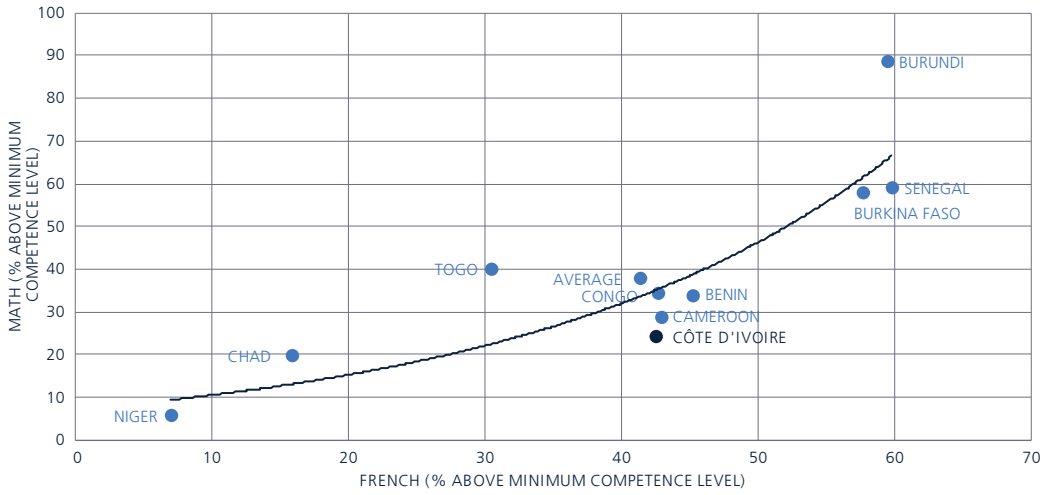
The 2010–2011 post-electoral crisis in Côte d'Ivoire marked a watershed moment for higher education in the country, with significant disruption to education provision in public universities. Since 2012, with the end of the crisis and with increased sociopolitical stability, enrollment in higher education returned to its pre-crisis levels, equivalent to 866 enrolled for every 100,000 people in the country. While the country's performance is good relative to other Francophone countries in Sub-Saharan Africa, there is still room for improvement, especially in comparison with other middle-income countries. In addition, disparities in terms of gender and wealth quintiles are persistent.

As Côte d'Ivoire aims to become an emerging economy over the next decade, the current stock of human capital hinders its global competitiveness. In light of historical enrollment patterns, educational attainment remains modest among the youth of working age in Côte d'Ivoire. Over 50 percent of youth between the ages of 15 and 34 lack a complete primary education, and only around 24 percent of working-age youth have completed more than primary education. Educational attainment lags behind other emerging economies both in Africa (such as Nigeria) and beyond (such as Indonesia).

Quality of primary education in Côte d'Ivoire also lags behind other Sub-Saharan African countries, limiting the skills that children can acquire in school. For instance, students at CM2 level (fifth grade of primary school) are behind relative to other Francophone countries in the region (Figure 10). Math scores are particularly low and less than 25 percent meet minimum competence requirements. French scores are more comparable to the average level obtained in other countries but still less than 45 percent are meeting minimum requirements. Since the education system constitutes the main source of skills acquisition for most individuals, continued improvements in access to education, as well as rapid gains in learning through improvements in the quality of education services will be critical for Côte d'Ivoire's competiveness.

Education influences both the occupations where individuals are working, as well as their productivity in these occupations. Higher-educated individuals are more likely to work in the wage sector, and employment in agriculture decreases with educational attainment. Access to wage employment is particularly limited for females relative to males, unless females have tertiary levels of education. In the wage sector, there are positive education earnings premia in wage work for both males and females, and signs of nonlinear, convex patterns. Strong heterogeneity in earnings profiles by gender are observed, with women receiving far lower wages at all levels of the education distribution in wage work. In nonagricultural self-employment, however, limited returns to additional years of education are observed, except for highly educated females who stay involved in this sector.

Figure 10
Percentage of children meeting minimum competence requirement in French and in Math in grade 5



Source: Results from 2014 PASEC (Programme d'analyse des systèmes éducatifs de la confemen) evaluations (PASEC, 2016).

Few individuals have opportunities to acquire skills after they have exited the education system. Only 12 percent of the working-age population participates in post-school training. Training provided by private providers is the most common, in particular traditional apprenticeships, which accounts for half of individuals undertaking post-school training. While traditional apprenticeships appear accessible and relevant to individuals with low levels of education, private and public technical and vocational training attract more educated groups.

While informal apprenticeships are the main source of post-school training—in particular for low-skilled youths—they are often overlooked in policy discussions on skills, which tend to focus on the education system and publicly provided training. Informal apprenticeships are provided by micro and small enterprises, mostly in the informal sector. Besides labor directly provided by apprentices, employees often hire from the pool of apprentices. Master-craftsmen also charge significant fees to apprentices, so that apprenticeships can constitute a source of revenues for firms. Firms consider behavioral skills as the most important characteristic sought in youth, as well as one of the most difficult characteristics to find. In fact, a large number of apprentices are observed dropping out before completing their training. While informal apprenticeship is characterized by a range of apparent inefficiencies, public interventions need to balance attempts to improve training quality with the risks of distorting a large source of private training provision for low-skilled youth in the informal sector.

Côte d'Ivoire faces the challenge to rapidly overhaul its education system to affect the flow of incoming youths joining the active population. Human capital projections for Côte d'Ivoire show that achieving universal primary education (Millennium Development Goal [MDG] 2) by 2020, will reduce the incidence of youth entering the labor force without having completed the primary cycle by 12 percentage points (from 23 percent to 11 percent) and eliminating the share of those entering the labor force with no education by 2025. If the MDGs were met by 2020, it also suggests that a greater share of the youth will have completed upper-secondary or some higher education. At the same time, improvements in the quality of basic education services are critical and urgent. As access to basic education and quality continue to improve, Côte d'Ivoire can also prepare to have a more performing higher education system.

Ensuring skill upgrading opportunities for youths and adults who already exited the education system is challenging given so many have low educational attainment and limited skills to start with. For this subgroup, the role for public intervention is not necessarily to directly provide training. Facilitation of access and quality improvements in existing private training opportunities can be considered as well. This can include leveraging informal apprenticeship arrangements, or better tailoring the currently inadequate professional training system to the underserved low-skilled population. Beyond technical skills, avenues to improve business skills and behavioral skills need to be further considered, both within and outside the education system. Together, these strategies can produce the foundational human capital necessary to ensure competitiveness and foster emergence in Côte d'Ivoire.

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1. THE CHALLENGE OF EMPLOYMENT QUALITY AND PRODUCTIVE INCLUSION IN CÔTE D'IVOIRE

Patrick Premand and Bienvenue N. Tien

1.1 THE EMPLOYMENT SITUATION IN CÔTE D'IVOIRE

Until recently, micro data on the employment situation in Côte d'Ivoire have remained relatively scarce. This limited the diagnosis of the employment challenge in the country, as well as analysis of past trends and assessment of future prospects. Recent efforts by the government to provide a more regular flow of employment statistics provide a clearer picture of the employment situation. Nationally representative surveys collected in October 2012, February 2014, and January-March 2015 provide recent and reliable micro data on employment in Côte d'Ivoire (see Box 1.1 for a summary of micro data sources). This chapter starts by describing the employment situation in Côte d'Ivoire and highlights its broad implications for employment policy. It does not seek to reproduce a large number of employment statistics already available from descriptive survey reports.[3] Rather, it focuses on the main patterns that are relevant for policy. By building on the framework of the regional report on Youth Employment in Sub-Saharan Africa (Filmer et al. 2014), the chapter analyzes patterns of employment across the main employment types: agriculture, nonagricultural self-employment, and wage employment.

BOX 1.1: SOURCES OF MICRO DATA ON EMPLOYMENT IN CÔTE D'IVOIRE

This report uses various nationally representative employment and household surveys from Côte d'Ivoire. They include three household living standards surveys from 2002, 2008, and 2015, as well as employment surveys from 2012 and 2014.

The 2002 and 2008 household surveys *Enquête Niveau de Vie des Ménages* (ENV 2002 and ENV 2008, hereafter) are traditional household living standards surveys. They present some limitations to get comprehensive employment data, but contain modules on labor and jobs to analyze employment and derive comparable statistics for key indicators over time.

The government has made strong efforts in collecting regular employment data in recent years. Nationally representative employment surveys were collected in October 2012 (EEMCI 2012) and February 2014 (ENSETE 2013). This report mostly relies on the later survey, in particular to provide information on the recent employment situation, as well as to build comparable time series for key employment indicators. The survey is a labor force survey, which includes detailed individual employment information, as well as household-level modules on nonagricultural household enterprises, agriculture, and livestock. Although the survey was originally planned for late 2013, and is therefore known as the 2013 employment survey (ENSETE 2013), data collection took place in February 2014. A new employment survey has been collected in 2016 and is being processed at the time this report is being finalized.

Finally, a national household living standards survey was collected in January-March 2015 (*Enquête Niveau de Vie des Ménages* (ENV 2015), with the objective to update poverty statistics and other social indicators. The survey includes modules on employment, nonagricultural household enterprises, and agriculture, as such allowing to construct key employment statistics, although with some comparability issues with the employment survey.

Source: AGEPE 2013; AGEPE and INS 2014; INS 2015.

[3] See AGEPE 2013; AGEPE and INS 2014.

Confusions at times arise in policy discussions and public debates on employment in developing countries, including in Côte d'Ivoire. Some of the formal definitions that are used to characterize a labor market where individuals look for wage jobs and employers supply these wage jobs are not well suited to contexts where self-employment in agricultural and nonagricultural activities predominate, and few individuals are not working and are instead looking for wage jobs. The overall jobs diagnostic is based on the official international employment definitions as they are adopted by Côte d'Ivoire.[4] Box 1.2 provides definitions of terms used throughout the report. In line with international norms, an individual is considered employed if she works at least one hour over the previous seven days. An individual is considered unemployed if she works less than one hour in the last 7 days, is actively looking for work, and is available to work in the next 15 days.

Instead of the share of individuals being unemployed, a more informative indicator of the employment situation in Côte d'Ivoire is the distribution of employment across agriculture, nonagricultural self-employment and wage employment, or earnings and productivity levels across these different types of jobs. Therefore, rather than focusing on the level of employment and unemployment, this chapter analyzes the composition of employment by distinguishing the three main types of employment: agricultural self-employment, nonagricultural self-employment, and wage employment. Importantly, underemployment in Côte d'Ivoire is not so much characterized by individuals working limited hours (underemployment based on hours worked). Rather, many individuals work in activities providing limited earnings (underemployment based on earnings).

In addition to reviewing the profile of employment in Côte d'Ivoire, this chapter also builds comparable indicators over time to analyze recent employment trends, covering the period of crisis and recent recovery. The chapter analyzes employment data from the 2002 and 2008 household surveys, in addition to the 2012 and 2013 employment surveys (collected in October 2012 and February 2014, respectively), as well as the 2015 national household survey. These five surveys are large-scale, nationally representative, high-quality, household-based surveys providing detailed information on individual employment. By analyzing trends between 2002 and 2015, the chapter describes demographic changes in the working-age population and labor force in Côte d'Ivoire, as well as analyzes changes in the composition of employment across the main sectors of employment.

BOX 1.2: DEFINITIONS OF KEY TERMS USED IN THIS REPORT

The terms used throughout the report are based on the official employment definitions for Côte d'Ivoire. Specifically, the report is based on the norms for employment statistics adopted during the 13th Conference of Labor Statisticians (CIST) held in 1982. The norms for employment statistics were adjusted following the 19th Conference of Labor Statisticians held in 2013, but comparable employment indicators cannot be built retrospectively for previous years for the new indicators. Box 1.3 highlights some of the difference between the old and the new norms for employment statistics.

In line with official definitions, the working-age population is classified into two groups: active and inactive. The active population is further divided into employed and unemployed. An individual is considered employed if she works at least one hour over the previous seven days. An individual is considered unemployed if she works less than one hour in the last seven days, is actively looking for work, and is available to work in the next 15 days. In this report, we further subdivide the employed population into three main categories of wage employment, agricultural self-employment, and nonagricultural self-employment. Definitions of the key terms used in this report are provided below.

[4] http://www.ilo.org/wcmsp5/groups/public/---dgreports/---stat/documents/publication/wcms_234124.pdf

Working-age population[a]	Individuals 14 years old or above
Labor force (Active population)	Individuals who work or are unemployed during the week prior to the survey
Labor force participation rate	Share of working-age population that is in the labor force
Employed	Individuals who perform any type of activities (paid employment or self-employment) for at least one hour a week prior to the survey, or who have a permanent job but were not working during the week prior to the survey
Employment rate or employment-to-working-age population ratio	Share of the working-age population that is employed
Unemployed	Individuals who do not work, are actively looking for a job, and are available to work in the next 15 days
Unemployment rate	Share of the labor force that is unemployed
Inactive population	Individuals not in the labor force. It includes all individuals who are not employed or unemployed during the week prior to the survey, and hence currently not active because they are in school, are retired, or for any other reason such as old age or disability.
Wage employment	Employed individuals who have declared being employed by an employer outside the household and are paid (either with or without a contract, in cash or in kind)
Agricultural self-employment	Employed individuals who work for their own account in the agricultural sector. It includes individuals engaged in farming activities either for own consumption or for sale.
Nonagricultural self-employment (or household enterprise)	Employed individuals who work for their own account in nonagricultural activities — either as self-employed who work alone with no employees or with other unpaid family members
Other types of employment	Employed individuals who cannot be included in any of the preceding categories. They include volunteers, interns, and apprentices, among others.
Nonagricultural household enterprise	A nonfarm individual enterprise or home production activity that is run by household members. (It needs not be physically located in the household dwelling unit.)
Formal workers	Workers who have declared being wage workers with a written or an oral contract, either in the public or private sector
Formal public wage employment	Employed individuals who have declared being wage workers in civil service, para-public enterprise, or in an international organization
Formal private wage employment	Employed individuals who have declared being wage workers and have either a written or oral contract with a private firm
Informal private wage employment	Employed individuals who have declared being wage workers and who do not have an oral or written contract

Source: World Bank (WDR 2013; SHIP Reference Manual, 2011); ILO (CIST 1982); authors' displays.
Note (a): This definition of working-age population reflects the definition adopted by Côte d'Ivoire, which differs from international definitions as it does not consider an upper bound.

BOX 1.3: OLD AND NEW OFFICIAL EMPLOYMENT DEFINITIONS

The official international definitions of employment statistics were adjusted in 2013. To ensure comparability, this report builds comparable employment statistics based on the definitions used for the previous 30 years. Specifically, the report is based on the norms for employment statistics adopted during the 13th Conference of Labor Statisticians, CIST, held in 1982, which provided the basis of the official ILO definitions until 2013. New norms for employment statistics were recommended following the 19th conference of labor statisticians held in 2013, but comparable employment indicators cannot be built retrospectively for previous years, and these new norms have not yet been widely or consistently applied. Overall, this report seeks to focus on the broad trends in the composition of employment in Côte d'Ivoire. In this context, the use of the old and the new norms does not change the main policy messages from the report.[a]

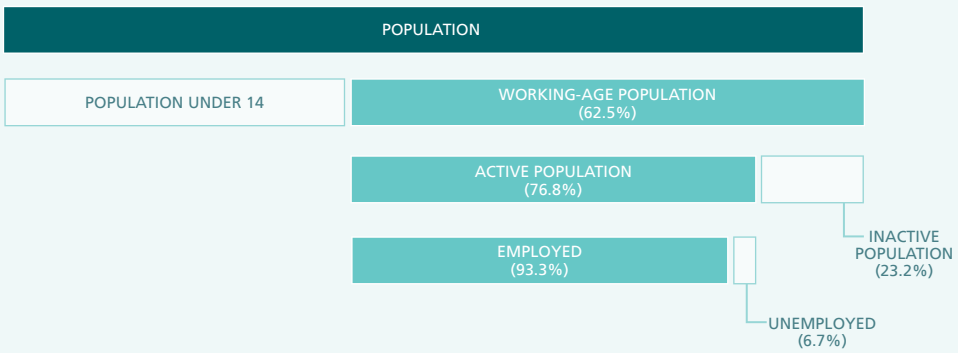
The 19th International Conference of Labor Statisticians held in 2013 recommended the adoption of new international norms for employment statistics. Figures B1.3.1 and B1.3.2 illustrate the structure of employment in Côte d'Ivoire in February 2014 according to the old and new norms. In both cases, the population is decomposed into the population under 14 and the working-age population. However, the decomposition of the working-age population is different based on the two sets of norms.

Based on the old norms, the working-age population is decomposed into the population in the *labor force* (or '*active population*') or the *inactive population* (out of the labor force). In turn, the labor force or active population is decomposed into the *employed* population and the *unemployed* population. An individual is considered employed if he/she spent at least one hour working in the 7 days before the survey. An individual is considered unemployed if he/she spent less than an hour working in the 7 days before the survey, is looking for work, and is available to work in the next 15 days.

Some changes to these basic concepts are introduced by the new norms for employment statistics. Under the new norms, the working-age population is decomposed into the population *in the labor force* and *out of the labor force*. As before, the population in the labor force is still decomposed into the *employed population* and the *unemployed population*. However, some nuances are introduced in the composition of the population out of the labor force. Specifically, the population out of the labor force now includes individuals who are looking for work but not available to work immediately ('*potential labor force*'), *individuals who are working but not employed*, and *other individuals outside the labor force*.

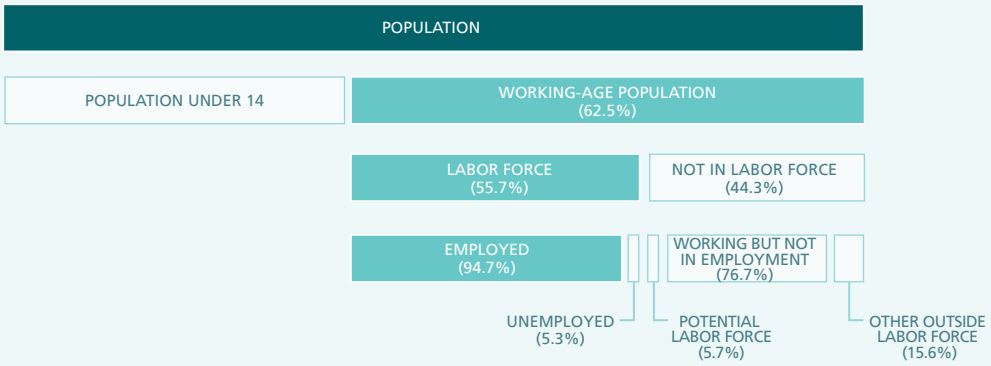
While this decomposition may seem similar to the one under the old norms, it has some strong implications with regard to the composition of the labor force. Under the new norms, individuals engaged in activities without any form of payment or 'for own final use' (for instance, subsistence farmers growing crops exclusively for own consumption) who were considered as employed, and therefore part of the labor force based on the old norm, are now considered to be out of the labor force based on the new norm. A new category of individuals 'working but not

Figure B1.3.1
Decomposition of the working-age population in Côte d'Ivoire in February 2014 based on the old norms for employment statistics



Source: ILO (CIST 1982); authors' display.

Figure B1.3.2
Decomposition of the working-age population in Côte d'Ivoire in February 2014 based on the new norms for employment statistics



Source: ILO (CIST 2013); authors' display.
Note (a): The new norms of employment statistics introduce distinctions between 'work' and 'employment' that create additional confusion in the policy discussions on employment.

employed' is created, which is part of the out-of-labor-force population. For these reasons, the size of the labor force is smaller under the new norms than it was under the old norm. Consequently, the unemployment rate also changes since it is a function of the size of the labor-force population (because both the numerator and denominator of the unemployment rate change, the rate can increase or decrease once the new norms are applied). As such, the old and new norms are not comparable.

Box 3.1 provides additional information on the challenges of applying the new norms to the agricultural sector.

1.1.1 Labor-force participation and unemployment

Côte d'Ivoire has a very young working-age population. In February 2014, the working-age population in Côte d'Ivoire was estimated at 62.5 percent of the overall population. Over 60 percent of the working-age population is composed of youths between 15 and 34 years (35.1 percent ages 15–24, and 25.2 percent ages 25–34). Individuals older than 35 years represent 39.7 percent of the working-age population, with less than 4 percent above 65 years.

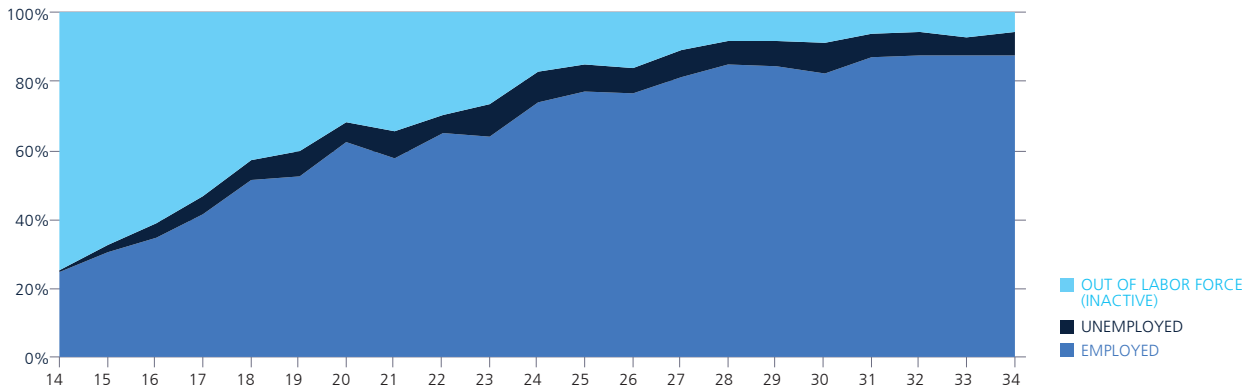
Côte d'Ivoire is characterized by high labor-force participation. In February 2014, 76.8 percent of the adult population was in the labor force. Labor-force participation rates reach 85 percent in rural areas, much higher than in urban areas (68 percent). Inactive individuals (those who are outside the labor force) mostly include youth who have not yet left school to enter the labor force, especially in urban areas, as well as the elderly (Table 1.1).

Table 1.1
Inactivity by age group, gender, and area of residence (%)

		Gender		Residence	
Age Group	All	Men	Women	Urban	Rural
14–24	44.3	43.9	44.8	57.8	28.9
25–34	9.9	5.0	15.0	14.1	6.3
35–64	9.4	3.9	15.3	12.1	7.5
65+	44.0	34.1	54.4	56.8	38.9
All	**23.2**	**19.3**	**27.2**	**32.1**	**15.4**

Source: ENSETE 2013; authors' calculation.

Figure 1.1
Youths transition into the labor force, by age



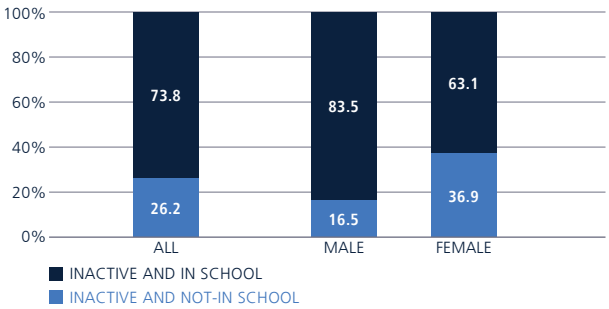
Source: ENSETE 2013; authors' display.

Labor-force participation remains relatively lower among women than men. Taken together, 27.2 percent of the adult women are inactive, much higher than the 19.3 percent of adult men. Gender differences are particularly large for age groups 25–34 and above, that is after youth have left school. Women face additional constraints than men to enter the labor force, including related to fertility choices and family duties.

The population out of the labor force is mainly composed of people who are currently in school. Young people who prepare to undertake a gradual school-to-work transition are part of the inactive population (Figure 1.1). Overall, 73.8 percent of the inactive are in school, respectively 83.5 percent among men and 63.1 among women (Figure 1.2). An overwhelming majority (86.1 percent) of the inactive cohort 14–24 are still in school, but only 36.2 percent of the next cohort (25–34) (Figure 1.3). The inactive also include some young people who are not in education, employment, or training, which are often called NEETs (youths not in employment, education or training)[5] The NEETs represent 13.9 percent of the inactive cohort 14–24, and 63.8 of the 25–34 age group.

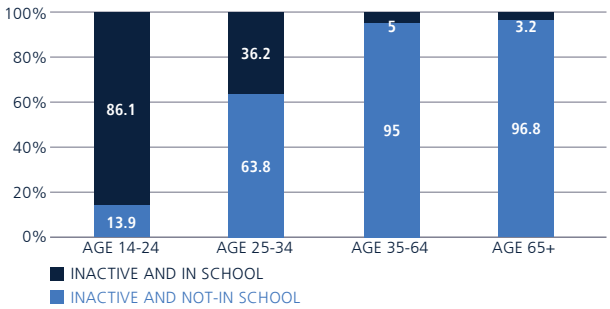
Côte d'Ivoire is characterized by relatively low unemployment. Unemployment affects a relatively small share of adults in the labor force (6.7 percent). Unemployment is formally defined as the share of individuals in the labor force who are not working, looking for work, and available to work. Consequently, unemployment is a concept that mostly relates to a formal labor market of wage jobs. As such, unemployment is very low in rural areas (3 percent), where formal labor markets are thin and most individuals are self-employed. Overall, the vast majority of adults in the labor force are engaged in some type of work, although many are employed in low-productivity occupations (as further described below).

Figure 1.2
Most of inactive people are still in school, particularly among men



Source: Authors' calculation; ENSETE 2013.

Figure 1.3
Inactivity decreases with age as youths complete the school-to-work transition



Source: Authors' calculation; ENSETE 2013.

[5] In addition to the inactive that are not in education and training, the NEETs also include the unemployed.

In addition to being more likely to be inactive than men, women also have a higher rate of unemployment. Women face higher rates of unemployment (9.4 percent) compared to men (4.5 percent). Taken together, 66 percent of the adult women are working, much lower than the 77 percent of men. In addition to facing constraints in entering the labor force, women also face hurdles in accessing employment once in the active population, including in terms of occupational choice as further described below.

The prevalence of unemployment is also higher among younger cohorts, particularly in urban areas. Although unemployment remains low by international standards, unemployment rates are relatively higher among youths, reaching 7.9 percent of the labor force for the 25–34 age group, and 13.6 percent for the same age group in urban areas (Table 1.2).

Table 1.2
Unemployment affects a relatively higher share of youth, women, and urban residents

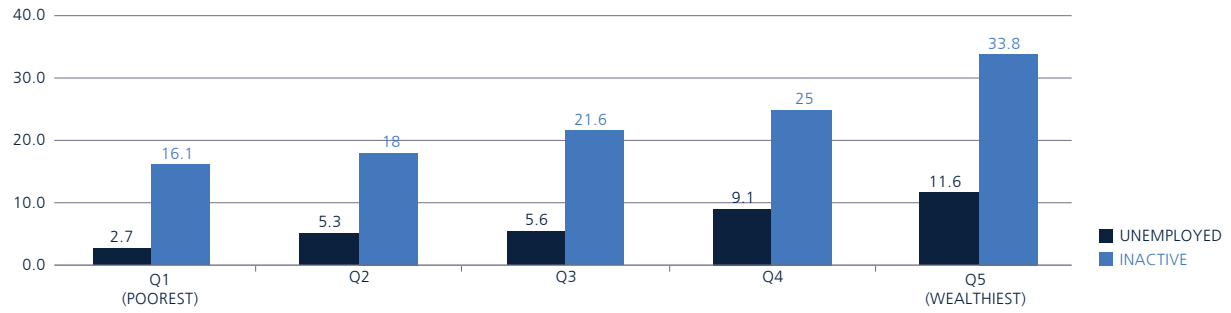
		Gender		Residence	
Age Group	All	Men	Women	Urban	Rural
14–24	9.8	6.8	13.0	15.9	5.6
25–34	7.9	4.8	11.6	13.6	3.5
35–64	4.4	3.1	5.9	8.4	1.6
65+	1.7	2.2	0.8	6.1	0.4
All	**6.7**	**4.5**	**9.4**	**11.9**	**3.1**

Source: ENSETE 2013; authors' calculation.

One pattern that is often overlooked is that inactivity and unemployment tend to be relatively higher among the wealthier groups. Inactivity and unemployment rates are the lowest at the bottom of the wealth distribution (Figure 1.4).[6] Less than 3 percent of those in the bottom wealth quintile are unemployed, and only 16 percent inactive. The poorest mostly live in rural areas, do not stay in school very long, and are engaged in some type of work. Most cannot afford to be unemployed, and the concept of 'looking for work' which underpins the definition of unemployment is not as relevant in contexts where self-employment is predominant, including in rural areas. By contrast, inactivity and unemployment rates increase steadily along the wealth distribution. Among the top quintile of the wealth distribution, less than two-thirds of the population is active, in part due to higher school participation rates among youths. At the same time, 11.6 percent of the labor force is unemployed.

Unemployment rates are higher among the most educated, although the majority of the unemployed still have low levels of education. Unemployment rates are relatively higher for individuals who have completed secondary or tertiary education (Figure 1.5). Youths who reached higher levels of educational

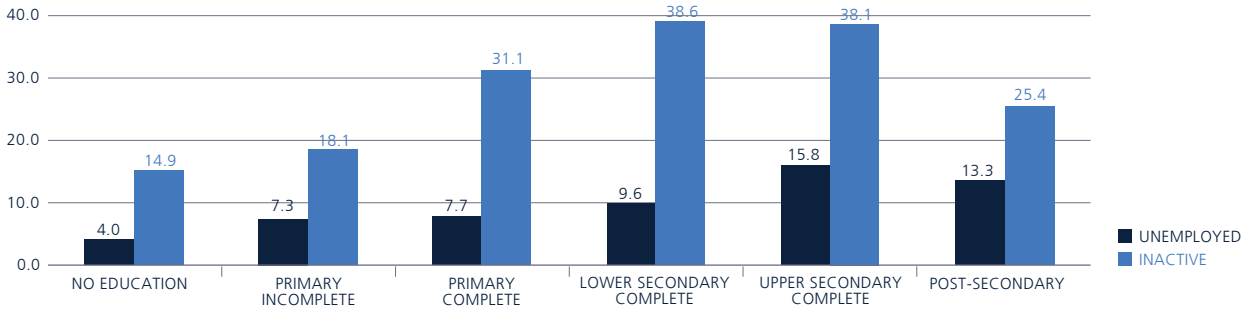
Figure 1.4
Inactivity and unemployment tend to rise along the wealth distribution



Source: ENSETE 2013; authors' display. Households are ranked based on a wealth index.

[6] Employment surveys do not include consumption or welfare measures. To analyze the distribution of employment, this chapter relies on a household asset index.

Figure 1.5
Inactivity and unemployment is relatively higher for those who have completed primary and secondary school



Source: ENSETE 2013; authors' display.

achievements tend to live in urban areas and come from families in the upper quintiles of the wealth distribution, and as such may be able to support longer job searches. Importantly, however, relatively few individuals reach these high levels of education, so that the majority of the unemployed still have less than secondary education.

While unemployment is relatively low, those who are unemployed remain so for a long time. The 2013 employment survey data shows that more than three out four unemployed are long-term unemployed; that is they have been without a job for more than a year. This pattern also holds across gender, age group, area of residence, and level of education (AGEPE and INS, 2014).

The labor force in Côte d'Ivoire is relatively mobile.[7] Approximately half of individuals in the labor force have migrated at some point in their life, including 42 percent of those living in urban areas and 58 percent of those living in rural areas. The migration is predominantly internal to Côte d'Ivoire, including permanent migrants and individuals who migrated away from their place of birth before going back. The share of migrants who were born abroad is more limited, though still sizable at 7 percent of the labor force. These numbers exclude temporary international migrants who come to Côte d'Ivoire to work before returning to their home country. Such seasonal international migration is particularly relevant in agriculture, as discussed in Chapter 3.

Table 1.3
Mobility of the labor force (%)

	Has never moved	Was a temporary migrant but came back	Internal migrant	International migrant (born abroad)	Total
All	**51.6**	**4.7**	**36.3**	**7.3**	**100**
Gender					
Male	51.3	5.0	35.2	8.5	100
Female	52.0	4.5	37.7	5.9	100
Area residence					
Urban	42.2	3.9	46.7	7.2	100
Rural	58.2	5.4	29.1	7.3	100

Source: ENSETE 2013; authors' calculations.

1.1.2 The composition of employment in Côte d'Ivoire

The overall composition of employment

The main employment challenge in Côte d'Ivoire stems from the high concentration of employment in agricultural and nonagricultural self-employment. Rather than the share of individuals being unemployed,

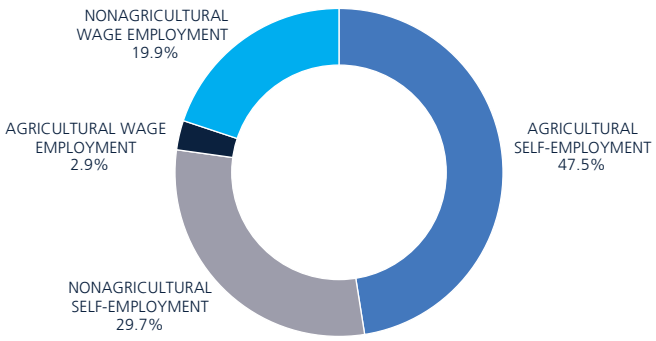
[7] The definition of (labor) mobility used here is based on the place of birth of the individual, not on citizenship.

a more informative indicator of the employment situation in Côte d'Ivoire is the distribution of employed individuals in different types of jobs. Building on the framework of the World Bank regional report on Youth Employment in Sub-Saharan Africa (Filmer et al. 2014), employment is divided in three main types of employment: agricultural employment, nonagricultural self-employment, and modern wage employment. Figure 1.6 summarizes the composition of employment in Côte d'Ivoire in February 2014 based on these categories. As noted above, unemployment is relatively low, and so is the number of wage jobs in the economy. Only 22.8 percent of employed individuals hold wage jobs, mostly in nonagricultural wage jobs (19.9 percent).[8] By contrast, 47.5 percent of the employed population is self-employed in agriculture, and 29.7 percent is self-employed in nonagricultural activities. Self-employed individuals do not operate in a formal 'labor market' for wage jobs. They mostly work for themselves and create their own jobs. Most adults work on family farms, or in nonagricultural individual enterprises selling goods or services in small-scale informal activities. While there is substantial variation within these employment sectors (including in agricultural and nonagricultural microenterprises), on average these occupations tends to have low productivity.

Côte d'Ivoire has an employment profile similar to lower-middle-income countries in Sub-Saharan Africa, but distinct from upper-middle-income countries in the region. Figure 1.7 contrasts the labor-force composition in Côte d'Ivoire with other countries in Sub-Saharan Africa (based on Filmer et al. 2014). With an unemployment rate below 10 percent and approximately 20 percent of the population in wage employment, the labor-force composition in Côte d'Ivoire contrasts sharply with upper-middle-income countries (such as Gabon or South Africa). Côte d'Ivoire has an employment profile much closer to lower-middle-income countries (such as Cameroon, Ghana or Senegal) or resource-rich countries (such as Nigeria), with over 45 percent of the labor force in agriculture and over 25 percent in nonagricultural self-employment. This being said, Côte d'Ivoire does tend to have slightly higher unemployment and wage employment, and slightly less agricultural employment than comparator lower-middle-income countries in Africa.

Women are particularly highly concentrated in self-employment, including nonagricultural self-employment, with limited access to wage jobs (Table 1.4). Among women, 12 percent of those employed hold wage jobs, including 24.4 percent in urban areas. In comparison, employed men are more than twice as likely to hold wage jobs, 26.4 percent nationally and 52.9 percent in urban areas. In contrast, nonagricultural self-employment is a key source of employment for women—41.9 percent of women are engaged in nonagricultural self-employment, twice the share of men. Taken together, close to 90 percent of women are self-employed in either agriculture or nonagricultural activities.

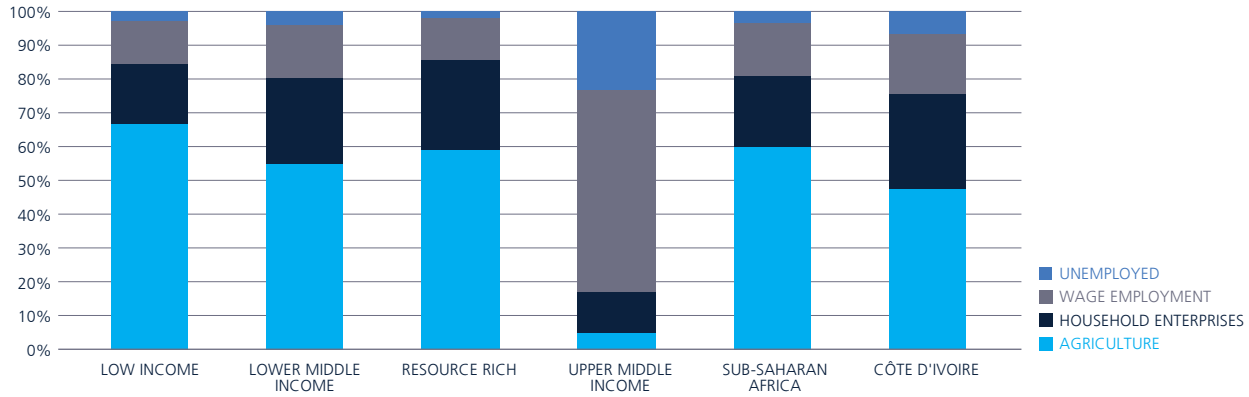
Figure 1.6
Composition of employment in Côte d'Ivoire



Source: ENSETE 2013; authors' display.

[8] We include apprentices and interns in the category of wage employment here, hence this statistic should be considered an upper bound.

Figure 1.7
Labor-force composition in Côte d'Ivoire and in other countries in Sub-Saharan Africa



Source: For Côte d'Ivoire, ENSETE 2013; for other countries, Filmer et al., 2014. Country classification based on per capita Gross National Income (GNI) in World Development Indicators.[9]

Table 1.4
Composition of employment by gender and residence in Côte d'Ivoire (%)

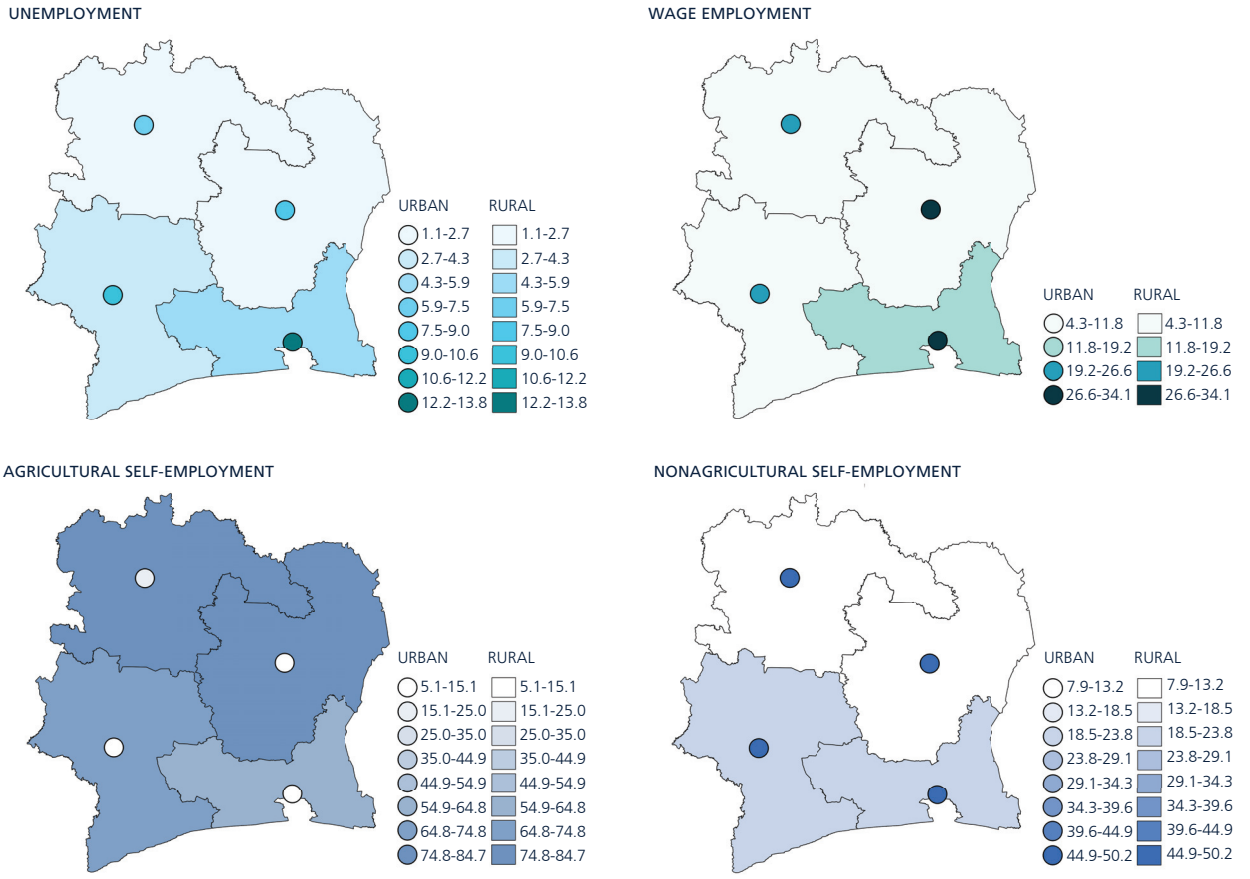
	Gender		Residence		Rural, by Gender		Urban, by Gender	
	Men	**Women**	**Urban**	**Rural**	**Men**	**Women**	**Men**	**Women**
Agricultural self-employment	49.3	45.4	8.1	72.6	74.8	69.8	8.6	7.4
Nonagricultural self-employment	19.8	41.9	50.8	16.3	9.1	25.2	36.8	67.7
Agricultural wage employment	4.5	0.8	1.1	4	6.3	1.1	1.7	0.5
Nonagricultural wage employment	26.4	11.9	40	7.1	9.7	3.9	52.9	24.4
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

Source: ENSETE 2013; authors' display.

Strong spatial employment patterns are observed (Table 1.5, Figure 1.8). Self-employment is the most common form of employment in both urban and rural areas. The prevalence of agricultural self-employment is particularly marked in rural areas, where wage jobs are very rare. In rural areas, 72.6 percent of the employed population work on family farms, and 16.3 percent are self-employed outside agriculture. Agricultural self-employment is relatively more prevalent in the north, with nonagricultural self-employment relatively more common in the south. Nonagricultural self-employment is also more prevalent than wage employment in urban areas, where wage jobs are not the norm either. Only 40 percent of employed individuals in urban areas hold wage jobs, while 51 percent are engaged in nonagricultural self-employment. Both wage employment and unemployment are strongly concentrated in urban areas and in the south. In fact, over 90 percent of formal jobs are concentrated in Abidjan (see Chapter 5).

[9] *Low-income countries* are Benin, Burkina Faso, Burundi, Central African Republic, Comoros, Eritrea, Ethiopia, Gambia, Guinea-Bissau, Kenya, Liberia, Madagascar, Malawi, Mali, Mozambique, Niger, Rwanda, Sierra Leone, Somalia, Tanzania, Togo, Uganda, and Zimbabwe; *Lower-middle-income countries* are Cameroon, Côte d'Ivoire, Ghana, Lesotho, Mauritania, São Tomé and Príncipe, Senegal, and Swaziland; *Resource-rich countries* are Angola, Chad, Democratic Republic of Congo, Republic of Congo, Guinea, Nigeria, Sudan, and Zambia; *Upper-middle-income countries* are Botswana, Cabo Verde, Equatorial Guinea, Gabon, Mauritius, Namibia, South Africa, and Seychelles.

Figure 1.8
Spatial distribution of employment and unemployment indicators

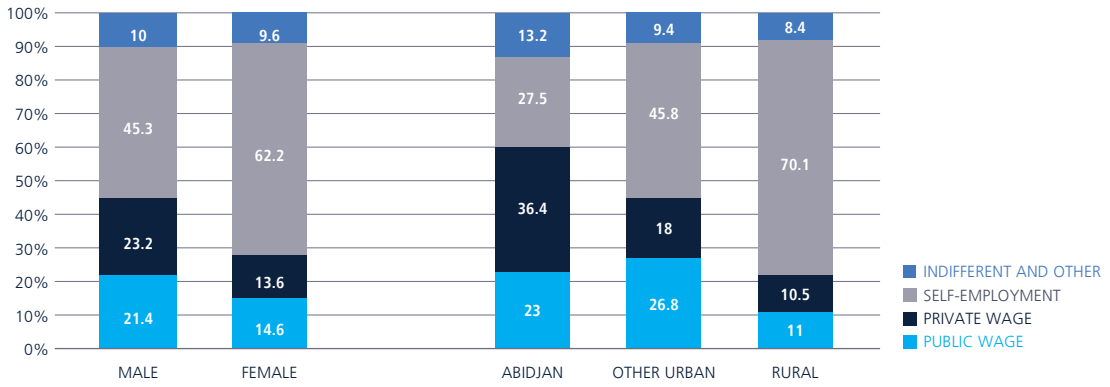


Source: Authors' calculations based on ENSETE 2013. Estimates for urban areas are for all urban areas in each region, and do not relate to the specific location depicted in the map.

Employment aspirations of the population reflect geographical differences and are rather mixed, as many declare preferences for self-employment. Females and individuals outside Abidjan are more likely to prefer self-employment, while individuals in Abidjan are mostly oriented toward wage jobs (Figure 1.9). Similar patterns are observed among the unemployed. While these patterns may seem surprising, these aspirations are aligned with the reality of the employment structure in Côte d'Ivoire, and in particular the high prevalence of self-employment activities. And of course, even the relatively low share of individuals aspiring to formal wage jobs remains higher than the available wage job opportunities.

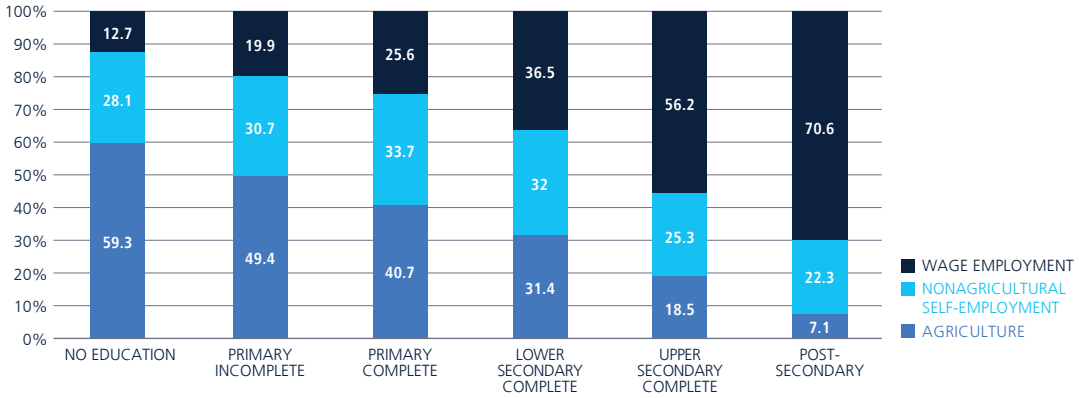
Education influences access to employment opportunities. Education contributes both to the occupations where individuals work, as well as the productivity in these occupations. Patterns of occupational selection are rather strong in Côte d'Ivoire. Most individuals with low education achievement are concentrated in agriculture, and access to nonagricultural wage jobs is concentrated among individuals with completed secondary education or more. The share of nonagricultural self-employment is relatively stable across levels of education, although it slightly decreases at secondary levels and above (Figure 1.10). Education is a key determinant of access to certain types of job. As such, stronger gender differences in educational attainment contribute to the strong gender differences in occupation. Box 1.4 further describes the likelihood of employment in the main types of employment given individual characteristics (gender, education) while controlling for other situational factors (social origin, region of residence). Results show that the descriptive patterns of occupational selection by educational level are strong. Chapter 6 further discusses the links between education, skills and training, and productive employment in Côte d'Ivoire.

Figure 1.9
Females and individuals outside Abidjan are more likely to prefer self-employment



Source: Authors' calculation; ENSETE 2013.
Note: Other includes: farm work, working for a trade union, or household.

Figure 1.10
Employment type by education attainment in Côte d'Ivoire



Source: Authors' calculation, from 2013 National Employment Survey (ENSETE 2013).

BOX 1.4: PATTERNS OF OCCUPATIONAL SELECTION

Table B1.4.1 illustrates descriptive patterns in occupational selection into the main types of employment based on a multinomial logit model. The reference category is agricultural self-employment. The table presents the relative risk ratio (RRR), which indicates the marginal change in the likelihood of an individual working in a given employment type (more likely if the coefficient is larger than 1, less likely if the coefficient is smaller than 1), compared to agricultural self-employment. Overall, gender, education, individual's father's occupational background, and area of residence significantly affect the likelihood of being in a given occupation compared to agricultural self-employment. The estimated effects represent associations, not causal effects.

Education has strong effects on the RRRs. Estimates indicate that education is associated with a strong increase in the odds of being wage employed or being self-employed relative to being in farming. For instance, individuals who have completed primary school have a probability between 51 to 76 percent higher than individuals with no education of working as wage workers compared to being in farming (Table B1.4.1). These odds are between 133 to 200 percent higher for individuals who have completed secondary school.

Gender patterns are also very strong. Men are much more likely than women to be wage employed compared to self-employed in agriculture. For example, men are twice more likely as women to be wage employed compared to being in farming. On the other hand, the chances for men being in nonagricultural self-employment instead of farming are about half those of women.

The region of residence also strongly determines whether an individual ends up in agricultural self-employment or not. Living outside of Abidjan, the major economic city, reduces the probability of ending up in some type of employment outside farming (wage employment, self-employment).

Finally, family background matters and patterns in the intergenerational transmission of occupations are quite strong. We proxy social origin of the individual with the employment type of his/her father when the individual was 15 years old. Individuals are more likely to end up in either wage or nonagricultural self-employment than in farming when their father was also in another type of employment outside farming.

Table B1.4.1
Multinomial logit estimates, odd ratio (with respect to self-employment in agriculture–reference category)

	Specification 1		Specification 2	
Variables	Wage	Self Nonag.	Wage	Self Nonag.
Male	2.015***	0.431***	2.046***	0.444***
	(0.101)	(0.0193)	(0.105)	(0.0205)
Age	0.969***	1.033***	1.007	1.056***
	(0.00972)	(0.00963)	(0.0112)	(0.0108)
Age2/100	0.991	0.943***	0.957***	0.925***
	(0.0128)	(0.0112)	(0.0135)	(0.0118)
Education (Ref.: No education)				
Primary incomplete	1.412***	1.249***	1.261***	1.145**
	(0.0963)	(0.0782)	(0.0887)	(0.0745)
Primary complete	1.763***	1.370***	1.515***	1.246***
	(0.120)	(0.0857)	(0.107)	(0.0814)
Lower-secondary complete	2.620***	1.523***	2.032***	1.314***
	(0.251)	(0.143)	(0.202)	(0.128)
Upper-secondary complete	6.919***	2.039***	4.835***	1.618***
	(1.143)	(0.345)	(0.809)	(0.277)
Post-secondary	17.26***	2.639***	11.46***	2.004***
	(3.474)	(0.555)	(2.220)	(0.408)
	Specification 1		Specification 2	
Variables	Wage	Self Nonag.	Wage	Self Nonag.
Marital status (Married)			0.501***	0.721***
			(0.0285)	(0.0381)
Father Occupation background (Ref.: Self-Agriculture)				
Wage			2.869***	2.386***
			(0.218)	(0.174)
Nonag. Self-Employment			3.088***	4.482***
			(0.219)	(0.289)
Other type and father did not work			1.766***	2.096***
			(0.142)	(0.150)
Region (Ref.: Abidjan)				
North-East rural	0.00376***	0.00335***	0.00546***	0.00495***
	(0.000642)	(0.000550)	(0.000950)	(0.000828)
North-East urban	0.118***	0.125***	0.134***	0.138***
	(0.0193)	(0.0201)	(0.0223)	(0.0226)
North-West rural	0.00385***	0.00477***	0.00598***	0.00733***
	(0.000640)	(0.000749)	(0.00101)	(0.00118)

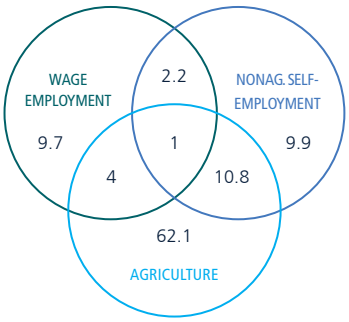
	Specification 1		Specification 2	
Variables	Wage	Self Nonag.	Wage	Self Nonag.
North-West urban	0.0629***	0.0830***	0.0784***	0.0992***
	[0.00985]	[0.0127]	[0.0125]	[0.0155]
South-West rural	0.00700***	0.00942***	0.0103***	0.0138***
	[0.00113]	[0.00144]	[0.00169]	[0.00217]
South-West urban	0.131***	0.149***	0.154***	0.170***
	[0.0215]	[0.0240]	[0.0256]	[0.0278]
South-East rural	0.0112***	0.0121***	0.0152***	0.0167***
	[0.00176]	[0.00184]	[0.00244]	[0.00260]
South-East urban	0.110***	0.127***	0.120***	0.139***
	[0.0181]	[0.0203]	[0.0202]	[0.0227]
Constant	31.00***	26.31***	11.29***	9.994***
	[7.268]	[5.868]	[2.803]	[2.343]
Observations	19,235	19,235	19,235	19,235
Log-likelihood	−14227.6	−14227.6	−13771.5	−13771.5
Pseudo-R^2	0.311	0.311	0.333	0.333
P-value	0.000	0.000	0.000	0.000

Note: *; **, and *** denotes respectively significant at 10, 5, and 1 percent level
Source: ENSETE 2013; authors' calculations.

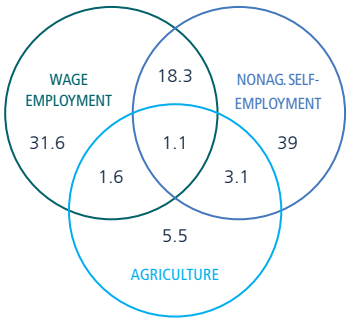
Although many individuals cumulate several activities, there is little diversification in employment types within households. Different members of the same household tend to be engaged in similar types of activities, so that households are fairly specialized in wage employment, nonagricultural self-employment, or agricultural self-employment. For instance, 40.2 percent of households are engaged in agricultural self-employment only, 21.1 percent in nonagricultural self-employment only, and 18.2 percent in wage employment only. Only about 20 percent of households have members in different employment types. The most common diversification pattern combines wage employment and nonagricultural self-employment (9.5 percent of households nationally), followed by nonagricultural self-employment and agricultural employment (8.9 percent of households nationally). Diversification patterns differ in urban and rural areas (Figure 1.11). Rural households do not combine many agricultural activities with nonagricultural activities, although, of course, there is substantial diversification within agriculture itself, such as combination of cash and food crops, agriculture and livestock (see discussion in Chapter 3). Urban households are slightly more diversified, mostly through nonagricultural self-employment.

Figure 1.11
Relatively few households diversify across employment types

RURAL AREAS (SHARE OF HOUSEHOLDS HAVING INDIVIDUALS IN VARIOUS COMBINATIONS OF EMPLOYMENT TYPES)



URBAN AREAS (SHARE OF HOUSEHOLDS HAVING INDIVIDUALS IN VARIOUS COMBINATIONS OF EMPLOYMENT TYPES)



Source: ENSETE 2013; authors' presentation.

Figure 1.12a
Cumulative distribution of hours worked per week

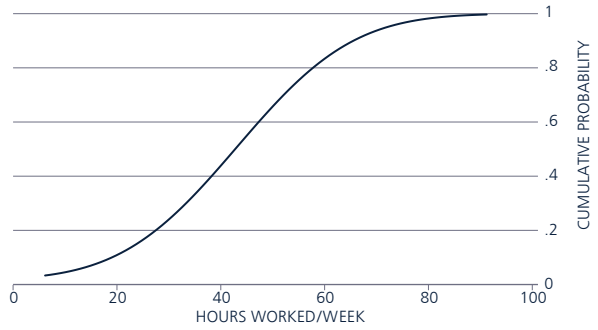


Figure 1.12b
Cumulative distribution of hours worked per week, by area of residence

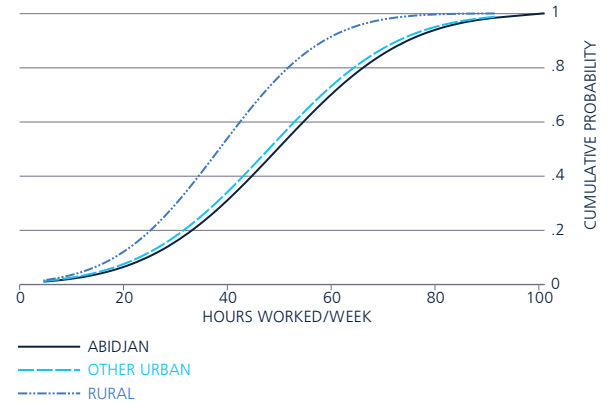


Figure 1.12c
Cumulative distribution of hours worked per week, by type of employment

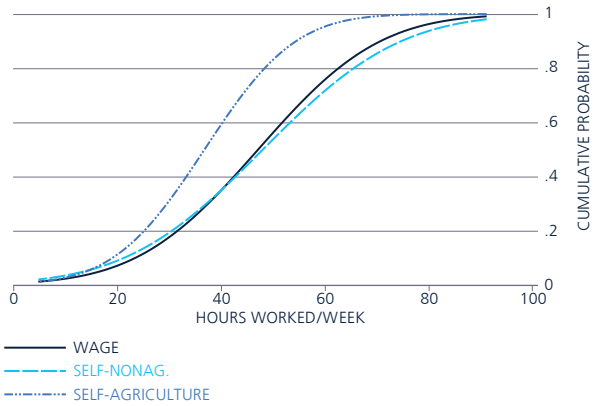
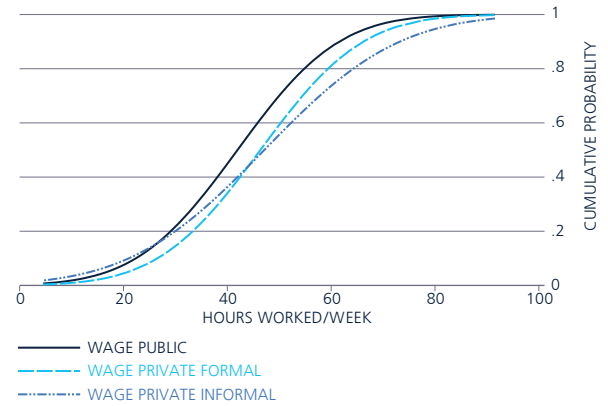


Figure 1.12d
Cumulative distribution of hours worked per week, by type of wage jobs



Source: Authors' calculation; ENSETE 2013.

Underemployment and earnings

Most people spend relatively long hours at work in Côte d'Ivoire, and more so in nonagricultural self-employment than in wage jobs. In February 2014, the average number of hours worked a week was around 41.8, with a median around 42 (Figure 1.12a). Only 20 percent of employed individuals worked less than 30 hours a week. By contrast, 40 percent of individuals report working more than 60 hours a week. Nonetheless, there are some differences in the number of hours worked by type of employment. Agricultural employment is known to exhibit substantial seasonality, with much lower work during the lean seasons. Individuals in agricultural self-employment worked the least hours compared to other occupations in February 2014, in part due to seasonal patterns (see discussion in Chapters 2 and 3). As discussed in Chapter 2, this seasonality in agricultural employment explains a substantial share in differences in average labor productivity across sectors. However, individuals in nonagricultural self-employment work slightly more hours (47.6) than those in wage employment (46.7) (Figure 1.12c). Among wage workers, it is individuals in the public sector who work less (41.4) than their counterparts in the private formal (45.8) or informal sectors (46.6) (Figure 1.12d).

The employment challenge in Côte d'Ivoire is sometimes described as widespread underemployment, but the issue relates to earnings more than time worked. What the data makes clear is that outside agriculture the main challenge is not so much underemployment in terms of hours worked. Indeed, if hours worked are used to characterize underemployment, outside of agriculture it is the wage employed in the public sector that would be most likely to be characterized as underemployed. As such, the employment challenge really is

the concentration of employment in low-productivity occupations where individuals spend many hours at work but earn relatively little.

Average earnings are low in Côte d'Ivoire, even with respect to comparator countries from Sub-Saharan Africa (World Bank, 2015). Based on macroeconomic data for 2013, earnings per worker in Côte d'Ivoire was estimated at around CFAF 97,266, or only US$197 per month, which is below the average for Sub-Saharan Africa (Figure 1.13b).[10] Reflecting poverty trends, average earnings have not increased much over the last decade due to rapid demographic changes as well as limited economic growth through 2011 (Figure 1.13a). Since then, economic growth led to an increase in average earnings that was already visible in 2012, and that is likely to have continued until recently, even though more recent data are not yet available.

Measures of productivity by employment type illustrate the concentration of employment in low-productivity occupations. Macroeconomic data on GDP composition can be combined with microeconomic data on employment to derive measures of earnings and productivity by employment type. Agricultural and nonagricultural self-employment occupy over three-fourths of the employed population. Yet on average these activities are the least productive, providing average earning per worker of CFAF 63,944 (or US$129) per month. While less than 20 percent of workers are employed in wage jobs and less than 10 percent in formal wage jobs, earnings in the formal sector are on average CFAF 306,477 (or US$523) per month (World Bank, 2015). These comparisons illustrate the strong income inequalities stemming from the employment profile in Côte d'Ivoire.

Figure 1.13a
Evolution of GDP per worker over time

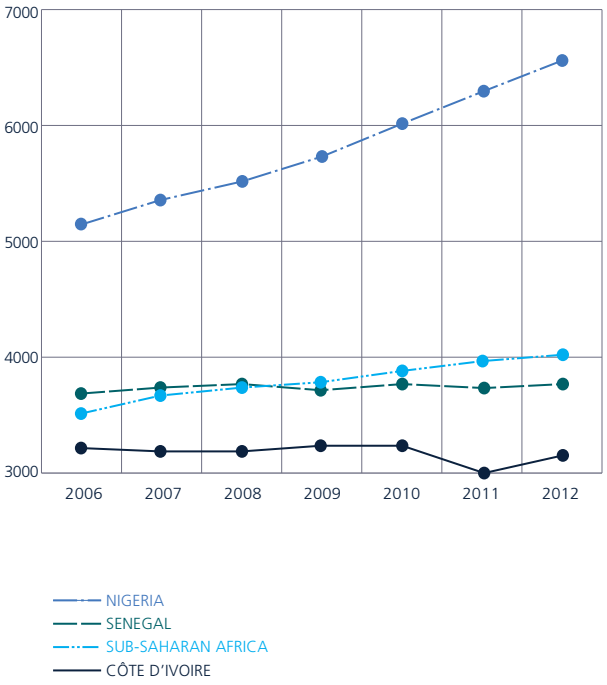
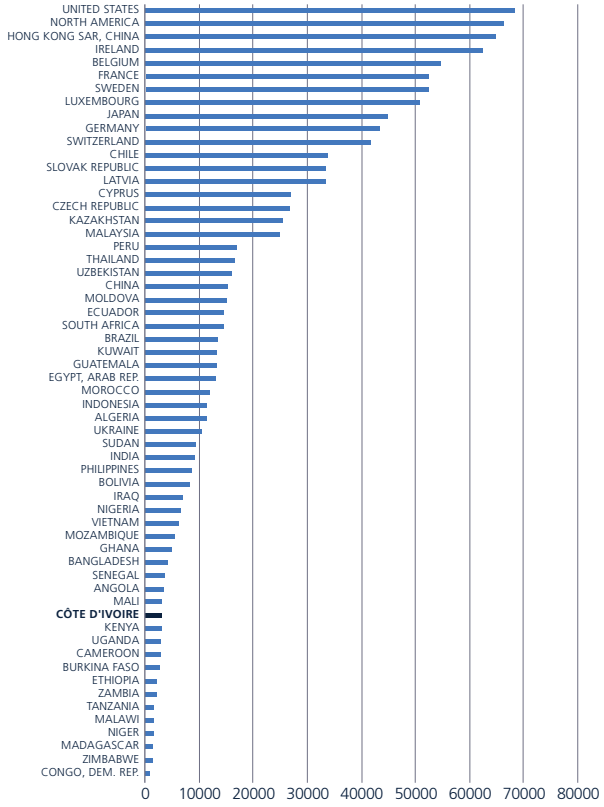


Figure 1.13b
GDP per worker in Côte d'Ivoire compared to other countries



Source: World Development Indicators and World Bank (2015).
Note: Real GDP per worker in US dollars (1990 PPP) value.

[10] The presentation of macroeconomic data on earnings is based on World Bank (2015). Unless noted otherwise, earnings per worker are computed in real GDP for 2013 (PPP for 2009) divided by the employed population. The indicator is a measure of worker productivity. It is however not necessarily equal to wages: in theory, wages would be equal to marginal productivity, not average productivity.

Large welfare differences are also found across individuals and employment types in micro data. Table 1.5 presents the share of individuals in various employment types by poverty status or welfare quintiles (based on per capita consumption). The share of individuals in agricultural self-employment decreases strongly along the welfare distribution, with 63.1 percent of the poor occupied in agriculture, and only 35.8 percent of individuals in the top welfare quintile. By contrast, only 11.1 percent of the poor have wage jobs (which are mostly informal), compared to 29.6 percent of individuals in the top quintile. The share of individuals in nonagricultural self-employment increases slightly along the welfare distribution. Overall, these patterns point to large variations in earnings within all types of employment.

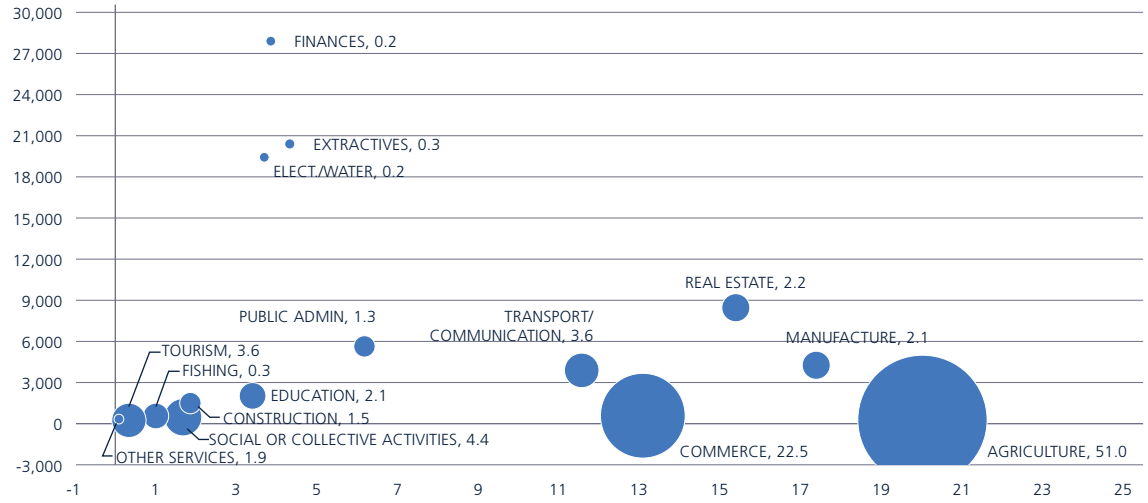
Table 1.5
Employment types by welfare status

	Agricultural self-employment	Nonagricultural self-employment	Agricultural wage employment	Nonagricultural wage employment	Total
Poverty status					
Poor	63.1	25.0	0.8	11.1	100
Non-poor	42.0	33.8	1.2	23.0	100
Consumption per capita quintiles					
1 (Poorest)	69.0	22.0	0.8	8.2	100
2	60.1	26.7	1.0	12.2	100
3	52.7	31.2	0.8	15.3	100
4	44.1	35.3	1.0	19.7	100
5 (Richest)	35.8	33.2	1.4	29.6	100
All	**50.2**	**30.4**	**1.0**	**18.4**	**100**

Source: ENV2015; authors' calculations.

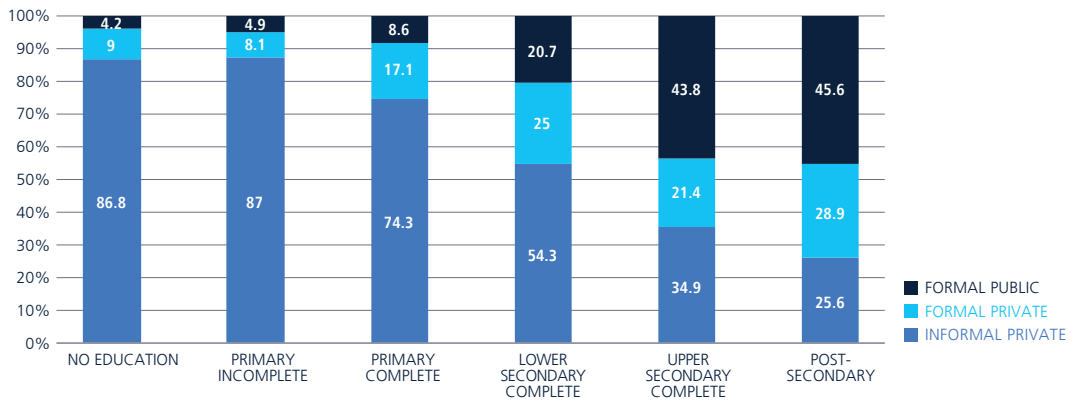
Strong variations are also observed in average worker productivity by sector (Figure 1.14, World Bank, 2015). Agriculture and commerce occupy three-fourths of the population, yet these activities are also the least productive. Average earnings are estimated at CFAF 39,612 per month in agriculture, and CFAF 52,125 per month in commerce. Sectors with the highest earnings are also those with the smallest employment shares. For instance, the finance or extractive industry sectors have average earnings of 2.3, respectively CFAF 1.6 million per month. Yet, privileged workers in these sectors amount to less than 0.5 percent of the employed population. Growth

Figure 1.14
Employment and productivity in 2013



Source: AGEPE and INS (2014), National Accounts, and World Bank (2015).
Note: The size of the bubble indicates the share of employment.

Figure 1.15
Composition of wage employment, by education level



Source: Authors' calculation, from ENSETE 2013.

in these sectors has limited employment potential. Finally, there are a range of intermediary sectors, such as construction, transport or communication, where average monthly earnings are higher than CFAF 100,000 per month. These sectors cover approximately 6 percent of the employed population, and their employment shares have been increasing since the 2010–2011 post-electoral crisis.

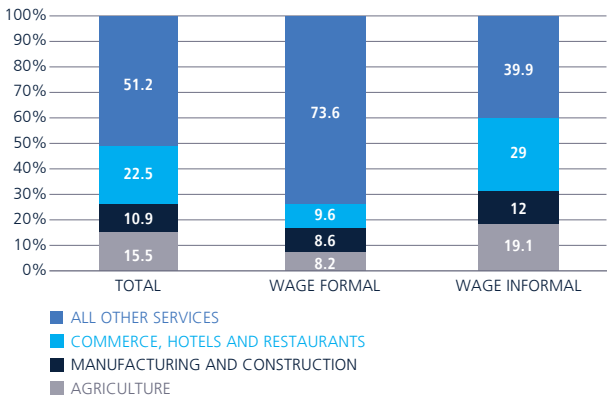
Characteristics of the most common employment types

Only a minority of individuals in Côte d'Ivoire have wage jobs, and among them formal employment in the private sector is also the exception. Of the employed population, 22.8 percent hold wage jobs, which includes 3.9 percent of wage workers in the public sector, 3.7 percent of wage workers in the formal private sector, and 15.1 percent of wage workers in the informal private sector (including apprentices). Therefore, over 65 percent of wage jobs are informal, that is not based on any type of written or oral contract and not subject to labor regulations. Even excluding the public sector, the majority of private wage jobs are informal in the economy. Informality in wage employment is particularly common for individuals with lower educational achievement. Over 80 percent of individuals with less than secondary education who have wage jobs do not have a written or oral contract (Figure 1.15). They often work in daily casual wage jobs. Formal jobs become the norm only for the wage employed who have completed secondary education. Strikingly, for the more educated, public wage jobs are more prevalent that wage employment in the formal sector.

Most wage employment takes place in small firms and in the services sector. In February 2014, nearly 72 percent of all wage employment was in the service sectors, with only 12 percent in industry and manufacturing. In the formal wage sector, the share of services is even higher (82.9 percent, Figure 1.16). In line with the prevalence of informal wage employment, small firms account for most wage employment. In fact, 50 percent of wage employment takes place in firms with five workers or fewer (Figure 1.17).

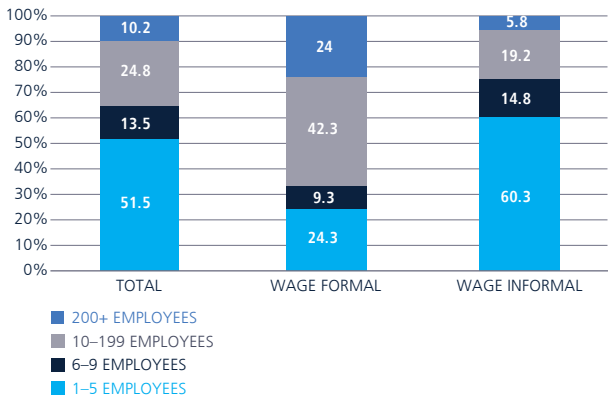
Chapter 5 provides a detailed review of past trends and assesses the prospects for formal job creation in Côte d'Ivoire using a unique firm-level dataset comprising all registered enterprises in Côte d'Ivoire from 2003 to 2012. The chapter provides an overview of the formal sector, describes job creation and firm dynamics, examines the determinants of firm survival and exit, and analyzes wages, job quality, and labor costs.

Figure 1.16
Most wage employment is in the service sector



Source: Authors' calculation, from 2013 National Employment Survey (ENSETE 2013).

Figure 1.17
Most wage employment takes place in small firms



Source: Authors' calculation, from 2013 National Employment Survey (ENSETE 2013).

BOX 1.5: DETERMINANTS OF EARNINGS IN WAGE EMPLOYMENT

Table B1.5.1 presents the results of estimated earnings regressions for individuals in wage employment. Overall, earnings increase with age for all wage workers, though at a decreasing rate. Furthermore, one more year of education increases earnings between 3 and 6 percent. Men earn substantially more than women, particularly in nonagricultural wage employment.

Table B1.5.1
Earnings equation estimates, by type of wage employment

		Wage Workers	
	All	Agriculture	Nonagriculture
Age	0.136***	0.103***	0.140***
	[0.00991]	[0.0185]	[0.0115]
Age-squared	−0.136***	−0.0975***	−0.140***
	[0.0131]	[0.0216]	[0.0153]
Gender (Male)	0.310***	0.165	0.316***
	[0.0454]	[0.194]	[0.0471]
Years of schooling	0.0638***	0.0302**	0.0649***
	[0.00319]	[0.0118]	[0.00334]
Lambda's	0.364***	0.0666	0.364***
	[0.107]	[0.218]	[0.121]
Constant	6.942***	8.652***	6.847***
	[0.294]	[0.761]	[0.345]
Strata dummies (Ref.: Abidjan)	Yes	Yes	Yes
Observations	2,009	194	1,815
R^2	0.404	0.323	0.413

Note: Standard errors in parentheses. Lambda is obtained from the occupational selection regression in Box 1.4.
*** p < 0.01, ** p < 0.05, * p < 0.1.

We perform Oaxaca-Blinder decomposition to investigate whether wage differentials between men and women are explained by differences in observed characteristics between the two groups. Differences in individual characteristics between men and women appear to explain most of the differential; with age and education accounting for an important part of the difference (Table B1.5.2).

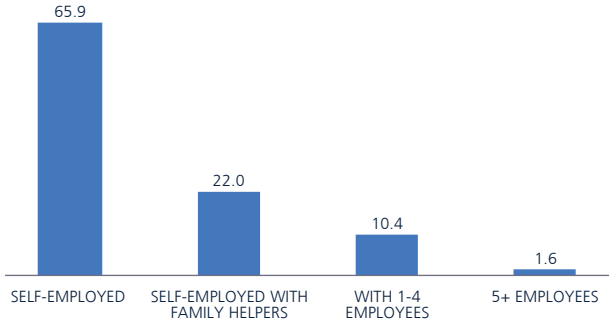
Table B1.5.2
Oaxaca-Blinder decomposition: Detailed outcomes for gender

	Female vs. Male	
	Coefficient	p-value
Differential		
Prediction_1 (Male)	11.18	[0.0000]
Prediction_2 (Female)	10.39	[0.0000]
Difference	0.788	[0.0002]
Endowments		
Age	0.233	[0.0000]
Education	0.0657	[0.0033]
Total	0.298	[0.0000]
Coefficients		
Age	−0.283	[0.0412]
Education	0.00718	[0.8783]
Constant	0.817	[0.0001]
Total	0.541	[0.0091]
Interaction		
Age	−0.0524	[0.0450]
Education	0.00105	[0.8784]
Total	−0.0514	[0.0452]
Observations	2,009	

Source: ENSETE 2013; authors' calculations.

Nonagricultural self-employment in household enterprises accounts for 29.7 percent of employment in Côte d'Ivoire. The large share of employment in nonagricultural household enterprises is often overlooked. Yet individual microenterprises are a key source of employment, particularly for the poor and women. Most of nonagricultural self-employment takes place in microenterprises owned and operated by the household (Figure 1.18). Self-employed individuals working for themselves in small-scale commerce or service activities account for 65.9 percent of employment in the sector. Of the individual enterprises, 22 percent include the owner as well as unpaid family helpers from the same household. Only a small share of individual enterprises (approximately 10.4 percent) relies on workers from outside the households. As such, this sector includes household enterprises of very different nature than formal small and medium enterprises (SMEs) that mostly rely on wage workers.The median individual in nonagricultural self-employment tends to be young female with no formal education. The majority of household enterprises are in small-scale service activities, and almost all are

Figure 1.18
Nonagricultural household enterprises have a rather different profile than formal SMEs



Source: ENSETE 2013; authors' display.

informal. At the same time, they are not short-lived—75 percent of household enterprises operate year-round, and over 80 percent have been in operation for five years or more.

Chapter 4 provides a detailed description of the nonagricultural self-employment (household enterprise) sector. It discusses who operates in the sector and why, and what are the most common types of activities. In light of very large heterogeneity in productivity in the sector, the chapter then addresses constraints for individuals to create or operate nonagricultural self-employment activities in Côte d'Ivoire, as well as determinants of household enterprises' productivity.

In terms of agricultural self-employment, farming is dominated by smallholders who are relatively well endowed with land and fairly market-oriented. Four in five smallholders sell at least some of their output, with one in five reporting to sell their complete harvest. In other words, most farmers engage with the market and have moved well beyond farming for subsistence only (Table 1.6). Close to 30 percent of households reported selling 100 percent of their agricultural production. This includes the sale of food and cash crops. As such, the data suggest that the vast majority of selling households are growing and marketing both cash and food crops, while very few of them specialize in food crops or subsistence agriculture. Around half of selling households are producing (and selling) both cash and food crops. Those focusing only on the production and sale of cash crops represent 32.7 percent. Only 17.2 percent of selling households are growing and marketing only food crops. Unlike selling households, non-selling households are more specialized in food crops. Close to 47 percent of them grew food crops only.

Table 1.6
Share of selling and non-selling households cultivating each type of crop

	Sellers (%)	Non-Sellers (%)	All (%)
Cash crop	82.8	53.1	76.4
Food crop	67.3	87.9	67.8
Cash crops and food crops	50.1	41.0	44.2
Cash crop only	32.7	12.1	32.2
Food crop only	17.2	46.9	23.6
All	**80.6**	**19.4**	

Source: Authors' calculation from ENSETE 2013.

Agricultural households rely heavily on labor from other households, in addition to family labor. About 45.9 percent of households hire agricultural labor and 42.4 percent benefit from the assistance of relatives to work on their farm. Only 28.9 percent of the households rely only on family labor. The average number of hired labor per household is close to five persons. A great number of relatives (unpaid labor) were also engaged on the household's farm. The average number of relatives that worked on the household's farm is around four persons. Overall, these data from agricultural households suggest a relative high use of labor from other households (including from migration), although the employment data mentioned above only suggests a small share of overall employment in agricultural wage employment.

Chapter 3 further describes agricultural self-employment and entry points to maximize agriculture's contribution to the jobs agenda in Côte d'Ivoire. The chapter begins with a brief profile of smallholder agriculture. It then outlines the opportunities and challenges it presents for advancing the jobs agenda, both by increasing productivity, earnings and jobs directly within agriculture, as well as further down the chain. Special attention goes to the labor aspects of agriculture, and areas which hold promise, but which have received somewhat less attention so far, such as rice. Some of the other cash crop sectors also hold promise to generate better employment opportunities if challenges in the value chains can be addressed.

1.2 EMPLOYMENT TRENDS IN CÔTE D'IVOIRE

The first part of this chapter provided a picture of the current employment situation in Côte d'Ivoire in February 2014. The second part of this chapter assesses trends in the composition of employment over time. Specifically, it builds comparable indicators between 2002 and 2015, covering the crisis period as well as more recent recovery.[11] By analyzing trends between 2002 and 2015, the chapter highlights the underlying demographic evolution in the working-age population in Côte d'Ivoire, as well as changes in the composition of employment across the main sectors of employment.

1.2.1 Working-age population, labor force, and unemployment over time

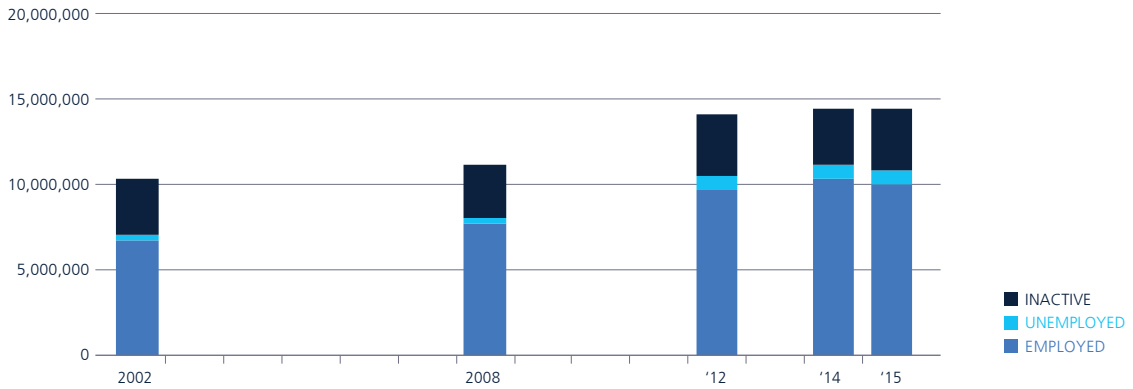
Côte d'Ivoire is undergoing fast demographic changes. The absolute size of the employed and unemployed population is largely driven by demographic forces. Changes in the composition of the labor force are more nuanced, and the participation and employment rates are relatively more stable over time. As such, demographic forces and the increase in the size of the population are the main drivers of the absolute numbers of people unemployed or employed in the various employment types. In terms of magnitude, changes in the composition of the labor force and employment are second-order to the broader demographic changes.

Demographics are driving large changes in the size of the working-age population and labor force (Figure 1.19). In 2002, there were 10.3 million individuals in the working-age population (60.8 percent of the overall population), with 7.1 million individuals in the labor force. As a result of demographic growth, the working-age and active populations have strongly increased over the last decade. By February 2014, the working-age population was estimated to have increased to 14.5 million individuals (62.5 percent of the total population), with 11.1 million individuals in the labor force.

Reflecting the increase in the size of the labor force, the size of the employed population has also increased strongly over time. The size of the employed population increased from 6.7 million in 2002 to 10.4 million in February 2014. As will be further discussed below, the large increase in the employed population is mainly driven by the combination of the demographic growth in the working-age population and the fact that the vast majority of the population is self-employed. In this context, the vast majority of 'employment creation' occurs though individuals entering the working-age population and creating self-employed occupations for themselves.

Given the demographic trends, the number of unemployed individuals has also strongly increased over time. The number of unemployed individuals grew from an estimated 350,000 individuals in 2002, to

Figure 1.19
The size of the working-age, employed, and unemployed population over time



Source: Authors' calculation, based on data for 2002, 2008, and 2015 are from national household surveys and 2012 and 2014 are from ENSETE 2012 and ENSETE 2013. Taken together, the employed and unemployed population constitute the active population.

[11] The chapter analyzes employment data from the 2002, 2008, and 2015 nationally representative household surveys, in addition to the 2012 and 2014 nationally representative employment surveys. Table A.1 in Annex A provides key summary statistics with their confidence interval, to gauge the significance of changes over time.

an estimated 750,000 individuals in 2014. In particular, the number of unemployed individuals grew strongly between 2008 and 2012 due to the combined effect of demographic growth and the 2010–2011 post-electoral crisis, to peak at 925,000 individuals in 2012.

Beyond the absolute numbers, the labor-force participation rate and employment-to-working-age-population ratio have slowly increased over time. Labor-force participation increased by 8.7 percentage points between 2002 and 2014; from 68.1 percent of the working-age population to 76.8 percent (Figure 1.20). The employment-to-working-age-population ratio measures the share of individuals employed over the total working-age population. This ratio was 64.6 in 2002, and increased to 71.7 percent in 2014. The employment-population ratio plateaued between 2008 and 2012, before increasing again in the post-crisis recovery period. The increase of the employment-to-working-age-population ratio is mostly explained by the increase in labor-force participation over the same period.

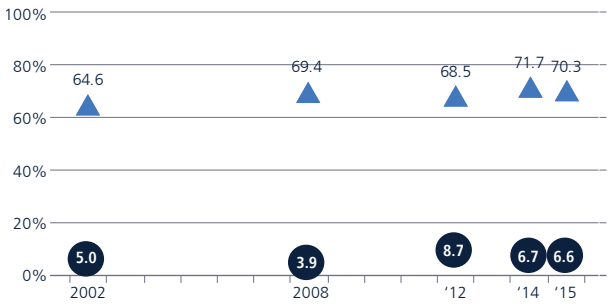
The unemployment rate increased in the aftermath of the 2011 crisis before going down in 2014. Despite a growing number of unemployed individuals, the unemployment rate is low overall. The unemployment rate was estimated at 5 percent in 2002, decreasing to 3.8 percent in 2008, before rising sharply to 8.7 percent in 2012 in the aftermath of the post-electoral crisis. The unemployment rate dropped slightly to 6.7 percent in February 2014 and remained stable through 2015 (Figure 1.21).

While patterns of labor-force participation by gender have been stable over time, women have become more likely to be unemployed than men. The labor-force participation rate for women is lower than their male counterparts, but the difference has remained similar over time, from 2002 to 2015 (Figure 1.22). In contrast, the unemployment rate for women started out in the early 2000s at around 4.4 percent, but rose to reach 9.4 percent in February 2014. On the contrary, the unemployment rate for men dropped to 4.5 percent in February 2014 from 5.6 percent in 2002 (Figure 1.23).

Focusing on more recent trends, since the 2011 crisis, strong growth has led to higher employment and lower unemployment. As discussed above, the changes in absolute numbers of the active and employed population are largely driven by fast demographic changes in Côte d'Ivoire, including the 350,000 to 400,000 young people who are estimated to join the working-age population each year.[12] Between November 2012 and February 2014, an estimated 700,000 additional individuals became employed. This reflects an increase in the working-age population, a faster increase in the active population (from 75 percent to 76.8 percent of the working-age population), an increase in employment (from 91.3 percent to 93.3 percent of the active population), as well as a decrease in unemployment (from 8.7 percent to 6.7 percent of the active population) (Table 1.7).Preliminary data available for 2016 suggest a continuing increase in labor-force participation and decrease in unemployment.

Figure 1.20
Labor-force participation over time

Figure 1.21
Evolution in employment-to-working-age-population ratio and unemployment rate



Source: Authors' calculation.
Note: Data for 2002 and 2008, and 2014 are from national household surveys and 2013 are from ENSETE 2013.

[12] AGEPE, 2014, Enquête Nationale sur la Situation de l'Emploi et du Travail des Enfants (ENSETE 2013), sur la base des projections de population fondées sur le RGPH 1998.

Figure 1.22
Labor-force participation by gender

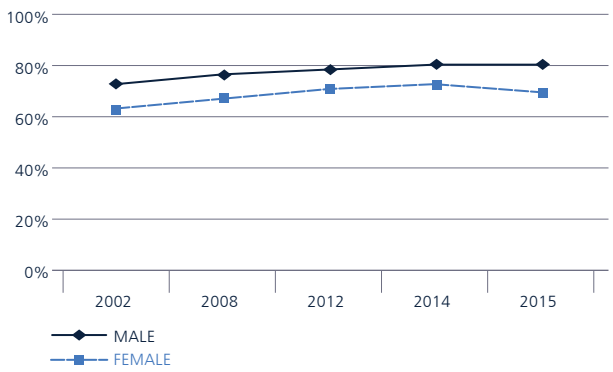
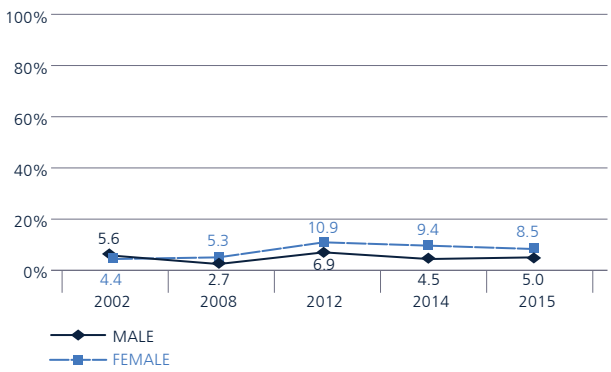


Figure 1.23
Unemployment by gender over time



Source: Authors' calculation.
Note: Data for 2002, 2008, and 2014 are from national household surveys and 2013 are from ENSETE 2013.

Table 1.7
Labor-force participation and employment in November 2012 and February 2014

	November 2012	February 2014
Active Population (Labor Force)	75.0%	76.8%
% of Employment in the Labor Force	91.3%	93.3%
% of Unemployment	8.7%	6.7%

Source: ENSETE 2012 and ENSETE 2013.

1.2.2 The composition of employment over time

We now describe the evolution of the composition of employment in Côte d'Ivoire, by showing how the shares of employed individuals in wage employment, nonagricultural self-employment, and agricultural self-employment have been evolving.[13]

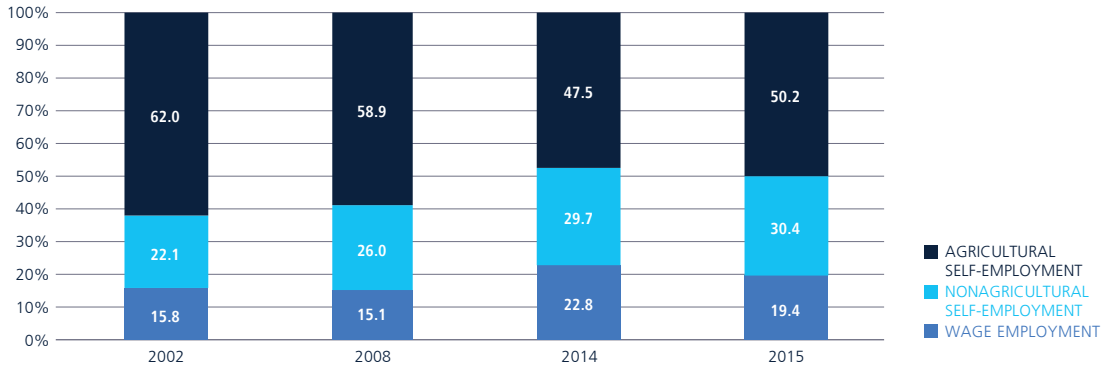
Formal wage employment has remained relatively low over the last decade, with self-employment consistently accounting for over 80 percent of employment. Overall, the share of individuals holding wage jobs has increased a little between 2002 and 2014, from 15.8 percent to 22.8 percent (Figure 1.24). As such, informal employment in agricultural and nonagricultural self-employment has remained the main source of employment opportunities over the last decade, with little change overall in their predominant role in the structure of employment in Côte d'Ivoire.

A diminishing share of employment in agriculture has mainly been compensated by increases in nonagricultural self-employment. Most people have been working and still work in agricultural and nonagricultural self-employment (Figure 1.24). While the share of agricultural self-employment has been decreasing over time, it is mainly the share of employment in nonagricultural self-employment that has increased. In particular, the share of agricultural self-employment diminished strongly between 2008 and 2014, and the share of nonagricultural self-employment increased during that period.

These trends in the composition of employment are broadly comparable to those observed across Sub-Saharan Africa. To provide some perspectives, Figure 1.25 compares the percentage change in employment share by employment sectors across a range of countries in Sub-Saharan Africa where harmonized employment indicators can be constructed from household surveys. Growth has contributed to shift the structure of employment away from agriculture in some countries, mostly toward nonagricultural self-employment. Yet in most countries, that shift has been very slow. For Côte d'Ivoire, the graph displays the changes between 2002 and

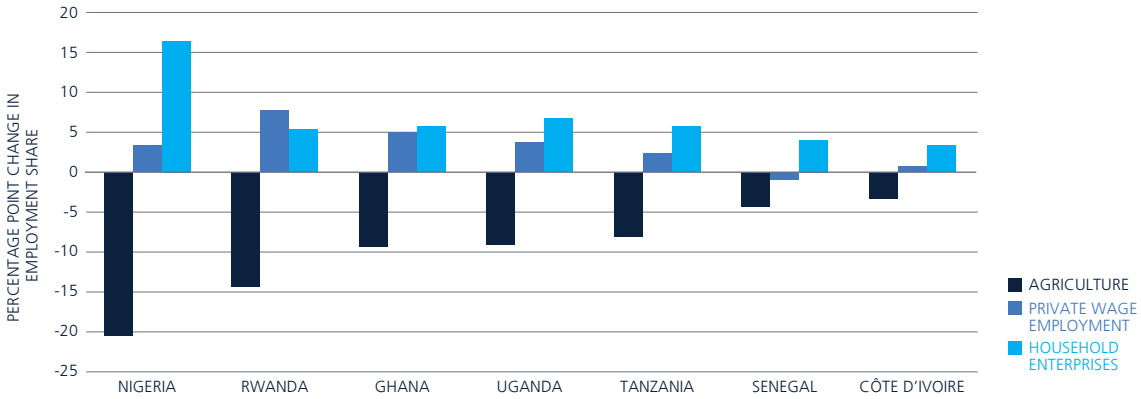
[13] This section compares the structure of employment over time (2002, 2008, 2014, and 2015).

Figure 1.24
Evolution of the composition of employment between 2002 and 2015



Source: Data for 2002, 2008, and 2015 are from national household survey, and 2014 are from ENSETE 2013; Authors' calculation.

Figure 1.25
Evolution of the structure of employment over time in a range of countries in Sub-Saharan Africa



Source: Regional Report on Youth Employment in Sub-Saharan Africa (Filmer et al., 2014), based on standardized and harmonized household and labor-force surveys. The graph displays the following periods: Nigeria (2004–2010), Rwanda (2005-–2010), Ghana (1998–2005), Uganda (2005–2010), Tanzania (2006–2012), Senegal (2001–2005), and Côte d'Ivoire (2002–2008). Note that the private wage jobs category does not include public wage jobs.

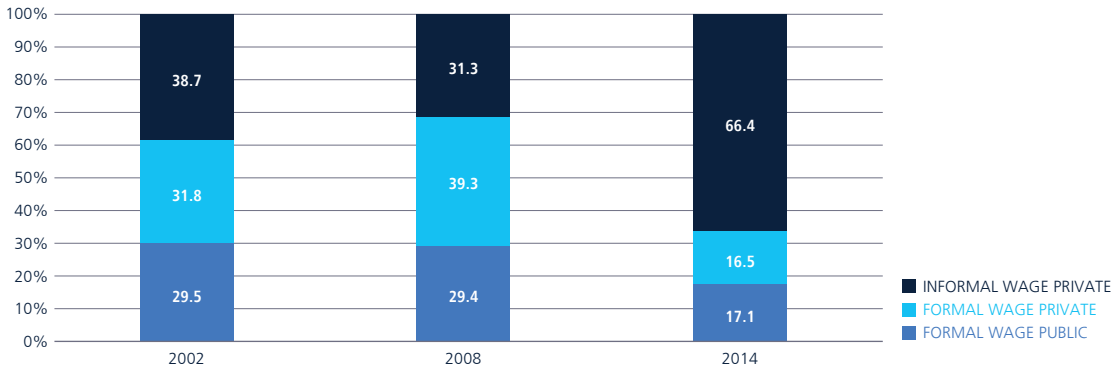
2008. It shows that during that period, the employment structure in Côte d'Ivoire has stayed the most stable relative to comparator countries, with the share of agriculture diminishing little and the share of private wage jobs increasing little, with a stronger increase in nonagricultural self-employment.

The share of formal wage employment has diminished over time, as informal wage jobs have become more prevalent (Figure 1.26). The share of informal wage jobs increased from 38.7 percent in 2002 to 59.8 percent in 2014. In contrast, the share of public wage jobs and formal private wage jobs decreased strongly between 2002 and 2014 (Figure 1.26). Taken together, the formal wage sector (including the private and public sectors) accounted for 8.1 percent of employed individuals in 2002, and 6.3 percent in 2014. There are some signs that the crisis contributed to disrupt the formal modern wage sector. This evidence from micro-level employment trends reflects some broader evidence from firm-level data on the effects of the crisis on firm productivity (see Chapter 5 in this report).

While the predominance of self-employment has changed relatively little over time, the sectoral composition of employment has evolved, especially with a decrease in the agricultural sector and an increase in the service sector. The share of agricultural employment declined by more than 14 percentage points between 2002 (63.4 percent) and 2014 (51.1 percent). Over the same period, the share of employment in services increased from 30.4 percent to 42.1 percent (Figure 1.27).

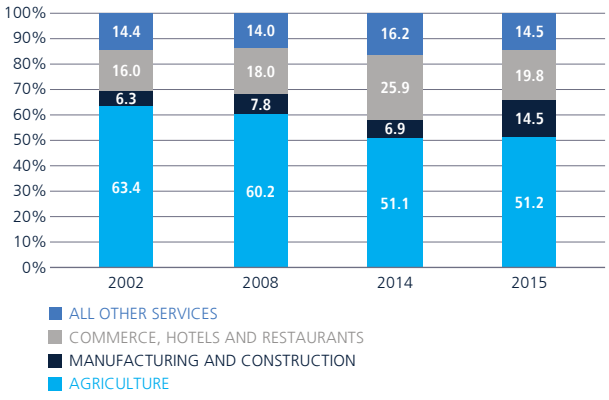
The increases of employment in the service and manufacturing sectors have to be interpreted carefully as they have mostly been in self-employment, not in wage employment. The share of wage employment in the service and manufacturing sectors increased slightly to 18.4 percent in 2015 from 14.5 percent in 2002. However, it is rather the increase in the share of self-employment in these sectors that has counterbalanced the decrease in the share of employment in agriculture. In 2015, the share of self-employment in the service and manufacturing sector was 30.4 percent compared with 22.1 percent in 2002. Self-employment in the manufacturing sector includes the low-productivity basic food-processing activities (Figure 1.28).

Figure 1.26
Evolution of the composition of wage employment between 2002 and 2014



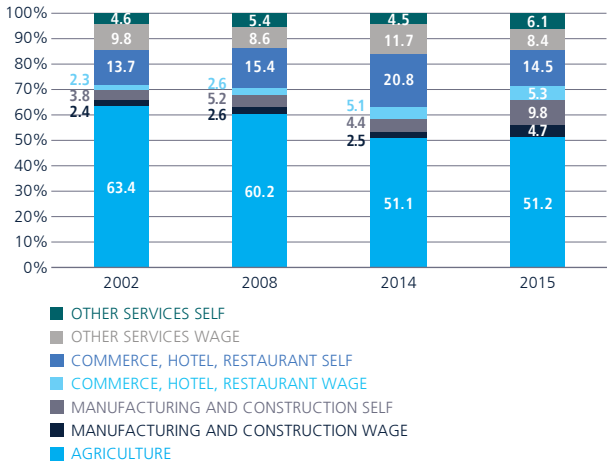
Source: Data for 2002 and 2008 are from national household survey, and 2014 are from ENSETE 2013. Comparable data not available from ENV 2015. Authors' calculation.

Figure 1.27
Agriculture remains the largest sector of employment



Source: Various micro data; authors' calculation.

Figure 1.28
Agriculture remains the largest sector of employment



Source: Various micro data; authors' calculation.

1.3 CONCLUSION

This chapter started by describing the employment situation in Côte d'Ivoire and highlighted its broad implications for employment policy. Côte d'Ivoire is characterized by a young population with high labor-force participation. Unemployment is relatively low, although with higher prevalence among educated youths in urban areas. The main employment challenge in Côte d'Ivoire stems from a high concentration of employment in agricultural and nonagricultural self-employment, and from a lack of formal wage employment. Underemployment is mostly characterized by individuals working in activities providing limited earnings. In this sense, the provision of better jobs—of all type, including in self-employment—to generate higher earnings is a key employment challenge for the near future. The recent employment situation highlights particular challenges for quality of employment and productive inclusion outside Abidjan, for the poor and for women.

This chapter also reviewed jobs trends in Côte d'Ivoire between 2002 and 2015. In the past decade, demographics have been the main driving forces of the size of the working-age population, active, employed and unemployed population. Trends in employment data also indicate signs of a widening gender gap in inactivity and unemployment. Employment in agricultural and nonagricultural self-employment remained preponderant over the last decade, with a decrease in agricultural self-employment counterbalanced by an increase in nonagricultural self-employment. Over the same period, the share of wage employment increased, although there were signs that the share of formal wage employment has not increased much. Overall, formal wage employment has remained the exception in Côte d'Ivoire. More recently, growth has not strongly changed the structure of employment, for instance between 2012 and 2015. The majority of additional individuals who became employed after the post-electoral crisis still work in agricultural and nonagricultural self-employment. The next chapter discusses patterns in structural transformation and assesses at the implications for future employment outlooks in Côte d'Ivoire. As will be illustrated, in the medium term, even in presence of strong growth in the modern wage sector, the majority of employment is expected to remain in agricultural and nonagricultural self-employment, in line with patterns for the broader region.

Since most people who join the labor force are employed, and demographics largely drive the absolute number of employed individuals in the economy, a focus on the number of jobs in the economy, or overall 'job creation' is missing the core employment challenge in Côte d'Ivoire, which mostly relates to the composition and quality of employment. In this context, a broader jobs strategy that centers on 'better jobs' and the issue of 'productive inclusion' for the poor, women and rural populations could address more directly the central challenges of reducing poverty and boosting shared prosperity in the short to medium term. The objective of an inclusive jobs strategy would go well beyond counting the number of new formal wage jobs created. It would seek to improve earnings and inclusive employment across all occupations, including in agricultural and nonagricultural self-employment where the majority of the population will remain employed for the foreseeable future. As such, the rest of this report invites to expand policy discussions on employment from a focus on the number of jobs and unemployment to a broader attention to the quality, inclusiveness, and productivity of jobs.

BOX 1.6: IMPACTS OF LABOR-INTENSIVE PUBLIC WORKS PROGRAMS ON EMPLOYMENT QUALITY

The impact evaluation of the labor-intensive public works program of the Youth Employment and Skills Development Project (PEJEDEC) illustrates how employment programs can increase employment quality in Côte d'Ivoire. Short-term results show that the public works program only increases slightly the share of youths who are employed. This is consistent with the observation that unemployment is relatively low and that most youths are engaged in informal jobs. In this context, the main impact of the program is to change the composition of employment by allowing youths to access better-paying wage jobs. Beyond impacts on economic indicators, participation in the public works program also improves attitudes and "psychological well-being", including self-esteem and aspirations towards the future. Overall, youths' well-being improves strongly during the program.

The impact evaluation study also documents that short-term impacts are very heterogeneous. A sub-group of participants, including the most vulnerable who indicate that they would be willing to work for a lower wage, as well as women, benefit very strongly from the program in economic terms. At the same time, the program attracts a substantial number of youths who are less vulnerable and benefit little in economic terms. Less vulnerable youths' psychological well-being still improves. In the end, the short-term efficiency and effectiveness of the public-works program could be improved by explicitly targeting the most vulnerable individuals and women. This would also promote productive inclusion of the most disadvantaged groups.

Source: Bertrand, Marianne; Bruno Crépon; Alicia Marguerie et Patrick Premand, 2016. *"Impacts à Court et Moyen Terme sur les Jeunes des Travaux à Haute Intensité de Main d'oeuvre (THIMO): Résultats de l'évaluation d'impact de la composante THIMO du Projet Emploi Jeunes et Développement des compétence (PEJEDEC) en Côte d'Ivoire."* Washington DC: Banque Mondiale et Abidjan: BCP-Emploi.

ANNEX A:

Table A.1
Summary statistics for key employment indicators in Côte d'Ivoire, 2002–2015

	2002			2008			2014			2015		
		95% CI			95% CI			95% CI			95% CI	
	Mean (%)	LB (%)	UB (%)	Mean (%)	LB (%)	UB (%)	Mean (%)	LB (%)	UB (%)	Mean (%)	LB (%)	UB (%)
All												
Working-age population	60.8	60.2	61.3	60.3	59.8	60.7	62.5	61.9	63.1	62.4	61.8	62.9
Labor force (active population)	68.1	67.4	68.7	72.2	71.7	72.7	76.8	76.2	77.5	75.3	74.5	76.0
Inactive population	31.9	31.3	32.6	27.8	27.3	28.3	23.2	22.5	23.8	24.7	24.0	25.5
Employment-to-working-age-population ratio	64.6	64.0	65.3	69.4	68.9	70.0	71.7	71.0	72.4	70.3	69.4	71.1
Unemployment rate	5.0	4.7	5.4	3.9	3.6	4.1	6.7	6.3	7.2	6.6	6.1	7.1
Type of employment												
Wage employment	15.8	15.2	16.5	15.1	14.6	15.6	22.8	22.1	23.5	19.4	18.7	20.2
Self-employment (non agriculture)	22.1	21.5	22.8	26.0	25.4	26.6	29.7	28.9	30.5	30.4	29.5	31.3
Self-employment (agriculture)	62.0	61.3	62.8	58.9	58.3	59.6	47.5	46.8	48.3	50.2	49.2	51.2
Type of wage employment												
Formal wage public	24.8	22.9	26.8	19.2	17.7	20.7	20.6	19.0	22.4	—	—	—
Formal wage private	26.4	24.6	28.3	30.1	28.4	31.8	19.6	17.9	21.3	—	—	—
Informal wage private	48.8	46.6	51.0	50.8	48.9	52.6	59.8	57.7	61.9	—	—	—
Male												
Working-age population	59.9	59.1	60.6	59.8	59.2	60.5	63.1	62.3	63.9	62.0	61.2	62.7
Labor Force (Active population)	73.1	72.2	74.0	76.6	75.9	77.3	80.7	79.8	81.5	80.8	79.8	81.8
Inactive population	26.9	26.0	27.8	23.4	22.7	24.1	19.3	18.5	20.2	19.2	18.2	20.2
Employment-to-working-age-population ratio	69.0	68.1	69.9	74.6	73.9	75.3	77.0	76.2	77.9	76.8	75.7	77.8
Unemployment rate	5.6	5.1	6.2	2.7	2.4	3.0	4.5	4.0	5.0	5.0	4.5	5.6
Type of employment												
Wage employment	21.3	20.4	22.3	19.3	18.6	20.0	30.9	29.9	31.9	22.5	21.5	23.5
Self-employment (non agriculture)	20.5	19.6	21.4	23.8	23.0	24.6	19.8	18.9	20.7	26.5	25.4	27.7
Self-employment (agriculture)	58.2	57.2	59.2	56.9	56.1	57.8	49.3	48.3	50.3	51.0	49.9	52.1
Type of wage employment												
Formal wage public	27.0	24.7	29.4	21.1	19.4	23.0	20.8	18.8	22.8	—	—	—
Formal wage private	29.1	27.0	31.3	32.0	30.0	34.1	20.4	18.5	22.5	—	—	—
Informal wage private	43.9	41.5	46.3	46.9	44.7	49.1	58.8	56.4	61.2	—	—	—
Female												
Working-age population	61.6	60.9	62.4	60.7	60.1	61.4	61.9	61.0	62.7	62.8	62.1	63.5
Labor force (active population)	63.2	62.3	64.2	67.6	66.9	68.4	72.8	71.8	73.8	69.6	68.5	70.6
Inactive population	36.8	35.8	37.7	32.4	31.6	33.1	27.2	26.2	28.2	30.4	29.4	31.5
Employment-to-working-age-population ratio	60.5	59.5	61.4	64.1	63.3	64.9	66.0	65.0	67.0	63.7	62.6	64.8
Unemployment rate	4.4	3.9	4.9	5.3	4.8	5.7	9.4	8.6	10.2	8.5	7.7	9.3

	2002			2008			2014			2015		
		95% CI			95% CI			95% CI			95% CI	
	Mean (%)	LB (%)	UB (%)	Mean (%)	LB (%)	UB (%)	Mean (%)	LB (%)	UB (%)	Mean (%)	LB (%)	UB (%)
Type of employment												
Wage employment	9.8	9.0	10.6	10.0	9.4	10.6	12.8	11.9	13.6	15.7	14.7	16.8
Self-employment (nonagriculture)	24.0	23.0	25.0	28.6	27.7	29.6	41.9	40.7	43.1	35.1	33.8	36.4
Self-employment (agriculture)	66.2	65.1	67.3	61.4	60.5	62.3	45.4	44.2	46.5	49.2	47.9	50.5
Type of wage employment												
Formal wage public	19.6	16.5	23.0	14.6	12.2	17.4	20.2	17.1	23.7	—	—	—
Formal wage private	19.9	16.7	23.6	25.5	22.4	28.7	16.7	13.8	20.1	—	—	—
Informal wage private	60.5	56.2	64.7	59.9	56.4	63.3	63.1	59.1	66.9	—	—	—

Source: Data for 2002 and 2008, 2015 are from the national household surveys, and 2014 from ENSETE 2013 collected in February 2014.
Note: Confidence intervals (CI) are derived with clustered standard-errors in 2015 (33 strata); 2014 (25 strata); 2008 (19 regions) and 2002 (11 regions)

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2: JOBS WITHIN THE STRUCTURAL TRANSFORMATION—INSIGHTS FOR CÔTE D'IVOIRE

Luc Christiaensen and Gabriel Lawin

A well-rounded jobs strategy seeks to generate more and better jobs so as to accelerate poverty reduction and foster shared prosperity. This suggests particular emphasis on raising earnings for the poorer (say bottom 40 percent) and more marginalized segments of society. Broadly speaking, this can be achieved either by increasing employment and productivity within the sectors where the poor currently are (agriculture and rural areas), or by facilitating shifts to sectors where labor productivity is higher. Agricultural and informal activities are hereby typically seen as less productive, and nonagricultural and formal activities as more productive.

Each approach (fostering intrasectoral productivity growth versus intersectoral labor shifts) entails somewhat different policy interventions. Those focused on fostering intrasectoral productivity growth aim to get the macro-fundamentals and business environment right, which benefits all sectors, possibly complemented with targeted sectoral initiatives to increase labor productivity within sectors (for example, through technological development and capital accumulation). By affecting the difference in labor productivity between sectors, the latter also affect incentives for intersectoral labor movements. But intersectoral labor mobility can also be encouraged more directly, through the removal of barriers to cross-sectoral movements. The release of labor out of agriculture could for instance be facilitated by removing land tenure insecurity (which also fosters land improvement and thus long-term agricultural productivity growth) or by providing information services about employment opportunities off the farm.

Historically, as countries developed, the share of labor in agriculture decreased, first counterbalanced by a corresponding increase in nonagricultural self-employment, and over a longer period also formal wage employment. These transformations usually also come along with urbanization, through rural-urban migration as well as in situ urbanization of rural centers, and formalization. Similar patterns of structural, spatial, and (to a much lesser degree) institutional transformation have started to take place in Côte d'Ivoire and are expected to continue over the next decade. So, what then is the right balance between these different policy approaches for Côte d'Ivoire today? How much movement between sectors, across space, and toward more formal forms of employment can and should be strived for today, especially when taking inclusive employment generation as the overarching objective?

This chapter first reviews the key insights from theory and the historical experience, in light of Côte d'Ivoire's own comparative advantage and its evolvement along the structural transformation. In doing so, particular emphasis goes to inclusive job creation. The jobs potential for agriculture under the structural transformation is discussed first (section 2.1), followed by an elaboration of the role of the nonfarm sector and proximity (section 2.2). To further deepen the empirical perspective and gauge the relative importance of the different sectors for inclusive employment in the near future, projections of where individuals are expected to work in Côte d'Ivoire over the next decade are presented in section 2.3. These draw on the conceptual and historical insights from sections 2.1 and 2.2, past trends, and macroeconomic growth forecasts. The chapter concludes by suggesting a three-pronged approach to generating more, better, and inclusive employment (section 2.4): (a) modernize agriculture, (b) expand productive employment opportunities off the farm and outside the large cities, and (c) support the

livelihoods of those left behind. This sets the stage for Chapters 3–5, which elaborate on the specific possibilities and challenges of the main employment opportunities in Côte d'Ivoire today. Chapter 3 identifies opportunities and guiding principles to maximize the contribution of agriculture. The critical issue of raising productivity in nonagricultural household enterprises (the informal sector) is assessed in Chapter 4. The trends and prospects for the creation of wage jobs in formal firms are discussed in Chapter 5. An in-depth discussion of the critical complementary role of social protection falls beyond the scope of the report.[14]

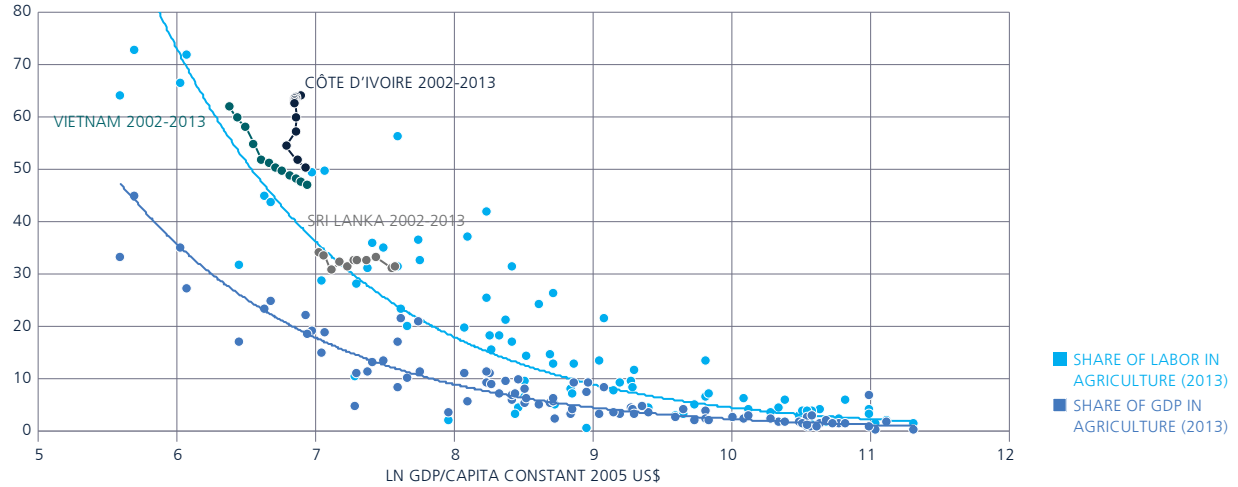
2.1 JOBS POTENTIAL FOR AGRICULTURE

2.1.1 Agriculture's jobs paradox

As households get richer, the demand for food as a share of total spending goes down and so does the demand from agriculture for labor. It has been widely observed across history that as countries develop, the share of agriculture in the economy and employment declines (Figure 2.1). These structural and occupational transformations at the macro level reflect people's demand behavior at the micro level, that is, their relatively larger demand for non-food than for food as they get richer.[15] As a result, the *share* of spending on food declines as incomes rise (widely known as Engel's Law), even though, in absolute terms, spending on food still increases. At the macro level this translates in a declining share of agriculture in GDP as countries develop, as well as a declining share of employment in agriculture.

From the supply side, labor is generally found to be more productive outside agriculture than in it. According to the national accounts, the value added per laborer outside agriculture is, in developing countries, on average 4.5 times the value added per laborer in agriculture. In middle-income countries, the ratio is 3.4, and in high-income countries, 2.2.[16] Within African countries, nonagricultural labor is 6 times more productive. These large productivity gaps at the initial stages of development and the subsequent convergence process suggest that there is a lot to be gained from moving people out of agriculture. It has also given rise to a popular view that the sectoral movement of people out of agriculture is a causal driver—rather than a manifestation—of development. In this view, the marginal productivity of labor in agriculture is virtually zero, such that labor can be removed from agriculture without (much) loss of output.

Figure 2.1
As countries develop, the share of agriculture in the economy and employment declines



Source: Authors' calculations. Agricultural labor share data for Côte d'Ivoire interpolated based on data for 2002 and 2008 from the national household survey, as well as from 2012 and 2013 employment surveys.

[14] For an up-to-date general discussion, the reader is referred to Honorati, Gentilini, and Yemtsov (2015).
[15] In technical terms, the income elasticity of the demand for non-food is larger than for food.
[16] Gollin, Lagakos, and Waugh (2014).

So, what can then be the contribution of agriculture to a country's jobs agenda, besides releasing labor? Both these labor supply and demand side perspectives on the role of agriculture would suggest that increasing labor productivity during the structural transformation should mainly happen through a reduction of the agricultural labor force and that to do so, policies should especially focus on removing barriers to sectoral (and spatial) migration. Yet, even though popular, there are a number of important caveats to these perspectives. For example, recent evidence indicates that the frequently cited agricultural productivity gap measures based on the national accounts abstract from a series of confounding factors and measurement issues, which exaggerate the gap. This suggests that the gains from sectoral movements, and thus the incentives to move, may not be as large as commonly purported. Furthermore, the view that labor is less productive in agriculture—a viewpoint that is especially well established in macro policy circles—has often also been taken as evidence that labor in agriculture is *intrinsically* less productive, and thus less worthy of investment. This sits oddly with the agricultural success stories of agro-exporters such as the United States and the Netherlands, and more recently also Vietnam, Chile, and Peru.

There are also caveats to the somewhat more pessimistic perspective from the demand side. While Engel's Law holds globally, its strength at the national level depends on the tradability and comparative advantage of the countries' agricultural commodities. Furthermore, part of the declining demand for labor in agriculture, following the lower (relative) demand for staples as incomes rise, will be offset by the increasing demand for higher-value and processed agricultural products as countries and their populations get richer. This creates new jobs on the farm, but increasingly also off the farm, in the expanding agricultural value chains and agribusinesses that is in extended agriculture. The latter effects are currently largely hidden in the numbers as they are largely incorporated in the manufacturing (food processing, machinery) and service (storage, transport, wholesale, retail) sectors of the national accounts. Yet, it is argued that it is exactly the extent to which countries manage to transform their agriculture away from staple crops, as they get richer and their staple crop productivity reaches sufficiently high levels, which determines whether they can generate productive employment for the poor and sustain the pace of rural poverty reduction.

The following two subsections examine these labor supply and demand side considerations within the context of Côte d'Ivoire. The working hypothesis is that, in general, as countries accelerate their develop, and in Côte d'Ivoire today in particular, there is still a lot of scope for increasing earnings of the poor within agriculture. Increasing labor productivity in agriculture is also needed to help facilitate the labor movement out of agriculture (see section 2.2), which will in turn become more important as agricultural labor productivity increases and Engel's Law becomes more binding. This is not to say that facilitating labor movement out of agriculture is not part of the process, but rather to emphasize that lots of unexploited inclusive jobs potential remains in agriculture, which should be realized, also to facilitate the agricultural labor exit itself.

2.1.2 Agriculture's labor productivity

First, new micro evidence suggests that the incentives for labor productivity gains from exiting agriculture are substantially less than commonly purported. Until today, the agricultural labor productivity gap is usually calculated from the macro data, by comparing the value added in nonagriculture per person primarily employed in nonagriculture with the value added in agriculture per person primarily employed in agriculture. Yet scrutiny of both the macro output and labor input measures suggests that they bias the gap to the detriment of agriculture, and that the bias increases the poorer and less advanced countries are in their structural transformation.

To see this, note that labor input (the denominator) is typically proxied by the number of people who have their primary occupation in agriculture (or nonagriculture). They do not account for differences in actual hours worked or differences in human capital. After controlling for these sectoral differences in labor efforts using additional information from household surveys, Gollin, Lagakos, and Waugh (2014) demonstrate, for example, that the average ratio of nonagricultural to agricultural labor productivity among African countries reduces from 6 to 3.3. Similarly, Vollrath (2013) finds that sectoral misallocation of labor explained only 12 percent of the cross-country income variation in his sample of 42 countries, when correcting the sectoral

employment numbers from FAO[17] for sectoral differences in time use and educational achievements, as opposed to 32 percent, when using unadjusted sectoral employment.[18]

Twelve percent is still a significant amount of variation, especially when considering that educational differences are usually thought to explain 10–15 percent of cross-country income variation. But it is significantly less than what has been reported commonly, with the simulated gains from sectoral labor reallocation much lower than commonly assumed, and most likely still an upper bound. For example, turning to the sectoral output measure (the numerator), which is typically obtained from the national accounts, this is also bound to exert further upward bias on the gap. Across 10 countries, Gollin, Lagakos, and Waugh (2014) estimated the labor effort adjusted nonagricultural to agricultural productivity ratio[19] to be on average 2.6 when using sectoral value added from the macro data versus 2.2 when estimating sectoral value added from the household surveys. National accounts tend to miss food produced for own consumption, for example, which in low-income countries often makes up an important part of total agricultural output.[20] Accounting for differences in capital intensity would bring the gap down further, especially in resource-rich countries, of which Africa counts many.

Along these lines, recent extension of the work by Gollin, Lagakos, and Waugh (2014) using detailed, carefully collected nationally representative micro data on sectoral income and time use from four African countries shows that the agricultural productivity gap can drop to well under two when using micro data and controlling for the actual number of hours worked (Figure 2.2) (McCullough forthcoming).[21] The labor productivity and earning gains from intersectoral labor movement, while real, are substantially less than commonly purported. Add to this the cost of moving, and the lower rural-to-urban migration rates observed in Sub-Saharan Africa (De Brauw, Mueller, and Lee 2014) pose less of a surprise. Furthermore, the large drop in the labor productivity gap when expressed per actual time input suggests that agriculture is not intrinsically less productive, and thus in principle equally worthy of investment to raise labor productivity.[22]

The observation of lesser than expected productivity gain from intersectoral labor movement also applies to Côte d'Ivoire. From the micro data, average net nonagricultural labor productivity per person primarily self-employed in Abidjan, other urban, and rural areas is 4.8, 3.7, and 3.1 times higher than in agriculture, respectively. As in other countries, accounting for educational differences across sectors/locations and the lower number of hours worked in agriculture would bring these gaps down substantially. While the data available do not permit a direct estimation of the agricultural productivity gap accounting for these factors,[23] back-of-the envelope calculations suggest that they would come down to about a factor two.[24] Comparing daily wages by location and sector of employment and education level can provide further approximations (Table 2.1). Wages in Abidjan are on average 1.9 to 2.1 times higher than in (rural) agriculture; in other urban areas they are about

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17 These are based on a person's primary sector of employment.

18 Maximizing the level of output per capita in each country by equalizing the marginal product of labor between sectors reduced the cross-country variation in log output per capita to 68 percent from the observed cross-country variation when using adjusted FAO sectoral employment numbers and to 88 percent when adjusting the FAO sectoral employment numbers for sectoral differences in labor effort (time use and human capital). Vollrath approximated households' sectoral time use shares using agricultural and nonagricultural household income shares under the assumption that within each household households equalize their marginal returns to time across occupations. He proxied households' human capital by multiplying the aggregate number of years of education of the male and female workers in each household by their respective returns estimated separately from Mincerian regressions. Calculations are based on the RIGA data (http://www.fao.org/economic/riga/rural-income-generating-activities/en/).

19 Adjusted for labor input for differences in hours worked across sectors and differences in human capital using micro data.

20 Household surveys, on the other hand, miss out on the production of large farms. Yet, the latter also tend to be more capital intensive, and while important from an aggregate output and factor compensation perspective (the perspective taken by the national accounts), their inclusion is less relevant when comparing labor productivity among the poorer segments of society, which are mainly smallholder farmers and the focus of the discussion.

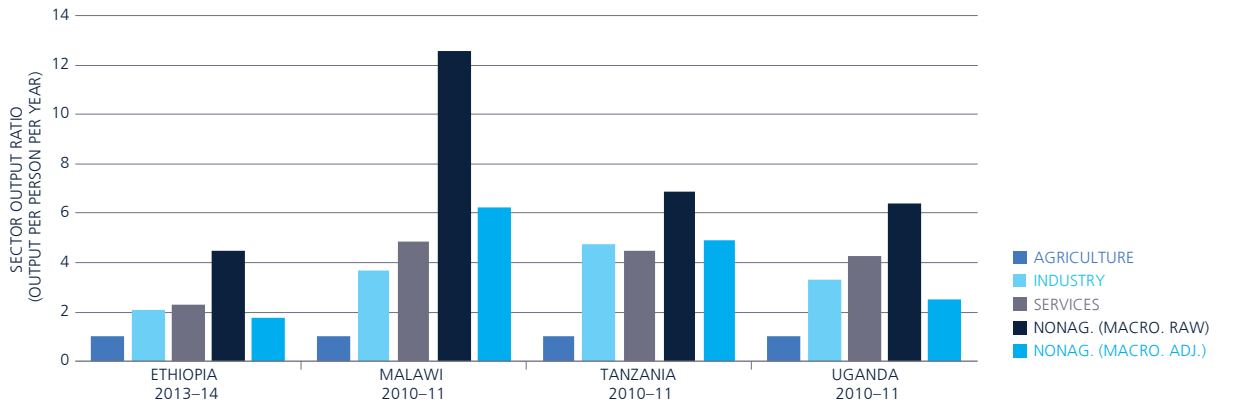
21 McCullough, E. B., 2017, Labor Productivity and Employment Gaps in Sub-Saharan Africa, *Food Policy,* 67: 133-152.

22 Testimony to the huge productivity potential of the agricultural sector are, for example, American, Dutch, Chinese, and Brazilian agriculture.

23 In addition to family labor, households also rely on mutual labor exchange arrangements whose contribution can be substantial. Yet in the available data they are only expressed in terms of person contributions and not in person days (or hours). This prevents a direct replication of the calculations made by McCullough (forthcoming) (as in Figure 2.2).

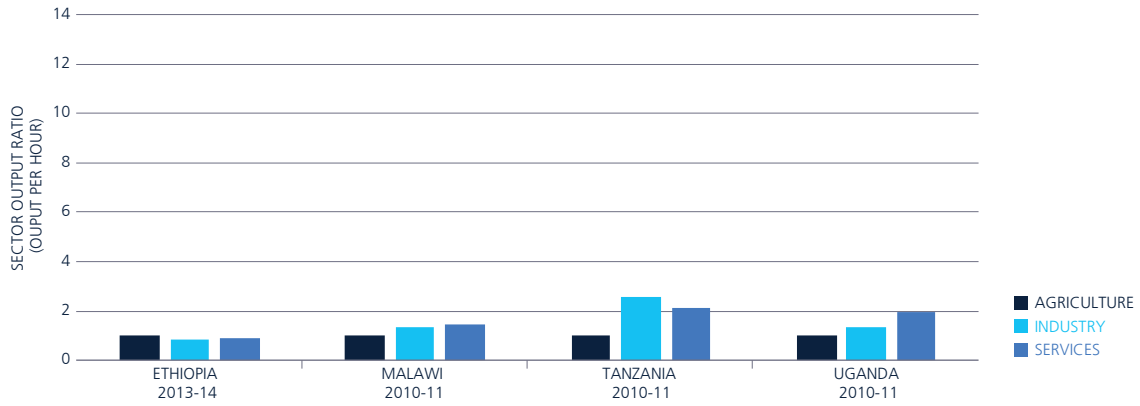
24 Adjustments are made based on the estimated ratios in educational achievement and hours worked across nonagriculture and agriculture (about 25 percent more educational achievement in nonagriculture — 2.52 years of education on average in nonagricultural self employment versus 2.05 in agriculture, calculations based on ENSETE, 2013), and about 25 percent less hours worked (about 2000 hours of work outside agriculture compared with around 1600 in agriculture — Figure 2.3).

Figure 2.2a
Sectoral labor productivity gaps drops substantially when expressed per time input



Source: McCullough (forthcoming).
Note: Productivity gaps by sector. The figure shows the ratio between productivity in each sector and agriculture based on per-person-per-year productivity measures. The fourth column depicts the raw productivity gaps between agriculture and nonagriculture as constructed using national accounts data, and the fifth column refers to adjusted gaps constructed by Gollin, Lagakos, and Waugh (2014).

Figure 2.2b
Ratio between productivity in agriculture and in other sectors based on output per time input



Source: McCullough (forthcoming).

1.5 times higher. This is clearly much smaller than the agricultural productivity gaps previously mentioned. The respective gaps further decline when controlling for the level of education.[25] Controlling for differences in cost of living as well as differences in capital intensity would further reduce the gap. Again, this is not to say that there are no labor productivity gains from intersectoral labor movements,[26] but rather that the gains are much less than anticipated at first sight. It redirects attention to the need for intrasectoral labor productivity gains.

[25] To see this compare the ratio of nonagricultural over agricultural wages for workers with higher education with the ratio of nonagricultural over agricultural wages for workers without education.

[26] The limited differences in nominal wages suggest that *wage* labor markets in Côte d'Ivoire are reasonably integrated and that sectoral *wage* labor misallocation is relatively limited (as in Vietnam, see Trung and Oostendorp, 2017), especially for the unskilled, whose labor productivity is the primary focus of the report. Yet, as in other countries (Vietnam and Tanzania, Nerman (2015)), there remains also a significant gap between the average rural nonagricultural and agricultural market wage rates (mostly fluctuating around CFAF 1,900 per day, Table 2.2) and the average shadow wage in agricultural self-employment (estimated at CFAF 884 per day applying Nerman's methodology to ENSETE 2013). While less than in Vietnam (where the agricultural shadow wages/rural market wage ratio is about 25 percent, compared with 45 percent in Côte d'Ivoire), it remains suggestive of some market segmentation (between wage and agricultural self-employment) and possibly labor surplus/underemployment in agriculture. The reasons behind this gap (for example, food security concerns/preferences for own crops, the seasonal nature of agricultural productivity, lack of demand for nonagricultural goods and services and thus lack of nonagricultural self-employment or wage opportunities, constraints (credit, skills) to entering nonagricultural self- employment, work preferences) remain however poorly understood (Nerman 2015; Trung and Oostendorp 2017).

Table 2.1
Wage gaps across space are much smaller than expected

Nominal wages (average)	Abidjan	Other urban	Rural-nonag	Rural-ag	Wage ratios		
					Abidjan/ agriculture	Other urban/ag	Rural wage/ag
2013 Employment Survey (February 2014)							
No education	2,644	2,350	1,951	1,711	1.55	1.37	1.14
Primary education	2,828	2,207	1,823	1,361	2.08	1.62	1.34
Secondary education	3,271	2,972	2,723	1,931	1.69	1.54	1.41
Higher education	4,498	4,561	5,524	3,832	1.17	1.19	1.44
Total	3,187	2,687	2,365	1,698	1.88	1.58	1.39
2015 Household Survey (April 2015)							
No education	3,387	2,363	1,991	1,935	1.75	1.22	1.03
Primary education	3,171	2,399	2,061	2,131	1.49	1.13	0.97
Secondary education	4,318	3,297	2,675	2,146	2.01	1.54	1.25
Higher education	6,849	7,035	5,823	2,544	2.69	2.77	2.29
Total	4,235	2,966	2,344	2,007	2.11	1.48	1.17

Source: Staff calculations, ENSETE 2013, and ENV 2015.

Second, large heterogeneity in agricultural labor productivity points to important opportunities for productivity gains within agriculture. Comparing the distributions of (net) labor productivity in Côte d'Ivoire, in agriculture and self-employment in rural, other urban, and Abidjan (Figure 2.3) confirms that average labor productivity (per person primarily employed in the sector) is highest in Abidjan (with other urban a close second). It is lowest for agriculture, with rural self-employment in between. The figure further shows that there is large heterogeneity in each of these activities, including in agriculture. This suggests substantial scope for raising agricultural labor productivity, even under existing agronomic practices. Simply bringing those currently operating at the 25th percentile of the agricultural labor productivity distribution to the 75th percentile would increase net labor productivity per person 7.8 times.[27] Similarly large gains can be obtained among those primarily employed in rural self-employment.[28] The substantial scope for intrasectoral productivity increase has also been observed in other countries.[29]

Closing the agricultural productivity gap will partly require addressing agricultural underemployment which can also be done within agriculture. Part of the heterogeneity in agricultural labor productivity follows from underemployment in agriculture. Yet this should not be taken to undermine Côte d'Ivoire's potential for raising labor productivity within agriculture. As shown in Figure 2.4, people primarily employed in agriculture work substantially fewer hours on an annual basis than those primarily engaged in nonagricultural activities (Figure 2.4), which, as shown above, explains a significant part of the agricultural per person productivity gap. It also indicates that agriculture is not intrinsically less productive, and thus equally worthy of investment.[30]

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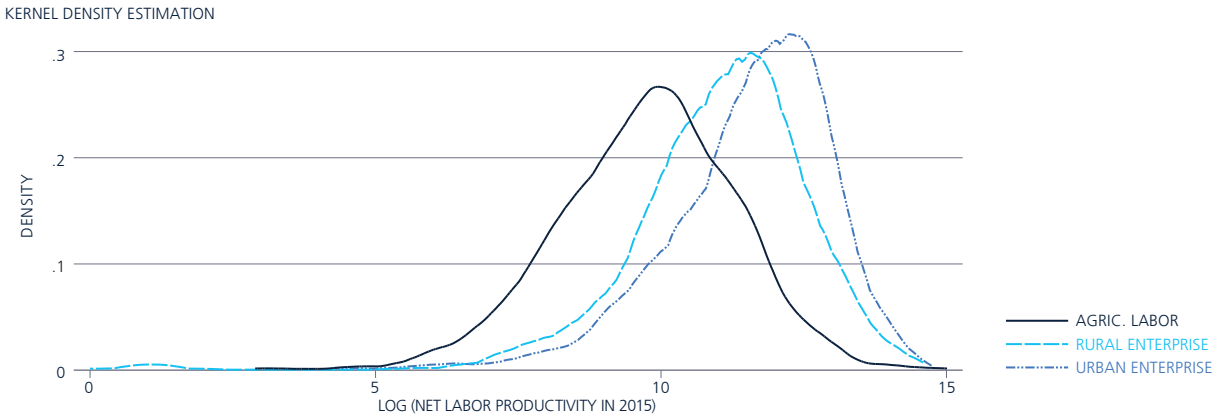
27 Given that agricultural underemployment is less pronounced in Côte d'Ivoire (compared with some of the other countries featured in Figure 2.3), measures to reduce agricultural underemployment as well as those that increase output per hour worked will be needed. See Chapter 3 for a more detailed discussion.

28 The within sectoral productivity gap may narrow somewhat, when expressed in net terms, at least to the extent that higher labor productivity results from higher use and spending on inputs.

29 For Uganda, Christiaensen and Kaminski (2016) calculated *net* labor productivity in farming, and rural and self-employment from the nationally representative 2009 Living Standard Measurement Study-Integrated Survey on Agriculture. They find both the average (as well as the spread) of net labor productivity in farming to be smaller than among the self-employed in rural areas. Moving farmers from the 25th to the 75th percentile in the distribution would increase their labor productivity 4.5 times. A similar move among self-employed people in rural areas would increase their productivity by a factor 10, though, given the larger spread, they would also start at a 40 percent lower productivity.

30 The significant sectoral difference in estimated time use accounts also for the larger share of labor effort adjustments and the decline in the agricultural productivity gap in Vollrath (2013, Table 3) (two-thirds on average due differences in time use versus one-third due to differences in educational achievements). Yet full cost-benefit analysis is needed to compare the returns with other investment opportunities.

Figure 2.3
Substantial heterogeneity in labor productivity within sectors suggests substantial scope for intrasectoral labor productivity gains, also in agriculture

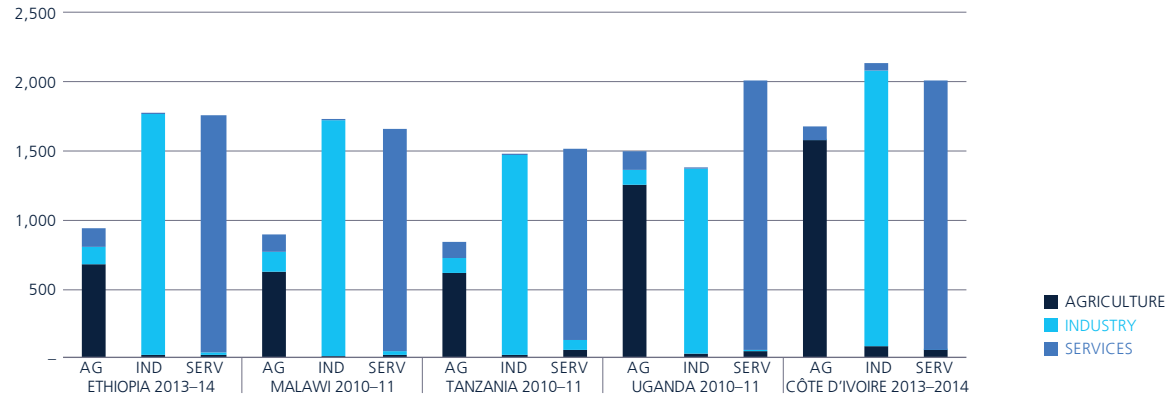


Source: Authors' calculations, ENV 2015.
Note: Net labor productivity is measured as the ratio of net output per person primarily employed per year. In the self-employment sector, net output is the value of annual profit.

Agricultural underemployment is also present in Côte d'Ivoire, albeit less pronounced than in the comparator countries (Figure 2.4) (with those primarily employed in agriculture working on average about 1,600 hours per year versus about 2,000 hours among those primarily working outside agriculture).[31] This lower underemployment is consistent with the greater importance of cash crops and the greater use of hired labor (Chapter 3), the country's further evolvement in the structural transformation, and its high degree of urbanization (see section 2.2). Moreover, underemployment among those primarily occupied in agriculture can also be addressed within agriculture. Agricultural underemployment may, for example, be related to the seasonal nature of agricultural production, characterized by periods of peak labor demand during which those primarily in agriculture cannot work off farm, as well as periods of relative idleness. It may then become difficult to engage with nonagricultural activities whose production cycles coincide with those of agriculture, or nonagricultural activities that are capital intensive and in need of continuous operation to be competitive. Underemployment may also arise when markets are absent or costly to reach, such that surplus production for sale no longer pays and subsistence farming emerges as the better option.

Yet, technology can help overcome these seasonal constraints, either by relaxing seasonal labor constraints (for example, through mechanization of seasonal agricultural tasks such as land preparation, weeding) or

Figure 2.4
People primarily employed in agriculture work fewer hours, suggesting underemployment



Source: Authors' calculations based on ENSETE 2013 for Côte d'Ivoire, McCullough (forthcoming).
Note: The figure shows the average hours supplied by individuals to all sectors, categorized by each individual's primary sector of participation.

[31] While there is undoubtedly also idle time among those primarily employed in informal self-employment, the data suggest that this is much less substantial than among those primarily employed in agriculture, possibly related to the seasonal nature of agricultural production.

by extending the growing season (for example, through irrigation to allow a second crop outside the rainy season). Mixed farming systems with divergent production cycles (crops and livestock) can also help. The cost of market access can equally be reduced. Solutions to underemployment in agriculture are thus not confined to nonagricultural activities, but can equally be found in agriculture, on and off the farm. Also, with agricultural underemployment less pronounced in Côte d'Ivoire, especially measures that that increase output per hour worked will be needed. The opportunities and challenges to raise agricultural labor productivity in Côte d'Ivoire are discussed in more detail in Chapter 3.

Third, income generation in agriculture is more poverty reducing. Cross-country evidence has convincingly shown that GDP growth in agriculture is more poverty reducing than GDP growth originating outside agriculture.[32] This holds especially when it concerns extreme poverty, when most of the poor live in rural areas, earning their living in agriculture,[33] and when land is more equally distributed, such that poor smallholders can put both their assets (labor and land) to work, benefit from them directly, and do so in large numbers. These cross-country empirical regularities are confirmed in Asia (for example, China)[34] as well as in recent African case studies. For instance, two-thirds of the 4 percentage point reduction in the poverty headcount during 2005–2009 in Uganda could be accounted for by the increase in earnings among individuals who were working primarily in agriculture in 2005 and continued doing so through 2009.[35] This followed because a large share of the population stayed in agriculture (49 percent) and many of them were poor, such that even a small drop in their poverty rate corresponded to a large number of people exiting poverty. The bulk of the sharp drop in poverty in Ethiopia during 1996–2011 could similarly be ascribed to growth in the agricultural sector.[36]

Yet, income generation in agriculture does not always or automatically lead to poverty reduction. In Brazil, for example, growth in agriculture did not contribute much to poverty reduction.[37] Land in Brazil is unequally distributed, and its agricultural boom of the past two decades has largely been driven by large-scale, highly mechanized, skill-intensive agriculture (much of it following the development of the Cerrado for soybean exports to China). It highlights that the job-generating and poverty-reducing powers of agriculture are further conditioned by initial conditions (agro-ecological potential and land distribution), production modalities (large versus small scale) and agricultural policies.

It also does not mean that fostering agriculture will necessarily yield the fastest overall economic growth. A trade-off between the rate of poverty reduction and overall GDP growth rate is possible, as illustrated by the experience of Uganda during 2005–2009, where two-thirds of poverty reduction could be ascribed to agricultural income growth among farmers, while two-thirds of overall consumption growth was on the account of the nonagricultural sector. Half of the latter came from growth in Kampala; the other half from consumption growth in the rural off-farm sector. Yet, growth in agriculture does not always lag growth elsewhere,[38] and the trade-off needs to be judged in terms of returns to investment as well as its political sustainability over time.

Overall, the available theoretical, empirical and historical evidence overwhelmingly suggests an important role for agricultural productivity growth to increase the earnings of the poor. The gains from intersectoral labor reallocation are less than commonly assumed, partly because of somewhat better labor market integration and lower agricultural underemployment than observed elsewhere. Wide heterogeneity in Côte d'Ivoire's agricultural labor productivity further suggests substantial scope for improvement, and income growth among smallholder farmers proves to be most effective at generating inclusive employment and poverty reduction. The conditions to do so are also present in Côte d'Ivoire. More than 50 percent of the active population and 78 percent of the rural population are still employed in agriculture; agriculture is still largely

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[32] Loayza and Raddatz (2010); Christiaensen, Demery, Kuhl (2011).

[33] Almost four in five of Sub-Saharan Africa's poor work in agriculture.

[34] Ravallion and Chen (2007).

[35] Christiaensen and Kaminski (2016).

[36] Hill and Tsehaye (2014).

[37] Ferreira, Leite, and Ravallion (2010).

[38] In Brazil, agriculture grew on average 3.7 percent per year during 1996–2014, industry 2.0 percent and services 3.2 percent. At 7.3 percent and 4.9 percent per year on average, agricultural GDP growth has also been solid in Ethiopia and Rwanda (albeit half the growth rate outside agriculture).

smallholder based, and more than 60 percent of the poor are smallholder farmers (World Bank 2011a).[39] latest recent Country Economic Memorandum for Côte d'Ivoire (World Bank 2011b) indicated an annual growth potential for agriculture over the next decade of at least 5 percent. Since the post-election crisis (2011–2014), it has been growing at an average of 5.7 percent per year. This does not do away with a continuing role for facilitating movement out of agriculture, as elaborated upon in section 2.3, but it highlights the continuing need and potential for raising labor productivity through agriculture at the current juncture.

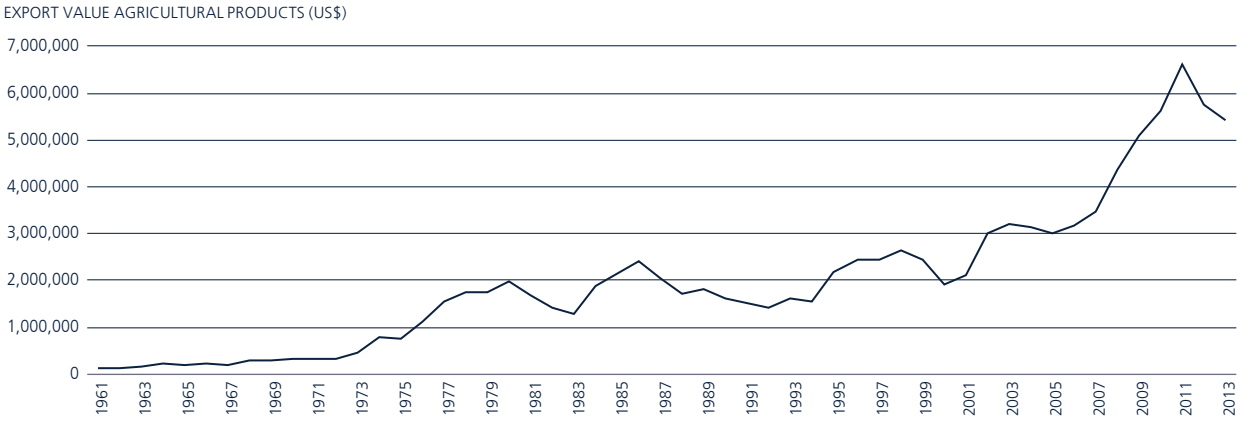
2.1.3 Agriculture's future demand for labor

Fourth, global demand for Côte d'Ivoire's agricultural export commodities points to continuing opportunities for adding new jobs and increasing earnings in agriculture. The extent to which Engel's Law acts as a constraint on the demand for a country's agricultural products (and labor), depends also on the tradability of its agriculture, the evolution of global (as opposed to domestic) demand, and the country's comparative advantage. The more tradable and competitive its agricultural commodity, the less constrained the country is by domestic demand and the larger is its agriculture's potential for generating jobs. The production and export of cash crops, especially cocoa, but also of coffee, cotton, and palm oil have historically been a cornerstone of Côte d'Ivoire's economy and job creation. They also feed other sectors of the economy, particularly agro-processing, commerce, and transportation and contribute importantly to formal wage job creation, many of them low skilled (Chapter 5).

In Côte d'Ivoire the value of agricultural exports has been expanding rapidly over the past years (at 9.7 percent per year during 2005–2012),[40] largely driven by the expansion of cocoa, rubber, cashews, and palm, which accounted for 26, 13, 4, and 3 percent of the growth, respectively (Figure 2.5). This was not only driven by an increase in price, but also by an increase in volumes. It is indicative of its agricultural export potential and reminiscent of the development model followed by Vietnam, which conquered world markets in the 1990s and 2000s to become one of the largest exporters of rice and coffee. During 1980–2000, Côte d'Ivoire was still among the top five world exporters of green coffee (in volume).

Given the predominance of the smallholder or outgrower production model in Côte d'Ivoire for most of its cash crops, many can benefit from the expansion of export crops. Households in cash crop production tend to be better off than those growing food only (as estimated from the 2008 household survey data) (World Bank 2011a). Controlling for other factors, per capita consumption was 9 percent higher among cocoa growers compared with those not growing export crops. Households growing oil palm, rubber, and cotton had even higher per capita consumption, averaging 10, 17 and 23 percent higher, respectively, than farmers that did not grow export crops.

Figure 2.5
Agricultural exports (US$) in Côte d'Ivoire more than doubled during the 2000s, relative stagnation during 1980–2000



Source: FAOSTAT 2016.

[39] Poorer rural households rely heavily on crop production. For the bottom 40 percent, crop production constitutes nearly 70 percent of income.

[40] In real terms (that is, corrected for changes in the terms of trade or the import unit/value index), the value of agricultural exports increased by 3.3 percent per year.

But much scope for improvement remains. Reforms in the cocoa sector have already resulted in a significant increase in production (from 1.2 million tons in 2009/10 to 1.8 million tons during the 2014/15 campaign). Diversification and expansion into newer crops, such as labor-intensive cashew (especially since the early 2000s), and adding value, through further processing, also hold a lot of potential for jobs. Since the mid-1990s, cashew production in Côte d'Ivoire has seen massive expansion. It became the world's leading exporter of (unshelled) cashew nuts in 2002 and more than quadrupled its production since, to over 426,000 tons in 2013. But for now, only around 6 percent of its cashew nuts are processed domestically. The government's target is to bring this to 50 percent by 2020. Increasing locally generated added value in cashew, but also cotton, could be critical for jobs. Both are grown in the central and northern parts of the country, which house many of the poor and have been hit hard by the longstanding multifaceted crisis. The 2007–2012 experience also shows formal employment generation in agribusiness firms teds to benefit the unskilled (see Figure 5.15).

Fifth, the dietary transformation following income growth and urbanization also opens up new demand for agricultural products and employment on, and increasingly also, off the farm in the value chains. As countries grow and urbanize, the demand for protein-rich food products, higher-value fruits and vegetables as well as purchased and packaged products increases. After Engel's Law, this is the second large Law of Demand, named after Bennett. This also opens up new jobs opportunities, directly in the production of these products (dairy, meat, fruits, and vegetables), and indirectly in the associated chains (storage, transport, processing, packaging, wholesale, and retail). The production of high-value agricultural products tends to be more labor intensive (see also Figure 3.6), while jobs in the agricultural value chain (especially in agro-processing) are often taken up by women (Table 2.2). Together they add better earning and more inclusive jobs, mitigating the decline of jobs in staple crop production as increasing labor productivity in staple production releases labor (given less than unit income elasticity of demand for staples) and the structural transformation proceeds. Linking changes in dietary patterns to the employment structure in six East and Southern African countries, Tschirley et al. (2015) project that between 2010 and 2025 about one-quarter of the decline in the farm labor share (3.2 percentage points out of a decline of 13.2) will be absorbed in food preparation away from home, food manufacturing, and marketing and transport.

Table 2.2
Employment in agribusiness grows with development

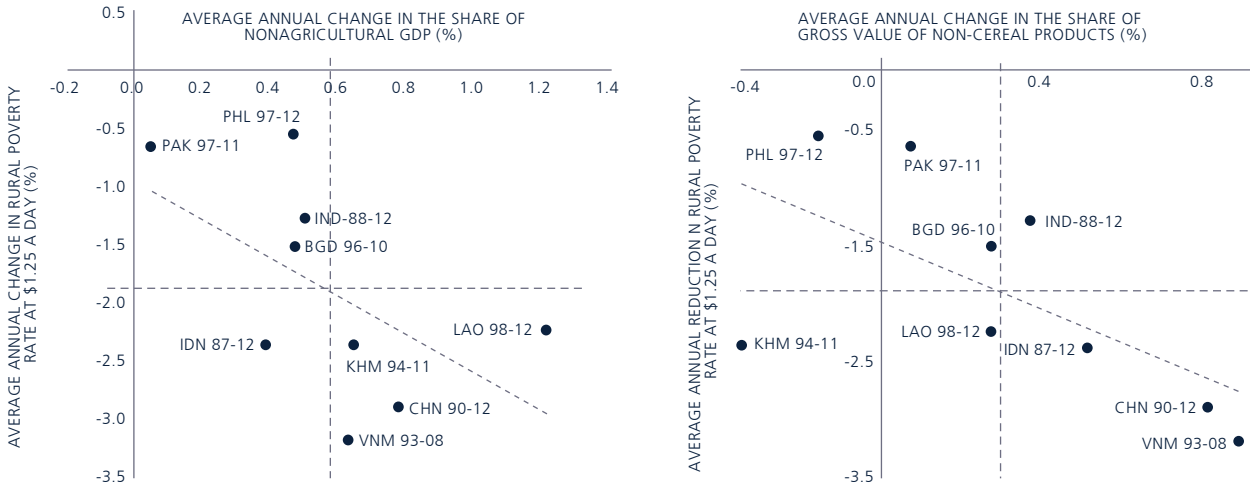
Shares of Jobs (%)	East and Southern Africa 2010	East and Southern Africa 2025	South Africa 2010	Côte d'Ivoire 2013		
				National	Rural Male	Rural Female
Non-agrifood system	17.4	27.3	72.1	37.8	20.0	19.6
Farming	74.7	61.5	13.6	47.2	61.9	74.6
Food manufacturing	2.3	3.3	4.4	2.0	2.6	1.1
Marketing and transport	4.8	6.5	7.2	10.5	11.6	4.4
Food preparation away from home	0.9	1.4	2.8	2.5	3.9	0.3

Source: Authors' calculations based on ENSETE 2013 for Côte d'Ivoire. Tschirley et al. 2015.

Countries that complement a successful structural transformation in response to Engel's Law with a successful agricultural transformation in response to Bennett's Law have historically experienced the fastest decline in rural poverty reduction. This is well demonstrated by the experience of China and Vietnam (Figure 2.6).[41] Laos and Cambodia still have to embark on their agricultural transformation, while Indonesia transformed its agriculture away from staples, but lags in its overall structural transformation. Both the structural and agricultural transformation are least advanced in the Philippines; the rural poverty decline has advanced least there as well.

[41] Huang (2016).

Figure 2.6
In Asia, rural poverty reduction was fastest when the agricultural transformation complemented the structural transformation



Source: Huang 2016.

2.2 MOVING BEYOND THE FARM

2.2.1 Youth has been leaving agriculture in Côte d'Ivoire, but at a normal pace

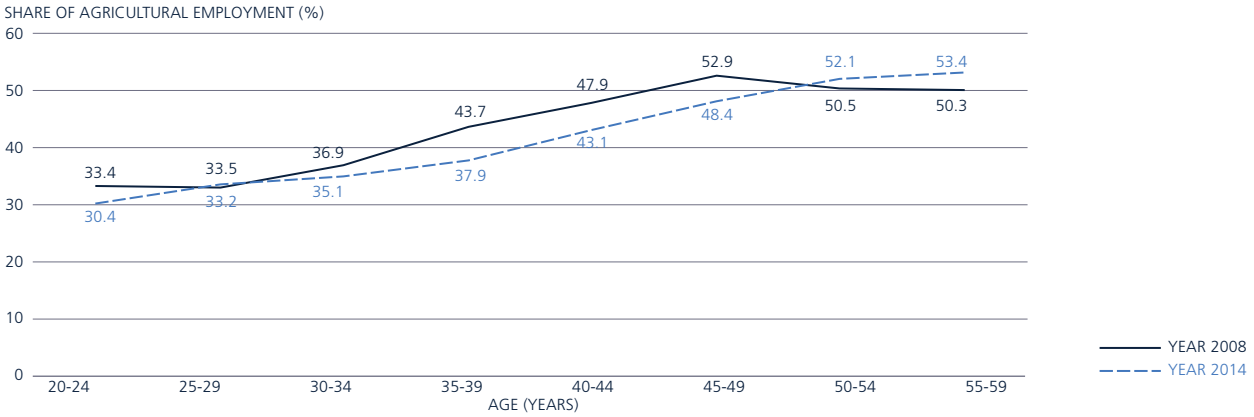
Seventh, despite good prospects for new jobs and better earnings within agriculture, over time, most jobs will be generated outside agriculture. As highlighted in the previous section, the prospects for new, better, and inclusive jobs in agriculture are particularly good in Côte d'Ivoire (compared to other countries), given its relatively low staple crop productivity (Chapter 3), its high potential for expanding its labor-intensive cash crop export and the production and value addition in high-value agricultural products through inclusive value chain development. Nonetheless, the overarching deeper trend remains toward a decline in the overall share of agricultural employment over time. This follows from the power of Engel's Law, which drives the (worldwide) structural transformation propelled by the lower income elasticity of the demand for food compared to the demand for non-food.

Often, it is the youth who are inclined to leave agriculture first or in greater numbers, also in Côte d'Ivoire. They tend to better educated, have more degrees of freedom and less to lose, rendering them more mobile. Difficult access to land (through land scarcity, hereditary laws, or poorly functioning rental markets) or (seasonal) lack of employment opportunities on the family farm may further drive them off the farm. Looking at actual participation shows that youth are indeed less involved in agriculture in Côte d'Ivoire than the older cohorts (Figure 2.7). Among the 20–34-year-olds (excluding students), 34.5 percent of workers were employed in agriculture in 2008; among the 35–60-year-olds, the ratio was 49.1 percent or 14.6 percentage points higher. Those who stay tend to engage full time and work as many hours as the older cohorts, suggesting a high degree of specialization.

So far, youth's exit out of agriculture has been in line with Côte d'Ivoire's level of development. Figure 2.8 presents the age participation gaps (percentage points) (around 2010) for a number of African countries as a function of their level of development.[42] An even higher gap in agricultural participation between the 20–34 and 35–60-year-olds is observed in Nigeria (19 percentage points). The difference is lower in Tanzania and Uganda (9.2 and 11.2 percentage points, respectively) and much lower in Ethiopia, Malawi, and Niger (5.2, 6.7, and 2.3 percentage points, respectively). These cross-country differences are broadly consistent with their levels of development—the higher are their per capita incomes, the further they are in the structural transformation

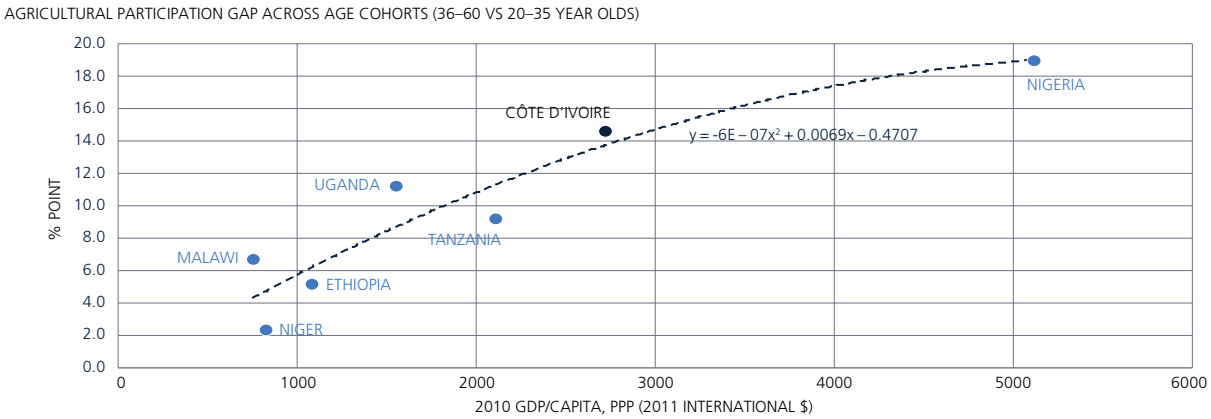
[42] Maiga, Christiaensen, Palacios-Lopez (2016).

Figure 2.7
Youth are less engaged in agriculture than the older age cohorts



Source: Authors' calculations based on ENV 2008 and ENSETE 2013.

Figure 2.8
Decline in agricultural participation in Côte d'Ivoire is consistent with its level of development



Source: Maiga, Christiaensen, Palacios-Lopez (2016); ENSETE 2013 for Côte d'Ivoire.
Note: Difference in agricultural participation among age cohorts (36–60 vs. 20–35-year-olds).

and the larger is the generational agricultural engagement gap. The rate of decline in agricultural engagement currently observed across Côte d'Ivoire's age cohorts is overall consistent with this pattern.[43]

Nonetheless, a note of caution is in order. The observed agricultural participation gaps are simple cross-sectional differences between age cohorts. As such, they also reflect life cycle issues unrelated to the structural transformation (such as youth starting to work off the farm before returning to farming in attendance of access to land) and they should be taken as upper bounds. Subtracting the difference in agricultural participation across age cohorts among the three least-developed countries, which are still at the cusp of their structural transformation (Ethiopia, Malawi, and Niger), as an indicator of a 'normal' age gradient, would reduce Côte d'Ivoire's age gradient to about 10 percentage points (from 14.6 in 2008).

Eighth, the road out of agriculture runs also partly through agriculture. Raising agricultural productivity remains critical to pace the transition out of agriculture and to foster nonfarm employment generation with broad-based agrarian production structures and inclusive agricultural value chains tending to be especially successful. An important share of the demand for nonagricultural products and services and thus nonagricultural employment, especially for the poorer segments of society, will come from broad-based agricultural growth in the

[43] As expected, between 2008 and 2014, the overall participation rate also continued to decline.

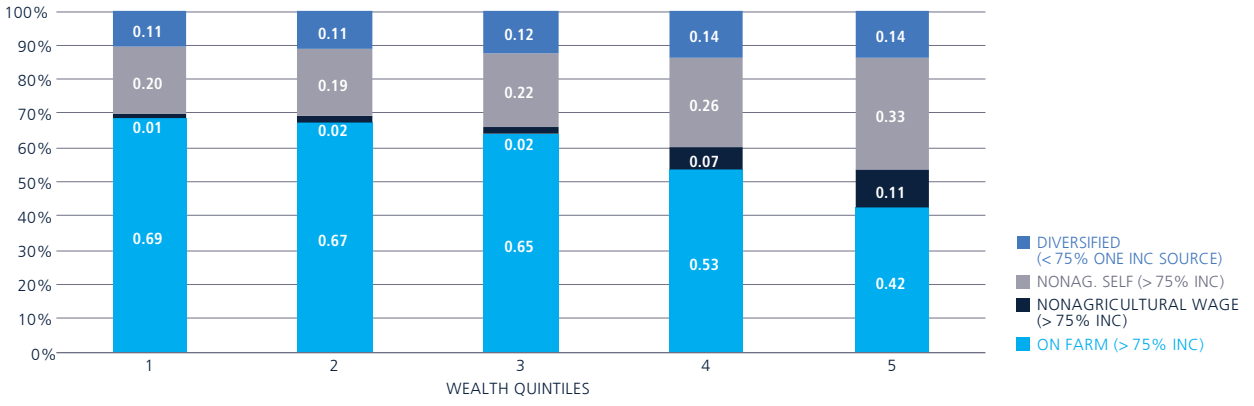
rural hinterlands (and less so from modern wage employment in modern manufacturing). In fact, 70 percent of the new 'jobs' generated between 2012 and 2014 were in self-employment (most of which were in agriculture on family farms) (Chapter 1). Only 30 percent of new jobs (working for someone else) were wage jobs (mostly still informal and without contract). Many of the new jobs will also be indirectly linked to agriculture and agribusiness.[44] Labor productivity increases across the agricultural subsectors will thus be equally necessary to keep agriculture competitive with other nonagricultural sectors, so as to retain youth and reap the job opportunities that the growth in domestic and external demand for agricultural products presents, but also to pace the transition of labor out of agriculture and foster demand for nonagricultural products and nonfarm employment generation.

Indeed, there might be increasing reluctance to stay engaged in agriculture at current productivity levels, at least from an aspirational perspective.[45] Depending on how the question is asked, two to four in five current farmers in Côte d'Ivoire already report to aspire to work outside agriculture.[46] This is not surprising as better-off individuals in rural areas tend to be somewhat more diversified or specialized in nonagricultural self- and wage employment, also in Côte d'Ivoire (Figure 2.9). Nonetheless, the decline in agricultural specialization across the wealth gradient is gradual and even among the wealthiest quintile, still more than two in five farmers are specialized in agriculture. In other countries the decline in the share of agricultural employment across the income quintiles is usually stronger. This partly also reflects the greater earnings potential offered by tradable cash crops (compared to other countries), and the more diversified and commercialized nature of agricultural activities in Côte d'Ivoire (see Chapter 3). With projected rural poverty rates in Côte d'Ivoire still at 57 percent in 2011, it is also consistent with limited off-farm opportunities in the rural economy and its urban centers.

2.2.2 Proximity matters for inclusiveness

Ninth, development of rural areas and secondary towns in Côte d'Ivoire is further called for to productively absorb labor exiting agriculture. At first sight, the rural employment structure is broadly consistent with current development. About four in five rural workers work in agriculture, which is consistent with the ratios observed in other countries at similar levels of development (Figure 2.10).[47] Yet only a very small (and relatively

Figure 2.9
Specialization into nonagricultural activities opens access to better jobs



Source: Authors' calculations from ENSETE 2013.

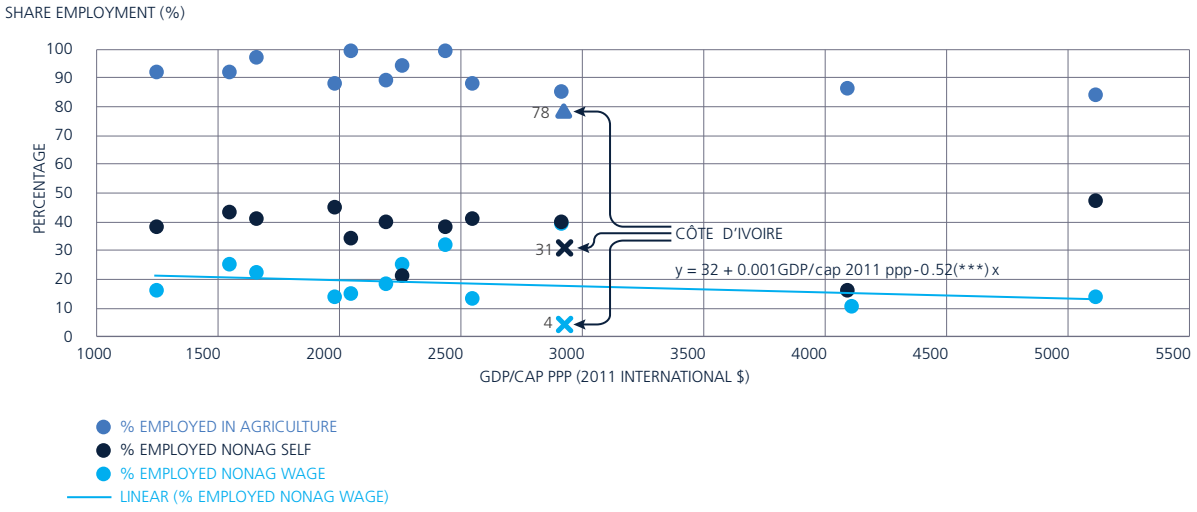
[44] Detailed analysis of the national accounts showed that while the value added in agriculture was estimated at 17.5, 6.5, and 2.5 percent, in Nicaragua (2006), Peru (2007), and Chile (2008), respectively, the value of forward and backward linkages added 5.2, 3.2, and 2.2 percentage points (Anriquez 2016), with the share of these linkages in the total value added by agriculture (production and linkages) increasing as countries become richer (Nicaragua, 1,849 (2010 US$) GDP/capita, in 2015; Peru (5,974 (2010 US$) GDP/capita in 2015; Chile 14,626 (2010 US$) GDP/capita in 2015) and the value added in agriculture declined.

[45] Surprisingly, there is not much difference across age cohorts. Much of the occupational transformation usually happens through younger age cohorts, who are more skilled and flexible.

[46] When asked about the type of business they would like to run in the future, about 60 percent of people employed in agriculture aspire to run a farm. When asked about the type of job they would like, more than 80 percent of those currently employed in agriculture, indicate to be aspiring a job outside agriculture.

[47] Davis, di Giuseppe, and Zezza (2015).

Figure 2.10
Among the Ivorian rural population, few have nonagricultural wage employment

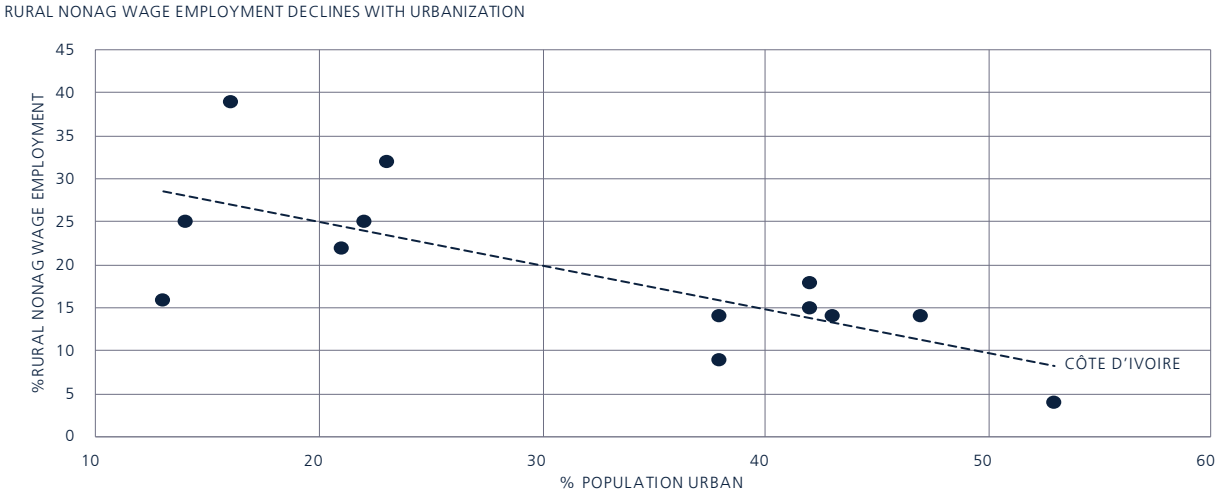


Source: World Bank staff compilation based on ENSETE 2013 and Davis, di Giuseppe, and Zezza (2015).

smaller) share of the rural population (4 percent) is engaged in nonagricultural *wage* employment. This is most likely linked to the high degree of Côte d'Ivoire's urbanization and urban concentration with most firms and nonagricultural wage employment confined to Abidjan. Fifty-three percent of the population is urban, of which 40 percent lives in Abidjan (Figure 2.11). In 2012, less than 10 percent of formal jobs were outside Abidjan (Figure 5.10), with the vast majority of new formal jobs continuing to be generated in Abidjan (Figure 5.16), and only very few in other urban areas (mainly in agribusiness). This urbanization pattern comes along with a high wage premium for skilled labor (laborers with higher education) who tend to earn on average about as much in other urban areas as in Abidjan, and about three times more than unskilled laborers in these urban areas (the highest locational skill premium) (Table 2.1). The low difference in wages for highly skilled workers between Abidjan and other urban areas suggests that a wage premium is needed to attract skilled labor to other urban areas (possibly also because of underdeveloped public services in these areas).

Controlling for GDP, households in Côte d'Ivoire tend to be also more specialized, either in agriculture or in nonagricultural self-employment. There is less part-time farming and income diversification within

Figure 2.11
Share of rural nonagricultural wage employment declines sharply with the rate of urbanization



Source: Authors' computations based on Davis, di Giuseppe, and Zezza (2015).

households than observed elsewhere. On the one hand, the larger degree of specialization is consistent with larger land availability per person (Figure 3.2) and cash crop growing such that, in the absence of mechanization, relatively more labor can stay employed on the farm. It may also point to limited off-farm income opportunities in the rural areas to diversify, such that sorting is more dichotomous—either fully in agriculture; or fully outside agriculture, but further away, in the city where nonagricultural self-employment and wage jobs are concentrated (see subsequent chapters).

Nearby access to off-farm self- and wage employment in the rural economy and secondary towns is especially important for better and inclusive employment. Cross-country evidence from across the world shows convincingly that movements out of agriculture to the rural economy, secondary towns, and secondary cities (defined as less than 1 million inhabitants) are more poverty reducing than exits out of agriculture into the metropoles.[48] While those who make it to the city, tend to gain much more on average than those who move nearby, only few of the poor manage to do so, and many more find their way into off-farm activities when they are nearby. The end outcome is one of an accelerated poverty reduction when people can find off-farm employment opportunities nearby. Given the bulky nature of the source material and related transport costs, many agribusinesses (for example, millers, beer breweries, processors) establish in urban centers closer to the sourcing areas. These centers often also act as trading hubs facilitating the supply of inputs (seeds, fertilizer, machinery), storage, marketing and transport of produce, generating off-farm employment opportunities. Even before accounting for related services agribusiness activities, including agriculture (ISIC 01) and food manufacturing (ISIC 15) alone accounted for more than 30 percent of total formal employment and more than 20 percent of value added in formal firms (Figure 5.5). Agribusiness also forms the only source of formal manufacturing jobs outside Abidjan. The past couple of years have witnessed a small increase in formal enterprise establishments outside Abidjan (Chapter 5), though much room for expansion remains.

2.3 HOW MUCH MOVEMENT BETWEEN SECTORS CAN REALISTICALLY BE EXPECTED IN CÔTE D'IVOIRE?

A benchmark scenario to gauge expected movement between employment sectors. The sections above provide a conceptual framework to consider the potential for agriculture and other sectors to generate employment and raise earnings for the poorer segments of society. This section presents a benchmark scenario outlining how much movement between sectors can realistically be expected in Côte d'Ivoire over the 2015–2025 horizon. It starts from the employment situation in Côte d'Ivoire in February 2014 and applies projections of population growth and growth rates for the main sectors of the economy over the next decade, as well as international historical estimates of the sectoral elasticity of employment in Africa and around the world. The projections forecast the composition of job growth over the next decade as well as the resulting effects on the country-wide employment structure. They provide a benchmark to consider how changes in productivity in agriculture or in other sectors, or changes in the composition of GDP growth, can influence the overall employment composition (holding sectoral elasticities of employment constant). The benchmark scenario is optimistic as it assumes high growth in industry (secondary), commerce, and services in the next decade, with more limited growth in agriculture (Table 2.3) (see Annex B for more background on methodology and findings).[49]

[48] Christiaensen, De Weerdt, and Todo (2013); Christiaensen and Todo (2014).

[49] This scenario is also based on growth-employment elasticities from low-income countries.

Table 2.3
Expected growth by sector used in benchmark projections

Year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Agriculture	3.6	3.1	2.2	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Secondary	8.7	8.5	8.2	6.8	6.6	6.4	6.3	6.1	5.9	5.7	5.5
Commerce	10.8	10.4	10.0	9.1	8.9	8.7	8.5	8.3	8.1	7.9	7.7
Services	10.8	10.4	10.0	9.1	8.9	8.7	8.5	8.3	8.1	7.9	7.7
Total	**8.8**	**8.5**	**8.1**	**7.5**	**7.4**	**7.3**	**7.1**	**7**	**6.9**	**6.7**	**6.6**

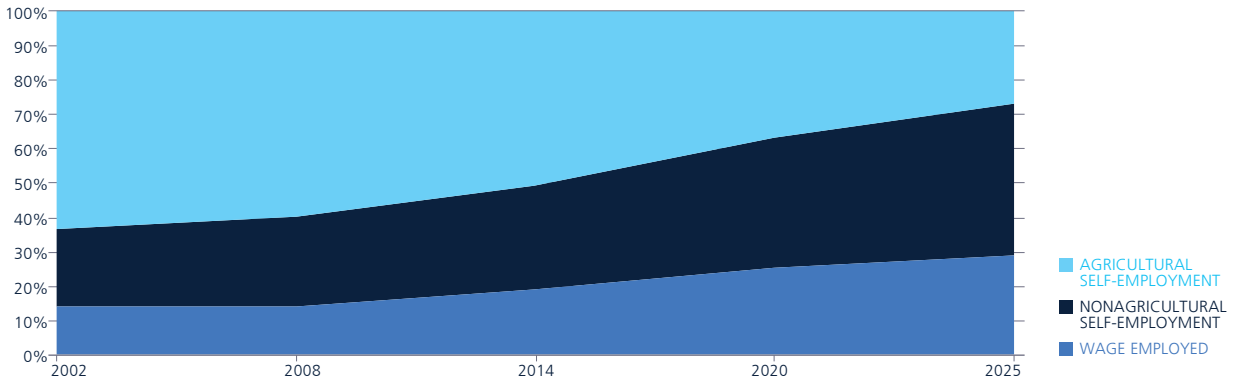
Source: World Bank, 2015

Projections suggest a continuing decline of the agricultural labor share, mostly counterbalanced by an increase in nonagricultural self-employment, which is expected to become the main source of employment (Figure 2.12). Specifically, it is expected that the share of employment in agriculture could decrease from 51 percent in 2014 to 29 percent in 2025. In parallel, it is likely that nonagricultural self-employment will become the main source of employment by 2025, 43 percent of the labor force is expected to be self-employed outside agriculture. The share of wage employment also increases, but it will remain the least prevalent type of employment, with less than 30 percent of the labor force.

Wage employment remains the smallest employment category and concentrated in services. These baseline projections are only indicative and subject to changes in within-sector productivity, the macroeconomic situation or the country's political stability. Nonetheless, wage employment remains the smallest employment category under a host of differing scenarios that consider differing growth patterns for industry and services, while maintaining the rather pessimistic outlook on agricultural growth (see Annex B). Wage employment is expected to remain largely dominated by the service sector, while the share of wage employment in industry will remain limited to 3 percent at most, even when considering fast expansion of the service and industry sectors.

Faster growth in agriculture would slow the exit of labor from agriculture as well as the expansion of nonagricultural self-employment. The benchmark scenario assumes a 3 percent growth rate of the agricultural sector over most of the next decade. If the agricultural sector modernizes more rapidly, a decade of 4 percent agricultural GDP growth is plausible. This would be on par with performance in Vietnam or China over

Figure 2.12
Employment composition over time in Côte d'Ivoire (expected composition past 2014, benchmark scenario)



Source: Authors' calculations based on ENV2002, ENV2008 and ENSETE 2013, projections for 2020 and 2025, see Annex B for methodology

the past three decades. Such stronger growth in the agricultural sector would limit exits from agriculture. As such, a share of 29 percent of employment in agriculture is best considered a lower bound.[50]

An important caveat to these projections is that they abstract from intersectoral linkages. Productivity growth in agriculture could also help growth, employment, and earnings in the other sectors, by increasing domestic demand for nonagricultural goods and services, as well as demand for higher-value and more processed agricultural produce, which would both lead to more and better off-farm jobs, in construction, in manufacturing (including agro-processing), and in food and non-food trade. It highlights the role for agriculture also to foster the transition.[51]

In sum, informal off-farm self-employment, not formal wage employment, is set to become the major source of employment, and policies to raise productivity of those earning their living as self-employed workers will be essential for more productive employment and poverty reduction. While essential, given the small initial base (especially in industry), even fast growth in the formal service and industry sector can only add a relatively small number of additional (formal) wage jobs. Though declining, employment in agriculture will remain large in the foreseeable future, with labor productivity gains in the sector also being an important factor in facilitating exit out of it. This does not do away with the important role formal firms play for employment, but rather highlights the need for realism in expectations and balanced policy attention.

2.4 A THREE-PRONGED APPROACH TOWARD PROMOTING PRODUCTIVE EMPLOYMENT AND ACCELERATING POVERTY REDUCTION

With two-thirds of Côte d'Ivoire's poor living in rural areas according to recent (2011) estimates and almost half of the poor living in households whose head is primarily engaged in agriculture, raising labor productivity in agriculture has to be a key entry point for more, better, and more inclusive employment generation in Côte d'Ivoire. This also plays to its potential comparative advantage in cash crop production and takes advantage of the rising demand for high-value and processed agricultural produce following rising incomes and dietary diversification, especially among its large urban population. For the country to grasp these opportunities, agricultural labor productivity will need to be made competitive with off-farm opportunities in the cities. Otherwise the exit of youth out of agriculture, some degree of which is normal, will only accelerate. Modernizing agriculture is therefore the first prong to more, better, and more inclusive employment. It will be the topic of Chapter 3.

But with global (and domestic) income elasticity for nonagricultural goods exceeding that for agricultural goods, the deeper running demand forces make that agriculture cannot do it alone, and expanding productive employment opportunities off the farm will be equally important. The transitional pace can be slower in Côte d'Ivoire given its agricultural export potential (and its high level of urbanization already). Off-farm employment generation will be more inclusive and poverty reducing, when it happens nearby. It is in the rural economies and rural urban centers where the poor are concentrated, drawing attention to the challenge of Côte d'Ivoire's high rate of urbanization (and urban concentration) as well as its low rate of rural off-farm wage employment. On the upside, pursuance of the agricultural transformation through inclusive agricultural production structures and inclusive value chain development emerges as a powerful remedial force through off-farm employment generation up and down the chains in rural urban centers. After modernizing agriculture, expanding productive employment opportunities off the farm is thus the second prong, with a fair bit of it directly related to agriculture. The importance and potential of off-farm employment generation nearby for inclusive employment generation and the link with agribusiness development will be elaborated upon in Chapters 4 and 5. The critical issue of raising productivity in nonagricultural household enterprises (the informal sector) will be assessed in Chapter 4. The trends and prospects for the creation of wage jobs in formal firms are discussed in Chapter 5.

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[50] But productivity growth in agriculture would also help growth, employment and earnings in the other sectors, by increasing domestic demand for nonagricultural goods and services, which in turn may lead to more and better off-farm jobs. The projections abstract from such interlinkages.

[51] Tiffin and Irz (2006).

Finally, the occupational transformation typically lags the economic transformation, and social protection will be needed for those unable to seize opportunities and access more productive employment opportunities. On the one hand, many (often older and female) farmers may be left behind in the rural areas. On the other hand, some individuals in urban areas may have limited potential to enter more productive occupations, including in nonagricultural self-employment where variations in productivity are substantial. Appropriate social assistance, including health and social protection systems, will need to be developed to assist those who can no longer make the transition to modern agriculture or switch to productive nonagricultural activities in urban areas. While the first two prongs are focused on increasing earnings, especially among the poorer segments of society, the third prong thus seeks to mitigate the rising income gap for those left behind through targeted employment programs and transfers. The set-up of such safety nets can further accelerate the structural and agricultural transformation, by encouraging investments, as well as expanding demands for products. An in-depth discussion of these issues falls however outside the scope of this report, which is focused on employment with a poverty lens.

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ANNEX B:

PROJECTION OF FUTURE EMPLOYMENT STRUCTURE — METHODOLOGY

The simulations follow the methodology used for the sectoral employment projections reported in the IMF Africa *Regional Economic Outlook* (IMF, 2012; Fox et al., 2013) and the World Bank regional report on *Youth Employment in Africa* (Filmer et al. 2014). The baseline structure of employment is obtained from the nationally representative microeconomic data on the employment situation in Côte d'Ivoire collected in February 2014 (ENSETE 2013). Estimates of population composition are based on the UN population data. Projections for sectoral composition of growth are taken from the World Bank 2015 Macro and Poverty Outlook (World Bank, 2015). Finally, a range of estimates of the sectoral elasticity of employment are used based on international experience, ranging from most conservative to highly optimistic.

The 2013 employment survey (ENSETE 2013) provides nationally representative individual-level data on labor-force participation and employment, including the type of employment (wage employment or self-employment) and sector of employment (agriculture, industry or services). The projections distinguish three categories of employment:

- **Agricultural employment**—mostly smallholder and commercial farmers. Wages agricultural employment is also included in this category, as well as fishing and forestry.
- **Nonagricultural self-employment (industry and services)**—these are small nonfarm businesses that tend to be operated by households in the industry and services sectors, it mostly includes self-employed people running unincorporated businesses who at times employ family members and outside workers. Family helpers outside of agriculture are also categorized in nonagricultural self-employment.
- **Wage employment (industry and services)**—work outside the agricultural sector for which wages are received from an unrelated individual. It occurs in both the industry and service sectors with the former involving mostly tradable goods and the latter non-tradable. The wage employed category includes salaried workers, employers, volunteers for organizations outside households, apprentices, and interns.

The working-age population (WAP) includes individuals over the age of 14. At the 2014 baseline, the working-age population was 62.5 percent of the total population, or 14,501,118 individuals (Table B.1). Of this working-age population, the employment participation rate (share of employed population in working-age population) was estimated to be 70 percent. Among the employed population, 51.1 percent were engaged in agriculture, 2.5 percent in wage employment in the industry sector, 5.1 percent in wage employment in the commerce sector, 11.7 percent in wage employment in other services sector, 4.4 percent in self-employment in the industry sector, 20.9 percent in self-employment in the commerce sector, and 4.2 percent in other services (see Figure 1.26).

To undertake the projections, based on the working-age population at baseline (from the 2013 employment survey and UN population data), we calculated the working-age population growth rates in Côte d'Ivoire and the commensurate size of the working-age population from 2014 through 2025.[52]

[52] While the UN definitions for working-age population align with the ENSETE definition and encompass all individuals over the age of 14, the working-age population data used in our calculations provided by the UN population division provides population estimates for individuals ages 15–64. Since were unable to locate population data disaggregated into the 14+ age group, we produced our estimates in Table B.2 below using the available data for the 15–64 age group.

Table B.1
Working-age population projections

Year	Working-Age Population	Growth rate (%)
2014	14,501,118	—
2015	14,880,081	3
2016	15,268,947	3
2017	15,667,975	3
2018	16,077,432	3
2019	16,497,588	3
2020	16,928,725	3
2021	17,371,129	3
2022	17,793,593	2
2023	18,226,331	2
2024	18,669,594	2
2025	19,123,636	2

Source: Authors calculations based on ENSETE 2013 and UN population data.

Data from national accounts provide the sectoral breakdowns of value added. Projections of GDP growth in the agriculture, industry, and service sectors were used through 2025, with the assumption that, from 2017 through 2025, overall GDP growth across all sectors would gradually decline. Table B.2 shows strong but declining growth within the industry and service sectors, and weak declining growth in agriculture.

Table B.2
GDP growth projections

Year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Agriculture	3.6	3.1	2.2	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Industry	8.7	8.5	8.2	6.8	6.6	6.4	6.3	6.1	5.9	5.7	5.5
Commerce	10.8	10.4	10.0	9.1	8.9	8.7	8.5	8.3	8.1	7.9	7.7
Services	10.8	10.4	10.0	9.1	8.9	8.7	8.5	8.3	8.1	7.9	7.7
Total	**8.8**	**8.5**	**8.1**	**7.5**	**7.4**	**7.3**	**7.1**	**7**	**6.9**	**6.7**	**6.6**

Source: World Bank, 2015.

To be able to project the future composition of employment based on the above sectoral growth rates, estimates of employment elasticity by sector are required. The calculation of the employment elasticity of growth/value added is a simple expression of the responsiveness of employment to output growth. The relationship is analyzed by sector and is expressed as follows:

$$d\ln(E_{it}) = \alpha_i \, d\ln(GDP_{it}),$$

where E_{it} is the volume of employment by employment sector (i) (wage and non-wage) at time t, GDP is the sectoral output value at time t and α is the sectoral employment elasticity, for the country (Fox et al. 2013). The parameter α could also be estimated directly using actual historical data, year on year. However, studies have shown that this estimate could potentially be unreliable due to greater volatility in annual output growth rates than in employment growth (Fox et al. 2013). As a result the preferred method is to use a longer period to estimate elasticities or a regression panel technique to account for employment persistence. Once α is estimated at the country level, future employment change can be projected for a given sectoral output change (IMF 2013). This approach relies on two strong assumptions: that the underlying relationships between the structural parameters which jointly determine employment and output in a given sector stay constant over time and that a long period of high or low sectoral growth will not affect elasticity. Fox et al. (2013) conduct a range of robustness checks and conclude that this modeling technique performs satisfactorily.

Table B.3
Elasticity parameters[a]

Sector	Low income	Resource rich
Wage industry	0.9	0.6
Self industry[b]	0.7	0.7
Wage services	0.8	0.8
Self services[c]	0.8	0.7

Source: Fox et al. 2013.
Note *(a):* Data is estimated over 1991–2003. *(b)* Agricultural employment closes the model for low-income and resource-rich countries. *(c)* Self-employment includes nonwage industry and nonwage services.

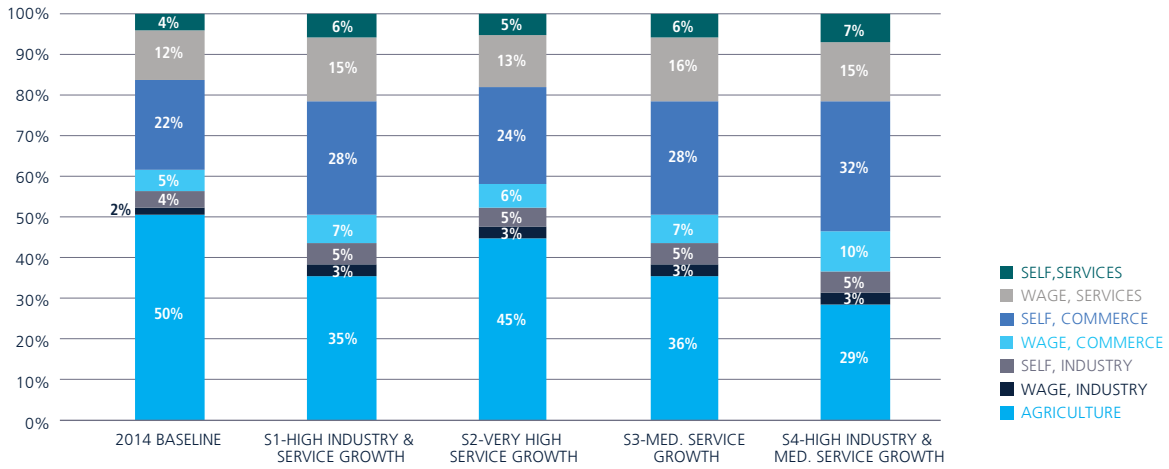
The projections were produced based on three different growth scenarios (See Table B.4) combined with the elasticities in Table B.3. These growth and elasticity combination scenarios include: high industry and services growth with low-income country employment elasticity (Scenario 1), very high services growth with resource-rich country elasticity (Scenario 2), and medium services growth also with resource-rich country elasticity (Scenario 3). Projections vary depending on the underlying scenarios considered, but trends are fairly robust. Figures B.1 and B.2 show the projected employment profiles in Côte d'Ivoire through 2020 and (more tentatively) through 2025, respectively.

Table B.4
Growth scenarios used for projections

	Scenario 1 High Industry and Services Growth		Scenario 2 Very High Service Growth		Scenario 3 Medium Service Growth	
Year	**Industry**	**Services**	**Industry**	**Services**	**Industry**	**Services**
2014	9.2	11.3	9.1	11.5	9.1	6.3
2015	9.5	9.4	9.2	11.5	9.2	6.3
2016	9.0	10.0	9.5	11.5	9.5	6.3
2017	7.8	9.5	9.0	11.5	9.0	6.3
2018	7.1	8.8	7.0	11.5	7.0	6.3
2019	7.0	8.7	6.9	11.5	6.9	6.3
2020	7.0	8.7	6.9	11.5	6.9	6.3
2021	6.9	8.5	6.9	11.5	6.9	6.3
2022	6.9	8.4	6.9	11.5	6.9	6.3
2023	6.8	8.4	6.8	11.5	6.8	6.3
2024	6.8	8.4	6.6	11.5	6.6	6.3
2025	6.7	8.3	6.7	11.5	6.7	6.3

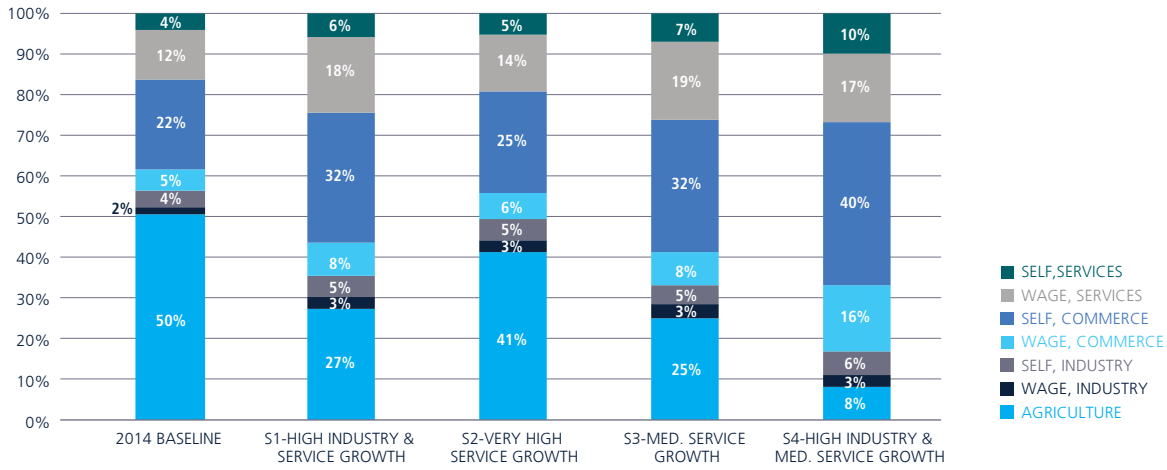
Source: Fox et et al., 2013.

Figure B.1
Projected structure of employment in 2020, by growth scenario



Source: Various micro data; authors' calculation.

Figure B.2
Projected structure of employment in 2025, by growth scenario



Source: Various micro data; authors' calculation.

3: MAXIMIZING AGRICULTURE'S CONTRIBUTION TO THE JOBS AGENDA

Luc Christiaensen and Gabriel Lawin

As highlighted in the previous chapter, increasing agricultural labor productivity is key to the jobs agenda in Côte d'Ivoire. It plays to its comparative advantage; it raises earnings of the poor directly, and it helps generate demand for nonagricultural goods and services and thus off-farm employment. Also, given the large share of employment in agriculture, even fast growth of urban wage jobs will not suffice to absorb all new entrants. But not all agricultural strategies are equally successful in generating inclusive employment.

This chapter discusses policy entry points to maximize agriculture's contribution. It begins with a brief profile of smallholder agriculture in Côte d'Ivoire and the opportunities and challenges it presents for inclusive employment within agriculture, and also further down the chain. The focus is on features of the agricultural system that are important from a jobs perspective and agricultural subsectors that are particularly promising for inclusive employment, but that have so far received less attention in national employment strategies. This is not to dismiss the important potential of export crops, but these have been discussed extensively elsewhere (World Bank 2012; 2015). Furthermore, many of the challenges faced by these crops, are also akin to those faced in the rice chains, which are discussed in more detail.[53] The chapter concludes with five policy entry points.

3.1 AGRICULTURE IS DOMINATED BY MARKET-ORIENTED SMALLHOLDERS WHO ARE WELL ENDOWED WITH LAND

While they contribute to 50 percent of the overall export value, export crops are only about a quarter of the value of total agricultural output. Food crops make up the rest (75 percent). Two in five farmers grow both cash and food crops (44 percent). About one-third grows only cash crops—they are richer on average. One in four (24 percent) grows only food crops—they are poorer on average. Traditionally, cash crops have received the most attention. These numbers would suggest greater attention to food crop growers and raising food crop productivity. This could also help raise labor productivity among women, who tend to be more engaged in the food cropping system[54] (Camara 1984; Chaléard 1988). There is also an important geographic dimension to this.

There are two main distinct agricultural regions in Côte d'Ivoire, the forest region in the south (southern and western regions) and the drier savannah in the north. With higher and more reliable rainfall and better soils, the forest region produces the majority of Côte d'Ivoire's export crops (cocoa, rubber) (Figure 3.1), with cocoa mainly grown by smallholders, and rubber on plantations. Together, they accounted for 56 percent and 16 percent, respectively of the total value of agricultural exports during 2011–2013. Food crops are less frequent in the south, consistent with the greater importance of cash crops (especially cocoa), and concern mainly roots and tubers. Overall, food crops are especially prevalent among smallholders in the northern region, dominated by cereals and rice. (Roots and tubers are also common in the eastern and central regions.) When it comes to cash crops, cashew and cotton are the cash crops of the north, both grown by smallholders (with cashew nuts also frequently in the central region). They contributed 5 percent and 4 percent of the total agricultural export value, respectively.

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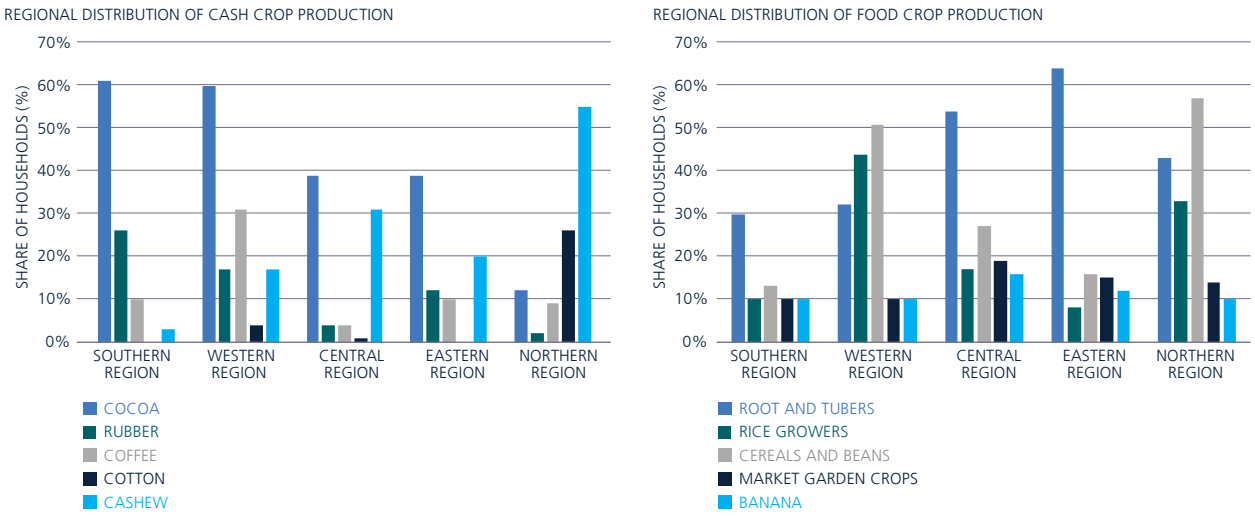
[53] See World Bank (2012a, 2015) for detailed subsectoral discussions.

[54] Aka (2007) showed that in Côte d'Ivoire, only 23% of coffee and cocoa growers are female. See also Camara (1984), Chaléard (1988), Ministère de l'agriculture de Côte d'Ivoire (2009).

Figure 3.1
Cocoa, rubber, roots, and tubers dominate in the southern regions; cotton, cashew, cereals/beans, and rice in the northern regions; rice is also important in the western regions



Source: World Bank staff calculations ENSETE 2013.

Regional poverty patterns are associated with cropping systems. The poverty headcount rate is very high in the north (59 percent in 2015), but it houses only 19 percent of the population. The opposite holds in the south (which includes Abidjan), a lower poverty headcount rate (36 percent), but hosting a larger share of the total population (47 percent). Better prospects, including through cocoa production, attracted more migrants. The combination of both factors (high poverty rate and low population share, and vice versa) makes that the northern and the southern regions account, respectively, for about 24 percent and 37 percent of the total number of poor people in 2015, or about two-thirds of the total number of poor. Inclusive employment generation suggests particular attention to these areas and their livelihoods systems. The revival of cotton and the recent boom in cashew and increasingly also rice are important developments from this perspective, especially for the northern region (see further below).

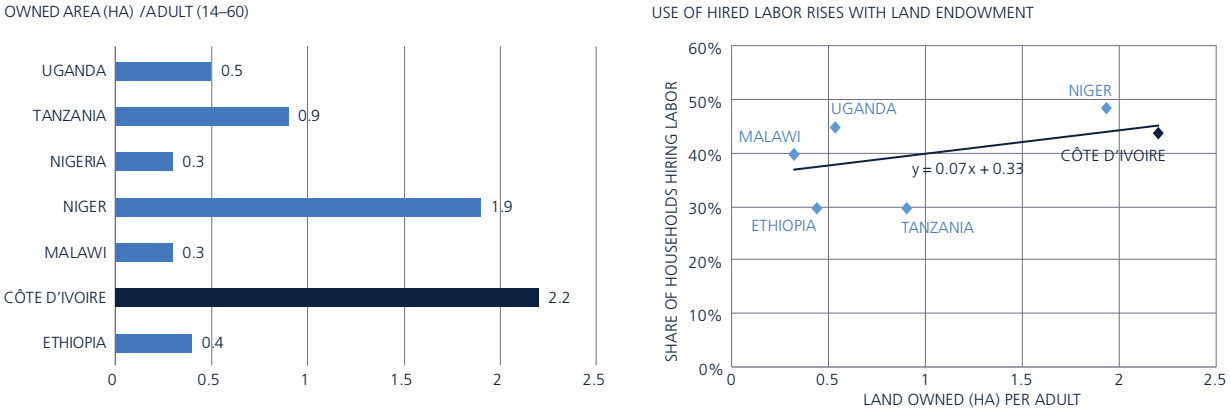
Table 3.1
Low population share, high poverty rate in northern region; high population share, lower poverty rate in southern region

Region	Population	Share of population (%)	Poverty rate (%)	Contribution to poverty (%)
Southern region	10,713,905	47	36.1	36.9
Western region	2,554,967	11	51.8	12.6
Central region	3,907,481	17	55.0	20.5
Eastern region	1,227,617	5	50.5	5.9
Northern region	4,267,361	19	59.4	24.1
Total	**22,671,331**	**100**	**46.3**	**100.0**

Source: Authors' calculations based on Ministère d'Etat, Ministère du Plan et du Développement (2016).
Note: The population statistics were picked from the 2014 census.

Farming is dominated by smallholders who are well endowed with land and hire (migrant) labor to make up for family labor shortages. Farmers own on average 2.2 ha per adult (Figure 3.2). Given very little mechanization, the use of hired labor (as well as labor exchange) is common to make up for family labor shortages. Almost half of the farmers (49 percent) use hired labor and 45 percent use unpaid labor (typically

Figure 3.2
Given high land/labor ratios in Côte d'Ivoire and little mechanization, hiring labor is common



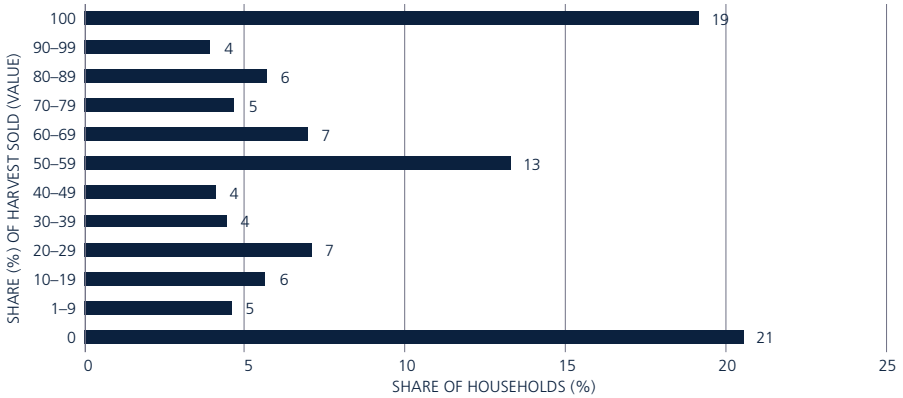
Source: Authors' calculations based on ENSETE (2013), Deininger, Fang, and Savastano (2015); Dillon and Barrett (2014).

through mutual labor exchange arrangements which are especially common in the north). On average they hire 5.1 persons and 4 (unpaid) persons.[55]

Use of hired labor is especially high in cotton, rice, and cashew (grown in the North), the production of which has been expanding over the past 5 years. Only 28 percent of agricultural households rely exclusively on family labor. This suggests substantial agricultural wage labor opportunities. Nonetheless only a very small share of the rural population reports to work as agricultural wage laborer (2.7 percent), suggesting that agricultural labor needs are often met by migrant laborers from neighboring countries. Both phenomena (low incidence of agricultural wage labor and high use of hired labor) are otherwise difficult to reconcile. The findings are also consistent with the notion of relatively limited agricultural labor surplus within Côte d'Ivoire, discussed in Chapter 2.

There is a fair degree of market orientation. Four in five smallholders sell at least some of their output, with one in five reporting to sell their complete harvest (Figure 3.3). In other words, most farmers engage with the market and have moved well beyond farming for subsistence only. It also suggests that the number of

Figure 3.3
Substantial market orientation among smallholders in Côte d'Ivoire



Source: Staff calculations based on ENSETE (2013).

[55] The labor questions of the agriculture module in the ENSETE 2013 only cover the last 3 months and so these statistics might suffer from underestimation and seasonality. Also, the use of hired and unpaid labor is only expressed in number of persons used, not in number of person days. Nonetheless, the number of unpaid persons used on the farm suggests that labor exchange (unpaid non-household members working on the farm) is non-negligible (and almost on par with hired labor use), suggesting that it is important to keep it in mind when calculating labor productivity measures, albeit less so from the perspective of jobs generation. The surveys do not provide additional information regarding the motivation, the precise extent or the individual characteristics of those involved in this unpaid labor exchange.

subsistence workers estimated from the 2013 ENSETE survey (using the new ILO employment categories) is most likely an overestimate. The survey classified about 50 percent of the people engaged in agriculture as subsistence workers (that is, workers working for their own consumption). Yet more than half of those lived in households who sold at least 30 percent of their harvest (in value terms) (see Box 3.1 for details). Households with land titles and access to irrigation commercialize a greater share of their production; female-headed households are less market oriented (Box 3.2).

BOX 3.1: SURVEY APPLICATION OF NEW INTERNATIONAL EMPLOYMENT DEFINITIONS: THE INITIAL CATEGORIZATION OF SUBSISTENCE FARMERS USED IN CÔTE D'IVOIRE DOES NOT CORRESPOND TO ACTUAL MARKET ORIENTATION

The 19th International Conference of Labor Statisticians held in 2013 recommended the adoption of new international norms for employment statistics, including revisions of the norms put in place after the 13th International Conference of Labor Statisticians held in 1982. Box 2 in Chapter 1 provides a detailed discussion. The new definition introduced a new category of people outside of the labor force called 'subsistence workers'. These are people who work for their own consumption. They are considered 'working but not employed'. This new categorization affects the employment rate, especially in countries where a large share of people are self-employed in agriculture, often as subsistence farmers. All other things equal, omitting these farmers from those 'employed' will increase the unemployment rate (by reducing the number of employed). This poses challenges, conceptually, and for comparability. The concept is also difficult to operationalize in practice.

Côte d'Ivoire was one of the first countries to apply these new norms in the 2013 employment survey (AGEPE and INS 2014). Due to limitations in the survey instrument and lack of guidelines to implement the new employment definitions, the original classification of subsistence farmers was implemented based on a question in the survey where individuals reported whether or not they have cash earnings from agriculture.

To assess the robustness of this classification, this report compares the degree of agricultural market participation among agricultural workers classified as employed and agricultural workers classified as subsistence workers using a household commercialization index (HCI) constructed from a household-based agricultural module also included in the survey. The HCI is defined as the ratio of the gross value of all crop sales and the gross value of all crop production:

$$HCI = \left[\frac{\text{Gross value of crop sales (in XOF)}}{\text{Gross value of all crop production (in XOF)}} \right] \times 100.$$

This index can be seen as a measure of a household's market orientation. The larger the index the higher is the degree of commercialization or market orientation. A value of zero signifies no market participation — the household only produces for it is own consumption; that is, full subsistence.

Application to ENSETE 2013 shows that the vast majority of individuals originally classified as subsistence workers (73.5 percent) actually reside in households who sell at least some of their products in the market. In fact, fifty-four percent of individuals originally classified as subsistence workers sell more than 30 percent of their products, and twenty percent sell all of it. Clearly, aside from any conceptual concerns about the omission of subsistence workers among the employed, the original classification failed to properly distinguish between farmers working for their own consumption and farmers engaging with the markets. The inadequacy of the classification can also be seen from the small difference in the average HCI between those employed in agriculture and those categorized as subsistence workers (51.9 percent versus 44.9 percent, respectively). The results illustrate the importance of a household-based approach in capturing agricultural market orientation. Gender differences within households in market orientation could lead to an underestimation of household production for the market, for example. Similarly, the shorter reference period (30 days) used in the individual labor module used to classify farmers as subsistence workers or not may also lead to underestimation. The agricultural module is based on sales during the last season.

Table B3.1.1
Comparison of household-level and individual-level classification (working-age population)

	[Agricultural employment only]		
Household-level classification	**Employed (%)**	**Subsistence workers (%)**	**Total (%)**
Market-oriented household (crop sales > 0)	79.53	73.48	77.15
Subsistence-oriented household (crop sales=0)	20.47	26.52	22.85
Total	100	100	100
Household commercialization index (HCI) (0 = no crop sales; 100 = full crop production sold)	51.9	44.9	49.1
No seller	20.47	26.52	22.85
Selling less than 10%	8.81	9.45	9.06
Selling between 10% and 20%	5.4	4.88	5.2
Selling between 20% and 30%	5.09	5.28	5.16
Selling between 30% and 40%	3.42	4.87	3.99
Selling between 40% and 50%	3.51	3.6	3.55
Selling between 50% and 60%	4.66	3.78	4.31
Selling between 60% and 69%	5.04	5.77	5.33
Selling between 70% and 79%	4.83	5.16	4.96
Selling between 80% and 89%	7.93	6.63	7.41
Selling between 90% and 99%	6.65	3.93	5.58
Selling 100%	24.2	20.13	22.6
Total	100	100	100
Share of households	60.57	39.43	100

Source: Staff calculations based on ENSETE (2013).

BOX 3.2: DETERMINANTS OF OUTPUT COMMERCIALIZATION

To explore the determinants of output commercialization, we run a simple OLS regression analysis of the HCI (see Box 3.1) on a set of determinants. The estimates indicate that gender of the household head, land certification, access to irrigation, the type of crop grown, and the use of inputs (organic and inorganic fertilizer, pesticides) are associated with the degree of output commercialization (Table B3.2.1). The commercialization index of female-headed households is on average 7 percent lower than that of male-headed households. Having a formal land certificate (land title or sale attestation) is associated with a higher rate of commercialization. Households with a land title commercialize 6 percent more of their production than those who do not have a land title. Access to an irrigation system increases the degree of agricultural commercialization. The regression coefficients show a positive and significant relationship between commercialization index and cash crops growing. Cocoa growing has a huge effect on the commercialization index. We do not find a significant relationship between commercialization and the household's cultivated land per adult suggesting that large farmers are not necessary those who are more market oriented (at least not in relative terms). Pesticide utilization increases by 4 percent the level of output commercialization.

Table B3.2.1
OLS estimates of the determinants of output commercialization

	Household commercialization Index (HCI)
Female headed	−6.880**
	(−3.14)
Age of household head (year)	−0.228
	(−1.12)
Age of household head squared/100	0.254
	(1.29)
Education of household head (ref: no education)	
[2] Primary	−0.802
	(−0.53)
[3] Secondary	−1.780
	(−0.94)
[4] Tertiary	−0.477
	(−0.07)
Household size (All members)	−0.0131
	(−0.05)
Household land size per adult (ha)	−0.286
	(−1.26)
Land tenure (ref: owned)	
Renting (Yes)	−0.0327
	(−0.01)
Mortgage (Yes)	−0.452
	(−0.04)
Borrowing (Yes)	−1.412
	(−0.31)
Other (Yes)	−7.644
	(−1.04)
Land certificate (ref: no document)	
Land title (Yes)	5.716*
	(2.46)
Customary certificate (Yes)	−0.952
	(−0.57)
Sale attestation (Yes)	8.437**
	(3.07)
Other documents (Yes)	5.487
	(1.83)
Access to irrigation (ref: No irrigation)	
River/lake (Yes)	8.633***
	(4.70)
Well (Yes)	−1.313
	(−0.57)
Borehole (Yes)	−5.334
	(−0.82)
Dam (Yes)	10.89**
	(2.89)
Other irrigation system (Yes)	2.393
	(1.62)

	Household commercialization Index (HCI)
Crops grown	
Cereals and beans (Yes)	−14.86***
	(−9.93)
Root vegetables (Yes)	−14.97***
	(−10.50)
Vegetables oil (ground nut, palm oil) (Yes)	0.353
	(0.20)
Cotton	3.749
	(1.09)
Legumes (market garden crops) (Yes)	5.389**
	(2.89)
Hevea (Yes)	−2.533
	(−1.34)
Cocoa (Yes)	21.89***
	(13.66)
Coffee (Yes)	4.323*
	(2.39)
Banana (Yes)	−1.830
	(−0.93)
Cashew (Yes)	−0.412
	(−0.24)
Agricultural inputs	
Family labor (man days)	0.0102**
	(2.94)
# Hired labor (persons)	0.0539
	(0.88)
# Unpaid labor (persons)	0.192*
	(2.52)
Manure usage (Yes)	6.097**
	(3.23)
Fertilizer usage (Yes)	−5.090**
	(−2.76)
Pesticide usage (Yes)	4.433**
	(2.96)
Marital status	
Married monogamous	0.798
	(0.37)
Single (never married)	9.159**
	(3.10)
Divorced/Separated	6.219
	(1.39)
Widow	3.224
	(0.98)
Constant	54.45***
	(9.57)
Observations	3,330
R^2	0.239

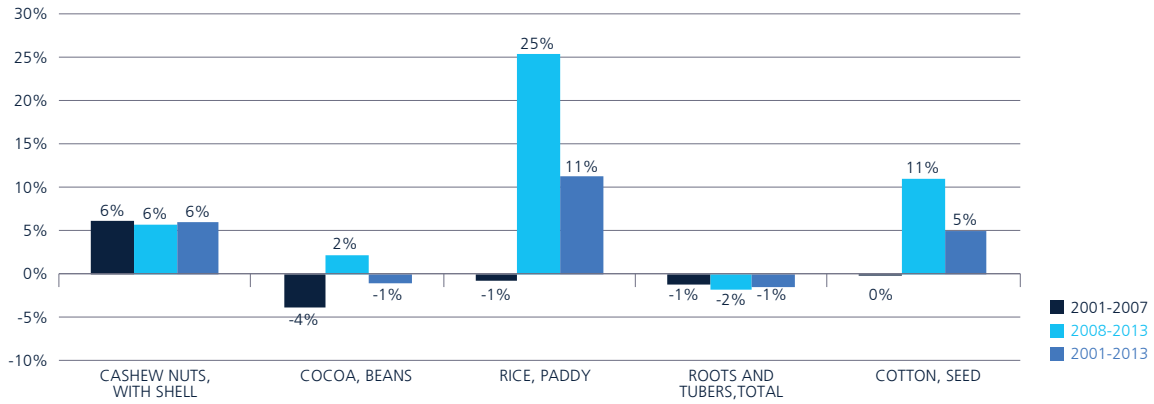
Source: Authors' calculation.
Note: t statistics in parentheses.
* p < 0.05, ** p < 0.01, *** p < 0.001, regression take into account household sampling weight.

3.2 ENHANCEMENT OF AGRICULTURAL LABOR PRODUCTIVITY AND DIVERSIFICATION HAS STARTED, BUT SUBSTANTIAL SCOPE FOR IMPROVEMENT REMAINS

For rice, cotton, and cashew nuts, the productivity increase has started. The overall objectives of the 'Agriculture for Jobs Agenda' are to enhance agricultural labor productivity in existing crops, to diversify the agricultural output mix, and to add value. In recent years, a beginning has been made on each of these fronts. Among staple crops, progress has been especially noticeable for rice, with FAO statistics suggesting annual yield gains in the order of 20 percent (Figure 3.4). In light of the much lower yield levels recorded in the micro data, such a growth rate seems somewhat large and deserves further scrutiny.[56] Nonetheless, irrespective of the exact growth rate, progress in rice production since the 2008 world food price crisis is real and consistent with concerted government efforts to boost domestic rice production (see section 3.3). Yield growth was negative however among other staple crops (such as roots and tubers). It reflects the longstanding neglect of staple crops in favor of cash crops and presents an area of attention, also in light of the poverty rates among food crop growers. Among cash crops, yield growth has also been revived, especially in cotton and cashew, indicating diversification beyond cocoa, though the production of coffee and pineapples declined (not reported in Figure 3.4).

Strong yield growth in rice, cashew, and cotton diversified the cash crop mix, but there has been no real diversification yet into high-value agricultural products. Overall, net agricultural production value increased by 2.5 percent per year (between 2004/06 and 2011/13). The annual increase was higher in rice (11.5 percent), other export crops (4.2 percent) (driven especially by cashew and cotton),[57] and meat (3.3 percent, especially chicken [9.2 percent] and cattle) (Figure 3.5). This resulted in a rising share of rice in total output (from 3.5 percent on average during 2004/06 to 6.2 percent during 2011/13) and a diversification in cash crops beyond cocoa (whose share declined from 26.6 percent to 24.2 percent). Diversification in high-value agricultural products (meat, dairy, fruits, and vegetables) remains limited. The share of meat increased only slightly from 7.9 percent to 8.3 percent, while the share of other high-value agricultural products decreased slightly from 16.5 percent to 15.8 percent).

Figure 3.4
A revival of yield growth for rice, cotton and cashew

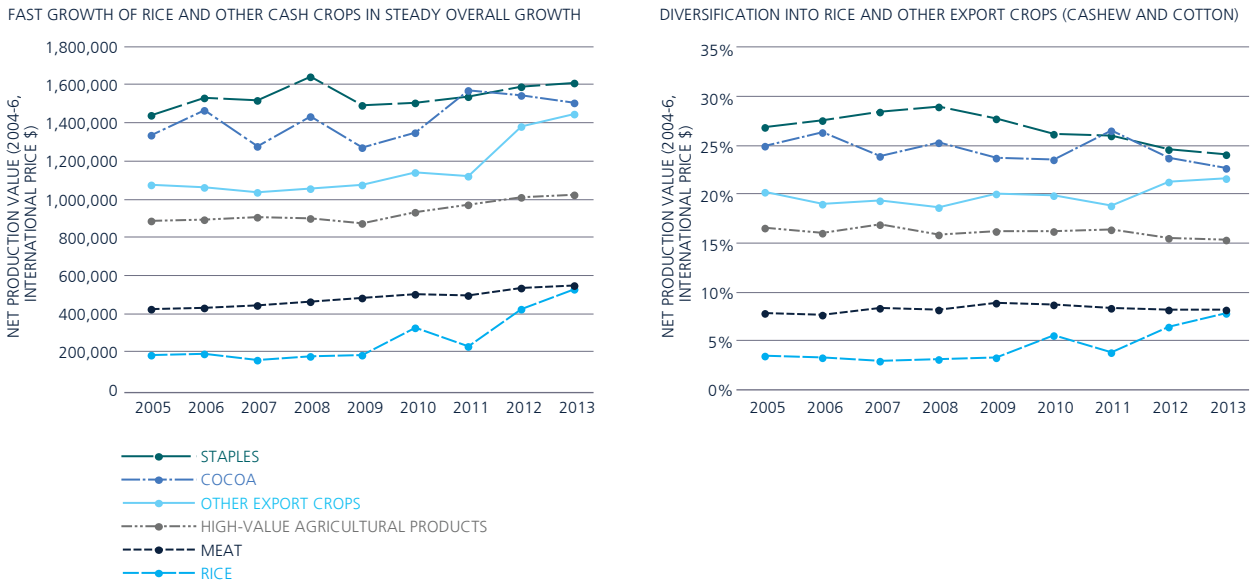


Source: Authors' calculations, FAOSTAT.

[56] The 2013 national employment survey (ENSETE 2013) puts the average rice yields at 1.8 tons per ha (rising to 2 tons per ha in the subsequent 2015 national household survey ENV 2015) — though the median is only 600 and 1000 kg per ha, respectively. This is substantially lower than the averages reported in the macro data from the national statistics, which rose from slightly below 2 tons/ha during the mid-2000s to about 5 tons/ha in 2013–2014. This discrepancy between the macro and micro data (or national/administrative and survey statistics) warrants further investigation. Some of the discrepancy may be the result from the fact that the household surveys capture only one of the rice harvests. They also exclude large commercial farms where yields are higher (higher input use, better water control, and typically more than one rice cycle per year).

[57] The value of coffee and pineapple production declined.

Figure 3.5
Rising share of rice and other export crops in overall expansion



Source: FAOSTAT.

The expansion of rice, cotton, and cashew production is promising from a jobs perspective.[58] Survey averages of family labor input per crop per hectare are presented from the employment survey collected in February 2014 (ENSETE 2013, which only concern the past 3 months) and the 2015 national household survey (ENV, which covers the past year) (Figure 3.6).[59] More generally, accurate labor input data in agriculture are notoriously hard to come by and Côte d'Ivoire is no exception.[60] Therefore, the results from both surveys are reported (to check consistency) and the emphasis is on the ranking of crops in terms of their labor intensity, rather than the absolute values.

Across survey years and labor input variables (family and hired), rice emerges as one of the most labor-intensive crops in Côte d'Ivoire. The recent expansion of rice production is thus also promising from a jobs perspective. Cotton and cashew producers make the most extensive use of hired labor. Both crops are grown widely in the north, where poverty rates are highest. The expansion of their production also holds promise for inclusive jobs generation (including for neighboring countries).[61] An increasing share of cashew nuts are also processed locally (especially in the central region), creating potential off-farm employment opportunities in secondary towns. Finally, consistent with findings from other countries (for example, Damiani (2003) for Brazil), vegetable production is also highly labor intensive. Its potential has so far been largely left unexploited. Overall, these trends are promising, but much scope for improvement remains.

Large heterogeneity in net returns per hectare across crops suggests substantial scope for productivity gains. The net value of production per hectare for farmers producing at the 75th percentile is typically three

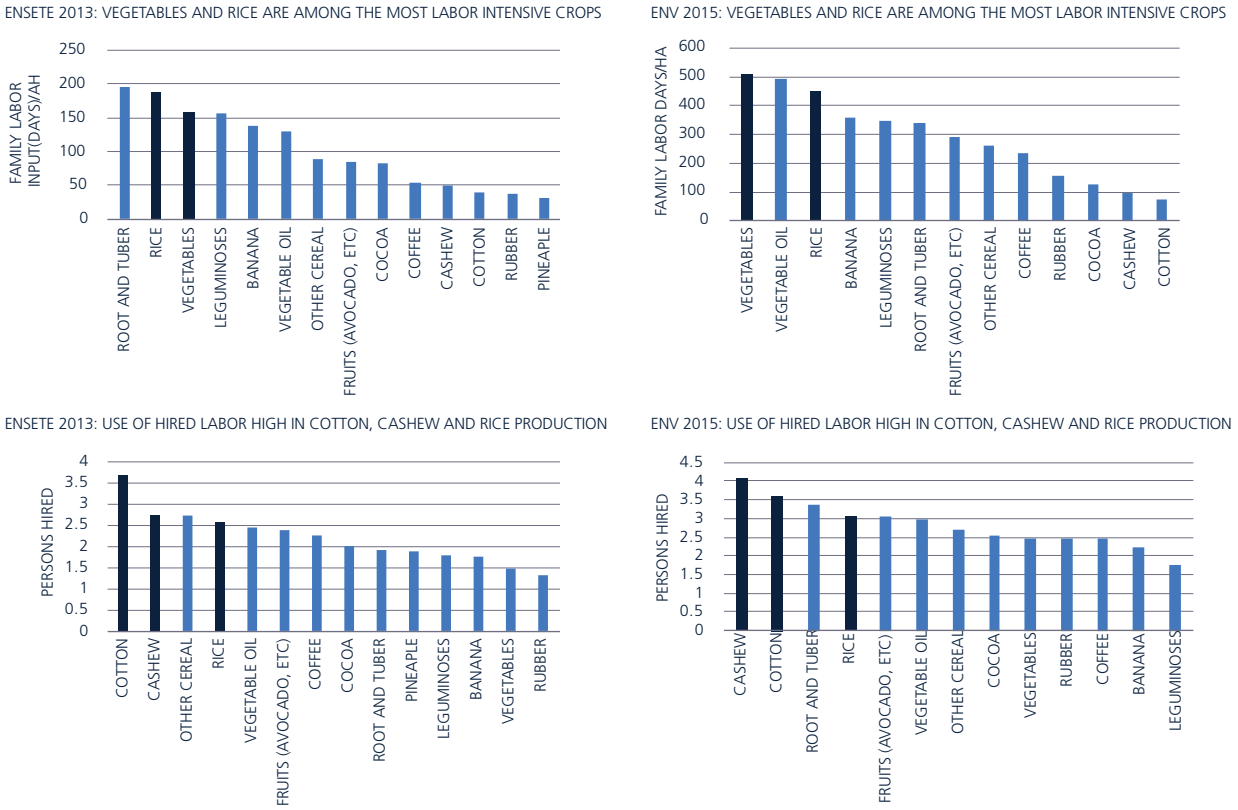
[58] The expansion of rice production followed largely from increasing yields. Cashew expanded first through area expansion (2000–2007) and subsequently through an increase in yields (2008–2013). Cotton seed production bottomed out around 2008 to increase to early 2000 levels through an increase in yields. A labor productivity increase can follow both from yield and land expansion (assuming labor input remains constant). Output/laborer = output/ha × ha/laborer. Consequently, yield increases among labor-intensive crops, holding labor input constant, increases labor productivity for many. Alternatively, if output increases mainly through area expansion in labor-intensive crops (holding labor input per area constant), many new jobs are generated. From a jobs perspective, a production increase in labor-intensive crops is beneficial either way and it is thus useful to understand the difference in labor intensity among different agricultural products.

[59] For hired labor, only the number of hired laborers per crop cultivated has been reported, not the number of days.

[60] See Arthi et al. (2016) for a series of experiments to gauge the difference in reported labor input in agriculture depending on the method used.

[61] While agricultural wage labor is often employment of last resort, and not seen as a 'quality' job, it would still entail an improvement in labor productivity if it exceeds the marginal value of on-farm self-employment (which was still estimated to be somewhat lower than the agricultural market wage, even though by a smaller margin than observed in other countries, suggesting a lower prevalence of surplus labor in Côte d'Ivoire, and consistent with the use of hired labor from neighboring countries. (See discussion in section 2.1.)

Figure 3.6
Rice and vegetable production are most labor intensive; cotton and cashew make extensive use of hired labor

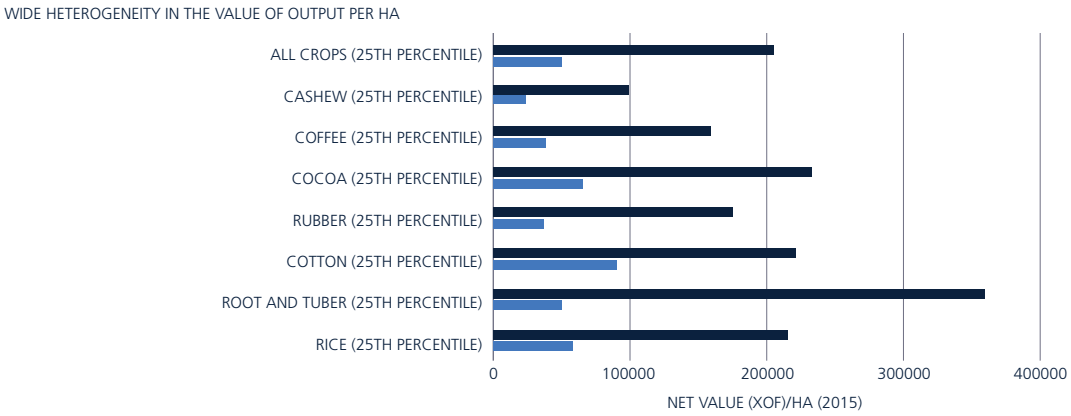


Source: Staff calculations based on ENSETE 2013 and ENV 2015.

to four times higher than the net value of production per hectare for farmers producing at the 25th percentile (Figure 3.7). This holds by crop and when considering overall crop income per household. Many factors could explain the productivity gap, such as differences in soil fertility, water control, agro-ecological circumstances, and market access. Controlling for labor inputs and other factors, multivariate regression results also point to the importance of differences in modern input use. Overall, as already illustrated by the heterogeneity in agricultural labor productivity reported in Chapter 2 (Figure 2.3), the heterogeneity in land productivity equally suggests substantial scope for productivity gains.

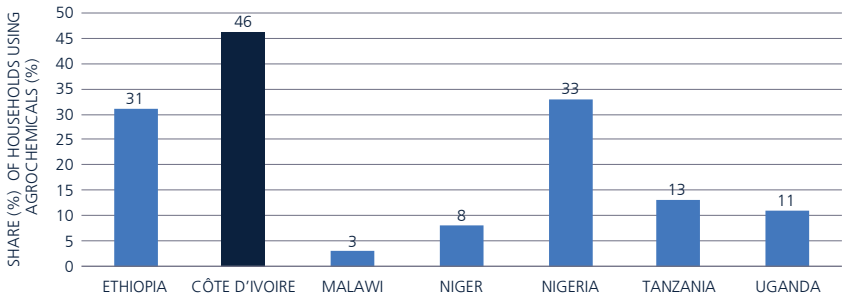
Inorganic fertilizer use is low and its profitability deserves further investigation. In 2014, only 26 percent of cultivating households reported using inorganic fertilizer. In 2015, the share was only 18 percent, corresponding to 14.7 percent of the cultivated land being fertilized. This is similar to Tanzania (17 percent of farmers use inorganic fertilizer), but much less than in in Nigeria (41 percent), Ethiopia (56 percent), and Malawi (77 percent). Use is higher among cotton and rice growers, which also recorded substantial yield expansion. Cross-country differences in fertilizer use are consistent with differences in land/labor endowments. Land per agricultural worker is higher in Côte d'Ivoire and Tanzania; while Nigeria, Ethiopia, and Malawi are more densely populated. When land/labor endowments decline, the adoption of land-saving technologies such as inorganic fertilizer increases, raising the question whether inorganic fertilizer use is profitable under the current circumstances. There may also be room for improvements in the fertilizer policy environment. At 64.4 to 100, Côte d'Ivoire scores slightly better than the Sub-Saharan African average on the fertilizer policy score according

Figure 3.7
Substantial heterogeneity across households in the value of output per hectare



Source: Authors' calculations based on 2015 national household survey (ENV 2015).

Figure 3.8
Comparatively high incidence of agrochemical use in Côte d'Ivoire



Source: Staff calculations ENSETE 2013; Sheahan, Barrett and Goldvale (2016).

to the 2016 Enabling-the-Business-of-Agriculture report. The conditions (soil fertility, input, and output prices, crops) under which inorganic fertilizer is profitable in Côte d'Ivoire deserves an in-depth analysis.[62]

Use of agrochemicals, on the other hand, is high, raising concerns about health hazards and job quality. In 2014, the use of agrochemicals was reported in 46 percent of cultivating households. The share was 37 percent in 2015, which is still substantially higher than in other African countries (see Figure 3.8). Use is most widespread on cotton and rubber, but also common on cocoa and rice. To the extent that it concerns herbicides, it helps save labor, reducing labor costs for weeding. While pesticide use is generally found to increase output value (also in other countries, for instance by 33 percent in Ethiopia, Tanzania, and Uganda), it is also found to be associated with an increase in health problems among users, raising issues about job quality.[63]

3.3 THE CASE OF RICE

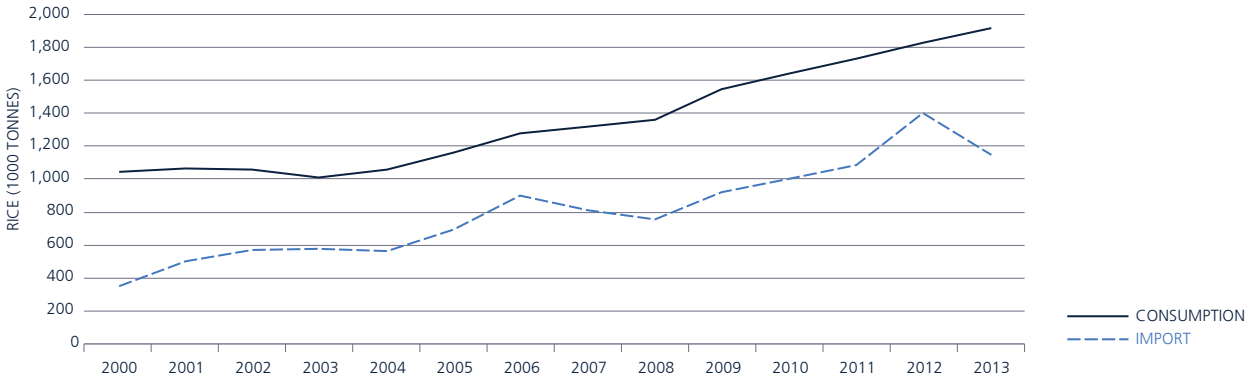
Until most recently, most of Côte d'Ivoire's rapidly growing demand for rice was met by imports. During 2000–2013, domestic rice consumption grew by almost 5 percent per year to attain more than 1.8 million tons in 2013, or an estimated 64 kg/person/year[64] (FAO 2016). Until most recently, most of this growth was met by imports, which, in 2013, accounted for 60 percent of the total rice consumption (Figure 3.9).

62 See Liverpool-Tasie et al. (2015) for an in-depth analysis of the profitability of inorganic fertilizer use in Nigeria. They find that, in Nigeria, transport costs to the nearest agro-input dealers, a measure of input market access, substantially reduce the profitability of fertilizer use for a number of farmers.

63 Sheahan, Barrett, and Goldvale (2016).

64 Based on FAO, 2016.

Figure 3.9
Rapidly rising rice consumption until recently mainly met by imports



Source: FAO, 2016.

The National Rice Development Strategy (NRDS) seeks to fill the large import gap, thereby also providing an estimated 500,000 jobs in the supply chain. Rice imports have consistently supplied more than half of consumption for the past three decades, despite numerous strategies and policies to boost domestic production. These attempts have been reinvigorated following the 2008 food crisis, which saw world rice prices more than triple in a matter of months. A new NRDS[65] was adopted in 2008 and revised in 2011. It seeks to attain a production of 2 million tons and to eliminate the import gap by taking a comprehensive value chain approach.

Despite rapid growth in rice production and yields recorded in the national statistics, many challenges and opportunities for growth remain both among producers and further down the value chain. As indicated in Figures 3.4 and 3.9, following a long period of stagnation, national statistics have recorded a very rapid gain in rice production in Côte d'Ivoire since 2009. These gains are largely achieved through gains in yields. But many challenges and opportunities for production, yield and jobs growth remain through interventions on the farm, but also down the chain. Poor organization of marketing and processing of paddy rice was for example recognized by the NRDS as one of the key challenges to boost production, thereby for the first time explicitly linking the challenge of increasing yields with the challenge of improving performance along the whole chain. It identified (a) the lack of confirmed and regular buyers, (b) the high costs of collection and transport (undermining import competitiveness), (c) the non-remunerative prices for producers, the absence of a price guarantee mechanism, and the failure of buyers to observe contract terms, (d) an inefficient paddy-processing sector, and (e) lack of storage facilities as important constraints to boost import competitiveness and domestic production.

While progress has been made on these issues, a recent qualitative survey of the rice value chain in four purposively selected rice-producing districts commissioned by FAO and Office National pour le Développement de la Riziculture de Côte d'Ivoire indicates that much room for improvement remains (Doumbia 2016).

Among processors, both the lack of sufficient supply of rice and cost and shortage of electricity are frequently mentioned as major constraints. This holds back investment and quality processing needed to compete with imports. Traders are generally underfinanced, and as a result, poorly equipped with regard to weighing equipment and vehicles, with lack of access to credit even more pronounced with women traders. Among producers, there is little optimal use of agricultural inputs such as improved seed, fertilizers, and pesticides (Table 3.2). Adequate water control (both to avoid flooding as well as drought) remains a great challenge. Only 16 percent of the area planted with rice has relatively good water control. And technical support remains deficient. As a

[65] In particular, it seeks to (a) enhance producers' access to improved seeds, irrigation, agricultural inputs, and mechanization; (b) promote processing units close to production areas; (c) promote more private investment in the rice sector; 4) regularize and secure rice prices both at the production, processing and marketing level. In addition to meeting national rice demand, the NRDS is projected to create (a) 500,000 direct jobs for the production of paddy using irrigated system; (b) 1.5 million direct jobs for paddy production in rainfed condition; (c) more than 500,000 direct jobs in related manufacturing and services.

consequence, rice yield and producer gross margin per hectare are often low and especially highly variable across sites and seasons. This in turn reduces volume, making rice milling less profitable.

The study concludes that the stakeholders in the rice value chain (producers, processors, input providers, storage, and traders) are generally poorly endowed with productive resources, under-equipped, poorly trained, and poorly organized and coordinated among themselves and across the different actors in the chain. The overall lack of financial depth in the chain, with each actor facing credit constraints and largely financing him/herself, combined with poor coordination and contractual arrangements among the different actors in the chain continues to challenge the rice sector to leave its lower level equilibrium fully behind.

Table 3.2
Relatively inefficient agronomic practices in rice production, despite reasonable awareness

	Irrigated rice[a]		Rainfed rice		
	Gagnoa	**Man**	**M'Bahiakro**	**Man**	**Bongouanou**
Average return					
Rice cycles per year	2	2	2	1	1
Yield (tons/ha)	4	3	1.25	0.85	0.75
Gross margin (XOF/ha)	118,000	100,000	26,973a	61,500	73,000
Improved seeds					
Level of awareness (%)	100	30–40	100	< 5	100
Share of producers using improved seeds (%)	5	70	100	<5	35
Recommended dosage per ha (kg)	40	40	7 to 8, in a system with transplanting	40	80–100
Share of producers applying the recommended dosage (%)	5	-	100	-	5
Fertilizer- NPK					
Level of awareness (%)	100	<50	100	<5	100
Share of producer using NPK (%)	90	40	100	<5	5–10
Recommended dosage per ha (kg)	200	150	150	150	100
Share of producer applying the recommended dosage (%)	30–40	<25	100	0	5
Herbicide					
Level of awareness (%)	100	<50	100	90	100
Share of producer using herbicide (%)	100	90	100	80	100
Share of producers applying the recommended dosage (%)	0 (under-utilization)	<5	100 (overdoses for some)	10	0
Agricultural equipment used	Hoe	Machete, lime	Hoe	Hoe	Hoe
	Machete sickle	Hoe, sickle	Machete sickle	Machete	Machete
	Tiller	Tiller	Watering cans	Lime	Lime
	Thresher-cleaner	Thresher-cleaner, tarpaulin		Harvest Knife	
Extension received	Yes	No	Yes	Yes, but little	No

Source: Doumbia, 2016.
Note (a): The rice production system in Côte d'Ivoire is characterized by three cropping systems (i) rainfed rice grown throughout the country but dominant in the west, north and west-central, (ii) flooded rice, which is mainly grown on the large north-western and northern plains, and (iii) irrigated rice, which is grown in the developed lowlands and the dam-based schemes of the center, west, center-west and north. This qualitative survey examines the cropping system in four districts in Côte d'Ivoire: Gagnoa, Man, M'Bahiakro, and Bongouanou.
Note: Input costs were only partially reclaimed by the project. Otherwise, the gross margin would have been negative (-67,027 XOF).

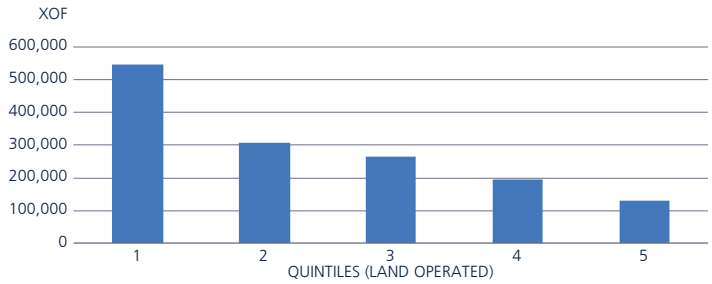
3.4 AGRICULTURAL POLICY ENTRY POINTS FOR MORE, BETTER, AND INCLUSIVE EMPLOYMENT GENERATION

Continued support to productivity growth in labor-intensive rice, cotton, and cashews could be complemented with additional support to other labor-intensive staples and high-value crops. Côte d'Ivoire's traditional policy focus on cash crops more broadly (and cocoa in particular), has recently been extended to rice taking a more promising, holistic value chain approach that seeks to integrate all stakeholders. Despite much progress, many challenges remain, all along the chain, which continues to suffer from undercapitalization and lack of skills, coordination, and organization at all levels. There remain also important and underexplored opportunities for productivity increase in other staples (roots and tubers), which would also help raise women's agricultural labor productivity,[66] and employment generation in the expansion of other high-value products (meat, dairy, fruits, and vegetables). Value chain studies can further help identify chain-specific constraints.[67] To maximize employment generation, inclusive value chain approaches should be promoted. This remains an important area for further investigation.

Smallholder agriculture holds most promise for inclusive employment generation. Smallholders in Côte d'Ivoire are relatively well endowed with land and hire labor (including from abroad) to make up for family labor shortages. There are no signs that larger farmers in Côte d'Ivoire are more efficient than smaller ones (Figure 3.10). Recent, rigorous assessment of the (short-term) spillover effects from new large farm establishments in Mozambique also points to limited beneficial effects on neighboring smallholders within 25 to 50 kilometers.[68] The limited indirect effects reported in Mozambique are furthermore limited to the adoption of better agronomic practices and accessing modern inputs, but were not found to extend to employment generation or output market participation and are counterbalanced by a decrease in perceived welfare. As in Brazil, this recent experience from Mozambique underscores once again that more and better jobs from large-scale commercial agricultural production units remain often far and few between.

Mechanization remains limited. As urban and rural wages increase, pressures to mechanize will increase. This does not necessarily imply large-scale farming. Different market solutions (such as machinery services) exist to overcome the indivisibility of farming capital and capture the economies of scale implied in mechanization. They have been deployed successfully, most recently also in China, where land endowments are multiple times smaller.[69] While not acute, the need for supporting smallholder mechanization within Côte d'Ivoire and its implications for employment generation in agriculture deserves further investigation.

Figure 3.10
Gross value of crop production declines with farm size (ha)



Source: Staff calculations based on ENSETE 2013.

[66] The 2011–2016 regional US$44 million West African Agricultural Productivity Program (WAAPP), which Côte d'Ivoire participates in and which is the first phase of a 10-year program, provides an initial step in addressing the staple crop productivity gap. The program focused on the development and dissemination of improved seed varieties and processing techniques for a series of staple crops (plantain, rice, manioc, rice, maize, mango) and animal husbandry (chicken, pork). Regional research centers were set up, each focusing on one crop. The center in Côte d'Ivoire focused on plantain.

[67] World Bank (2012a, 2014) provides a useful starting point.

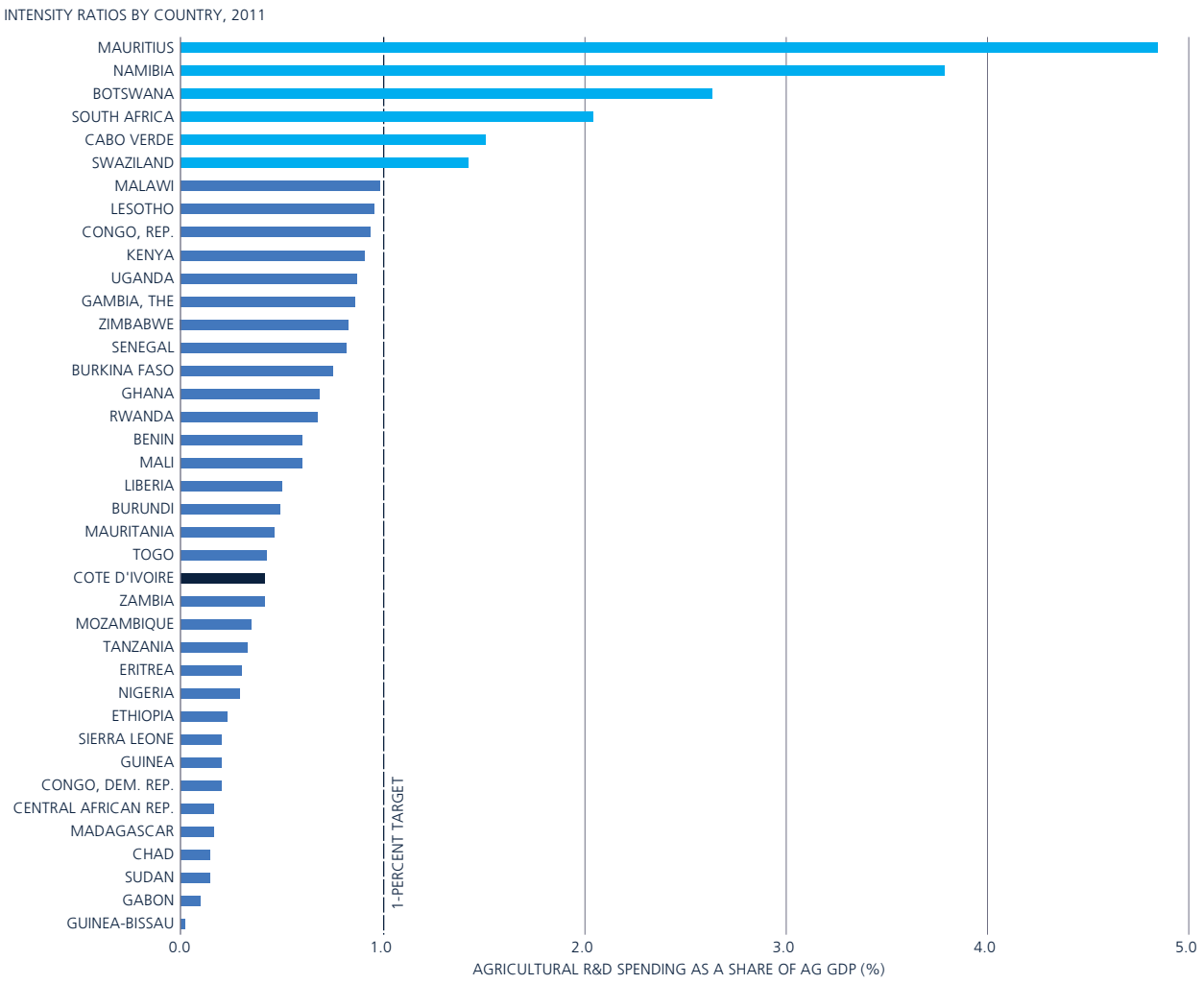
[68] Deininger et al. (2015)

[69] Wang, Yamauchi, and Huang (2016).

Addressing technology adoption, health hazards, and skills gap. Inorganic fertilizer use is low. Nonetheless, multivariate analysis suggests positive gross returns to inorganic fertilizer use for most crops. These disappear however when looking at net returns (when the fertilizer expense is accounted for). Inorganic fertilizer is often also inadequately used (as illustrated in the qualitative rice study) and considered costly. The profitability of inorganic fertilizer use and the policies affecting it (fertilizer policy, agronomic extension) need further investigation. Agro-chemicals on the other hand are widely used. In addition to soil and water pollution, they also raise important concerns about health hazards, which deserve more attention.

Côte d'Ivoire remains also well below the 1 percent agricultural GDP benchmark in terms of its public spending on agricultural research and development (Figure 3.11). And even recently (2011), there were only 131 full-time equivalent researchers (compared with 1,151 in Kenya or 815 in Tanzania). While much of agricultural research and development (R&D) in Côte d'Ivoire is financed by the private sector (through the International-Professional Fund for Agricultural Research and Extension (*Fonds Interprofesionnel pour la Recherche et le Conseil Agricole*, FIRCA) and the food industry (including the establishment of local research centers by some multinationals), this is mainly geared toward cash crops, not staple crops.[70]

Figure 3.11
Public spending on agricultural R&D remains well below the benchmark



Source: Beintema and Stads, 2014.

[70] WAAPP a regional program focused on increasing staple crop productivity, including by strengthening the national research centers, begins addressing some of the constraints.

Finally, low educational levels and poor training among all actors in the chains (farmers, traders, and processors) hold agricultural innovation back. Rural literacy rates, for example, are just 25 percent, highlighting the lack of foundational skills, an enormous and urgent challenge elaborated upon in Chapter 6. But demand for agricultural-specific technical education also largely exceeds supply and agricultural innovation increasingly also asks for skills not traditionally developed in agricultural education, that is the so-called soft skills that enable people to communicate, develop leadership, and work collaboratively Rehabilitating the agricultural education and training centers would allow to leverage gains in primary education (Chapter 6) and build the stock of agricultural knowledge providers. But it also requires bringing these centers into the agricultural innovation system by creating communication channels between researchers, producers and employers (for example by linking professional networks), modernizing curricula (shifting them to applied learning, and problem solving with an interdisciplinary focus), and rendering them more gender inclusive (for example through targeted recruitment policies in education, research, and extension programs).[71]

Improve rural land tenure security. Land tenure security matters for fixed land investments that are important to increase land productivity, but take time to pay off (land improvement, irrigation, tree crops). It also facilitates off-farm diversification and prevents land disputes and conflict. On the one hand, at 34 percent the share of households which reported to have a land title is much larger in Côte d'Ivoire than in other African countries (1 percent in Malawi, 11 percent in Niger, 14 percent in Tanzania, 19 percent in Uganda).[72] Yet, this still leaves two in three farmers without a title, and even among those with a title, only one-third (11 percentage points) has an official document. Most land is owned and transferred according to local customary law. Facilitating the resolution of land disputes, especially those involving immigrants, is a priority for promoting greater inclusiveness in rural land tenure and preventing conflicts. Working with traditional and local authorities to develop alternative dispute resolution mechanisms acceptable to all could be a step in this direction. But even so, with women not allowed to inherit land in many ethnic groups, access to land for women remains confined to borrowing, renting or share cropping, or through their husbands. This holds back their productivity potential and requires special attention (FAO 2010; Ministère de l'agriculture de Côte d'Ivoire, 2013).

Overcome the financing gap. As highlighted in the rice value chain study, the ability of farmers and agribusinesses to invest is importantly determined by their access to financial services. Initiatives to expand access to finance in rural areas have as yet proven unsuccessful. Even micro financial institutions (MFIs) devote only 5 percent of their portfolio to financing agriculture. As a result, only an estimated 14 percent of the rural population have access to formal financial services. A comprehensive agricultural finance diagnostic is called for. Successful development of financial services will, among others, require a supportive legal and regulatory framework that enables the enforcement of legal contracts in the agricultural sector. Market-friendly government support mechanisms (such as partial credit guarantee schemes and public-private partnerships to encourage the development of agricultural insurance) will also be needed.

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[71] The training model followed by the Songhai agricultural training center in Porto Novo, Benin provides just one such example. It is locally owned and privately managed. Instruction favors application, with more than 75 percent of time devoted to practical subjects. Innovations in the training include creation of a business center of agricultural products and a credit program to help trainees establish themselves after training. About 20 percent of the trainees are women and 60 percent come from rural areas. Sixty-five to seventy percent of its graduates settle in agriculture. Other African institutes which successfully adapted their AET programs include Makerere in Uganda, Jomo Kenyatta in Kenya, as well as institutes in Mauritius. For a comprehensive review of AET reform guidance, see module 2 in Agricultural Innovation Systems, An Investment Sourcebook (World Bank 2012b).

[72] Deininger, Xia, and Savastano (2015)

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4: RAISING PRODUCTIVITY IN NONAGRICULTURAL SELF-EMPLOYMENT IN CÔTE D'IVOIRE

Bienvenue N. Tien and Patrick Premand

4.1 INTRODUCTION

Projections of the future employment profile in Côte d'Ivoire indicate that nonagricultural self-employment is likely to become the largest employment category by 2025. Nonagricultural independent activities already make up a sizable share of jobs in Côte d'Ivoire. Based on employment survey data (ENSETE 2013), nonagricultural self-employment in microenterprises accounted for 29.3 percent of employment in the country in February 2014, compared to 46.9 percent in agriculture and only 17.4 percent in wage jobs (see Chapter 1). This share is projected to reach more than 40 percent by 2025. While projections of course have a margin of errors, nonagricultural self-employment is likely to become the largest employment sector, larger than the expected share of wage jobs and probably even agricultural employment (see Chapter 2, in particular, Annex B).

Almost all nonagricultural household enterprises are in the informal sector, and their legal status is fuzzy. In the Ivorian legal framework, microenterprises are defined as having a maximum of 10 permanent employees, with an annual turnover (after taxes) up to CFAF 30 million, and doing some form of simplified accounting. Nonagricultural household enterprises are in this sense also microenterprises. However, an important caveat is that most independent activities are not registered and do not hold any form of accounting.[73] As such, household enterprises operate at the margin of current laws on small-medium enterprises in the country. In this chapter, the terms nonagricultural self-employment, nonagricultural household enterprises, nonagricultural microenterprises, or simply household enterprises are used interchangeably. Box 4.1 gives an overview of existing definitions of informality.

Surprisingly, the large share of employment in the sector along with its potential is often overlooked in policy discussions. Policy strategies for nonagricultural self-employment are very limited in Côte d'Ivoire. Yet, nonagricultural household enterprises are a key source of employment, particularly for the poor and women. While the Government of Côte d'Ivoire aims to have an 'emerging economy' by 2020, the informal sector is there to stay. As such, addressing the informal sector in policy strategies will be needed as part of the efforts to achieve this ambitious goal. Raising productivity in the sector will be particularly critical to ensure better and more inclusive productive opportunities as well as to contribute to poverty reduction. It can also contribute to off-farm diversification in rural areas, as mentioned in Chapter 2.

This chapter discusses employment and productivity in the nonagricultural household enterprise sector in Côte d'Ivoire, as well as the scope for policies to support it. The chapter starts with an overall description of household enterprises. Some basic questions are addressed, such as who operates in the sector and why, what are the most common types of activities, do these activities persist over time? In light of very large heterogeneity in productivity, the chapter then addresses constraints for individuals to create or operate

[73] For Côte d'Ivoire, official definition of small and medium enterprises is provided in *Loi N° 2014-140 du 24 Mars 2014* on National Policy Orientation for small and medium enterprises. Chapter II, Article 5 of this law provides the definition of microenterprises.

household enterprises, as well as determinants of household enterprises' productivity. The analysis is primarily based on quantitative micro data, but also supported with complementary qualitative data on household enterprises collected as part of the study (see Box 4.2 for a discussion of data sources). The final section looks at different policy entry points for the sector and analyses the interplay of the different actors (household enterprise operators, policy makers, and other stakeholders).

BOX 4.1: NONAGRICULTURAL HOUSEHOLD ENTERPRISES AND INFORMALITY: CONCEPTS AND DEFINITIONS

Analyzing nonagricultural household enterprises requires a workable definition of these activities in the broader realm of the informal economy. Existing definitions of informality itself are many and far from being consensual (Maloney 2004). In spite of its varying meanings, scholars, pundits, and decision makers tend to give a negative connotation to informality: unprotected workers, excessive regulation, low productivity, unfair competition, evasion of the rule of law, underpayment or nonpayment of taxes, and work 'underground' (Perry et al. 2007).

Conceptually, a definition of the informal sector was adopted during the ILO's Fifteenth International Conference of Labor Statisticians (15th ICLS) in 1993, which subsequently was included in the revised international System of National Accounts (SNA 1993). Two approaches of the informal sector emerged from that conference: the enterprise approach and the labor approach. In the enterprise approach, the informal sector is defined in terms of characteristics of the production units (enterprises) in which activities take place. In the labor approach, the informal sector is defined in terms of the characteristics of the persons involved or their jobs (Hussmanns 2004).

According to Hussmanns (2004), on the one hand, *employment in the informal sector* includes "all jobs in informal sector enterprises or all persons who, during a given reference period, were employed in at least one informal sector enterprise, irrespective of their status in employment and whether it was their main or a secondary job" (p. 2). On the other hand, *informal sector enterprises* were defined on the basis of selected criteria such as size, registration, market orientation, nonagricultural activities. Moreover, the 17th ICLS defined *informal employment* as "comprising the total number of informal jobs, whether carried out in formal sector enterprises, informal sector enterprises, or households, during a given reference period." In addition to the above-mentioned criteria, compliance with public regulation has emerged as an important criterion to define informality; with the rationale that interactions with the state play a pivotal role to define informality (Benjamin et al. 2014; Kanbur 2009).

Still, the above-mentioned criteria have been subject to criticism. It is difficult to define the informal sector in a dichotomized manner (Benjamin and Mbaye 2012). Existing definitions do not sufficiently distinguish between formal and informal firms. Some scholars prefer to coin the informal sector as a 'continuum' with different degrees of formality (Steel and Snodgrass 2008). On that ground, Benjamin and Mbaye (2012) establish criteria to classify firms in six different levels of informality.

Against this backdrop, the term 'household enterprise' fits in the realm of the conceptual framework elaborated above. Fox and Sohnesen (2012) and Filmer et al. (2014, p.150) define household enterprises (HEs) as unincorporated, nonfarm businesses owned by households. From an employment perspective, they include self-employed individuals running unincorporated businesses as well as family members working in those businesses, mostly as family helpers. This definition incorporates both the enterprise and labor approaches.

Operationally, in the case of Côte d'Ivoire, existing literature on informality indicates that the country follows the ILO framework elaborated above. However, the predominant way to define informality is based on the registration criterion, and slightly less on the size criterion. Indeed, from both approaches (enterprise or labor), being in informality implies that the operating entity or employee is not registered with the Government Social Security Office (*Caisse Nationale de Prévoyance Sociale* or CNPS). The rationale is that registration with the social security office is generally the last administrative step to establish an enterprise or declaring an employee in Côte d'Ivoire, while often preceding steps of formalization are juridical or fiscal natures (AGEPE 2011). Throughout this chapter, nonagricultural household enterprises are defined as in Filmer et al. (2014). The terms nonagricultural household enterprises or simply household enterprises or informal sector are used interchangeably.

Source: Various sources; Authors' display.

BOX 4.2: QUANTITATIVE AND QUALITATIVE DATA SOURCES FOR AN INTEGRATED APPROACH TO ANALYZE THE NONAGRICULTURAL HOUSEHOLD ENTERPRISE SECTOR IN CÔTE D'IVOIRE

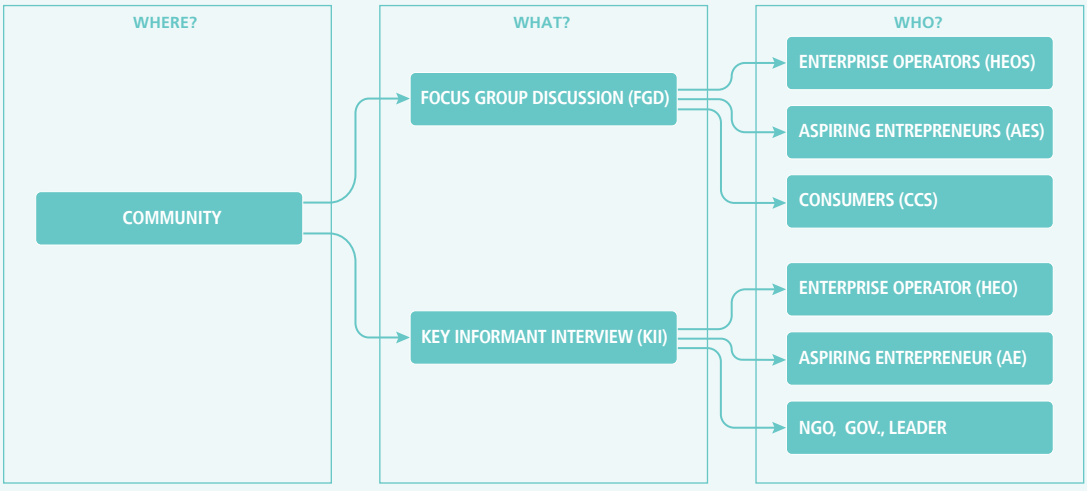
Existing analyses on household enterprises (Fox and Sohnesen 2012; Filmer et al. 2014) have mostly relied on quantitative surveys. To some extents, quantitative data may not capture all the nuances of the sector, in particular as quantitative interviews and traditional labor-force surveys, may not adequately measure the characteristics, productivity or constraints faced by household enterprise operators (Benjamin et al. 2014).

To get a comprehensive picture of constraints and challenges in the sector, this chapter uses both quantitative micro data and complementary qualitative data. First, cross-sectional quantitative data is obtained from the 2013 national employment Survey (ENSETE 2013). The survey provides nationally representative data on approximately 12,000 households and their members. It includes a household-based module on Income Generating Activities and Household Enterprises. From this survey, we are able to perform analysis at the level of the unit of production as well as at the level of the household enterprise owner (often household heads). Key information on difficulties at entry, sector, and location of operation, number of workers, levels of profits or revenues are derived from this module.

As indicated earlier, quantitative surveys, in particular cross-sectional surveys, present some limitations, for example in providing information on interactions between operators and government officials or consumers, as well as the effect of the recent conflict on the sector in Côte d'Ivoire. Following recent work on household enterprise in fragile and conflict affected states that originated in Liberia (Chapman and Heaner, 2016), complementary qualitative data was collected in Côte d'Ivoire to better understand the sector. While the qualitative data is not representative, it is useful to draw contrasts and highlight nuances harder to pick up from closed questions. For instance, the qualitative survey helps to identify the range of constraints affecting productivity in the sector, as well as gain a deeper understanding of issues from the perspective of different stakeholders, which may not be revealed in existing quantitative data (Benjamin et al. 2014).

In practice, the qualitative work covered 10 communities throughout Côte d'Ivoire, including 6 urban communities (Yopougon and Abobo in Abidjan, Man, Bouaké, Korhogo, and Bondoukou) and 4 rural communities (around Man, Bouaké, Korhogo, and Bondoukou). In each community, focus group discussions (FGDs) and key informant interviews (KIIs) were conducted. The FGDs targeted Household Enterprise Operators (HEOs), Aspiring Entrepreneurs (AEs), Consumer/Community Members (CCs), while the KIIs targeted HEOs, AEs, community leaders, government representatives, and nongovernmental organizations (see Figure B4.2.1). The qualitative work led to a substantive field report that was produced as a background piece to this chapter (Bouaki 2016), as well as over 500 pages of transcripts.

Figure B4.2.1
Qualitative survey organization



Source: Authors' presentation.

Source: Various sources; authors' display.

4.2 WHO IS OPERATING HOUSEHOLD ENTERPRISES AND WHY?

4.2.1 Who works in the sector?

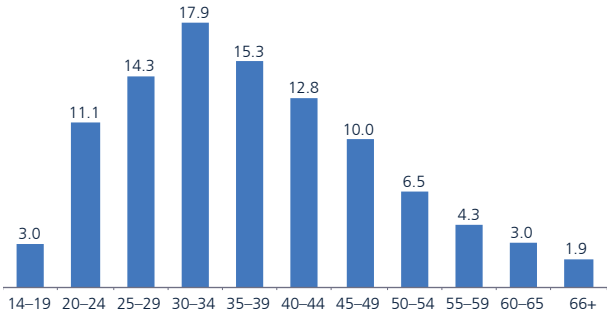
As in many countries in the region, the median owner of a nonagricultural household enterprise is a young female with no formal education. In Côte d'Ivoire, 60 percent of nonagricultural household enterprises owners are female.[74] Also, approximately half of all nonagricultural household enterprises are owned by young people between the age of 14 and 34 (Figure 4.1). More than half of the owners do not have any formal education. Only about 14 percent have at least completed low secondary or more (Figure 4.2). These general characteristics of household enterprise owners are in line with findings in other Sub-Saharan African economies, such as Ghana and Cameroon (Fox and Sohnesen 2012).

The majority of nonagricultural household enterprises are in small-scale service activities. Figure 4.3 indicates that more than 40 percent are in small-scale retail and trading activities, such as selling personal products (Table C.1 in Annex C lists the most common activities). Other common activities include small-scale manufacturing activities (such as producing fruit juice, alcohol or other activities involving basic processing and the transformation of agricultural products) (17.4 percent), as well as food selling and restaurants (15.5 percent). The majority of nonagricultural household enterprises are operated in urban areas (70.2 percent). In urban areas, retail activities, personal services (hairdressing), and construction activities are relatively more common than in rural areas. In rural areas, activities involving the transformation of agricultural products or selling food are relatively more common (Figure 4.3).[75]

Almost all nonagricultural household enterprises are informal. More than 90 percent are not registered in any way. An earlier informal survey conducted in Abidjan also found similar results (AGEPE 2011). In addition, more than 60 percent of nonagricultural household enterprises report not keeping any books, with just 14.4 percent undertaking formal bookkeeping (Figure 4.4). The degree of informality is also evident through the fact that 68.1 percent of household enterprise owners are not subject to formal fiscal regimes. Only some 5.0 percent are subject to *regime réel*, and 27 percent pay lump-sum taxes (Figure 4.5). That being said, most microenterprises do need to pay local authorities for permits (*patente*) to operate.

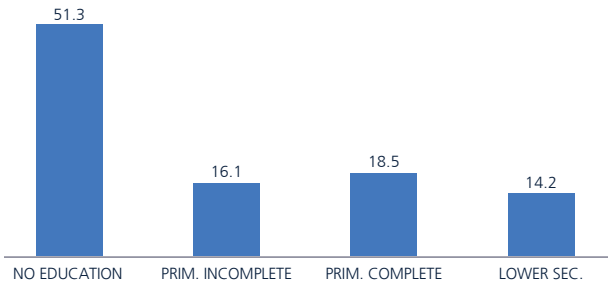
Although they are informal, nonagricultural household enterprises are persistent. More than 75 percent of nonagricultural household enterprises are active throughout the year (Figure 4.6). In addition, they are not short lived. More than 80 percent have been active for more than 5 years (Figure 4.7).

Figure 4.1
Many nonagricultural microenterprises owners are young people



Source: ENSETE 2013; authors' display.

Figure 4.2
Most nonagricultural microenterprises owners have no formal education

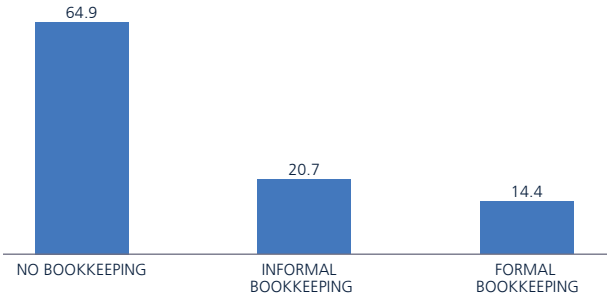


Source: ENSETE 2013; authors' display.

[74] As indicated in Chapter 1, in Côte d'Ivoire, the share of women in nonagricultural self-employment is much higher than male counterparts. However, there are no significant difference over time in the gender break-down in the sector.

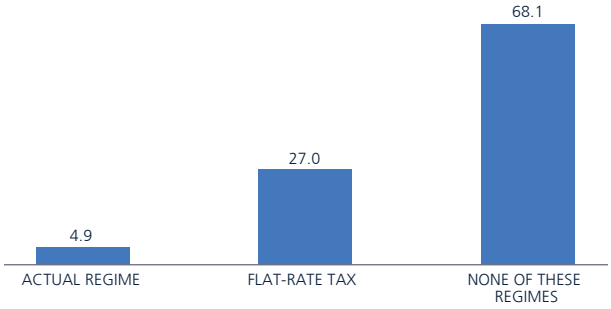
[75] The data from employment survey makes it hard to categorize employment in terms of tradable and non-tradable sectors. However, it is clear that small-scale retails activities (such as selling personal or food products) dominate nonagricultural self-employment in Côte d'Ivoire. These types of activities are most likely to oriented to fill the needs of local communities and markets.

Figure 4.4
Most nonagricultural microenterprises do not keep books



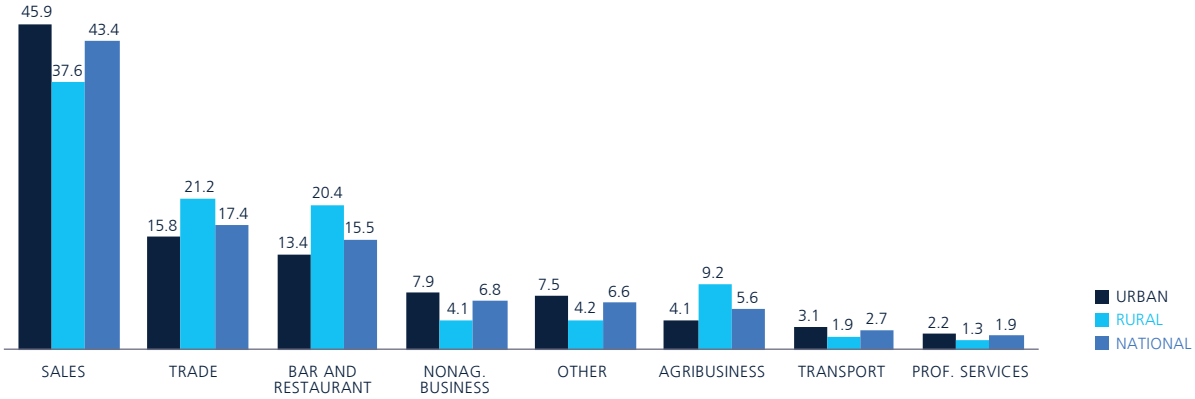
Source: ENSETE 2013; authors' display.

Figure 4.5
Most nonagricultural microenterprises are not subject to formal fiscal regimes



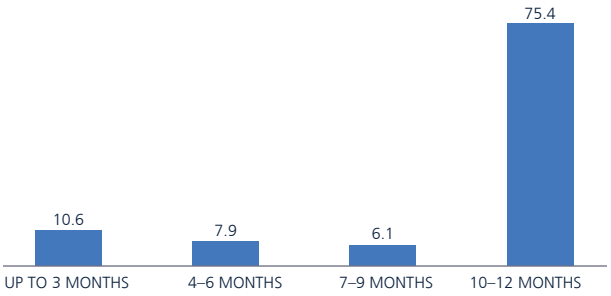
Source: ENSETE 2013; authors' display.

Figure 4.3
Main activities in nonagricultural microenterprises, by area of residence



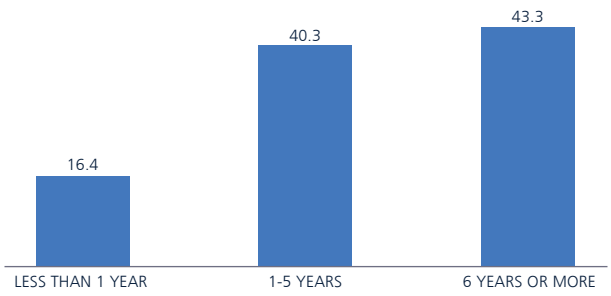
Source: ENSETE 2013; authors' display. See Table C.1 for specific examples of activities.

Figure 4.6
Most nonagricultural household enterprises operate throughout the year



Source: ENSETE 2013; authors' display.

Figure 4.7
Most nonagricultural household enterprises are older than 5 years



Source: ENSETE 2013; authors' display.

4.2.2 Why do people work in the sector?

In general, the literature has documented that the degree of informality in an economy may depend on the structure of the labor market, as well as the overall economic situation in a given country. Loayza and Rigolini (2011) document that in the long run, informality is larger when labor productivity is lower, government services weaker, and business flexibility less prevalent. In the short run, they find that informal employment behaves counter-cyclically, which suggests that it acts as a buffer or safety net in case of crisis and shocks. In Côte d'Ivoire, the trends presented in Chapter 1 suggest that the informal sector indeed expanded

during the years of crisis. However, a large part of the informal sector is rather structural and it includes businesses with many years of operation, as mentioned above.

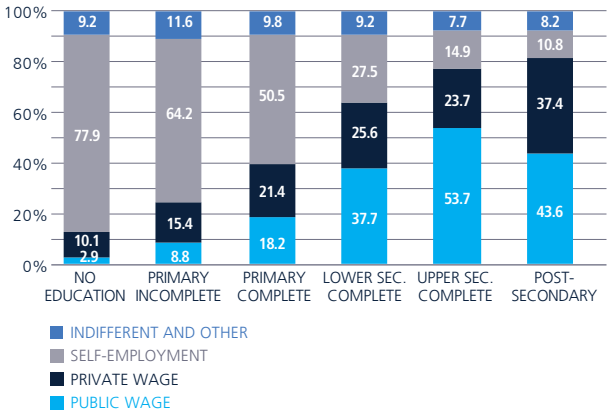
Decisions to enter into entrepreneurship or nonagricultural self-employment have also been the subject of many studies.[76] A common framework to analyze entry into the sector contrasts push and pull factors.[77] For instance, expected level of profits, economic growth, and high innovative potential characterize pull factors, while differences between expected profits and current local wages in the sector represent push factors (Lederman et al. 2014). In countries such as Tanzania and Republic of Congo, push factors appear predominant (Fox and Sohnesen 2012). In Côte d'Ivoire, a range of pull factors are also at play.

In line with descriptive patterns above, women and individuals with no or low education levels are more likely to be self-employed. Estimates from probit regressions indicate that education along with numeracy are associated with variations in the likelihood of being self-employed. More educated individuals and those with better reading and writing skills (of French language) are less likely to be in self-employment. Similarly, males are less likely to enter the sector compared with female counterparts (see Box C.1 in Annex C for more details on the estimation technique, and see Table C.2 in Annex C for results).

Moreover, in contrast to common perceptions, many individuals report preferring self-employment over other types of occupations including wage employment. More than 53 percent of the individuals (15 years of age and more) desire to be self-employed, while only some 18.2 percent and 18.7 percent desire to be in public and private wage employment, respectively. The desire to be self-employed is even higher among individuals with no formal education (77.9 percent) compared with only 10.8 percent among those with post-secondary education level (Figure 4.8). These patterns may of course reflect a constrained choice set, particularly for the low-educated individuals for which formal wage jobs are often unattainable.

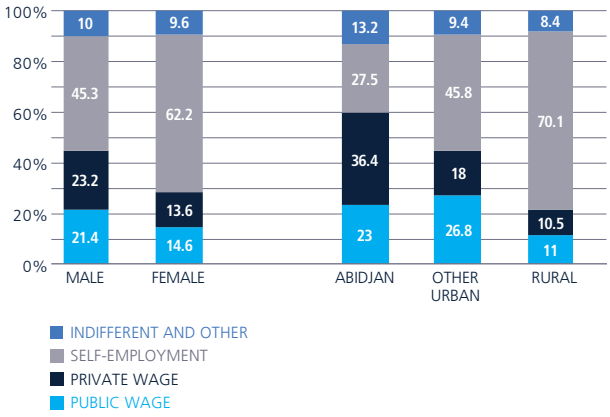
Overall, a range of pull factors contribute to entry into nonagricultural self-employment. Expected earning potentials (43.2 percent) in the sector as well as the desire to be independent (being one's own boss) (37 percent) are key motives why individuals declare preferring self-employment. In particular, the expectation of higher earnings than in other activities is a key reason for women to prefer the sector (44.2 percent) as is the desire to be independent individuals in rural areas (45.9 percent) (Table 4.1).

Figure 4.8
Most individuals with no formal education declare preferring self-employment



Source: ENSETE 2013; authors' display.

Figure 4.9
Female and individuals outside Abidjan are more likely to declare preferring self-employment



Source: ENSETE 2013; authors' display.

[76] Lederman et al. (2014) and Perry et al. (2007) provide a comprehensive review of the literature on the selection into the sector.

[77] For more formal entrepreneurship, Lederman et al. (2014) indicate that entry mistakes may occur if potential entrepreneurs are overconfident. This may apply less to developing countries and small-scale self-employment activities. Still, in the case of Côte d'Ivoire, the qualitative survey indicates that virtually all potential entrepreneurs say they are absolutely confident that they will succeed once they establish their enterprises. Their confidence is explained by their own assessment of their abilities, prior experiences in the sector they want to operate, and so on.

Table 4.1
Self-reported reasons for preferring self-employment (%)

	All	By Gender		By Area of Residence		
		Male	Female	Abidjan	Other urban	Rural
Expect to earn more	43.2	42.0	44.2	33.9	40.7	45.9
Want to be own boss	37.0	39.9	34.6	42.3	38.3	35.5
Want to have an interesting work	6.2	6.6	6.0	3.6	6.2	6.8
Work hours flexibility	4.0	2.8	5.0	7.7	3.6	3.4
Could not find a good wage job	3.2	2.9	3.5	4.6	3.2	2.9
Other reasons	6.3	5.9	6.7	7.9	8.0	5.3
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: ENSETE 2013; authors' calculation.

Qualitative data also provide additional insights as to why some individuals may prefer self-employment as opposed to other types of work. Factors such as the risk associated with informal private wage sector jobs and the role of social capital in job search were regularly mentioned by qualitative informants. Moreover, for individuals in rural areas, nonagricultural household enterprises represent a key source of diversification of the household income portfolio. Nonagricultural household enterprises are, for instance, used as a buffer or a complementary activity to mitigate harvest risks (see Box 4.3 for examples of pull factors from the qualitative work).

BOX 4.3: SELECTED QUALITATIVE QUOTES ON ENTRY INTO NONAGRICULTURAL HOUSEHOLD ENTERPRISES

As described in Box 4.2, this chapter relies both on quantitative micro data and complementary qualitative data to better understand the constraints and challenges in the sector. Several factors lead individuals to self-employment. When asked, participants in FGDs alluded to key factors which shed light on why they may choose to operate a household enterprise. This provides additional insight to the reasons elaborated in Table 4.1. For instance, risks associated with private wage sector (for example, being not well paid, or not being paid at all), lack of adequate social capital to obtain wage jobs, or seasonality in rural settings. Below are selected quotes from participants to highlight these points.

Risks in private wage jobs: "*Souvent tu travailles chez eux [les employeurs] et en fin de semaine, ils ne te donnent pas ton argent. A la zone, si tu as un accident de travail, ton employeur ne fait rien pour toi, il te laisse comme ça. Le SMIGR n'est pas respecté à la zone industrielle. [...]*" (FGD CC M Yopougon)

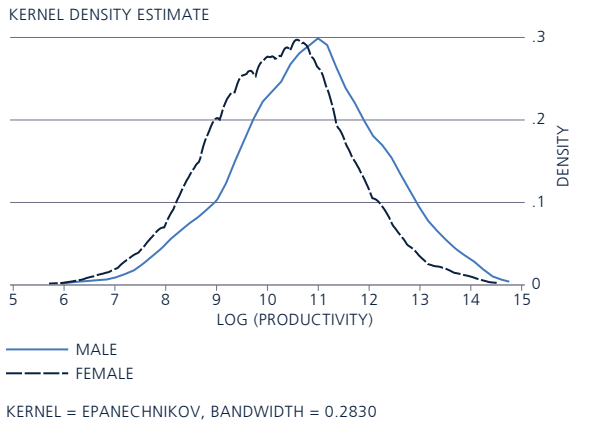
Social Capital: " *On nous a formé ici. Le jour de la remise des kits, ils ont laissé ceux qui ont eu les bonnes moyennes et ils nous ont laissés. Ils ont pris ceux qu'ils connaissaient pour les récompenser. [...]*" (FGD AE, Korhogo urbain)

" *...[Q]uand les structures viennent, ils ne prennent pas en compte nos diplômes. Ils recrutent par relation*" (FGD HE Man)

Seasonality: "*Le manioc produit une fois en un an alors que le commerçant gagne un peu tous les jours [...]*" (FGD CC M Djebonoua)

Source: Bouaki (2016).

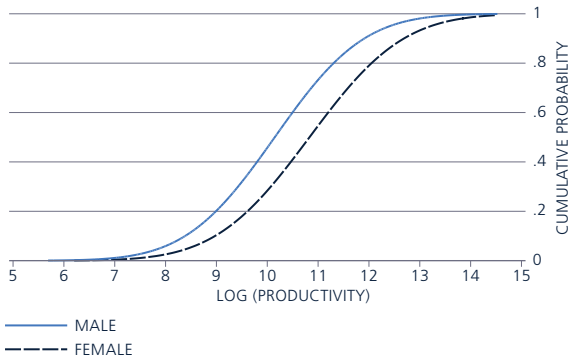
Figure 4.10
Productivity dispersion by gender



KERNEL = EPANECHNIKOV, BANDWIDTH = 0.2830

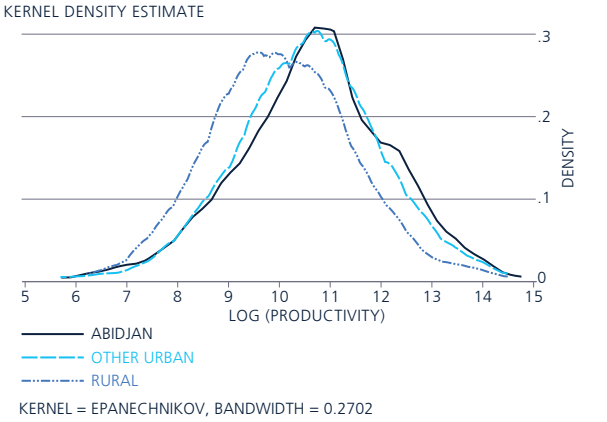
Source: ENSETE 2013; authors' display.

Figure 4.11
Cumulative distribution of productivity by gender



Source: ENSETE 2013; authors' display.

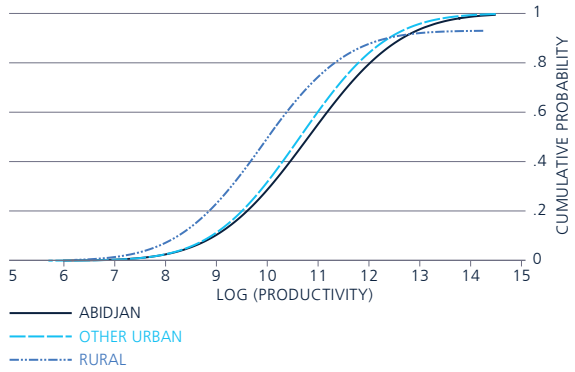
Figure 4.12
Productivity dispersion by area of residence



KERNEL = EPANECHNIKOV, BANDWIDTH = 0.2702

Source: ENSETE 2013; authors' display.

Figure 4.13
Cumulative distribution of productivity by area of residence

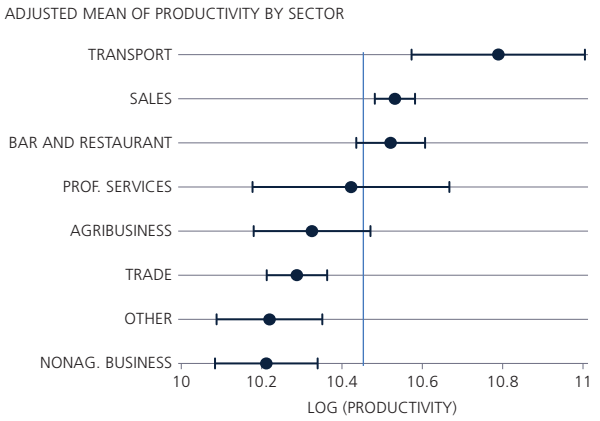


Source: ENSETE 2013; authors' display.

Self-employment is not necessarily synonymous with unhappiness with work and life compared with other occupations. The previous discussion highlighted for many individuals a preference for self-employment relative to wage employment as an aspect of the rationale for entering into self-employment. There is an emerging literature looking at the relationship between sector of employment and happiness with work and life. For instance, Falco et al. (2012) show, in the case of Ghana, that there is a high degree of overlap in the distribution of satisfaction across sectors (formal employment and informal employment). In other words, being in self-employment does not necessary translate into unhappiness. In the case Côte d'Ivoire, analysis from the qualitative work shows that many operators display positive attitude with regard to their work. This illustrates that a productive nonagricultural household enterprise can contribute to well-being.

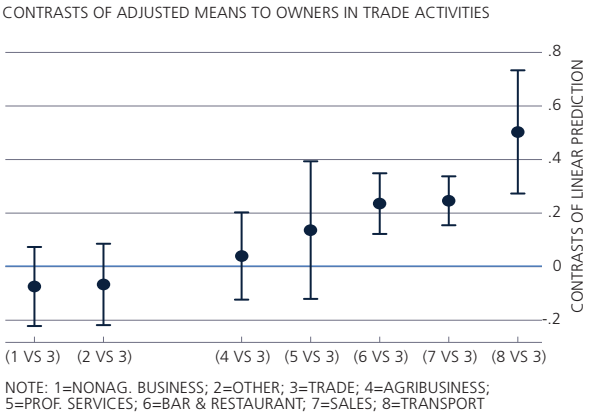
Clearly, not all individuals are in the informal sector by choice, but these patterns highlight substantial heterogeneity in the sector, and a somewhat more nuanced view compared to the negative connotation the sector often elicits. More educated individual are less likely to enter nonagricultural self-employment by choice. At the same time, and as further described below, many operators in the sector face constraints that hinder their business opportunities. It remains that, for many individuals, entering nonagricultural self-employment is a way to increase their earnings. Indeed, as mentioned in Chapter 3, average productivity in nonagricultural self-employment tends to be higher than average productivity in agriculture. As such, for many, entry into nonagricultural self-employment can contribute to offer a better job and a pathway out of poverty.

Figure 4.14
Productivity by sector



Source: ENSETE 2013; authors' computation.

Figure 4.15
Productivity premium compared to trading sector



NOTE: 1=NONAG. BUSINESS; 2=OTHER; 3=TRADE; 4=AGRIBUSINESS; 5=PROF. SERVICES; 6=BAR & RESTAURANT; 7=SALES; 8=TRANSPORT

Source: ENSETE 2013; authors' computation.

4.2.3. The household enterprise sector is very heterogeneous

The large heterogeneity in the household enterprise sector is visible through substantial variations in productivity.[78] Figures 4.10–4.13 illustrate the distributions of productivity across gender and area of residence. Figures 4.10 and 4.12 display the frequency distributions of productivity. Figures 4.11 and 4.13 display cumulative distributions of output per worker, showing the fraction of individuals in the sector at or below any given level of productivity. The horizontal differences are indicative of the productivity gaps between groups. Overall, productivity measures have a high dispersion.

The household enterprise sector includes a mix of high and low productivity units of production. While many individuals are just surviving in the sector, many others are doing very well. Figures 4.10–4.14 illustrate some stylized facts: enterprises owned by men and operating in Abidjan are the most productive, while operators in rural areas are much less productive.

Sectors that are relatively more capital intensive tend to be more productive. The heterogeneity in household enterprises is reflected by strong variation in productivity across types of activities. Sectors such as transport, sales, or bar and restaurant activities are more productive than trade (Figure 4.14). These sectors are generally more capital intensive. For instance, operators in sales (for example, retails of personal articles, cereals, clothes, and so on) are estimated to be, on average, between 23 to 28 percent more productive than those trading alcohol, juice, and fruits. These estimates are highly statistically significant (Figure 4.15; Table C.3, in Annex C).

4.3 WHAT ARE THE CHALLENGES AND DRIVERS OF PRODUCTIVITY IN NONAGRICULTURAL SELF-EMPLOYMENT?

From a policy standpoint, one key question is to understand the constraints for individuals in low-productivity household enterprises to become more productive. This requires a better understanding of the most prevalent constraints, as well as market failures that could be addressed through public interventions. The preceding sections have highlighted the characteristics of operators as well as the highly heterogeneous nature of the sector. This section sheds light on inhibiting constraints as well as factors enhancing productivity.

As in many other countries around the world, individuals in Côte d'Ivoire face multiple constraints to create and operate household enterprises. These constraints evolve around the capital available at entry and in operation, the business environment in which (potential) micro-entrepreneurs (expect to) operate, and the business and entrepreneurial skills of the operators. Analysis from both quantitative and qualitative data

[78] Following Nagler and Naude (2014), we define Productivity = $\frac{\text{average monthly sales}}{\text{number of workers}}$

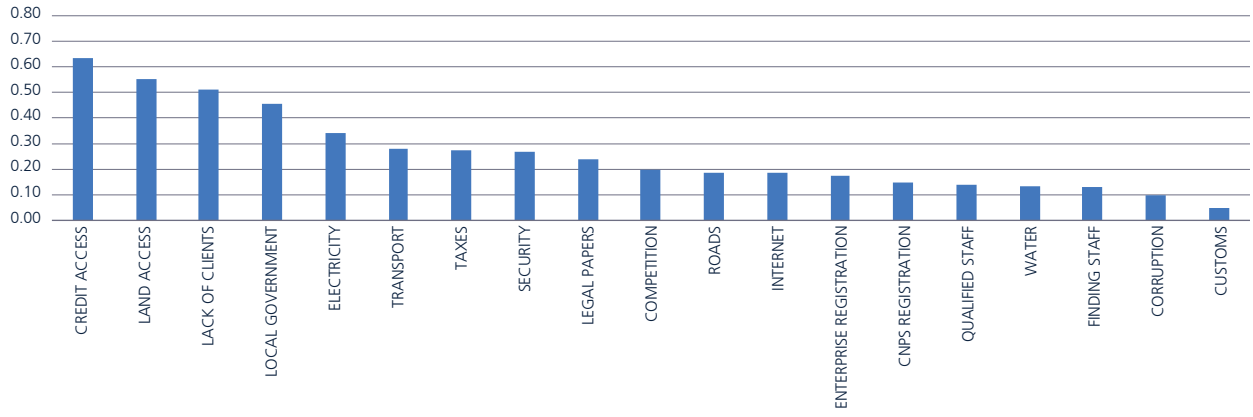
indicates that there is a distinct hierarchy of constraints, in the following order: capital constraints, constraints in terms of space and working environment, interactions with authorities, and skills.

Figure 4.16 illustrates the most prevailing constraints from a nonrepresentative survey of urban (mostly informal) microenterprises that reported interest in hosting apprentices as part of the PEJEDEC project (Crépon and Premand, 2017). The ranking of constraints is broadly consistent with the ordering mentioned above. Microenterprise owners overwhelmingly report lack of access to capital as a major binding constraint they face to open their business, with over 60 percent reporting facing capital constraints. As mentioned above, access to work space can often be an issue, with few microenterprises operating in a dedicated business space. Owners report access to land as one of the top five constraints they face. The business environment, lack of clients, as well as difficulties with local government are common constraints. While a very large share of the owners have no education, and few undertake any accounting, lack of skills does not appear high on the list of obstacles reported by enterprise owners.

Capital constraints are the most binding for individuals in the sector. In the 2013 national employment survey (ENSETE 2013), more than half of household enterprise owners (52.7 percent) cited lack of capital as a major problem for start-up.[79] Qualitative data provides highly consistent information, showing that the lack of access to adequate financial services is both a constraint to entry as well as for household enterprise operation, also because it limits working capital and opportunities for longer-term investments. The very limited or nonexistent financial services compel (potential) micro-entrepreneurs in the sector to mostly rely on personal savings or on family and friends networks for financing.[80] This situation is in line with earlier findings in other countries in Africa (Filmer et al. 2014).

The lack of safe working environment or access to markets represent an impediment for productivity in the sector. Descriptive statistics from the employment survey (ENSETE 2013) show that most household enterprises operate on the street (34.4 percent), followed by home (26.4 percent), market place (23.7 percent), in a permanent building (11.1 percent), and other (4.4 percent). At the same time, estimates show that entrepreneurs operating from home have significantly lower productivity. For instance, at the national level, owners operating in a fixed building or in a market place are, respectively, 57.2 percent and 18.5 percent more productive than those operating from home (Table C.3, column 2). These differences are strongly statistically significant.

Figure 4.16
Main constraints reported in nonagricultural microenterprise (Sample of urban microenterprises that expressed interest in hosting apprentices as part of PEJEDEC project)



Source: PEJEDEC Apprenticeship Impact Evaluation baseline survey, see Crépon and Premand, 2017.

[79] Although lack of capital is reported as major binding constraint at entry, individuals who report such entry constraint do not have lower productivity on average. Estimates indicate that individuals who, for instance, had no difficulties at entry are not necessary more productive than comparable counterparts who had no access to capital at entryThis may be the case because they had to enter a less capital-intensive sector due to the constraints they face in the first place [Table C.3, column 2].

[80] *"1) J'avais déjà fait de petites économies .... [...] Et mon frère m'a soutenu avec 200 000 francs sinon moi-même j'avais 90 000 francs seulement. 2) J'ai travaillé d'abord chez les autres et puis petit à petit j'ai fait des économies afin de lancer ma propre activité. 3) J'ai fait mes propres économies auprès d'un ami qui faisait le défrisage "* [FGD HE Yopougon] [Bouaki 2016].

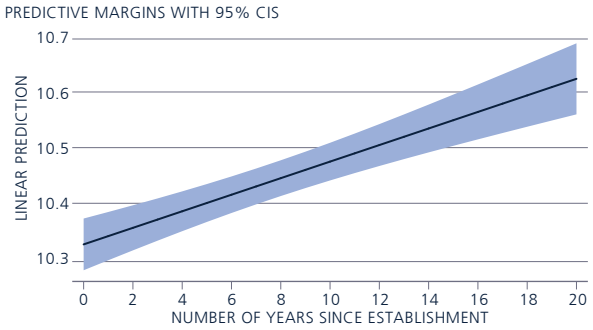
In the qualitative survey, many business operators also complained of a poor business environment and problematic relations with local authorities. Microenterprise owners complained about extortion, including from municipal authorities.[81] Although many operators pay simplified taxes to the municipalities in which they operate, they often report being extorted by tax collectors or having to pay bribes. Many microenterprise owners do not feel like they are receiving adequate services in exchange for the taxes they pay. These issues would need to be tackled as part of the strategy to improve the enabling environment for microenterprises.

Formal education has mixed effects on productivity in household enterprises. In the national employment survey, it first appears that schooling is correlated with household enterprises' productivity. However, this effect works through a range of other factors, including the number of years in operation and hours worked a week, so that there is no remaining education premia after controlling for these factors (Table C.3, Annex C). Earlier cross-country analysis also suggested limited returns to education in the sector (see Fox and Sohnesen 2012), although the majority of household enterprise owners have no formal education. Chapter 6 in this report also shows that earnings premia for additional education are lower in nonagricultural self-employment than they are in wage employment. Still, qualitative informants acknowledge that basic education can contribute to run microenterprises through basic numeracy and literacy skills.[82]

Years of experience in operation are associated with higher productivity. One of the key differences between formal and informal enterprises is that formal enterprises have the ability to acquire skilled workforce or upgrade workforce whenever necessary, while microenterprises have limited scope for human capital changes. As indicated above, household enterprises' owners work alone most of the time and have limited formal education. Qualitative informants indicate during FGDs that they often compensate the lack of these skills with experience over time ('learning by doing')[83] (Figure 4.17). Estimates from the national employment survey also indicate that there is a positive and statistically significant nonlinear effect of age on household enterprises productivity (Figure 4.18). The coefficient estimates range from 9.9 percent to 11.1 percent (Table C.3, columns 1 and 2).

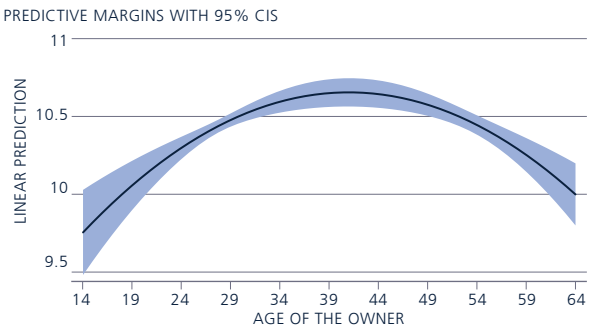
Basic business skills also seem to matter for productivity, including through the capacity to keep books, accomplish necessary administrative paperwork, or the ability to expand, diversify, and improve product quality. Similarly, estimates show that household enterprises with formal bookkeeping

Figure 4.17
Years in operation and HEs productivity



Source: ENSETE 2013; authors' computation.

Figure 4.18
Age of owner and HEs productivity



Source: ENSETE 2013; authors' computation.

81 *"Les agents de la mairie nous fatiguent. Ils viennent la nuit. Ils nous encaissent même quand on vend dans nos maisons, ils nous parlent d'occupation du domaine public (ODP) […] "* (FGD HE Abobo) (Bouaki 2016).
Or *"1) Quels que soient les papiers que tu vas leur montrer ils vont tout faire pour te soutirer un peu d'argent. 2) Il y a des agents qui viennent la nuit encaisser avec de faux tickets quand je vends mes poulets, ils ne viennent jamais la journée"* (FGD HE Yopougon) (Bouaki 2016).

82 *"Ce que tu as appris à l'école te permet de savoir où tu vas avec ton entreprise. Ça te permet d'avoir une base pour mener une activité."* (FGD AE, Korhogo urbain). Or *" … les diplômés sont avantagés. 2) Nous les analphabètes, notre situation nous fatigue trop. Ceux qui sont allés à l'école ont facilement du travail. 3) Même dans les métiers, ceux qui sont allés à l'école sont avantagés. Ils savent calculer. Ils ont des diplômes. 4) Parce que actuellement les nouvelles voitures qui viennent sont électroniques. Eux, ils ont les ordinateurs, donc ils arrivent à s'en sortir. Si c'est au niveau des anciens moteurs, là je maîtrise. Mais les nouvelles voitures électroniques, je ne connais pas. 5) Moi je suis couturière, je ne vois pas la différence. 6) Les produits de coiffure actuels, il y a des prescriptions, si tu ne sais pas lire tu vas blesser les clients"* (FGD HE Bondoukou rural) (Bouaki 2016)

83 *"C'est l'ancienneté qui nous permet d'affronter la concurrence. […] "* (KII HE Yopougon) (Bouaki 2016).

records and some simplified form of booking are, respectively, 14.4 percent and 31.2 percent more productive than household enterprises that do not keep books at all (Table C.3, Annex C). Lack of adequate business skills coupled with limited or lack of training opportunities make it difficult for small-scale entrepreneurs to expand, diversify, and develop effective marketing strategies.[84] Simply put, operators in the sector are constrained by weak technical and business skills (managerial and marketing skills).

Operators in the sector also mention challenges related to behavioral skills. Micro-entrepreneurs in specialized activities in urban areas have difficulties at finding skilled and trusted workforce; even when they are willing to provide on-the-job training.[85] Qualitative informants in focus group discussions in rural communities mention that they find difficult to retain recruits as well.

4.4 TOWARD A MORE SUPPORTIVE BUSINESS ENVIRONMENT FOR SELF-EMPLOYMENT

A discussion of the informal sector would not be complete without addressing the issue of interactions between household enterprise operators and the state. In the literature, government failures have been identified as a key factor contributing to the spread of informality, especially in developing economies. In this context, informality is viewed as a deliberate rational choice in response to the relative costs and benefits of formal versus informal status (see Diop and Niang 2012, for an exhaustive list of other references). In other terms, institutional settings do influence individuals' decisions to operate formal or informal enterprises. When discussing government failures in this context, the literature indicates three factors affecting firms' choice of becoming or remaining informal: access to public services, the regulatory and tax environment, and the enforcement of regulations (Diop and Niang 2012). This section sheds light on existing institutional roles and strategies for the sector, as well as entry points to set up a more supportive business environment for the household enterprise sector.

4.4.1 Existing institutional roles and strategies

Household enterprises are not explicitly featured in the national employment strategy. As indicated, micro-enterprises represent a key source of job, including for women and youths. Yet formal SMEs attract by far the most policy attention, despite their much smaller labor share. A review of the recent literature and policy documents undertaken as background to this chapter shows that that there is no comprehensive national strategy for household enterprises or the informal sector.

Furthermore, actions regarding informal enterprises tend to start with the question of how to 'formalize' them.[86] In this spirit, over the past few years, Côte d'Ivoire has substantially reduced the procedures for starting a formal business; ranking globally 46 out of 189 economies on the ease of doing business (Doing Business 2016). Today, with a one stop-shop agency, there are four major steps taking up to seven businesses days to create a formal business in the country (Doing Business 2016). These improvements are welcome, and as Chapter 5 discusses, the share of small firms have been growing in the formal sector over time. Still, many informal microenterprises remain unaware of these changes. In fact, most qualitative informants do not seem familiar with the simplified procedures to register a business in the country; especially for individuals in secondary cities. This is consistent with international experience, which has shown consistently that efforts to encourage formalization is only effective for a relatively small share of firms.

Formalization should not be seen as an end in itself, particularly since evidence on the effectiveness of policies to encourage formalization on firm productivity are rather mixed. Overall, as indicated in Bruhn and McKenzie (2013), formalization policies—based on current evidence (see Box 4.4)—result only in

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[84] *"...[s]ouvent à la télé, on attend parler de [agir pour les jeunes] à la radio. Mais, je n'ai jamais pris part. Ils s'intéressent plus aux associations ... "* [KII AE Yopougon] (Bouaki 2016).

[85] *"Ici, c'est difficile de trouver des gens de confiance. 2) C'est difficile de trouver des gens qui connaissent mais aussi de confiance. On les prend et on les forme sur le tas"* [FGD HE Abobo] (Bouaki 2016).

[86] In the law on SMEs there is only one article on informal sector. This article reads as follows *"Des mesures spécifiques destinées à favoriser la migration du secteur informel vers le secteur moderne structuré, sont mises en œuvre par l'État à travers le Ministère en Charge de la Promotion des PME, qui en assure le suivi, selon des modalités définies par décret"* [Loi No 2014-140 du 24 Mars 2014, Article 24].

a modest increase in the number of firm registrations. At the same time, formalizing household enterprises typically contribute very little to tax revenues. In addition, most informal firms appear not to benefit much from formalizing, and therefore public rationale for trying to formalize micro-enterprises may be subject to debate. More and more, formalization is incentivized through complementary benefit packages that seek to address constraints to firm productivity. In this sense, finding effective policies to address constraints to productivity should come first, and attempts to formalize second.

BOX 4.4: FORMALIZATION AND MICROENTERPRISE PERFORMANCE: WHAT DO WE KNOW?

When it comes to formalization and performance in the informal sector, there are two broad questions that are usually asked (Benjamin et al. 2014): (a) Does a reduction in entry procedures (for example, reducing number of days to start a business) lead to an increase in the number of new formal firms? and (2) What happens once firms formalize? For instance, do these firms show increased performance with respect to informal firms? It is worth noting here that overall, the body of literature on formalization and the informal sector performance in Sub-Saharan Africa is scarce. Most of the studies on this topic have been conducted in Latin America and Southeast Asia (Benjamin et al. 2014; Bruhn and McKenzie 2013).

Bruhn and McKenzie (2013) summarize a number of studies on the first question on the effects of entry reforms and related policies to promote firm formalization. Overall, they find most of these policies to promote firm formalization result only in a modest increase in the number of formal firms, if at all. For instance, in Mexico, Bruhn (2011) analyzed the impact of a reform that, in 2002, reduced the number of days to start a business from 30.1 to 1.4. The author finds that the reform increased the number of registered firms, but only by 5 percent, a small magnitude. Similarly, Cárdenas and Rozo (2009) find, in the case of Columbia, that the inception of a one-stop-shop in six major cities increased business registrations by 5 percent. In Peru, Mullainathan and Schnabl (2010) find that a municipal licensing reform in Lima increased the number of provisional licenses issued to informal firms, but many of these firms did not renew their license later. Andrade, Bruhn, and McKenzie (2013) find in a case study from Belo Horizonte (Brazil) that information campaigns following simplification of formalization (registration requirements) result in very few informal firm registering, in particular only when the firms received a municipal inspection. In that case, the likelihood of formalizing was between 21 to 27 percentage points. Moreover, studies from South Asia also find similar results. For instance, in Sri Lanka, de Mel, McKenzie and Woodruff (2013) find that information provision and cost reimbursement of business registration had no effect on formalization rate. In Bangladesh, a study to deliver brochures with information to 1,500 informal firms finds that the information delivery had no effect on formalization rate (de Giorgi and Rahman, 2013). However, in a case study from Portugal, Branstetter et al. (2014) find that the introduction of a one-stop-shop, which decreased the number of days to register a business by 91 percent, led to an increase of the new firms created by 17 percent. Benhassine et al. (2016) study the effect of the introduction of the entreprenant legal status in Benin, as well as the combination of a free registration process with supplementary efforts to enhance the presumed benefits of formalization (through links to government training programs, support to open bank accounts, and tax mediation services). Overall impacts on formalization are limited, but the full package leads to the largest impacts on formalization (16.3 percentage points). However, Benhassine et al. (2016) show that formalization offers limited benefits to the firms, and the costs of personalized assistance are high, suggesting that such enhanced formalization efforts are unlikely to pass cost-benefit tests.

The second strand of studies looks at the performance of firms once they formalize. Emerging evidence suggests that formalization can contribute to higher performance, but that the effects are relatively small (Benjamin et al. 2014). Among others, Fajnzylber, Maloney, and Montes-Rojas (2011), evaluate the impact of Brazil's formalization program, SIMPLES, and find that formality increases the employment, the probability of having a fixed location, and revenues and profits. However, Monteiro and Assunção (2012) using the same dataset as Fajnzylber, Maloney, and Montes-Rojas (2011), though with a different identification strategy, find that the program had limited impacts on formalization.[87] Moreover, in the case of Vietnam, Rand and Torm (2012) find that firms that formalized in the period

[87] Recently, Piza (2016) revisited both previous papers and found that the differences in results are explained by the dates each study uses to identify when the program was put in place. In addition, a robustness check indicates that seasonality around November may, among other factors, cast some doubts on the identification strategy used in both studies.

of 2007–2009 registered an increase in their profits and investments compared with similar firms that remained informal. In the case of Bolivia, McKenzie and Sakho (2010) also find that firms that become formal issue more tax receipts and have increase in their sales. Campos, Goldstein and McKenzie (2015) document encouraging short-term results on firm registration from a program in Malawi, although still with limited results on tax registration. Support to business registration alone has no impact, but the combination of formalization assistance and bank information session results in significant impacts on having a business bank account, financial practices, savings, and use of complementary financial products.

Source: Various sources; authors' display.

Governance of the household enterprise sector suffers from lack of clarity in institutional roles and inter-ministerial coordination. To set up a more supportive enabling environment for household enterprises in Côte d'Ivoire, one real challenge is a lack of clear roles or responsibilities with respect to the sector. Figure 4.19 illustrates the coordination challenges among different ministries and agencies. In general, each ministry does have (*de jure*) specific mandates. However, when it comes to the informal sector, several ministries often have similarly narrow but overlapping objectives, in this case formalizing the informal sector. There are parallel efforts to create registries of individuals in the informal sector. For instance, the Ministry of Commerce plans on having a national registry of traders (*Carte du commerçant*) in the informal sector, while the Ministry of Handicraft and Promotion of Small and Medium Enterprises simultaneously intends to create a national registry of mastercrafstmen (*Carte de l'Artisan/Entrepreneur*).

While government agencies are focused on building registries to better regulate or tax the sector, there is relatively less attention to the provision of services needed to address constraints to productivity. When asked, many qualitative informants reveal that they are not aware of the adequate authorities who could address their needs or concerns, or where they could acquire information or look for support opportunities (Bouaki 2016). As such, one critical aspect of setting up a more supportive business environment would involve stronger accountability in public service provision for the informal sector. This is especially important given that, as mentioned before, formalization cannot be seen as an end of its own.

4.4.2 Outlining a strategy for more productive nonagricultural self-employment

The previous sections highlighted key challenges facing operators of household enterprises at entry and in operation. These constraints relate to missing or imperfect markets for capital, work space or skills, and as such provide scope for public intervention to better support operators in the household enterprise sector. As noted in Benjamin et al. (2014), recommended policies to support the informal sector in general depend on both the nature of the informal firms as well as the causes and effects of informality. Below are some policy entry points that could help improve and enhance the operating environment for household enterprises in the country.

Strategies ought to address the systematic constraints to a more supportive business environment, both at the institutional and individual levels. A three-step approach could be considered to create a more supportive business environment for nonagricultural self-employment: (a) articulate a strategy ensuring voice for household enterprise operators and accountability for public agencies dealing with the sector; (b) undertake specific interventions to relax binding constraints for operators in the sector facing market failures; and (c) set up a safety net for those that may not be able to grow or become more productive.

At a policy level, it is essential to articulate a strategy to ensure effective voice for household enterprise operators, institutional coordination, and accountability for public agencies dealing with the sector. At a strategic level, nonagricultural self-employment would need to be tackled explicitly in the overall national employment strategy, including to outline approaches that go beyond attempts to formalize or regulate it. In the process, providing household enterprise operators a mechanism to voice their ideas and concerns may be beneficial. The strategy would likely benefit from a differential approach for urban and rural sectors, as well as specific attention to inclusiveness of women and the poor. At an institutional level, more effective service delivery for operators in household enterprises would require addressing coordination failures, including to clarify roles and responsibilities of various government agencies, both at the national and local level. Mechanisms to

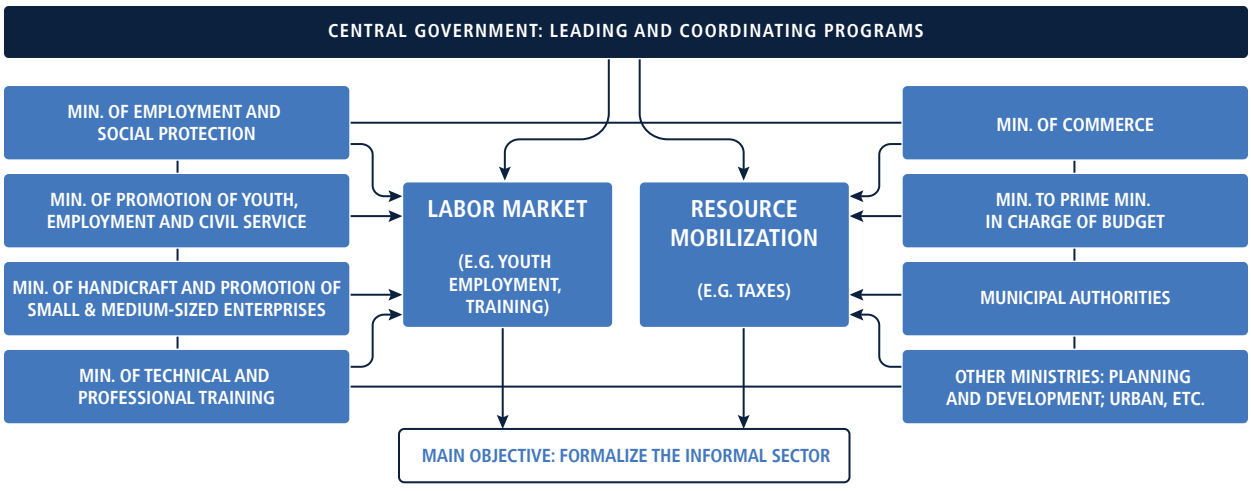
minimize corrupt or extortive practices from some public agents would help to address concerns from operators and contribute to greater accountability. Specific measures could include clearer definitions of rights and obligations, as well as the establishment of reporting channels for grievances.

At a programmatic level, specific interventions can be undertaken to relax binding constraints for household operators in the sector facing market failures. Cho, Robalino, and Watson (2014) review evidence on effectiveness and design elements of programs to address a range of constraints for self-employment. They highlight mixed evidence on the effectiveness of these interventions. International evidence can be used to identify the most promising interventions to address prevalent constraints in Côte d'Ivoire. In light of multiple constraints for productivity in the sector, integrated interventions addressing multiple drivers of productivity appear more promising than fragmented interventions. To minimize fragmentation of actions, interventions could be centered directly to the hierarchy of constraints identified in this sector based on both qualitative and quantitative data.

Finding cost-effective instruments to facilitate access to capital is clearly a top priority as highlighted by both qualitative and quantitative data. Some programs have been demonstrated as effective in relaxing capital constraints and boost productivity among self-employed individuals. As Blattman, Fiala and Martinez (2014) have shown in Uganda, the provision of cash grants to youths groups can be an effective instrument. However, there might be concerns in scaling up such an approach, and alternative financial instruments suitable to reach the most vulnerable individuals would be useful. At the same time, existing international evidence on the effectiveness microfinance interventions is much more mixed (see Banerjee, Karlan, and Zinman (2015) for a summary of recent studies). This suggests that, although capital constraints are binding, finding the right instrument to address them is not straightforward. The PRISE[88] project currently tests a range of alternative instruments in western Côte d'Ivoire (in particular, cash grants, semi-credit, and rotating savings groups). Results from its impact evaluation will be very informative to identify the most cost-effective financial instrument to relax capital constraints for individuals in informal employment in Côte d'Ivoire.

Access to a suitable work location and markets is critical as well. At a minimum, this would mean ensuring proper and safe space to work for household enterprise operators, who are often forced to relocate, disrupting their business. The expansion of markets and upgrading of their infrastructure can help, together with an explicit consideration of the household enterprise sector, in urban planning and policies. For rural entrepreneurs, the facilitation of access to market may also take the form of value chain facilitation, including better access to equipment and inputs, as well as opportunities to sell products. Micro-franchising could also be considered.

Figure 4.19
Inter-ministerial approaches to the informal sector



Source: Authors' display.

[88] PRISE stands for *Projet d'Insertion Socio-Economique des populations vulnérables de l'Ouest de Côte d'Ivoire.*

With regard to skills, the direct scope for intervention might be more limited. It is not that clear that skills are a binding constraint, and international evidence on interventions providing training alone has been quite mixed. As will be further discussed in Chapter 6, a large number of youths obtain training through private informal apprenticeships that often take place in informal firms and provide a pathway for youths to in turn become self-employed. Existing private training providers and master-craftsmen could be used as a platform and incentivized to improve the quality of the training they provide. In addition, providing access to training on business skills and opportunities to upgrade skills could also be considered. Training programs that build a range of skills together (rather than focusing exclusively on selected technical skills) has shown some promise to raise productivity in the informal sector, in particular for women when combining behavioral skills with business skills or technical skills training.

Complementing social protection interventions with livelihood support programs addressing multiple constraints can promote productive inclusion among the poorest population. Safety nets programs typically target the poorest populations, including those engaged in low-productivity self-employment. The set-up of safety nets can facilitate savings, encourage risk taking and more broadly stimulate demand. Care should be taken in not excluding individuals from productive interventions on the basis of ad hoc criteria. Indeed, studies have shown that the most constrained individuals can stand to gain a lot from productive interventions addressing capital or skill constraints. This is particularly the case for multi-faceted graduation programs that target the poor and provide a mix of cash transfers, productive asset transfer (typically cash or livestock) and training, along with regular coaching visits and access to savings. An evaluation of the graduation approach in six countries around the world showed large impacts on earnings, consumption, food security and assets (Banerjee et al., 2015). Efforts to expand and scale-up such an approach are underway in a range of countries and could also be considered in Côte d'Ivoire.

Lastly, given heterogeneity in the sector, a social protection and safety net system would still be needed for those that may not be able to grow or become more productive. Given the high number of individuals operating in self-employment, and the large variation in productivity in the sector, it is probable that a share of individuals may not be able to seize opportunities and strongly increase their earnings. For these individuals, a safety net is needed to ensure basic welfare levels and protection against extreme poverty.

4.4.3 Conclusion

There is a wide variety of informal nonagricultural self-employment activities in Côte d'Ivoire, and many individuals choose to operate in the sector. From a legalistic standpoint, being informal means that the establishment (operating unit) or the employee is not registered. As in many countries in the region, the median owner of a nonagricultural microenterprise tends to be young females with no formal education. The majority of nonagricultural individual enterprises are in small-scale service activities, but these enterprises persist over time. In fact, in contrast to common perceptions, many individuals declare preferring self-employment over other types of occupations. A range of pull factors, including earning potentials, attract individuals into the sector. For rural households, nonagricultural activities represent a source of income diversification to mitigate harvest risks or seasonal variations, and often a pathway out of poverty. Still, as Chapter 3 has highlighted, off-farm diversification remains limited in rural Côte d'Ivoire and there might be scope to further encourage it.

Heterogeneity in the nonagricultural employment sector is also reflected by substantial variations of productivity. Individuals face multiple constraints to create and operate their household enterprises. Start-up capital remains the most binding constraint for individuals. The second binding constraint is the lack of safe working environment and access to market. Other key constraints facing the operators are that they are often subject to extortions by some government authorities, in particular municipal tax collectors, despite receiving limited services in exchange of their tax payments. Finally, although large returns to education are not directly observed in the sector, operators often 'learn by doing' through on-the-job experience. Limited business skills also affect productivity.

Institutionally, household enterprises are not fully featured in the national employment strategy. Most government actions focus on SMEs and the formal sector. Existing actions regarding informal micro-enterprises mostly center on attempts to 'formalize' them. Governance of the sector also suffers from lack of clarity in institutional roles and inter-ministerial coordination. There are initiatives by government agencies to build registries

to better regulate or tax the sector, but there is relatively less attention to the provision of services needed to address constraints to productivity.

Strategies ought to address systematic constraints to a more supportive business environment, both at the institutional and individual levels. To do so, a three-step approach is suggested: (a) articulate a strategy ensuring voice for household enterprise operators and accountability for public agencies dealing with the sector; (b) undertake specific interventions to relax binding constraints for household operators in the sector facing missing markets, and (c) set up a safety net for those that may not be able to grow or become more productive. If better-integrated in the national employment strategy, the sector can offer a pathway out of poverty for many individuals, in particular youth and women. As such, it is directly relevant to offer better and more inclusive employment in Côte d'Ivoire.

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ANNEX C:

Table C.1
Most frequent activities of household enterprises in the 2013 employment survey (ENSETE 2013)

Agrobusiness	[02122] Bois de chauffage
	[05001] Poissons
	[01131] Arachides
Nonag. Business	[41000] Eau distribuée
	[45402] Travaux de menuiserie et de vitrerie
	[45211] Travaux de construction de logements
Trade	[15915] Vins et autres alcools
	[15303] Jus de fruits et légumes
	[24120] Charbon de bois
Sales	[52453] Vente au détail sur éventaires et marchés d'articles personnels divers
	[52430] Vente au détail sur éventaires et marchés de céréales, tubercules, et d'autres produits alimentaires, boissons et tabacs manufacturés
	[52230] Vente au détail en magasin spécialisé de textiles, habillement, chaussures et articles en cuir
Bar and restaurant	[55210] Services de restauration
	[55220] Services des bars, cafés et autres débits de boissons
Transport	[64222] Autres services d'accès aux réseaux de télécommunication
	[60210] Services de transports urbains de passagers
	[60400] Services de transports par conduits
Prof. Services	[74354] Services fournis principalement aux entreprises n.c.a.
	[85130] Services rendus par les tradipraticiens
	[85121] Soins médicaux
	[72303] Autres services rattachés à l'informatique
Other	[93020] Coiffure et soins de beauté
	[93040] Autres services personnels
	[91310] Services fournis par les organisations religieuses

Source: ENSETE 2013; author's display.

BOX C.1: METHODOLOGY FOR ANALYSIS OF HOUSEHOLD ENTERPRISE PRODUCTIVITY

This chapter analyzes the determinants of household enterprise productivity based on cross-sectional data from the 2013 national employment survey (ENSETE 2013). We attempt to account for possible sample selection effects, and use a two-step Heckmann selection model.

Formally we estimate (Hill et al. 2008),

$$z_i^* = \gamma_1 + \gamma_2 w_i + u_i, \qquad i = 1, \ldots, N. \qquad (1)$$

The selection equation is expressed in terms of a latent variable z_i^* (corresponding here to the productivity level) that depends on the explanatory variables w_i. z_i^* is not observed, but we do observe the binary variable $z_i = 1$ if $z_i^* > 0$ and $z_i = 0$, if $z_i^* \leq 0$.

We start by estimating a probit model of selection into nonagricultural self-employment, and use the results to estimate the inverse Mills Ratio (IMR), which is equal to $\lambda_i = \frac{\phi(\gamma_1 + \gamma_2 w_i)}{\Phi(\gamma_1 + \gamma_2 w_i)}$

Once z_i is known, we then run an OLS with the estimated IMR, $\tilde{\lambda}_i = \frac{\phi(\tilde{\gamma}_1 + \tilde{\gamma}_2 w_i)}{\Phi(\tilde{\gamma}_1 + \tilde{\gamma}_2 w_i)}$, included to correct for selection bias, yielding the estimation equation

$$y_i = \beta_1 + \beta_2 x_i + \beta_\lambda \tilde{\lambda}_i + v_i, \qquad i = 1, \ldots, N. \qquad (2)$$

with the dependent variable y_i (here the log of productivity), and x_i a vector including individual, household enterprise, and geographical characteristics.

In the first stage (equation (1)) the covariates include individual characteristics of the household head (age, gender, and education), regional dummies, and number of children in the household. Following Nagler and Naude (2014), we make the assumption that number of children in a household contributes to household selection into nonagricultural self-employment in the first stage, but does not affect productivity in the second stage. In the second stage (equation (2)), individual characteristics of the owner and regional dummies (same in the selection stage) along with household enterprises characteristics (type of activities, point of operations, and so on) are included.

Ultimately, while the analysis should be interpreted carefully and not as providing causal estimates, it is useful in analyzing covariates of productivity in household enterprises based on the available cross-sectional data.

Source: Authors' display.

Table C.2
Probit estimates for selection into self-employment

	Specification I			Specification II		
	All	**Urban**	**Rural**	**All**	**Urban**	**Rural**
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Male	–0.470***	–0.427***	–0.570***	–0.483***	–0.436***	–0.573***
	(0.031)	(0.038)	(0.053)	(0.033)	(0.041)	(0.057)
Age	0.059***	0.072***	0.034***	0.058***	0.072***	0.034***
	(0.005)	(0.007)	(0.008)	(0.005)	(0.007)	(0.008)
Age sq/100	–0.071***	–0.084***	–0.049***	–0.070***	–0.083***	–0.048***
	(0.006)	(0.008)	(0.009)	(0.006)	(0.008)	(0.009)
Year-of-schooling	0.055***	0.053***	0.045**	0.055***	0.054***	0.045**
	(0.011)	(0.012)	(0.020)	(0.011)	(0.012)	(0.020)
Year-of-schooling Sq/100	–0.580***	–0.569***	–0.440***	–0.580***	–0.569***	–0.440***
	(0.069)	(0.079)	(0.147)	(0.069)	(0.079)	(0.147)
Read and write in French	–0.200***	–0.289***	–0.041	–0.201***	–0.289***	–0.041
	(0.042)	(0.050)	(0.076)	(0.042)	(0.050)	(0.076)
Number Children in HH	0.027***	0.041***	0.014	0.025***	0.039***	0.013
	(0.008)	(0.011)	(0.012)	(0.008)	(0.011)	(0.012)
Married				0.036	0.025	0.007
				(0.032)	(0.041)	(0.054)
Constant	–1.142***	–1.443***	–1.148***	–1.128***	–1.430***	–1.147***
	(0.129)	(0.157)	(0.195)	(0.129)	(0.158)	(0.195)
Observations	11,221	6,335	4,886	11,221	6,335	4,886
Pseudo R^2	0.081	0.074	0.049	0.081	0.074	0.049
Log likelihood	–6,029	–3,733	–2,267	–6,029	–3,733	–2,267
Strata Dummies	Yes	Yes	Yes	Yes	Yes	Yes

Source: ENSETE 2013, authors' estimates.
Note: Standard errors in parentheses; *** p < 0.01, ** p < 0.05, * p < 0.1.

Table C.3
OLS estimates for determinants of household enterprise productivity (dependent variable: ln(productivity), results are from the second stage of a Heckman Selection Model)

	All		Urban		Rural	
	(1)	(2)	(3)	(4)	(5)	(6)
Male	0.066	0.142	0.111	0.134	-0.129	0.249
	(0.165)	(0.149)	(0.222)	(0.207)	(0.291)	(0.248)
Age	0.111***	0.099***	0.113***	0.102***	0.114***	0.077**
	(0.022)	(0.020)	(0.029)	(0.027)	(0.037)	(0.032)
Age sq/100	–0.131***	–0.119***	–0.132***	–0.122***	–0.137***	–0.092**
	(0.026)	(0.024)	(0.035)	(0.033)	(0.045)	(0.039)
Year-of-schooling	0.037	0.010	0.034	0.013	0.069*	0.007
	(0.023)	(0.021)	(0.031)	(0.029)	(0.041)	(0.035)
Year-of-schooling Sq/100	–0.444**	–0.171	–0.413	–0.187	–0.729*	–0.151
	(0.225)	(0.202)	(0.304)	(0.282)	(0.409)	(0.350)
Read and Write in French	–0.048	0.051	–0.045	0.033	–0.095	0.116
	(0.085)	(0.077)	(0.111)	(0.102)	(0.151)	(0.130)
Sector (Ref.: Trade)						
Agribusiness	0.015	0.038	–0.024	0.039	0.046	0.042
	(0.094)	(0.083)	(0.127)	(0.112)	(0.144)	(0.124)
Nonag. business	–0.086	–0.076	–0.112	–0.070	0.090	–0.022
	(0.083)	(0.075)	(0.094)	(0.087)	(0.176)	(0.151)
Sales	0.279***	0.244***	0.284***	0.251***	0.267***	0.229***
	(0.051)	(0.047)	(0.062)	(0.057)	(0.092)	(0.082)
Bar and Restaurant	0.195***	0.233***	0.204**	0.303***	0.166	0.110
	(0.064)	(0.058)	(0.082)	(0.075)	(0.102)	(0.091)
Transport	0.599***	0.501***	0.737***	0.661***	–0.048	–0.118
	(0.127)	(0.117)	(0.145)	(0.136)	(0.244)	(0.208)
Prof. services	0.196	0.134	0.303*	0.225	–0.129	–0.131
	(0.135)	(0.131)	(0.160)	(0.155)	(0.230)	(0.235)
Other	0.075	–0.068	0.069	–0.043	0.164	–0.067
	(0.083)	(0.078)	(0.096)	(0.088)	(0.175)	(0.174)
Location of operation (Ref.: Home)						
Street	0.310***	0.245***	0.354***	0.262***	0.341***	0.305***
	(0.050)	(0.046)	(0.062)	(0.058)	(0.087)	(0.078)
Market	0.319***	0.185***	0.501***	0.313***	–0.018	–0.021
	(0.057)	(0.053)	(0.073)	(0.069)	(0.092)	(0.083)
Permanent building	0.618***	0.572***	0.722***	0.621***	0.464***	0.533***
	(0.071)	(0.065)	(0.085)	(0.079)	(0.134)	(0.123)
Other	0.512***	0.442***	0.723***	0.572***	0.300**	0.321***
	(0.094)	(0.084)	(0.123)	(0.116)	(0.142)	(0.124)
At start-up (Ref.: No access to capital)						
No difficulty	–0.184***	–0.181***	–0.139***	–0.141***	–0.284***	–0.266***
	(0.041)	(0.037)	(0.050)	(0.046)	(0.071)	(0.064)
Location	–0.098	–0.103	–0.060	–0.079	–0.203	–0.149
	(0.070)	(0.064)	(0.080)	(0.072)	(0.147)	(0.143)
Other	–0.235***	–0.243***	–0.246***	–0.242***	–0.226*	–0.244**
	(0.075)	(0.069)	(0.091)	(0.085)	(0.128)	(0.116)

	All		Urban		Rural	
	(1)	(2)	(3)	(4)	(5)	(6)
Bookkeeping (Ref.: No bookkeeping)						
Formal bookkeeping	0.096*	0.144***	0.093	0.129**	0.103	0.180**
	(0.053)	(0.048)	(0.063)	(0.058)	(0.096)	(0.087)
Non-detailed bookkeeping	0.268***	0.312***	0.240***	0.252***	0.355***	0.471***
	(0.048)	(0.043)	(0.057)	(0.052)	(0.086)	(0.078)
Fiscal regime (Ref.: No regime)						
Regime reel	0.347***	0.312***	0.480***	0.438***	–0.158	–0.104
	(0.100)	(0.094)	(0.112)	(0.105)	(0.208)	(0.197)
Taxe forfaitaire	0.282***	0.308***	0.237***	0.289***	0.373***	0.390***
	(0.047)	(0.043)	(0.053)	(0.049)	(0.114)	(0.103)
# of workers (family and non-family members)		–0.332***		–0.327***		–0.339***
		(0.014)		(0.018)		(0.022)
Number of years since establishment		0.015***		0.016***		0.011***
		(0.002)		(0.003)		(0.004)
Hours worked a week		0.007***		0.003*		0.015***
		(0.001)		(0.002)		(0.002)
Hours worked a week sq/100		–0.004***		–0.001		–0.009***
		(0.001)		(0.002)		(0.002)
Inverse Mills ratio	1.285***	0.849**	1.220*	0.888	1.581**	0.449
	(0.466)	(0.421)	(0.659)	(0.615)	(0.756)	(0.650)
Constant	6.151***	7.313***	6.763***	7.843***	5.645***	8.001***
	(1.029)	(0.932)	(1.046)	(0.978)	(1.580)	(1.358)
Observations	5,178	5,178	3,535	3,535	1,643	1,643
R^2	0.182	0.319	0.166	0.295	0.146	0.316
Adj. R^2	0.175	0.312	0.158	0.287	0.127	0.299
Strata Dummies	Yes	Yes	Yes	Yes	Yes	Yes

Source: ENSETE 2013, authors' estimates.
Note: Robust standard errors in parentheses; *** p < 0.01, ** p < 0.05, * p < 0.1.

5: TRENDS AND PROSPECTS FOR FORMAL JOB CREATION IN CÔTE D'IVOIRE

Sarah Hebous and Trang Thu Tran

5.1 INTRODUCTION

Given the higher-quality of jobs in the modern formal sector, expanding the size of the formal sector is key to more and *better* jobs. As indicated in the analysis in Chapter 1, Côte d'Ivoire's main employment challenge stems from the concentration of employment in informal and low-productivity occupations. An analysis of the employment profile illustrates a very low share of wage employment among the employed population. In particular, less than 4 percent of the employed population holds formal private wage jobs. In this context, it is essential to better understand the dynamics of employment in formal enterprises, and the constraints to the creation of formal jobs. This is also particularly relevant as the formal sector constitutes a large share of aggregate value added in the economy.

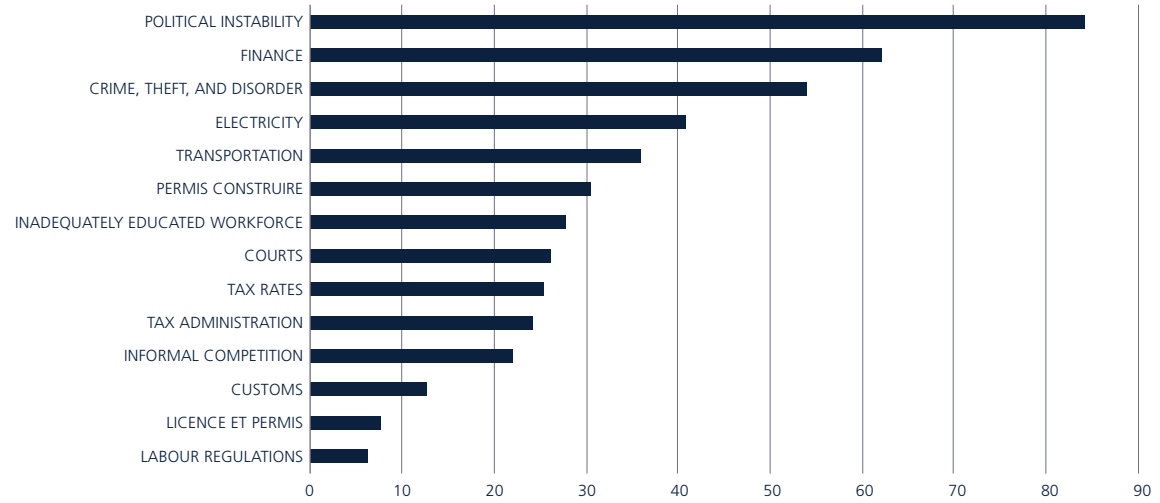
Côte d'Ivoire's economy is characterized by a relatively developed and diversified industrial sector for Sub-Saharan Africa, but competitiveness and the overall investment climate eroded during the decade long civil strife.[89] While the country has been in a long-term economic decline since the 1990s, the conflict years between 2002 and 2004 left the country divided, with severe consequences for the economy, human capital, governance, and social cohesion. Total factor productivity (TFP) growth further declined from –0.5 percent in 1990–2000 to –1.2 percent in 2000–2010 (World Bank 2015a). Amid the difficult business environment since 2000, businesses were less likely to form and survive. In particular, a significant share of foreign firms left the country during this period (Klapper et al. 2013).

As the country is recovering from conflict and eying emergence, Côte d'Ivoire could capitalize on the peace dividends and focus on addressing other constraints limiting competitiveness and growth of the private sector. Using data from the World Bank Enterprise Survey (WBES) and the World Economic Forum (WEF) Executive Opinion Survey, government and political stability were consistently ranked as one of the most important obstacle to doing business in 2009 (Figure 5.1a). However, the formation of a new Government in May 2011 has led to important progress in the security situation throughout the country. Côte d'Ivoire Country Policy and Institutional Assessment (CPIA) rating rose sharply from 2.7 in 2011 to 3.3 in 2014—the fastest increase in the entire region and one of the fastest historically for any country (World Bank 2015a). This improvement is reflected in the most recent WEF ranking where businesses no longer consider instability to be a major constraint (Figure 5.1b).

Being a member of a currency union has contributed to stable macroeconomic conditions and low inflation. It also, however, renders exchange rate devaluation infeasible as a trade tool—a disadvantage for a commodity-driven economy (World Bank 2010). Côte d'Ivoire will need to rely on other policy tools including those affecting the overall business environment and other vertical policies at the firm or sector level. Both the WBES and WEF data suggest access to finance and infrastructure as among the most important constraints to

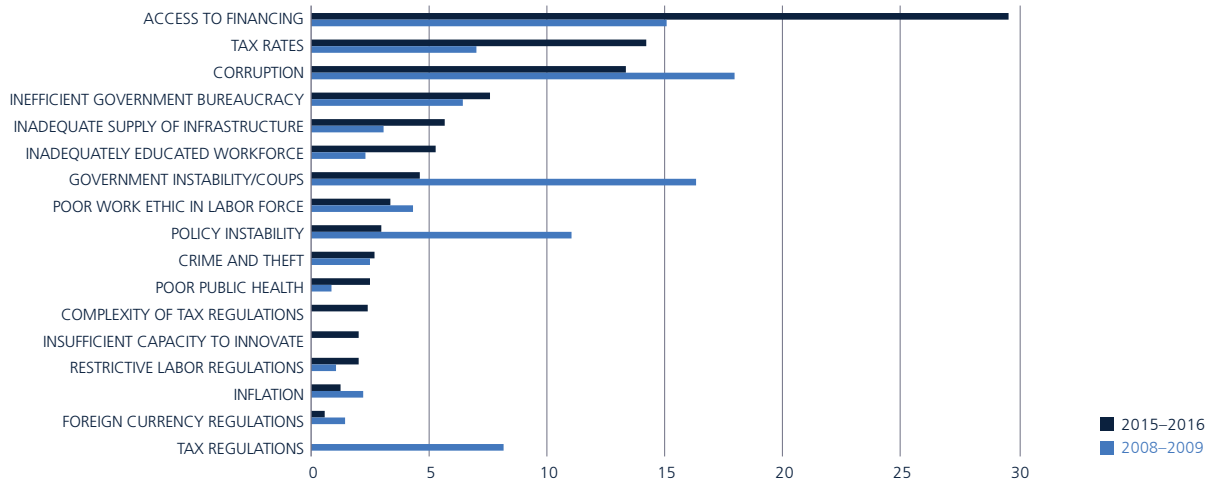
[89] Manufacturing contributes to around 16.6 percent of GDP for 2006–2014 (World Bank 2015b).

Figure 5.1a
Share of firms viewing an obstacle as major/severe, 2009



Note: World Bank Enterprise Survey data 2009.

Figure 5.1b
Share of respondents viewing a factor as most problematic for doing business, 2008–2009 and 2015–2016



Source: WEF Competitiveness Report, Executive Opinion Survey, 2008–2009 and 2015–2016

firms. Beyond this general pattern, there are significant differences across firms, with large and small firms being more financially constrained. Using Centrale de Bilans data from 2010 and additional qualitative evidence, a study on the competitiveness of the manufacturing sector (World Bank 2015a) further suggests that the main constraints to manufacturing are (a) transport infrastructure and logistics, (b) access to land, (c) electricity, (d) high labor cost, and mixed quality and low levels of workers' skills.

This chapter reviews past trends and assesses the prospects for formal job creation using the *Centrale de Bilans* (CdB), a firm-level dataset comprising registered enterprises from all sectors in Côte d'Ivoire from 2003 to 2012. Specifically, we expand on the previous analyses by studying firms in manufacturing and beyond over a 10-year period from 2003 to 2012. This long panel allow us to follow firms during conflict episodes in 2003–2006, their recovery after the Ouagadougou Peace Accord in 2007, the 2010–2011 post-electoral crisis and formation of a new government in 2011. The dataset contains information on firm ownership, location, employment by skill level, financial statements, and import-export of inputs and sales. Where appropriate, we also supplement the CdB data with cross-country data from the WBES.

The chapter proceeds as follows. Section 2 provides an overview of the formal sector. Section 3 describes job creation and firm dynamics to study who creates jobs and whether the pattern of job reallocation indicates a flexible labor market or rather excessive job destruction and churning. To identify the main constraints to job creation, section 4 examines the determinants of firm survival and exit and section 5 reports labor productivity and growth in continuing firms. Section 6 continues to study wages, job quality, and labor cost. Section 7 provides a discussion and conclusion. Additional results and robustness checks are presented in Annex D.

5.2 AN OVERVIEW OF THE FORMAL SECTOR

5.2.1 Trends in formal jobs and firms

The main analysis in this chapter is based on anonymized firm-level data from the Registrar of Companies for the modern enterprise sectors, collected by the National Statistics Institute (INS). The Registrar of Companies collects information upon incorporation including physical location, sector classification and shareholdings for all shareholders. All registered operating firms are then legally required to submit annual filings to the INS, the tax administration (Direction Générale des Impôts, DGI), the court of justice, and the Central Bank (*Banque Centrale des Etats de l'Afrique de l'Ouest*, BCEAO) with detailed financial and employment information, which are reported under the West Africa accounting system standards, *Système Comptable Ouest Africain* (SYSCOA).[90] Firms hand in hard copies of their forms between March and June following the closing of the fiscal year in December, after which the data are processed by INS.[91]

The resulting panel dataset, *Centrale des Bilans* (CdB), covers the years 2003–2012. It spans part of the conflict episodes in 2003–2006, recovery after the Ouagadougou peace accord of 2007, the post-electoral crisis in 2010/2011 and establishment of a new government in 2011. It includes unique firm identification which allows us to track firms over time. The dataset covers the universe of registered firms in all sectors—agriculture, mining, manufacturing, construction, and services. A major advantage of this dataset is that it does not have a cut-off point in terms of size either by revenue or employment, including one-person firms (firms without employees). While smaller firms—those below certain revenue thresholds—are subject to different tax regimes, they are required to submit financial and employment information in a simplified format. As a result, the data allow us to have a full picture of the formal economy.

BOX 5.1: TAX REGIMES AND REPORTING REGIMES IN THE CENTRALE DES BILANS

There are four tax regimes in Côte d'Ivoire: *Réel Normal* and *Réel Simplifié* (real systems) as well as Synthetique and Forfait (flat rate systems), corresponding to decreasing revenue thresholds. In general, firms obliged to the real system submit the full questionnaire under the 'normal' accounting system, *Systeme Comptable Normal*. Other firms submit a shorter version under the simplified accounting system, *System Comptable Allégé*. Nevertheless, there are a number of cases of mismatches between the tax regime and reporting system in the data.

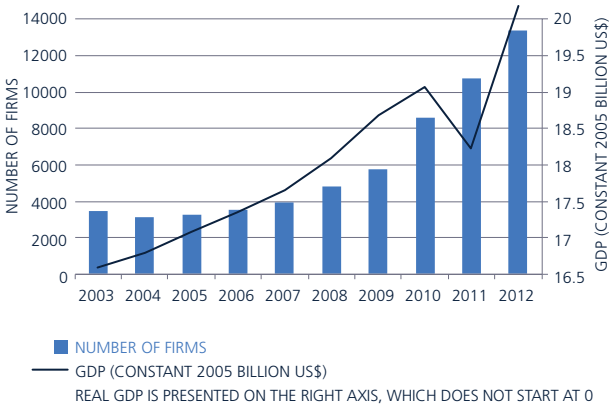
For details on these tax regimes, see http://cote divoire.eregulations.org/menu/10?l=fr

Positive trends in the aggregate number of firms and jobs appear consistent with increasing economic activities after the peace accord in 2007 (Figures 5.2 and 5.3). There is a significant and sustained increase in both the number of firms and formal jobs since 2008. Within 10 years, the number of formal firms has more than tripled from 3,458 in 2003 to 13,387 in 2012. Similarly, aggregate formal employment in 2012, at about 300,000, is more than 50 percent higher than during the 2003–2007 period. Increases in formal employment

[90] Before 2011, firms were required to submit this information to the INS and the Tax Administration separately. Since 2011, the data are collected through the 'Guichet Unique de dépôt des états financiers (GUDEF) and shared between INS and DGI. Given the sensitive nature of tax information, one might be concerned about firms' misreporting to INS after 2010 for tax reasons. However, a preliminary analysis on distribution of firms' reported revenues suggest that it is not the case. See Annex D for more details.

[91] Côte d'Ivoire is planning to introduce an electronic submission platform which is expected to shorten processing time and which would also reduce the likelihood of data entry errors.

Figure 5.2
Number of firms



Source: Author calculations using CdB data.

Figure 5.3
Number of formal jobs by sector

Source: Author calculations using CdB data.

are particularly noticeable in services. These trends are consistent with increasing investments in the economy by the private sector, amid rising confidence in the country's prospects and stability. Private investments were found to be the main contributor to real GDP growth of 3.6 percent and TFP growth of 0.4 percent in the 2011–2013 period (World Bank 2015a).

Increases in the number of firms appear to be driven by the entry of smaller firms, as seen in the declining shares of normal firms and foreign firms. However, measured by the share of firms, the structure of the formal sector has not changed significantly. There is a slight decrease in the share of firms in primary sectors, picked up by manufacturing firms.

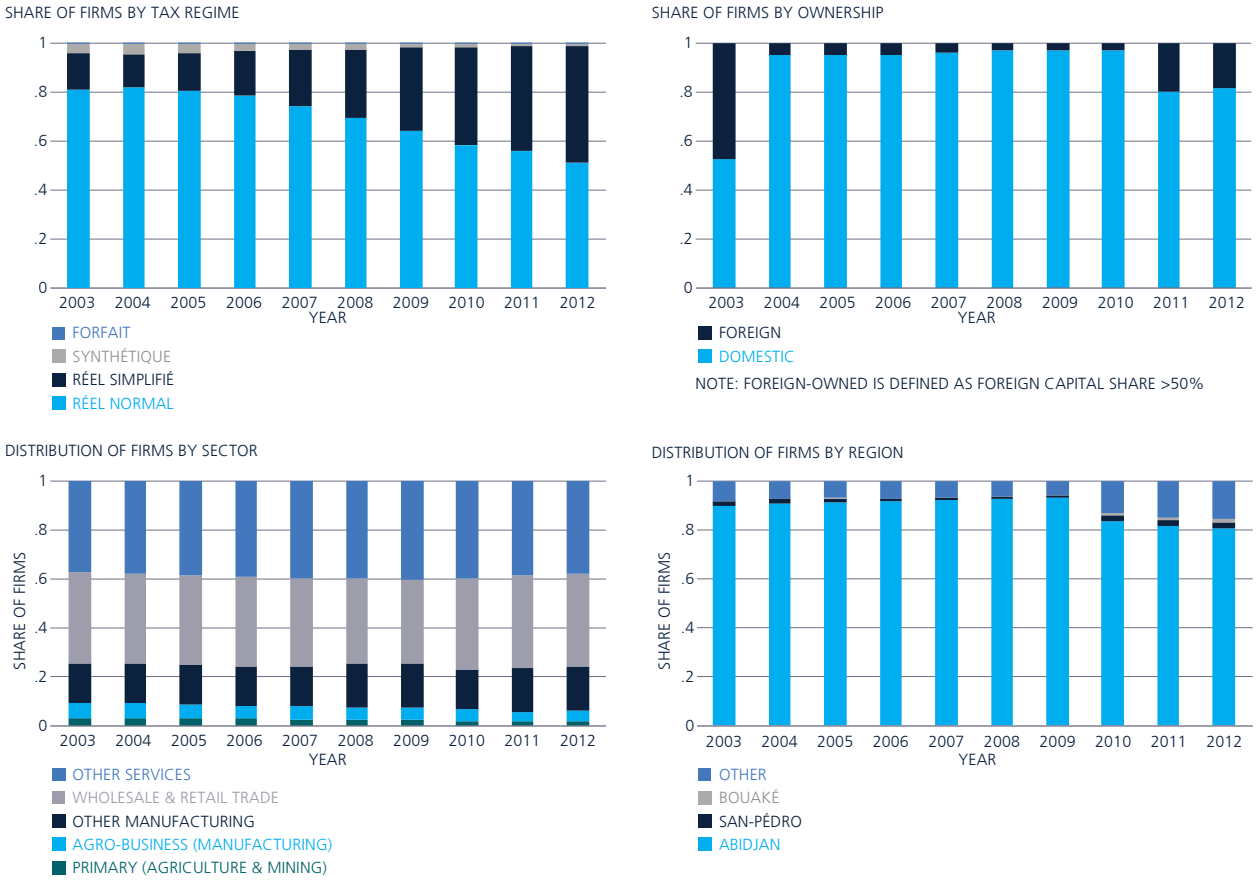
Notably, economic activities are returning to regions outside Abidjan after 2010. Abidjan has always been the most important industrial center for Côte d'Ivoire but there had been other growth poles in the past, whose importance declined significantly during the 2002–2004 conflict. However, despite the number of firms in Abidjan increasing steadily since 2007, its relative share in the country-wide firms has decreased from around 90 percent in 2003 to around 80 percent in 2012. In Bouaké, there is a substantial increase in registered firms making the share eight times its 2003 level. In San-Pédro, the share of firms in 2012 is slightly higher than in 2003.

Another visible trend is a rapid return of foreign investment in 2011 and 2012. Following the conflict years, the share of foreign-owned firms, that is firms that report a foreign capital share larger than 50 percent, abruptly decreased from almost half of all formal firms in 2003 to under 5 percent in 2004. In 2011, this share rebounded to almost 20 percent with the total number of foreign-owned firms being even higher than in 2003 (2,449 and 1,421 firms, respectively). In 2003, the biggest share of foreign-owned firms was French, followed by Russian, and Lebanese firms, with shares of 48 percent, 10 percent, and 9 percent, respectively. In 2012, the picture changed considerably. While French firms are still the largest share of foreign-owned firms, their share is merely 25 percent. At the same time, there are almost as many Lebanese firms (23 percent). Other African countries account for 8 percent of foreign-owned firms. Interestingly, the increase in Lebanese ownership seems consistent with anecdotal evidence suggesting that Lebanese investors were taking over businesses left by French interest after the conflict.[92]

An important caveat to note is that part of the trends might also reflect better data coverage over time. In particular, the spike in 2010 in the number of firms also coincides with the new data depository, GUDEF, introduced to improve data consistency. Nevertheless, while there is no direct information on the extent of data coverage over time, analysis using 'Normal' firms only—that is, larger firms that are more visible and face higher cost on non-reporting—reveal that the trends are similar for this group of firms. Similarly, the increase in foreign firms in 2011–2012 cannot be a data-driven result as they are the most likely to comply with reporting requirements. This result suggests it is unlikely that the patterns presented above are driven by data reporting alone.

[92] http://www.economist.com/news/special-report/21696789-why-some-diasporas-are-so-successful-settled-strangers

Figure 5.4
Distribution of firms by tax regime, ownership, sector, and region



Source: Author calculations using CdB data.

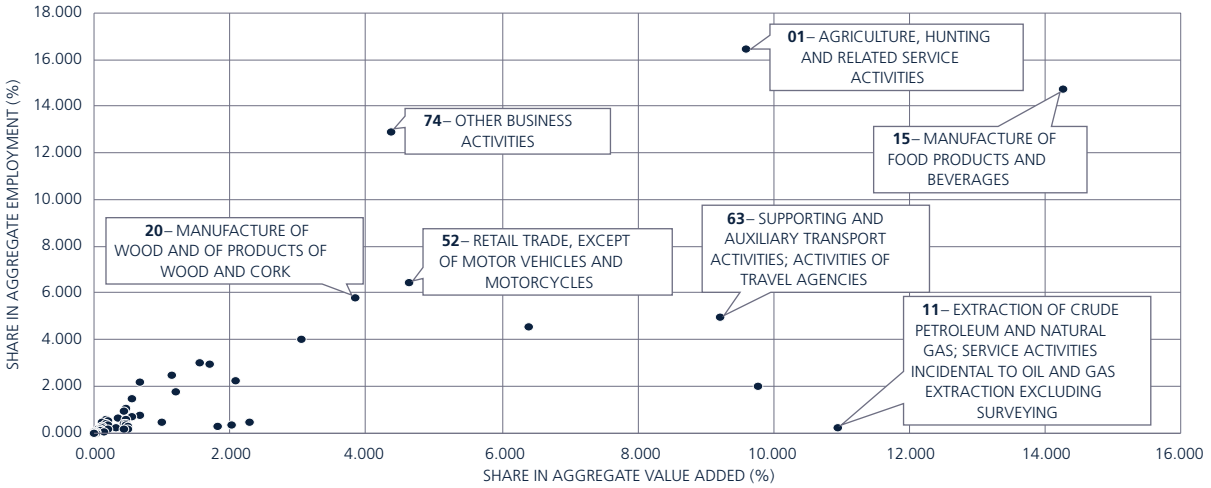
5.2.2 Characteristics of formal firms

Formal firms in Côte d'Ivoire are highly heterogeneous. The distribution of firms, both in employment and output are skewed (see Table D.4 in the Annex D). The average size in terms of employment (37 employees) is many times over the median size (5 employees) and even the 75th percentiles (13 employees). Similar high variance can be seen in sales or other firm characteristics. Of those reporting, very few are exporters (7.5 percent) or importers (13.9 percent). Not all firms reported purchasing any raw materials or intermediate inputs in a given year. Less than 75 percent reported having invested in their physical capital stock and even fewer firms had any investments in intangible capital (investments in R&D, licensing, and so on).

Firms are larger in the manufacturing sector compared to the services sector, driven by the presence of larger firms on the top of the distribution. There are many small firms in both sectors—the median employment size is only 4 and 5 in services and manufacturing. However, the large manufacturing firms are much larger than large services firms. The 75th and 95th percentile in manufacturing is more than two and four times larger than in services. As a result, the average manufacturing firm employs more than 63 workers, almost three times more than the average of 23 workers in services.

At a more aggregate level, sectors are also highly heterogeneous, with employment and output dominated by agribusiness activities (Figure 5.5). More than half of total formal employment is concentrated in only four sectors (ISIC 01, 15, 74, 52). Among them, food manufacturing (ISIC 15) stands out as the most important contributor to value added and the second biggest contributor to employment. Even without counting related services, agribusiness activities including agriculture (ISIC 01) and food manufacturing (ISIC 15) alone account for more than 30 percent of total employment and more than 20 percent of total value added

Figure 5.5
Sectoral contribution to aggregate formal employment and value added



Source: Author calculations using CdB data.
Note: Shares are averaged over 2007–2012.

in formal firms. In contrast, the Oil and Gas sector (ISIC 11) for example, while accounting for more than 10 percent of aggregate output, employs only a negligible share of workers. Given this outsized role of agribusiness for employment, policies emphasizing job creation will continue to have to pay special attention to the sector.

5.2.3. Patterns of firm entry and exit

Entry rates have been increasing after 2007 with the exception of a setback in 2010 and 2011. In 2012, the entry rate reaches its highest level at 25 percent, coinciding with the recovery after the 2010–2011 post-electoral crisis. We define firm exits as permanent exits from the dataset, hence the exit rates reported here are potentially higher than the true exit rates. Nevertheless, the trend over time reveals generally declining exit rates, with the exception of 2009.[93]

Figure 5.6
Entry-exit rate, Côte d'Ivoire

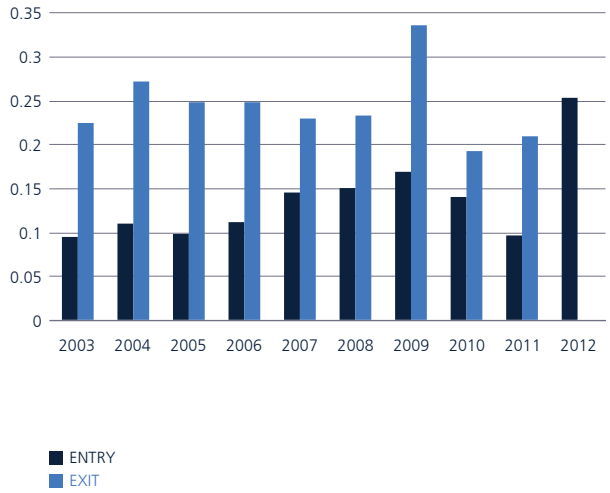
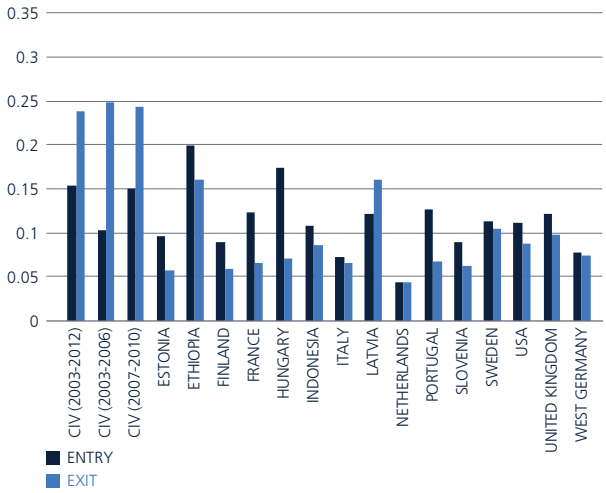


Figure 5.7
Entry-exit rate compared internationally



Source: Author calculations using CdB data.
Note: CdB data for Côte d'Ivoire. Indonesia and Ethiopia data are from Hallward-Driemeier and Rjikers (2013) and Shiferaw (2009). Other cross-country data are from Bartelsman, Haltiwanger, and Scarpetta (2009).

[93] See Annex D for a discussion on data attrition and potential bias in the observed firm exit patterns.

Figure 5.8
Size at entry, Côte d'Ivoire

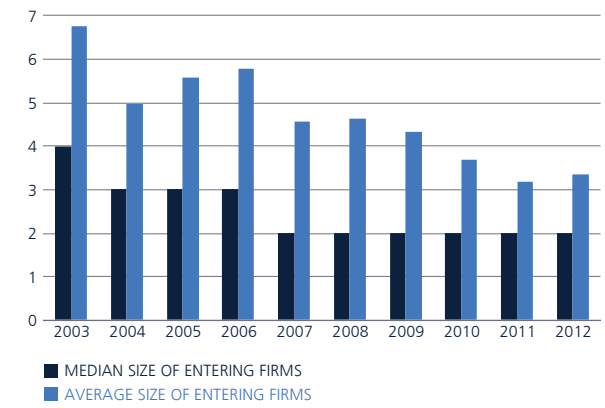
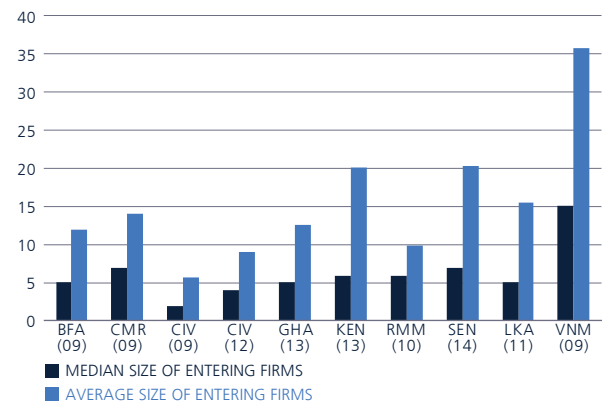


Figure 5.9
Size at entry compared internationally



Source: CdB data for Côte d'Ivoire.

The business demographics displayed in Figure 5.5 illustrate a very dynamic entry-exit pattern compared to other countries with available data. Cross-country results for both developed and developing countries from Bartelsman, Haltiwanger, and Scarpetta (2009), Hallward-Driemeier and Rjikers (2013), and Shiferaw (2009) show that virtually all countries have higher entry rates than exit rates.[94] With the exception of Hungary, the differences between entry and exit rates are small, not exceeding 5 percentage points. Exit rates for most countries are below 10 percent. Latvia is the only country that exhibits an entry-exit pattern similar to Côte d'Ivoire. Nevertheless, Latvia's entry and exit rates of 12 percent and 16 percent stay visibly below the Ivorian averages (2003–2012) of 15 percent and 23 percent, respectively. The volatile business environment in Côte d'Ivoire is possibly driven by the conflict episodes and businesses transforming from and to the formal sector.

The increase in entry rate and decline in the size at entry suggest lower barriers to formalization and entry, driven possibly by both a more stable political and economic environment.

The size of entering firms in all sectors has declined over time. The median size at entry has fallen from four employees in 2003 to only two after 2007. Even if one ignores the conflict period between 2003 and 2006, the average size of entering firms has been declining steadily since 2007. While not shown here, this pattern holds true overall, as well as for both manufacturing and services firms. Interestingly, size at entry in the CdB is fairly consistent with data from the WBES 2009 (Figures 5.8 and 5.9). Compared to peer countries within and outside the region, Ivorian firms enter at a smaller size, indicating possible lower barriers to entry in Côte d'Ivoire.

5.3 JOB CREATION AND FIRM DYNAMICS

BOX 5.2: EMPLOYMENT AND FIRM SIZE DEFINITION

In this chapter, we only report internal employees (*Personnel propre*), both full-time (*permanents*) and part-time (*saisonniers*), but exclude external employees (*Personnel extérieur*) from all of our definitions involved employment. In the *Organisation pour l'Harmonisation en Afrique du Droit des Affaires* (OHADA) accounting system, external employees include the services of salaried employees loaned temporarily from another company. Internal employees include those on a company's own payroll (*Masse salariale*).[95]

During the 2003–2012 period, in aggregate, 75–88 percent (internal) employment in the formal sector is reported as full-time. At the firm level, about 11 percent of firms have part-time employees in the whole sample period, where for those that employed part-time workers, their share in total employment is 39 percent.

To facilitate international comparison, firm size categories in this chapter are defined by employment, where firms

[94] This is the case even as exit is also defined as exit from data.
[95] http://www.ohada.com/actes-uniformes/693/862/section-3-personnel-interimaire.html

are defined as Micro, Small, Medium, and Large if their total number of [non-temporary] workers are in between [0–4], [5–19], [20–99], [100+], respectively. These are the same definitions employed by the WBES and have been typically used in studies with cross-country benchmarking.

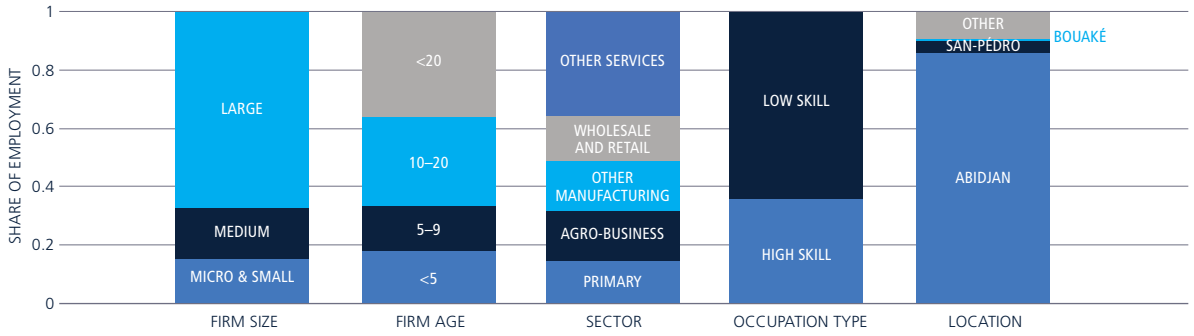
These definitions depart from those adopted by the Government of Côte d'Ivoire, where a combination of number of employees and revenue is used. Firms are defined as micro if their total number of [non-temporary] workers does not exceed 10 and annual revenue does not exceed CFAF 30 million. A small or medium firm [*Petite et Moyenne Entreprise*, PME] has less than 100 employees and its revenue does not exceed CFCF 1 billion. Where appropriate, this chapter aims to look at firm outcomes along the full distribution of employment rather than by only three categories as described above.

5.3.1. Distribution of private formal employment

Most formal jobs are concentrated in large and old firms, as well as firms in Abidjan. Firms with over 100 employees provide almost 70 percent of jobs. This is consistent with more recent findings from the Employment Survey collected in February 2014 (ENSETE 2013) which suggest that medium and large firms account for more than 75 percent of formal employment (see Chapter 1). The share of jobs generated by firms older than 10 years is similarly high. Less than 10 percent of formal jobs are outside Abidjan. The majority of jobs are in lower-skilled occupations.

The services sector generates most formal jobs. Nevertheless, agribusiness and manufacturing still contribute significantly to total private formal employment. While the share of firms in the agribusiness sector was

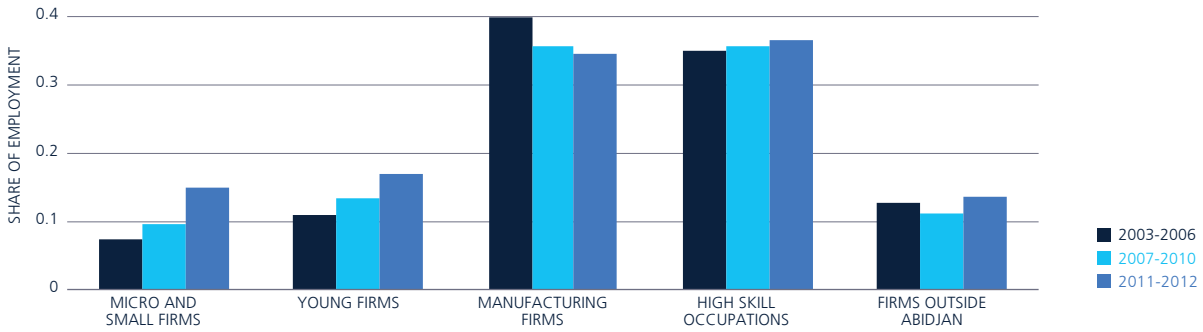
Figure 5.10
Private formal employment distribution by firm type and skill level



NOTE: CATEGORIES ARE 1) MICRO AND SMALL (<20 EMPLOYEES), 2) MEDIUM (20-100 EMPLOYEES), 3) LARGE (>100 EMPLOYEES)
HIGH SKILL OCCUPATIONS INCLUDE SENIOR AND MIDDLE MANAGERS, AND TECHNICIANS
LOW SKILL OCCUPATIONS INCLUDE LABORERS, WORKERS, AND APPRENTICES

Source: Author calculations using CdB data.

Figure 5.11
Changes in contribution to formal employment



NOTE: YOUNG FIRMS — YOUNGER THAN 5 YEARS
MICRO AND SMALL FIRMS: LESS THAN 20 EMPLOYEES
HIGH SKILL OCCUPATIONS INCLUDE SENIOR AND MIDDLE MANAGERS, AND TECHNICIANS

Source: Author calculations using CdB data.

only 4 percent in 2012 it generated 18 percent of jobs. This is consistent with the Growth and Competitiveness Report for the manufacturing sector that found using 2010 census data that the agribusiness sector is highly important both with regard to value added and employment (World Bank, 2015b).

Given the increase in entry, small and young firms are becoming more important for employment. In the conflict period (2003–2006), small firms and young firms had employment shares of 10 percent and 12 percent, respectively. In 2011–2012, employment shares for both types of firms increased to more than 15 percent.

Structurally, there have not been big changes in the sectoral and regional composition of formal employment however. Manufacturing becomes slightly less important but still accounts for more than 30 percent of jobs. Despite the increase in number of firms in other regions, the share of jobs in regions outside Abidjan is still very little.

There has been no significant change in the share of employment in higher-skilled occupations, indicating that there are still challenges concerning the quality of the jobs in Côte d'Ivoire's formal sector. Over the sample period, the number of jobs in technical and management positions remain at around 35 percent of total employment.

The most striking change has been a continuous shift of the employment distribution to the left (Figure 5.12). In all years, from 60 percent to almost 90 percent of firms are small firms but the size distribution has become increasingly skewed. This is consistent with the annual increase in entry of small firms observed above.

Nevertheless, Côte d'Ivoire is not an outlier in its shares of small firms (Figure 5.13 and 5.17). Even compared to developed and transitioning economies, results from Bartelsman, Haltiwanger, and Scarpetta (2009) suggest that the share of micro and small firms exceeds 80 percent in all countries with available data. Contribution of these firms to employment in Côte d'Ivoire is very low however, which perhaps indicates a higher concentration of micro firms. Employment generated by formal micro and small firms in Côte d'Ivoire is about 11 percent compared to 20 percent is the United States and the United Kingdom, and 50 percent in Sweden.

5.3.2. Which firms create formal jobs?

Net formal job creation has been mostly positive since 2006 but in aggregate few new jobs have been created in the formal sector (Figure 5.13). As the large increase in number of firms after 2007 is due to entry of smaller firms, aggregate net job creation has been limited. High-skill occupations exhibit less volatility than overall net job creation. There is a steady level of net job creation among more skilled positions throughout all years even in years with large swings in low-skill jobs.

Figure 5.12
Cumulative distribution of formal employment

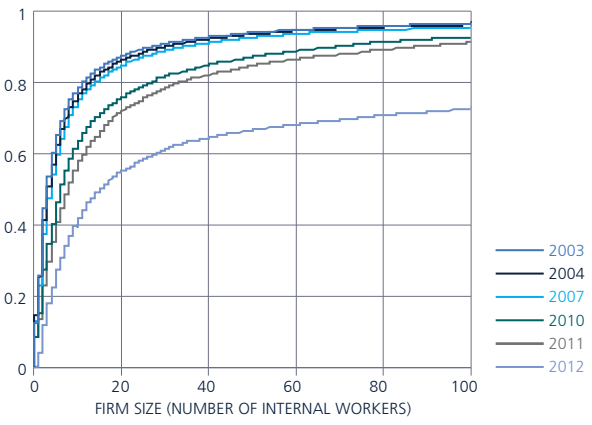
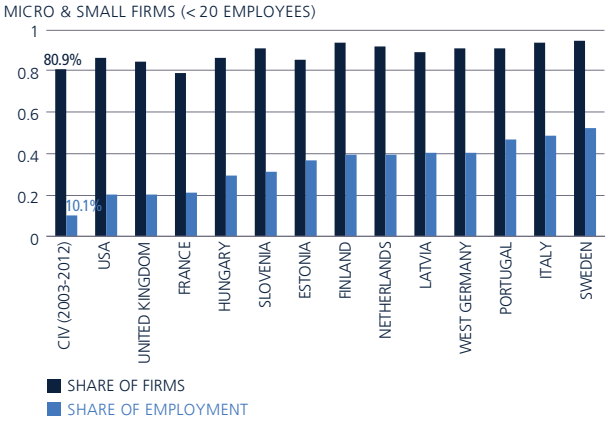
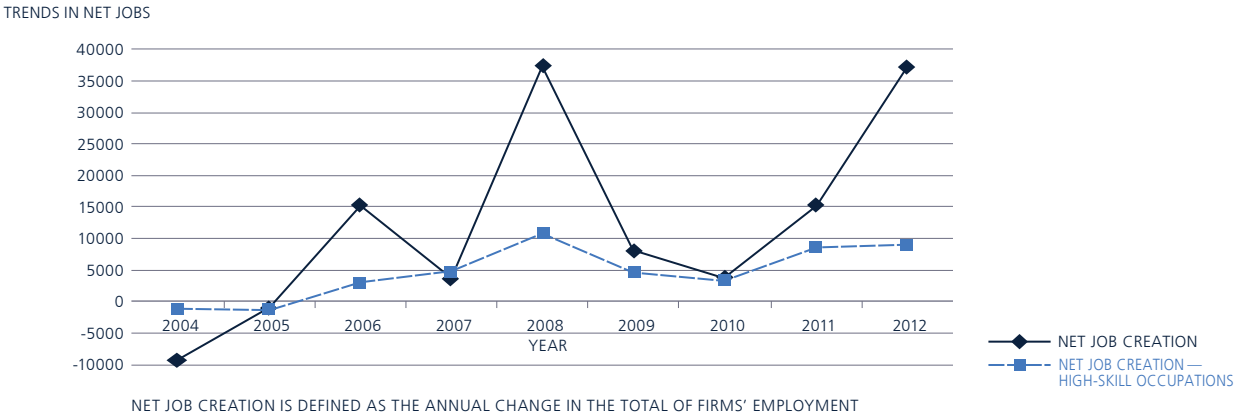


Figure 5.13
Size distribution of formal employment



Note: Data from other countries are based on the methodology in Bartelsman, Haltiwanger, and Scarpetta (2009) and available at http://econweb.umd.edu/~haltiwan/download_bhs.htm.

Figure 5.14
Net job creation in formal firms



Source: Author calculations using CdB data.

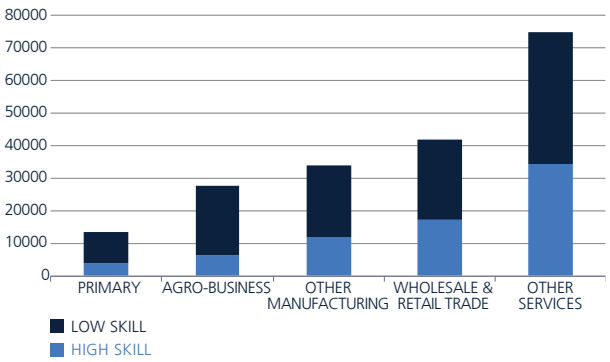
Job creation for low-skilled occupations appear more sensitive to overall economic and political conditions. In the peak years of net job creation, 2008 and 2012, net job creation reaches three times its average level. These spikes are driven by creation of lower-skilled jobs. In the same years, high-skilled jobs only made up a quarter of overall job creation, only slightly exceeding its usual level. The temporary nature of demand changes as well as labor supply constraints might explain the different trends in high- and low-skilled net job creation. The trends suggest more limited potential for higher-skilled job creation but also potential higher employment stability for more skilled workers.

The majority of jobs are created in services with relatively higher share of skilled employment. The agribusiness sector has a substantial contribution to job creation despite its low share of firms. However, jobs created in the agribusiness sector tend to be unskilled.

Job creation continues to be concentrated in Abidjan. There are virtually no jobs created in manufacturing other than agribusiness outside Abidjan. The primary sector is the only sector where a considerable share of jobs is created outside Abidjan. Most jobs created in Bouaké are in the agribusiness sector. San Pédro contributes to net job creation in the primary sector and in trade.

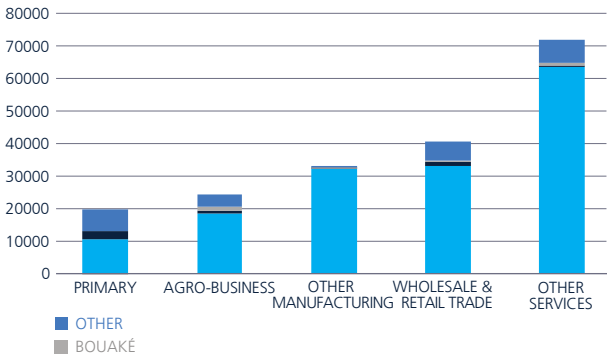
In Côte d'Ivoire, young firms and large firms create the vast majority of net jobs. There is conflicting cross-country evidence on the relative importance of small firms and young firms for job creation. In the United States, it has been shown that new firms are the most important source of job creation. However, evidence from

Figure 5.15
Net formal job creation by occupation and sector (2003–2012)



NOTE: HIGH SKILL OCCUPATIONS INCLUDE SENIOR AND MIDDLE MANAGERS, AND TECHNICIANS; NET JOB CREATION IS DEFINED AS THE ANNUAL CHANGE IN THE TOTAL OF FIRMS'EMPLOYMENT

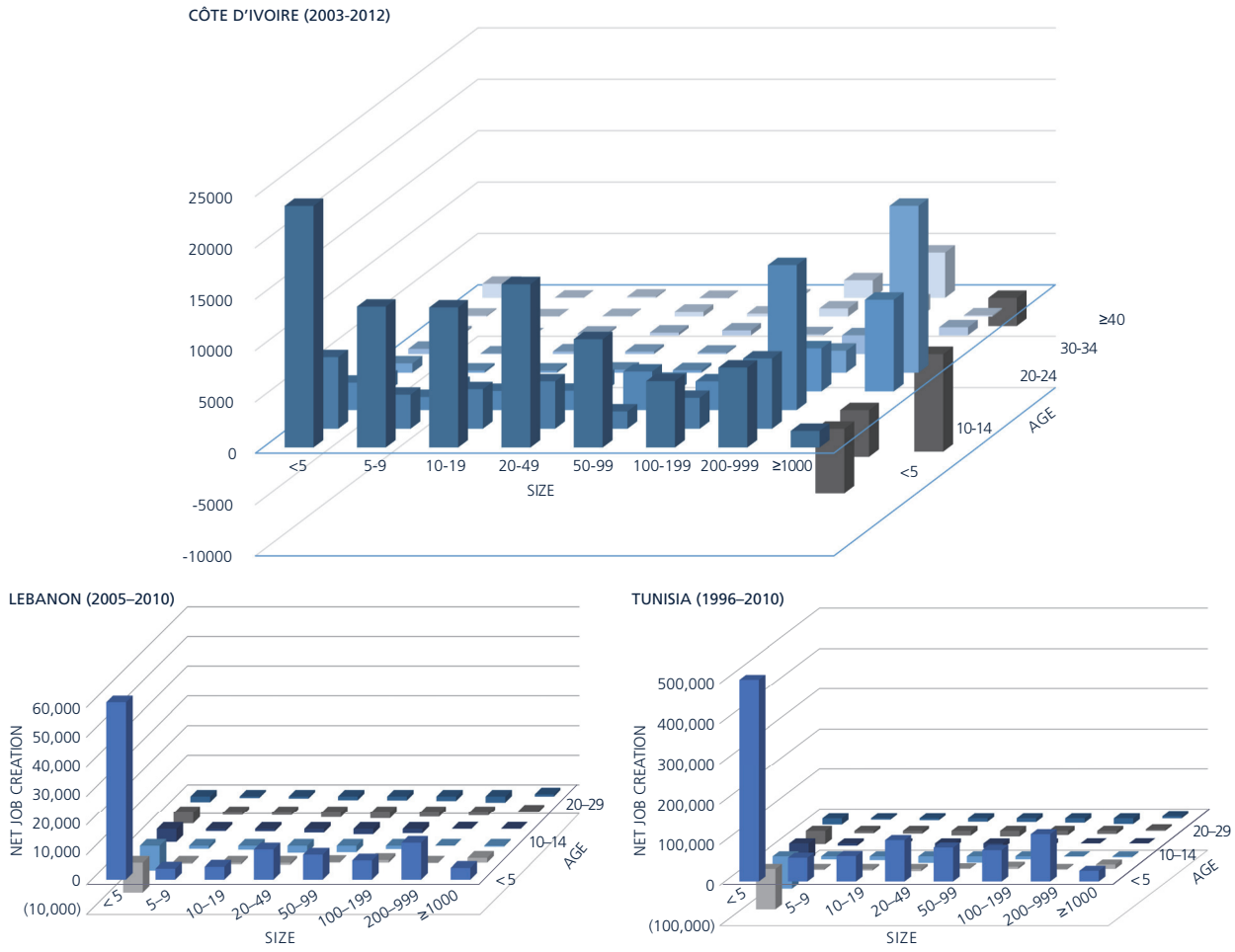
Figure 5.16
Net formal job creation by location and sector (2003–2012)



NOTE: NET JOB CREATION IS DEFINED AS THE ANNUAL CHANGE IN THE TOTAL OF FIRMS'EMPLOYMENT

Source: Author calculations using CdB data.

Figure 5.17
Net formal job creation by size and age



Source: Author calculations using CdB data
Note: Data from Lebanon and Tunisia are from Schiffbauer et al. (2015). In all three graphs, size is the base year size (firm size in year $t - 1$ for incumbents and firms that exit in year t, while for entrants it is size in year t).

developing countries points to small and older firms as the greatest contributors to net job creation; see Li and Rama (2015) for an overview of firm dynamics and job creation in developing countries.

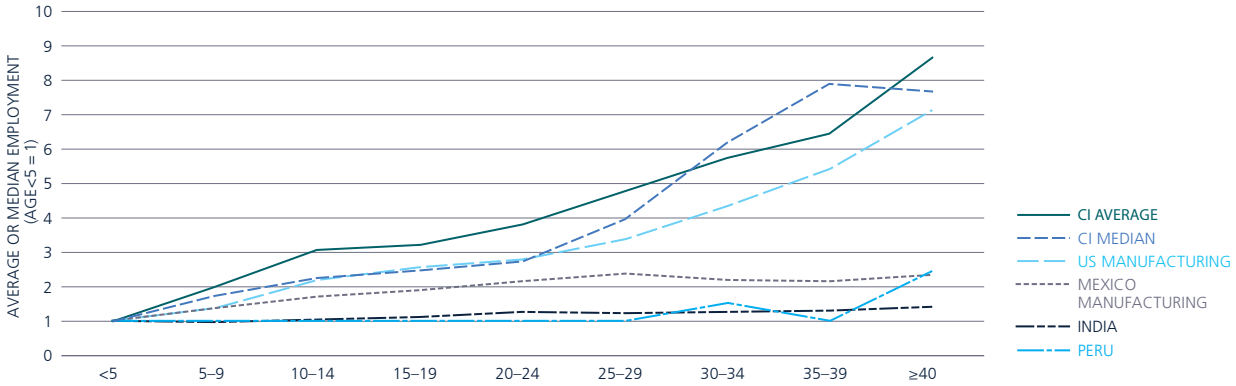
Young Ivorian firms across all size groups exhibit a positive net job creation. Firms that are young and small create the highest number of net jobs. While this is also the case in countries such as Lebanon and Tunisia, unlike in Côte d'Ivoire the net job creation of young and small firms by far exceeds the net job creation of other size-age groups. The contribution of young firms in Côte d'Ivoire, while less significant, also occur beyond entry for firms in the 5–9 age group.

The simultaneous importance of entry by new firms and expansion among large and incumbent firms for net job creation implies more economic dynamism compared to other developing countries. Firms with 200–999 employees in particular show a high net job creation. This pattern cannot be observed in countries like Lebanon and Tunisia where only the smallest among the incumbent firms contribute significantly to net job creation.

5.3.3 Formal employment growth over the life cycle

In Côte d'Ivoire, firms appear to grow over time. The results above can be completed by an analysis of employment growth from a different angle, namely the firm's life cycle, to find descriptive evidence for whether job creation

Figure 5.18
Formal employment by firm age



Source: Author calculations using CdB data.
Note: Data for the United States, Mexico, and India are from Hsieh and Klenow (2014). Data for Peru are from Aterido and Iacovone (2015). Employment in the youngest group (age <5 years) is normalized to 1 in each country. The figure gives *unweighted* average employment per operating plant/firm versus plant/firm age in the cross-section. For Côte d'Ivoire, we use the cross-section in 2012 and also include the median employment at each age bin. The pattern for Côte d'Ivoire is very similar whether we use data in 2012, pool over 2003–2012 or other sub-periods, or when we account for industry (value added) weights at the 3-digit, 2-digit or section level.

is constrained by the firm's ability to grow. Growing evidence following the seminal work by Hsieh and Klenow (2014) has suggested that compared to developed countries, firms in developing countries tend to grow much slower over time due to poor marketing functioning that constrains firms to invest and expand. In India, Peru, and Mexico, this holds true as evidenced by comparing average employment at different age bins with the U.S. manufacturing sector (Figure 5.18). Yet we observe a much healthier size-age pattern for Ivorian firms (Figure 5.18). In fact, the average growth rate over the firm's life cycle is higher than all other countries with available data.

Employment growth is concentrated in a subset of firms however. The median size at most age bins is smaller than the average size, suggesting that there is a section of 'better firms' that drives most of the employment-age relationship. The breakdown of firms by employment growth percentile lends further support to the above observed paradox that while the fastest-growing firms are young, not all young firms grow. As shown in Table 5.1, average employment size, median sales size, and share of small firms are similar for firms exhibiting employment growth above the 90th percentile and below the 50th percentile. Both high- and low-growth firms tend to be young; average and median age as well as share of young firms is comparable for low-growth firms and firms above the 75th percentile. High-growth firms are, however, significantly smaller and younger than firms between the 50th and 75th percentile. This pattern is true in both manufacturing and services, and in different periods during the whole sample period.

Table 5.1
Firm characteristics by formal employment growth percentile

		Manufacturing 2003–2012				Services 2003–2012			
		Growth above p90	Growth p75–p90	Growth p50–p75	Growth below p50	Growth above p90	Growth p75–p90	Growth p50–p75	Growth below p50
Growth rate		at p90	at p75	at p50		at p90	at p75	at p50	
		0.67	0.14	0.00		0.67	0.14	0.00	
Age	**Average**	6.20	10.05	18.96	11.16	6.16	9.01	14.32	9.91
	Median	3.00	6.00	15.00	7.00	3.00	6.00	10.00	6.00
Employment	**Average**	65.50	105.38	234.38	67.71	53.51	61.39	136.91	32.85
	Median	10.00	17.00	63.00	6.00	8.00	10.00	33.00	5.00
Sales (CFAF, millions)	**Average**	1,340	2,706	17,830	2,494	346	770	3,176	726
	Median	88	226	1,312	80	53	99	377	42
Share of small firms		0.67	0.53	0.17	0.71	0.75	0.68	0.33	0.83
Share of young firms		0.61	0.41	0.12	0.39	0.59	0.41	0.19	0.37

		All sectors 2007–2010				All sectors 2011–2012			
		Growth above p90	Growth p75–p90	Growth p50–p75	Growth below p50	Growth above p90	Growth p75–p90	Growth p50–p75	Growth below p50
Growth rate		at p90	at p75	at p50		at p90	at p75	at p50	
		0.55	0.15	0.00		0.67	0.13	0.00	
Age	**Average**	5.55	9.71	16.57	10.19	5.85	8.69	15.32	8.58
	Median	3.00	6.00	12.00	6.00	3.00	5.00	11.00	5.00
Employment	**Average**	44.19	87.50	177.95	43.44	25.47	52.17	165.72	19.63
	Median	8.00	11.00	40.00	5.00	5.00	9.00	28.00	3.00
Sales (mil FCFA)	**Average**	1,135	3,165	11,863	2,278	834	2,057	7,839	605
	Median	98	282	1,032	113	51	147	488	51
Share of small firms		0.74	0.64	0.28	0.79	0.80	0.73	0.37	0.88
Share of young firms		0.64	0.40	0.17	0.41	0.60	0.44	0.19	0.44

Note: Firm-level employment growth is the change in employment from year $t-1$ to year t, divided by average employment size, $g_{ist} = \frac{2(E_{ist}-E_{ist-1})}{E_{ist}+E_{ist-1}}$

where g_{ist} is employment growth in firm i in sector s in year t and E_{ist} is employment in firm i in sector s in year t. All variables, except for employment growth rate, refer to year $t-1$.

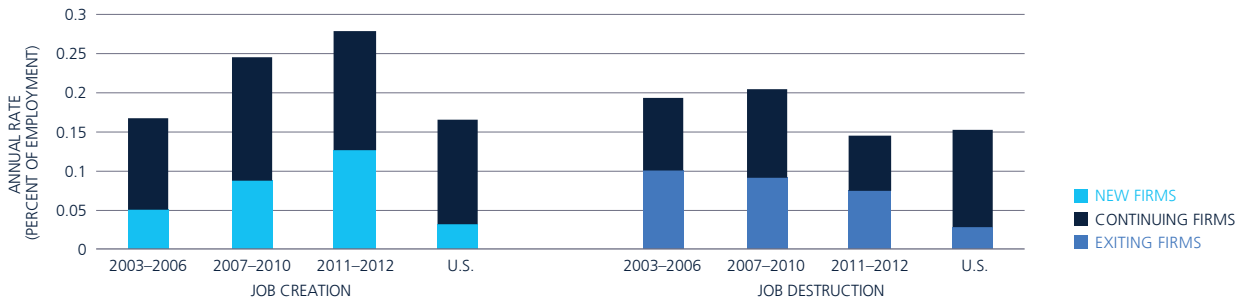
5.3.4. The role of firm entry and exit in formal job creation

Net changes in employment hide a considerable amount of job creation and destruction. Cross-country evidence (such as Bartelsman, Haltiwanger, and Scarpetta 2009) has found a high degree of employment turbulence in both developed and developing countries, indicated by simultaneously large gross job creation and destruction. To understand the role of business entry and exit in job creation, we decompose aggregate employment growth into job creation (by new and expanding firms) and job destruction (by contracting and existing firms).[96]

Côte d'Ivoire exhibits a very high level of job churning driven by firm entry and exit, even compared to other low-income countries. In 2007–2010 the total job creation and destruction rates in Côte d'Ivoire were around 25 percent and 20 percent of total employment, respectively. For the United States (1980–2009) these figures are around 15 percent. Li and Rama (2015) provide an overview of job creation and job destruction rates for developing countries. All countries with available data exhibit gross job creation and destructions below 18 percent, much lower than Côte d'Ivoire. For example, Ethiopia's (1997–2007) gross job creation and destruction rates are about 17 percent and 10 percent, respectively.

Since 2007, entry has become much more important for job creation. During the conflict period overall job creation was around 17 percent with only about one-third of new jobs being created by entering firms. This share has increased to 50 percent of overall job creation in 2011–2012. At the same time, the relative importance

Figure 5.19
Job flows through firm entry, exit, expansion, and contraction



Source: Author calculations using CdB data.

[96] Formally, this is done as follows: $\Delta Job_t = \sum_{i \in Expanding} \Delta Job_{it} + \sum_{i \in Contracting} \Delta Job_{it} + \sum_{i \in Exiting} \Delta Job_{it} + \sum_{i \in New} \Delta Job_{it}$

of exiting firms for job destruction has not changed. About half of the job destruction is caused by firms exiting. This pattern is consistent with the observed increase in the number of firms and the relatively stable exit rate.

Overall, the above evidence suggests that the most important constraints to job creation in Côte d'Ivoire appear to be the low survival rate of firms and the high volatility of the business environment. The findings indicate a business environment with firms constantly entering and exiting. Rather than reflecting efficient reallocation, it probably reflects difficulties of firms to survive. This seems to be especially the case for small firms after 2007.

5.4. FIRM SURVIVAL

Given the above evidence on the important role of firm survival, this section aims to understand the determinants of firm survival/exit by analyzing the link between exits and firm-level productivity and the degree of sector-level competition. The key hypothesis is that in a well-functioning market, there should be a positive selection of more productive firms to survive (less likely to exit) and this effect is stronger in more competitive markets. Box 5.3 outlines the methodology, and table B5.3.2 reports the estimation results.

As expected, we see evidence of a weak but positive market selection effect such that more productive firms are less likely to exit. In most specifications, the coefficient estimates on labor productivity are negative and significant. In the baseline specification, the result indicates an average marginal effect of log labor productivity on exit probability of –0.0175. This implies that a one standard deviation improvement in log labor productivity reduces the chances of exit by 1.8 percentage points.[97] While positive, this is a very small effect considering the average exit rate of about 24 percent in the sample period.

Relative to 2003–2006, there is a weaker productivity selection in the 2007–2010 period. The results in column (2) suggest that the magnitude of the impact of labor productivity has reduced by about 50 percent in 2007–2010. This is the same period where the economy started to recover and we see a marked increase in the entry of smaller firms. The expansion in economic activities in this period does not favor a more efficient reallocation of resources toward more productive firms. Unfortunately, we do not have data beyond 2012 to analyze whether market efficiency has improved during the most recent economic recovery.

Competition with foreign firms appears to be a key channel of market selection by productivity. Results in columns (3) and (5) show that in sectors with high entry rate of foreign firms, productive firms are more likely to survive. Notably, when the interaction between foreign entry and labor productivity is included, productivity alone has a much smaller and insignificant effect on exit rates. This result indicates that unproductive incumbents are much more likely to survive in sectors with less foreign competition. In the absence of new foreign entry, there is no evidence of positive productivity selection. Interestingly, sectoral competition as measured by the output Herfindahl-Hirschman index (HHI) does not seem to make a difference to firm exit rates, as shown in columns (4) and (6). This result is consistent with the argument that foreign competition might be much more important than domestic competition for market selection.

Evidence of increased failure rates in sectors with high foreign entry rate and a survival premium for older and bigger firms suggest the need to support young domestic firm's capacity to compete. While foreign competition appears to reinforce the positive market selection effect, it is worrying that increases in foreign presence in a sector also reduces the average probability of firm survival, even after taking into account productivity. The estimates in column (3), for example, imply that a one standard deviation increase in foreign entry rate increases firm exit rates by 2.6 percentage points. Further, results from all specifications show that regardless of productivity, older and bigger firms are more likely to survive. Firms in the largest cities (Abidjan, Bouaké, San Pédro) are also more likely to survive. Interestingly, firms in Bouaké tend to have significantly higher survival rates, suggesting potentially higher market opportunities there.

[97] This is calculated by evaluating the difference in exit probability when log labor productivity is one standard deviation away from its mean and all other controls are at their means, and when all controls are at their means.

BOX 5.3: EXIT PROBABILITIES REGRESSIONS

Based on firm dynamics models as in Olley and Pakes (1996), firms exit when the net present discounted value of profits, accounting for fixed costs, is negative. Since productivity and market structure are the key determinants of profits in such models, the firm's exit hazard in each time period can be written as:

$$\Pr(E_{ist} = 1) = \Pr(\delta TFP_{ist-1} + \beta X_{it-1} + \gamma Z_{st-1} \leq c^{f}_{it-1})$$

Assuming that fixed cost is a random error term following a logistic distribution, the empirical specification can be estimated using a complementary log-log model.[98] For simplicity, we control for labor productivity (value added per worker) instead of TFP and control for the firm's capital intensity to account for the possibility that firms having high labor productivity is due to high capital intensity rather than TFP.[99] The key hypothesis is that in a well-functioning market, there should be a positive selection of more productive firms to survive (less likely to exit).

We include a range of interactions with productivity to understand how different factors affect the market selection effect, including (a) whether a firm is foreign owned, (b) time period dummies to proxy for the conflict periods, and (c) competition intensity as measured by the entry rate of foreign firms and an output HHI index at the 2-digit sector level. We also include other firm characteristics such as size, age, region and industry and year fixed effects (FE) to account for unobserved policy and other changes in market fundamentals at the industry level and over time that could affect firm exits.

Table B5.3.2
Determinants of firm exit

Variables	(1) Exit	(2) Exit	(3) Exit	(4) Exit	(5) Exit	(6) Exit
Size group [5–9]	−0.299***	−0.298***	−0.297***	−0.299***	−0.294***	−0.298***
	(0.0470)	(0.0470)	(0.0470)	(0.0470)	(0.0471)	(0.0470)
Size group [10–19]	−0.289***	−0.289***	−0.286***	−0.290***	−0.282***	−0.289***
	(0.0499)	(0.0499)	(0.0500)	(0.0499)	(0.0500)	(0.0500)
Size group [20–49]	−0.476***	−0.476***	−0.473***	−0.477***	−0.470***	−0.477***
	(0.0565)	(0.0565)	(0.0565)	(0.0565)	(0.0566)	(0.0566)
Size group [50–99]	−0.653***	−0.656***	−0.650***	−0.654***	−0.649***	−0.656***
	(0.0809)	(0.0810)	(0.0809)	(0.0810)	(0.0810)	(0.0810)
Size group [100–199]	−0.652***	−0.652***	−0.655***	−0.653***	−0.656***	−0.653***
	(0.102)	(0.102)	(0.102)	(0.102)	(0.102)	(0.102)
Size group [200–999]	−0.864***	−0.866***	−0.864***	−0.867***	−0.863***	−0.869***
	(0.105)	(0.105)	(0.105)	(0.105)	(0.105)	(0.105)
Size group ≥ 1000	−1.445***	−1.445***	−1.447***	−1.447***	−1.448***	−1.453***
	(0.248)	(0.247)	(0.248)	(0.247)	(0.247)	(0.247)
Age group [5–9]	−0.308***	−0.309***	−0.307***	−0.308***	−0.309***	−0.309***
	(0.0444)	(0.0444)	(0.0444)	(0.0444)	(0.0444)	(0.0444)
Age group [10–14]	−0.274***	−0.274***	−0.273***	−0.274***	−0.273***	−0.274***
	(0.0550)	(0.0550)	(0.0551)	(0.0550)	(0.0551)	(0.0550)
Age group [15–19]	−0.327***	−0.323***	−0.327***	−0.326***	−0.324***	−0.323***
	(0.0725)	(0.0725)	(0.0726)	(0.0725)	(0.0726)	(0.0725)
Age group [20–24]	−0.467***	−0.467***	−0.469***	−0.467***	−0.473***	−0.468***
	(0.0896)	(0.0896)	(0.0896)	(0.0896)	(0.0897)	(0.0896)
Age group [25–29]	−0.532***	−0.531***	−0.536***	−0.532***	−0.539***	−0.532***
	(0.108)	(0.108)	(0.108)	(0.108)	(0.108)	(0.108)

[98] This specification is also equivalent to a discrete time hazard model (Cameron and Trivedi 2005).

[99] The results are similar using a Solow TFP index calculated with constant returns to scale and 2-digit industry's median labor shares. Since our measure of output captures revenue rather than physical output, a high level of labor productivity or TFP could imply either high productivity or market demand and we will not be able to distinguish between the two.

Variables	(1) Exit	(2) Exit	(3) Exit	(4) Exit	(5) Exit	(6) Exit
Age group [30–34]	−0.423***	−0.424***	−0.424***	−0.423***	−0.429***	−0.424***
	[0.130]	[0.130]	[0.130]	[0.130]	[0.130]	[0.130]
Age group [35–39]	−0.567***	−0.563***	−0.571***	−0.566***	−0.564***	−0.558***
	[0.171]	[0.171]	[0.171]	[0.171]	[0.171]	[0.171]
Age group ≥ 40	−0.432***	−0.432***	−0.437***	−0.432***	−0.443***	−0.431***
	[0.111]	[0.111]	[0.111]	[0.111]	[0.112]	[0.111]
Foreign ownership	0.0292	0.0287	0.0271	0.0290	1.053	1.026
	[0.0658]	[0.0659]	[0.0658]	[0.0658]	[0.663]	[0.662]
Abidjan	−0.352***	−0.354***	−0.352***	−0.353***	−0.357***	−0.355***
	[0.0521]	[0.0521]	[0.0521]	[0.0521]	[0.0521]	[0.0521]
San Pedro	−0.331***	−0.334***	−0.336***	−0.332***	−0.341***	−0.335***
	[0.125]	[0.124]	[0.125]	[0.125]	[0.124]	[0.124]
Bouaké	−0.830**	−0.833**	−0.830**	−0.830**	−0.841**	−0.833**
	[0.384]	[0.384]	[0.384]	[0.384]	[0.385]	[0.384]
Log (labor productivity)	−0.113***	−0.159***	−0.0292	−0.113***	−0.0230	−0.148***
	[0.0161]	[0.0244]	[0.0375]	[0.0193]	[0.0420]	[0.0291]
logK/L	−0.126	−0.120	−0.127	−0.125	−0.132	−0.126
	[0.138]	[0.138]	[0.138]	[0.138]	[0.138]	[0.138]
Foreign*logLP					−0.0675	−0.0659
					[0.0437]	[0.0437]
(2007–2010)*logLP		0.0724**			0.112***	0.0613*
		[0.0306]			[0.0347]	[0.0319]
(2011)*logLP		0.0681			0.0629	0.0750*
		[0.0416]			[0.0422]	[0.0425]
Entry rate of foreign firms (sector)			10.90***		18.20***	
			[4.204]		[4.787]	
logLP*foreign entry			−0.690**		−1.181***	
			[0.273]		[0.312]	
HHI of value added (sector)				−0.243		−0.810
				[2.011]		[2.040]
logLP*HHI				−0.00929		0.0273
				[0.127]		[0.129]
2-digit industry and year FE	Yes	Yes	Yes	Yes	Yes	Yes
Constant	1.715***	2.383***	0.414	1.775***	0.336	2.313***
	[0.383]	[0.462]	[0.638]	[0.423]	[0.687]	[0.520]
Observations	21,560	21,560	21,560	21,560	21,560	21,560

Note: Clustered standard errors in parentheses *** p < 0.01, ** p < 0.05, * p < 0.1. Exit indicator is only available for 2003–2011 as we rely on exit from data. LP denotes labor productivity (value-added per worker)

5.5 LABOR PRODUCTIVITY AND GROWTH IN CONTINUING FIRMS

For surviving firms, employment growth significantly decreases with size. We have seen earlier that job creation is highest among young and small firms. This section puts more structure into the descriptive analysis in section 5.3 by regressing firm-level employment growth—in continuing firms—on firm characteristics, productivity, and other sector-level controls in both OLS and FE regressions (see Table in Annex D for the specifications and associated results). While not reported here, the OLS results in column (3) show that once size and other firm characteristics are controlled for, the age effect is only significant for firms older than 25 years. This result is consistent with the finding that only a small portion of young firms are able to grow, which on average might result in similar growth rates among different age groups. It suggests that much of the positive growth-age relationship seems to be driven by size: along the size distribution, smaller firms appear to growth faster.

Beyond size and age, firm-level productivity has a positive effect on post-entry growth. This relationship between employment growth and productivity is another useful indicator for market allocative efficiency as in a competitive market, productive firms should be able to grow while unproductive firms contract and exit (see for example, the discussion in Syverson 2011). The OLS estimates on labor productivity show a positive but weak within-sector correlation where a doubling of labor productivity is associated with an average of only 4–5 percent increase in employment growth. The FE coefficient estimates are higher. While the magnitude of the effect is still small, it suggests that when firms improve productivity, they manage to increase the labor force at the same time instead of shedding labor. However, as mentioned above, our productivity measures revenue productivity hence increases in productivity will partially capture increases in firm's demand. Therefore, our results could also be interpreted as firms facing higher demand are more likely to grow.

Employment growth also increases with the sectoral growth in labor productivity. The results in column (6) shows that conditional on own productivity, firms are able to grow faster when labor productivity in the sector as a whole is growing. One interpretation is that there is a positive reallocation of employment from less-productive to more-productive sectors. To the extent that sector labor productivity is a signal of aggregate sectoral demand growth, this result further suggests that demand growth is important for job creation.

Capital-intensive firms tend to grow faster. Estimates in the FE specifications suggest that a 10 percent increase in capital intensity is associated with around 9–13 percent increase in employment growth rate. While capital intensity alone is a poor proxy for financial constraint, the fact that more capital-intensive firms, that is less labor-intensive firms, are able to grow faster conditional on firm fixed effects and other characteristics suggest the potential role of access to finance as a constraint for job creation.

There are no clear differences between manufacturing and services firms. One might expect that for tradable sectors, employment is more likely to increase with productivity growth due to potential for demand expansion. Yet, we see a slightly smaller (but not statistically significant) coefficient estimate for manufacturing firms compared to services. This result indicates that the manufacturing sector might be performing below its potential for output growth and job creation. Interestingly, there is a positive correlation between employment growth and the share of French-speaking West African employees in most specifications. This relationship seems driven solely by the services sector however, suggesting that employment growth in services has occurred disproportionally more for those workers.

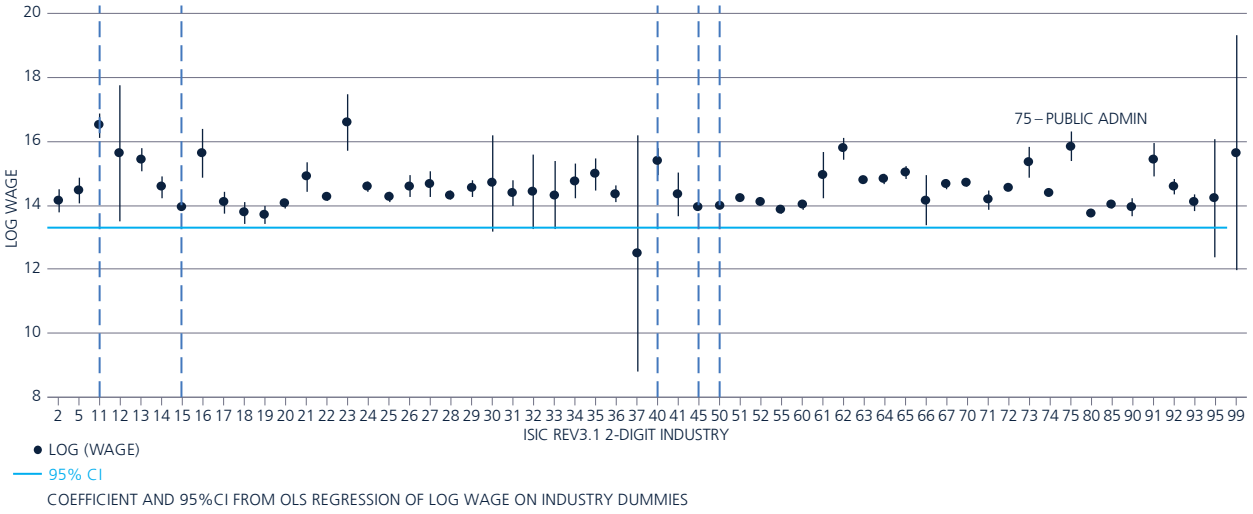
5.6 WAGES, JOB QUALITY, AND LABOR COSTS

This section studies the pattern of wages as an indicator for job quality and well as labor cost across sectors, firm types, and over time. It also explores how the wage growth path is related to labor productivity and other firm-level characteristics. The analysis helps answer the following questions: (a) Are wages higher in large or small firms, firms creating jobs versus non-job creators? (b) Do wages increase with productivity, including productivity within firms and across sector? (c) How does this wage-productivity relationship vary by the extent of market competition?

First, there is a lot of heterogeneity in wages across and within sectors, even after accounting for skill composition. Not surprisingly, most sectors pay better than agriculture. Somewhat unexpectedly, the food manufacturing sector has one of the lowest average wage. The oil and gas related industries (ISIC 11 and 23) are by far the highest-paying sectors. Those in the public sector (75) are also among the highest-paying jobs, lending support to the argument that in many developing countries including Côte d'Ivoire, high public wages might impose a wage floor effect for skilled workers in the private sector. This observation is consistent with the finding in Chapter 1 that for the more educated—those at least upper-secondary education—public jobs are more prevalent that private wage employment in the formal sector.

One might expect that variations in sectoral wages are driven mainly by differences in the skill content. However, decomposing wages by different occupations (where skilled workers are defined as those in management or technician positions) show that there remains substantial heterogeneity across sectors, both for

Figure 5.20
Wage differentials in formal jobs across sectors



Source: Author calculations using CdB data.
Note: Vertical dotted lines separate Agriculture & Fishing, Mining, Manufacturing, Utilities, Construction, and Services sectors. Horizontal line presents the current minimum (nominal) wage line.

skilled and unskilled workers. While occupation alone is not a perfect measure of skill content, this heterogeneity is potentially a result of wage rigidity or non-transferability of skills across sectors.

Second, there appears to be different wage levels in micro and small firms compared to larger firms, where wages are significantly higher.[100] As expected, wages in micro firms are lower than in small firms, which in turn have lower wages than medium and large firms. Interestingly, there are no clear differences in wages among large and medium firms. The wage distribution on the left, in particular, appears identical for medium and large firms. If wages can be considered a sufficient proxy for worker's characteristics, it looks as if medium and large firms are hiring a similar set of workers who are however distinctly different from the micro and small firms. This result has important implications. Results on labor costs from previous studies focusing on the larger firms (such as World Bank 2015), may not be applicable across all firms, as is further discussed in section 5.7.

Figure 5.21
Wage distribution by firm size

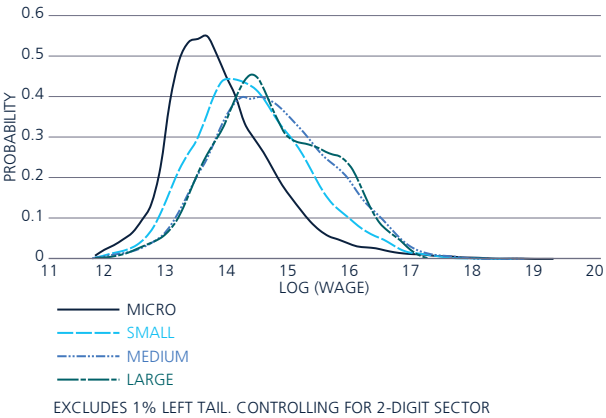
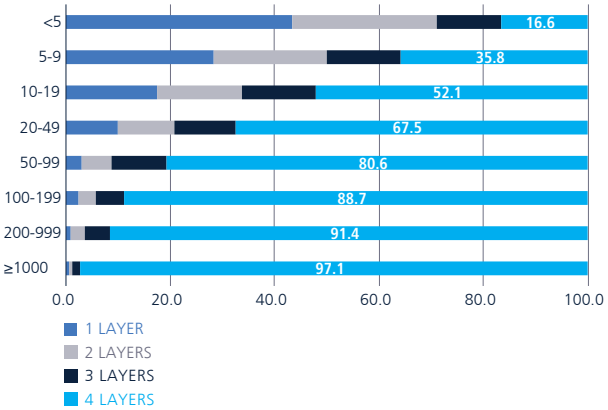


Figure 5.22
Organization structure by firm size



Source: Author calculations using CdB data.
Note: The four 'layers' are senior management, middle management, technicians, and unskilled workers which include laborers, workers, and apprentices. The idea of organization layers follows Caliendo, Monte, and Rossi-Hansberg (2015).

[100] This is in contrast to results from the 2009 Enterprise Survey (World Bank 2010), which finds small firms to have higher labor cost.

One potential explanation for this pattern might be that large firms require a different organizational structure that involves significantly more managerial positions. The explanation is supported by analyzing how firms are most likely to be organized across different size categories (see Caliendo, Monte, and Rossi-Hansberg 2015, for an explanation on how firms organize to economize on their use of knowledge). Among those with at least 20 employees, the vast majority of firms are organized in a more complex structure that includes all four types of employees (unskilled laborers, technicians, middle management, and senior executives). In contrast, only 16.6 percent of micro firms have all four layers of employees while the vast majority only have one or two types of workers. As average wages are significantly higher for the upper more-skilled layers, these differences in firms' organizational structure can account for their wage differentials.

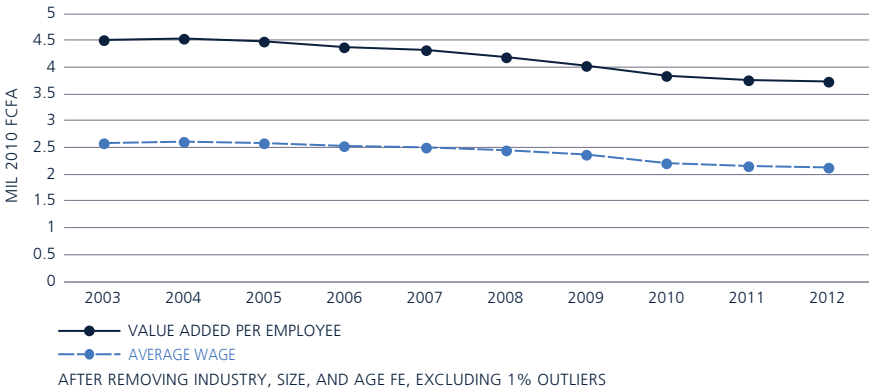
Over time, average wages in the formal sector have been declining in real terms, perhaps reflecting the entry of more low-skill workers. Figure 5.23 shows the evolution of average wage and average value added per worker, after accounting for sector, size, and age composition of firms over time. By 2012, the average labor productivity was about 17 percent lower than its level in 2003, and the difference is statistically significant. One explanation for the declining labor productivity is if firms have become less skill intensive, which is consistent with the results shown in Figure 5.14. Given that these estimates are net of sector, size, and age effects, the result suggests that the share of less-skilled workers might have increased within firms.

The difference between wages and labor productivity has remained constant over time, suggesting that the relative bargaining power of workers and firms has not changed much. As the average labor productivity decreases, we see a similar decline in firm-level wages. In the entire sample period, average wages always stay at approximately 60 percent that of the average labor productivity. As the relationship between wage and labor productivity should be determined by the bargaining power between firms and workers, the observed wage gap indicates that firms have maintained a similar level of bargaining power overtime.

To formalize the descriptive statistics presented above, the rest of this section discusses the determinants of wages based on a rent-sharing model (in the spirit of Van Reenan 1996; Card, Devicienti, and Maida 2014). The main idea is that depending on the structure of the labor market, how wages paid to workers compare to their marginal product of labor (in other words, how profits are shared) depends on their respective bargaining power. More specifically, we regress (log) wage on firm's average labor productivity, skill ratio, the sectoral level of productive and wages—as proxy for the outside option for the firm's employees—and other firm and sectoral characteristics.[101] This is equivalent to averaging the individual wage determination problem into a firm-level wage function (see Table D.3, Annex D, for the specifications and regression results).

Firms' unit labor cost decreases as they *grow*. OLS results suggest that across firms and sectors, the relationship between firm size and wages is non-monotonous. Micro firms have lower wages than small firms,

Figure 5.23
Wages and labor productivity over time in formal firms



Source: Author calculations using CdB data.

[101] We do not observe the marginal product of labor. Labor productivity (value added per worker) is proportional to the marginal revenue product of labor in a Cobb-Douglas technology.

consistent with the descriptive evidence above. Once they reach 50 employees, wages start to decrease with size. However, when firm fixed effects are accounted for, firm age has no significant effect. Most strikingly, wages decrease monotonously with firm size, indicating that firms' average wages decrease as they grow. In addition, the negative correlation between wages and whether a firm creates jobs further confirms the importance of labor costs for employment growth.

As expected, firm-level wages increase with labor productivity. The coefficient estimates on labor productivity imply an elasticity of 0.15 to 0.38. This is true whether we control for firm-level productivity alone or when we control for sectoral productivity, such that the estimates can be interpreted as the impact of firm-specific productivity (or demand) shocks. When firm fixed effects are accounted for, the estimated elasticity is smaller, suggesting that wage growth within firms is less responsive to productivity increases than across firms. While not strictly comparable, these elasticity estimates are relatively large compared to those in previous studies such as Card, Devicienti, and Maida (2014), implying a fairly large rent-sharing effect in Côte d'Ivoire.

Interestingly, the average sectoral productivity has a dampening effect of firm-level wages. This is in contrasts to evidence from Sweden (Carlsson et al. 2015) which finds that common productivity shocks within sectors have a large positive effect on wages. In other words, we do not find evidence of profitability improvements among firms in the same labor market segment result in wage growth for workers. This might be an indicator of the lack of labor mobility *across* sectors, consistent with our earlier observation of wage heterogeneity and possible lack of skill transferability across sectors in Côte d'Ivoire.

Firm-level wages increase with the outside wage but the extent of market concentration and skill intensity do not have a significant impact on rent sharing. The average sector-level wages have a positive effect on firm-level wages, confirming the hypothesis that workers have higher bargaining power when they have better outside options. However, market power as measured by the sectoral HHI index of employment does not have any significant impact on wages, both in levels and in its interaction with firm-level productivity. Similarly, the coefficients on the interaction with skill ratio in the fixed effect specification are small and insignificant, suggesting that skilled workers are not more likely to benefit from productivity improvements.

5.7 DISCUSSION AND CONCLUSION

The various analyses above reveal some very positive trends in the formal sector: firms are increasingly formalized and are growing over time, contributing to a sustained net gain in formal employment since 2007.[102] With increased political stability, we also see a return of foreign investors and foreign workers, especially after the 2011 election.

Yet, in aggregate, the number of new jobs created in the formal sector is still negligible compared to the size of the labor force. In 2014, the total number of wage jobs is approximately 2 million, a multifold of the size of the formal sector in 2012 and its most significant annual net job gain (300,000 and 40,000, respectively). Part of the explanation is that while we do see firms grow over time, many struggle to survive in the first place. Compared to other countries with available data, Côte d'Ivoire has one of the most volatile firm and job dynamics patterns. For those that do survive, growth seems concentrated in a small fraction of firms. In addition, there remain deep regional disparities in business activities.

Among other factors, both capital intensity and firm-level labor productivity appear to improve chances of firms' survival and growth. Given our revenue productivity measure, the role of productivity further suggests the importance of demand. Labor cost, particularly for more skilled occupations, also seems to affect firms' ability to expand. These results suggest a number of areas of investment climate constraints to firm growth. The following sections discuss these constraints and potential policy responses, with an emphasis on capital and labor/capabilities constraints.

[102] It is worth noting again that since part of the trend could reflect better data collection, not all the gains observed in the data might be attributed to new economic activities alone.

5.7.1. Investment climate constraints and policies

Entry *regulations* no longer appear to be a major constraint. Côte d'Ivoire has achieved significant progress in its business regulatory environment, as measured by the Doing Business (DB) rankings since 2012. The most remarkable improvement has been the area of 'starting a business', where Côte d'Ivoire's performance with regard to distance to frontiers jumped from 40 in 2004 to 91 in 2016, driven by reductions in both time and cost of registration. With its long-standing history of openness to foreign businesses and workers, the country also has virtually no regulatory restrictions on foreign equity ownership.[103] The increase in entry observed in the CdB data, both domestic and foreign, suggest that investment climate constraints to the formal sector growth might rest more with operations and market opportunities rather than firm entry.

Beyond political instability, constraints to post-entry growth might be partly explained by access to finance, transport and logistics, as well as skill and cost constraints in the labor market. Despite improvements, Côte d'Ivoire is still characterized by similar investment climate constraints facing other countries the region. In 2016, and despite recent improvements, its Doing Business ranking is still 142 out of more than 180 countries. Beside political instability, the non-conducive investment climate possibly contributed to high exit rates, and high level of labor churning.

Access to finance is an important constraint, indicated by firm perceptions as well as low levels of capital intensity and high returns to capital. Table 5.3 shows the cross-sectional variations in capital intensity and returns to capital by firm size in Côte d'Ivoire and a set of comparator countries. Capital intensity among Ivorian firms is in fact substantially lower than in other countries. Conversely, the average returns to capital across different firm sizes are almost always higher. While it is difficult to assess where capital is most binding, we use average return to capital, measured as the ratio of value added over the capital stock, as a proxy. The idea is that for profit-maximizing firms, the marginal returns to capital should be equated to its price, hence higher returns indicate higher capital cost, or that the firm is more capital constrained. Using this proxy, Ivorian firms appear to be most capital constrained among comparator countries both in West Africa and other regions.

Table 5.3
Capital intensity and returns to capital in formal manufacturing sector across countries

Country-year	Median capital intensity	Median return to capital		
		Small firms[a]	Medium	Large
Burkina Faso (2009)	9,802	2.01	0.39	1.41
Cameroon (2009)	12,480	1.34	0.93	0.89
Côte d'Ivoire (2009)	2,040	2.32	0.54	2.98
Côte d'Ivoire (2012)[b]	5,298			
Côte d'Ivoire, manufacturing (2012, CdB)[c]	3,637	1.46	1.37	0.88
Côte d'Ivoire, other sectors (2012, CdB)[c]	2,453	2.42	2.08	1.38
Ghana (2013)	10,634	0.48	0.51	0.86
Kenya (2013)	20,676	0.62	0.46	1.67
Senegal (2014)	9,327	0.58	0.91	5.10
Sri Lanka (2011)	8,716	0.24	0.48	1.20
Vietnam (2009)	18,071	0.66	0.63	0.48

Source: World Bank Enterprise Survey and Côte d'Ivoire's CdB. Data from WBES excludes 1 percent outliers. Côte d'Ivoire 2012 does not follow standardized WBES methodology and calculations are not accounted for sampling design, hence need to be interpreted with caution. Monetary values are in 2010 U.S. dollar. Capital intensity is the value of capital stock (total fixed asset) per worker. Return to capital is value added/capital stock.
Note (a): Small firms: exclude firms with fewer than five employees. (b) Returns to capital by firm size are not reported for Côte d'Ivoire 2012 enterprise survey data due to small sample size. (c) Estimate using CdB data exclude micro firms and firms reporting zero capital to be comparable with the WBES.

[103] See referenced data in http://www.doingbusiness.org/Custom-Query/cote-divoire and http://iab.worldbank.org/data/exploreeconomies/cote-divoire#investing-across-sectors

Figure 5.24
Capital returns by sector

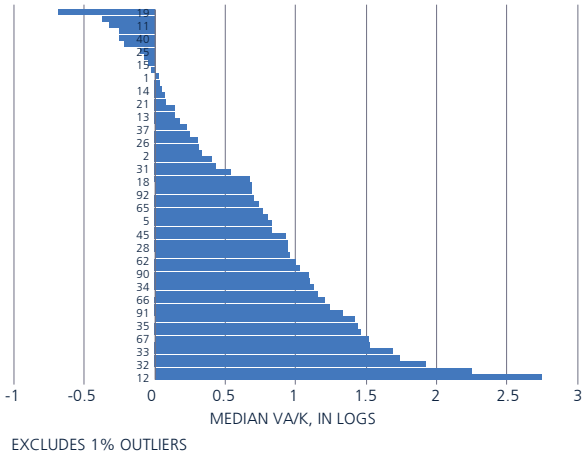
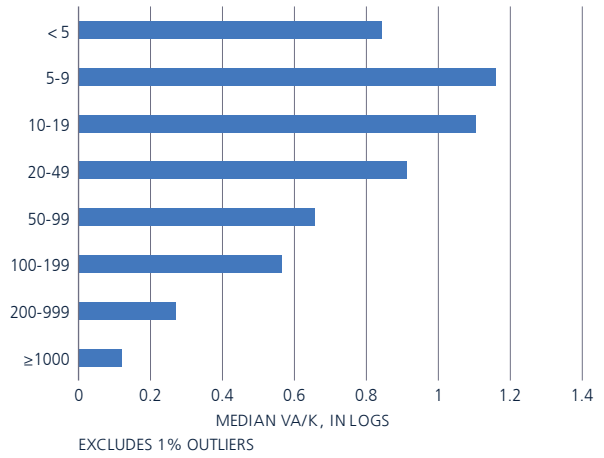


Figure 5.25
Capital returns by firm size



Source: Author calculations using CdB data.

Capital constraint varies substantially by sectors and type of firms, indicating frictions in the capital market (Figures 5.24 and 5.25). Using the same average capital returns as a proxy, it appears that manufacturing and services industries associated with mining, computer and other equipment, and financial intermediation (ISIC 12, 30, 32, 33, 50, 67, and 72) are the most financially constrained. The agribusiness sector (ISIC 15), on the other hand, appears to be less constrained. Similarly, capital constraints also vary by firm size. In general, access to finance appears more binding for smaller firms. However, in contrast to suggestions from other studies, *formal micro firms might not be the most financially constrained*. Using our proxy, firms between 5–20 employees will benefit most from capital reallocation. Still, as Chapter 4 highlights, capital constraints are also the most binding constraints for household enterprise.

Accordingly, policies to improve access to finance need to pay attention to firm and sector heterogeneity. The country's low score on the Doing Business 'getting credit' indicators, for example, is driven by the lack of a credit bureau or credit registry, sharing of credit information, and a movable collateral registry, which negatively affects the allocation of credit in the economy and often impacts smaller firms disproportionally. Alternatively, to alleviate capital constraints, one might consider policies to attract foreign investments in sectors that are more financially constrained. These policies need not be blunt instruments such as tax incentives but could be targeted investment climate policies that would encourage foreign entry in certain sectors. In addition, low returns to capital in certain sectors and types of firms can be caused by constraints in complementary inputs such as skilled labor. Therefore, policies that do not consider other complementary inputs might fall short of alleviating firms' constraints to grow.

Another concern about the formal sector's competitiveness, particularly the manufacturing sector, is its conceived high labor cost (World Bank 2014). If this is true, excessively high labor cost could be a constraint to firm growth and aggregate employment growth. We already find support in the CdB data that firms appear to grow at the same time as they reduce the average labor cost. We further look at cross-country evidence for whether Côte d'Ivoire is competitive in its labor cost. Results from the WBES are presented in Figure 5.26.

In contrast to the manufacturing study focusing on the largest firms (World Bank 2014), Ivorian firms in fact pay a moderate level of wages compared to those in other countries both inside and outside the region. Average wages in 2009, which excludes former rebel zones, is only higher than that of Mali and Ghana. The labor cost in 2012, which includes former rebel zones, is even lower.

However, Côte d'Ivoire also has a relatively low labor productivity/labor cost ratio. This result implies that the labor force is not competitive and that low workforce productivity might become a constraint to formal sector expansion.

BOX 5.4: LABOR REGULATIONS AND THE MINIMUM WAGE

With regard to regulatory costs, Côte d'Ivoire does not have overly restrictive labor regulations (World Bank 2010). The minimum wage level appears non-binding for most firms in the whole sample period, where the average wage for around 95 percent of the firms is higher than the minimum wage level.

In 2013, Côte d'Ivoire doubled its minimum wage level for the first time since the 1994 devaluation. There has been no evidence on the impact of this increase on employment but our firm-level data suggest that the new minimum wage could become binding for a significant share of micro and small firms, as around 37 percent of those firms are currently paying at the level of the new minimum wage on average.

As mentioned in Chapter 1, a substantial share of the employed population, and even those in wage jobs, in fact earn much less than the minimum wage. In part, this is because only a small share of the employed population hold formal jobs, as highlighted in this chapter. Earnings in nonagricultural and agricultural self-employment, although rather heterogeneous, are on average lower than the minimum wage for the formal sector.

At the same time, the new minimum wage does not appear excessive for formal firms. Based on the Doing Business database, the ratio of minimum wage to overall value added per worker (GDP per employed person) in Côte d'Ivoire is still at the low end among West African countries and comparator countries such as Kenya and Vietnam.[104] Policies to improve labor competitiveness for the formal sector will have to consider aspects related to the workforce as well as broader policies that can reduce the cost of living in urban areas. Gelb et al. (2013), for example, suggest several possible causes for high living costs (Côte d'Ivoire is one of the countries with the highest price levels given its income level), including the dependence on resource-based exports and investment inflows, and high transportation costs driving up food prices. Hence complementary policies to reform agricultural and services sectors or better manage urbanization might help drive down living costs and needed compensation levels.

Low relative productivity indicates that the level of skills of the workforce might be a key constraint to growth in better firms. As will be further discussed in Chapter 6, due to the crisis, education attainment in Côte d'Ivoire has lagged behind Sub-Saharan Africa's trend. Yet, Chapter 1 suggests that only those with at least secondary education have a decent chance of working in the formal sector. At the same time, convex pattern in the return to schooling are found in Côte d'Ivoire (see Chapter 6), indicating steep increases in labor costs as firms employ higher shares of skilled workers. Given the results above that larger firms tend to have employ higher shares of technical and managerial positions, high labor cost associated with high skill premium might be a binding constraint for growth. This observation is in line with Gelb et al. (2013) which finds that large firms pay higher wages in Sub-Saharan Africa, potentially due to labor management issues resulting in higher supervisor-to-worker ratio than elsewhere.

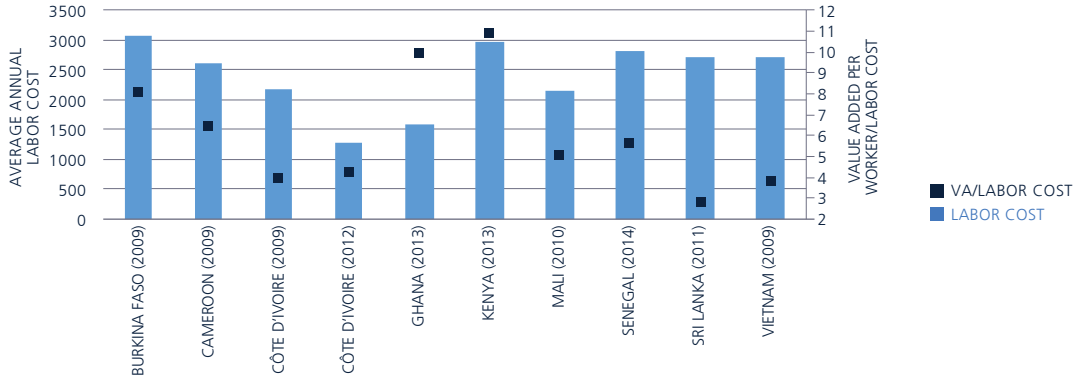
Beyond concerns about efficiency, low labor productivity might also be an indicator that firms are constrained by lack of demand. Recent research (see Foster, Haltiwanger, and Syverson 2016) suggests that a key explanation for the slow growth of young firms in the United States is more likely linked to slow growth of demand rather than productivity. Evidence from the CdB data appears consistent with this hypothesis: while younger firms grow faster on average, only a subset of them do grow, and once firm labor productivity is accounted for, age has very little explanatory power over growth.

In the context of Côte d'Ivoire, two factors stand out as possible constraints to output demand growth: transport infrastructure and logistics, and firm capabilities. As in most countries, rapid expansion of demand is most likely to occur in tradable sectors. Côte d'Ivoire has an advantage over many other landlocked countries but its logistic performance index (LPI) is barely above the Sub-Saharan Africa average. The cost of export and import based on Doing Business data is inexplicably more expensive than landlocked countries such as Burkina Faso and Mali.[105] For smaller firms in particular, reaching the regional market might be an important

[104] Doing Business data on Minimum wage/Ratio of minimum wage to value added per employee:
Kenya: 269.4/1.4, CI: 119.0/0.5, Senegal: 185.6/1.1, Cameroon: 70.3/0.3, Burkina Faso: 107.9/1, Sri Lanka: 79.3/0.2, Ghana: 60.1/0.3, Mali: 62/0.5, Vietnam: 142.5/0.6

[105] See http://www.doingbusiness.org/Custom-Query/cote-divoire

Figure 5.26
Manufacturing unit labor cost and labor productivity/labor cost ratio across countries



Source: Author calculations using CdB data.
Note: WBES data. We exclude 5 percent outliers due to very high dispersion in the distribution of value added per worker in many countries, which could be driven by measurement errors. Côte d'Ivoire 2009 covers Abidjan, San-Pedro, and Yamoussoukro. CIV 2012 covers Abidjan, San-Pedro, Abengourou, Bouaké, Daloa, and Korhogo.

channel for export. Yet road and rail transport infrastructure in Côte d'Ivoire is inefficient and expensive, contributed to by entrenched monopoly, inefficient quota system, and pervasive roadblocks and corruption demands in the north such as along the Abidjan-Ouagadougou corridor (World Bank 2014, 2015b). Successful demand accumulation also requires a certain degree of firm capabilities. As argued earlier, the fact that Ivorian firms are significantly less able to survive in sectors with a high rate of foreign entry suggests the need to improve capabilities for domestic firms. These include, beyond better access to finance, other complementary inputs such as business services support, access to information about foreign markets, and public inputs such as quality standards. The next section discusses some of the policy tools toward this goal.

5.7.2. Incentives and other direct support programs

Beyond policies to improve the overall investment climate, governments can also consider other direct support programs that could compensate for a poor business environment in the short run. The government of Côte d'Ivoire has an extensive incentives program to promote FDI. However, much of the current FDI incentives favor capital expenditures and are not necessarily in line with the goal to promote exports or employment (World Bank 2016). Given the high cost in foregone taxes, public funding might be better diverted to provide subsidies or tax credits to encourage exports, hiring, skills and quality upgrading, or creating linkages with the local economy rather than on expensive tax breaks for capital-intensive sectors with limited linkages to the rest of the economy such as the oil and gas sector.

Incentives and support programs might benefit from taking into account sectoral potential for job creation. One measure that could help guide targeting is to consider the labor intensity in different sectors, particularly for unskilled labor. Table D.4 shows a breakdown along this line, where labor intensity is measured as the expenditure share of employment in value added output, which could be considered as the derived labor demand. Food manufacturing (ISIC 15), for example, is important for employment but as a relatively capital-intensive sector, its employment returns to the same amount of investments will be fairly limited. Other high-potential sectors include business activities (ISIC 74) and transport services (ISIC 63), due to their high contribution to aggregate employment and a high labor intensity. In addition, these are also network industries whose growth can have potential to improve services inputs to the rest of the economy. An alternative to ex ante targeting, given the difficulty to predict business success, is to identify emerging successful firms or sectors and consider policies to alleviate the constraints specific to those firms/sectors.

Support programs also need to address existing regional disparities in economic activities as well as agglomeration effects. The continued concentration of businesses in Abidjan suggests that in the short run, it will be difficult to create inclusive opportunities for formal jobs in the rest of the country. In the long run, rebalancing the pattern of economic activities in the country will require policies address coordination failures

by providing infrastructure and incentivizing market linkages between downstream and upstream businesses in other regions. The most likely candidates could be cities to leverage agglomeration benefits from existing concentration of infrastructure and human resources. One such effort is the project to support the Ivorian Government develop the city of Bouaké. The project includes both infrastructure financing and direct technical and financial support instruments provided for firms to stimulate investments and job creation. In Bouaké, for example, the project leverages its position as a trading hub and proximity to agricultural supplies to target agro-transformation activities.

Given the likelihood of interdependent constraints, especially for micro and small firms, it is possible that no one type of support would be sufficient to improve firm performance and growth. Any policy intervention would need to carefully consider a range of possible constraints specific to sector and firm type while ensuring market competition, and incorporating tracking and evaluating interventions where possible.

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ANNEX D:

Distribution of firms around the tax thresholds

Figure D.1 shows the number of firms in different revenue groups in 2004, 2005, 2009, and 2010 to examine whether there is any bunching around the two revenue thresholds of CFAF 50 million and CFAF 150 million which will put firms in the Simplified versus Normal tax regimes. The threshold changed in 2004 due to a new Law of Finance, whereas starting in 2010, firms were asked to submit the same information to INS and the Tax Administration. The lack of bunching around these tax thresholds suggests, at least, that there is no evidence of firms manipulating reported revenue to avoid paying the higher tax rate.

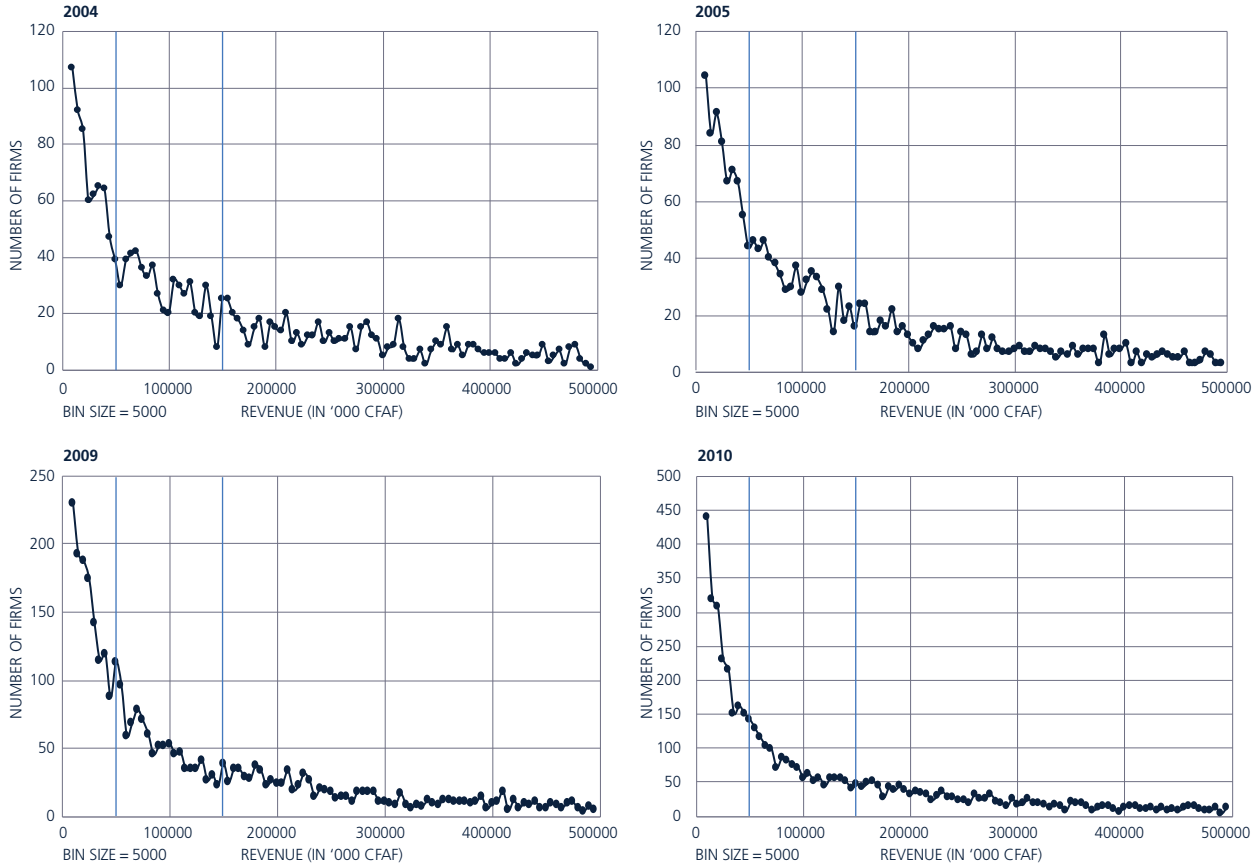
Summary statistics

Table D.1
Summary statistics 2003–2012

Variable	N	mean	sd	p5	p25	p50	p75	p95
Share owned by foreign nationals	59,593	12.18	31.84	0	0	0	0	100
Foreign ownership (positive foreign capital share)	59,593	0.138	0.345	0	0	0	0	1
Foreign ownership (foreign capital share >50)	59,593	0.12	0.325	0	0	0	0	1
Total employment (number of internal workers)	59,696	37.67	269.2	0	2	5	13	103
Total full-time internal employment (*permanents*)	8,182	55.43	360.1	0	1	3	15	176
Employment in manufacturing firms	13,084	63.31	311.1	0	2	5	24	254
Employment in services firms	45,145	23.4	183	0	2	4	11	63
Total skilled employment	59,696	13.44	70.13	0	0	2	8	47
Total unskilled employment	59,696	21.42	180.9	0	0	1	5	52
Share French West African workers	53,374	0.0499	0.143	0	0	0	0	0.333
Share all other foreign workers	53,374	0.0232	0.0905	0	0	0	0	0.143
Exporter	18,221	0.0751	0.264	0	0	0	0	1
Importer	17,974	0.139	0.346	0	0	0	0	1
Sales	56,274	1,932	25,611	0.296	17.78	85.61	386.5	4,947
Value added	59,711	298.9	3,487	–19.24	0	10.58	50.49	694.5
Value added per worker	53,366	4.014	99.57	–4.43	0.339	2.217	5.438	18.83
Purchase of intermediate inputs	60,558	1,205	15,067	0	2.919	27.1	187.4	2,715
Purchase of raw materials	30,468	931.8	18,957	0	0.177	2.466	21.59	1,034
Total fixed asset	55,947	413.2	4,143	0	0	2.645	27.88	720
Total intangible capital	41,655	90.09	2,184	0	0	0	0.261	28.3

Note: Data are reported before excluding outliers.
All monetary values are in 2010 CFAF, millions.
Skilled employment includes senior and middle management, and technicians. Unskilled includes laborers, workers, and apprentices.

Figure D.1
Distribution of firms by revenue



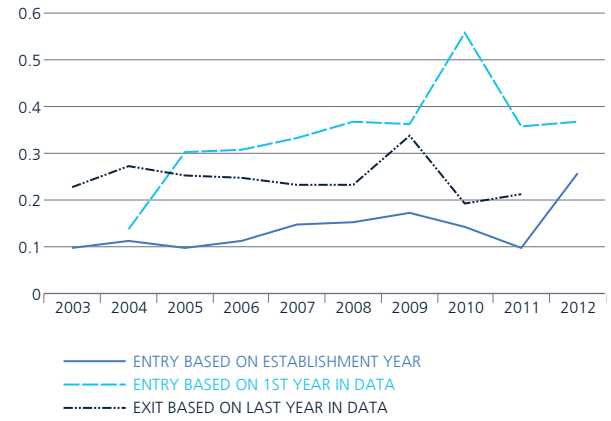
Source: Author calculations using CdB data.

Data attrition and firm exit

As firms' true exits are not observed in the data, we define a firm as exiting when they permanently exit from the dataset (hence exit is set as missing in the last year of the dataset). This definition will over-report exits and create potential bias in the trend of firm exits overtime if firms exit and reenter the data in multiple years. To evaluate to extent of bias, we examine the trends in firm entry, both by entry in dataset and true entry as defined by their reported establishment year. We observe an expected over-reporting of entry, but the trends in entry rates using the two measures are fairly similar with the exception of 2010 and 2011, suggesting that the trend using our exit definition is also likely not misleading.

To further check for potential bias in the observed entry pattern due to better data collection, we report the trends in size at entry for *Normal* firms only. If better data collection leads to disproportional shares of small firms (non-Normal firms) to be included in more recent years, then we might expect the entry pattern for Normal firms to be very different. However, we observe a very similar as with all firms, suggesting the observed trend in decreasing firm size at entry is likely not driven by data reporting.

Figure D.2
Entry-exit rate



Source: Author calculations using CdB data.

Figure D.3
Employment size at entry

Source: Author calculations using CdB data.

Regression results

Employment growth regressions

Table D.2
Correlates of employment growth in continuing firms

	(1)	(2)	(3)	(4)	(5)	(6)
	Full sample, OLS	Full sample, OLS	Full sample, FE	Manufacturing, FE	Services, FE	Full sample, FE
Lagged LP (log)	0.0379***	0.0511***	0.104***	0.0953***	0.113***	0.108***
	(0.00299)	(0.00437)	(0.00870)	(0.0159)	(0.0160)	(0.00903)
Lagged K/L (log)	0.193***	0.148***	0.886***	0.863***	1.154***	0.924***
	(0.0242)	(0.0348)	(0.0836)	(0.183)	(0.170)	(0.0874)
Skill ratio		−0.000542	0.000793	0.000205	0.00284	0.000825
		(0.000344)	(0.000520)	(0.000628)	(0.00177)	(0.000502)
Share of FWA workers		0.0881***	0.144**	0.0969	0.247**	0.141**
		(0.0239)	(0.0584)	(0.132)	(0.108)	(0.0605)
Share of other foreign workers		−0.0312	0.141	0.0586	0.0353	0.174
		(0.0568)	(0.135)	(0.307)	(0.205)	(0.144)
Foreign owned		0.00494	0.0247**	0.0577***	−0.0179	0.0178
		(0.0123)	(0.0113)	(0.0181)	(0.0242)	(0.0156)
Average sector LP growth (log)						0.0339*
						(0.0196)
(Lagged) size and age dummies		Yes				
Regional dummies		Yes				
Firm FE			Yes	Yes	Yes	Yes
Industry and year FE	Yes	Yes	Yes	Yes	Yes	Yes
Constant	−1.061***	−1.131***	−3.944***	−3.744***	−4.788***	−4.047***
	(0.0636)	(0.0909)	(0.253)	(0.477)	(0.498)	(0.279)
Observations	17,707	10,844	12,304	2,622	4,287	11,520
R-squared	0.030	0.058	0.086	0.082	0.101	0.107
Number of firms			4,848	1,015	1,701	4,570

Note: Cluster standard errors in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.1. Employment growth is estimated as in Davis, Haltiwanger, and Schuh (1996) for continuing firms only. Size and age dummies are as in Table 5.1. LP denotes labor productivity (value added per worker).

Wage regressions

Following Van Reenan (1996), in a wage bargaining model, individual wages can be written as a function of the marginal product of labor, which is proportional to labor productivity with a Cobb-Douglas technology, and other firm-level and industry characteristics that determine the bargaining power between the firm and the employee:

$$w_{ijst} = \beta p_{ijt} + \gamma X_{jst} + \delta Z_{st} + \varepsilon_{ijst}$$

Averaging the above equation across workers and accounting for the skill composition, the firm-level wage regressions can be written as follow, where we control for sectoral wages and productivity to proxy for workers' outside options and sector's employment concentration as a measure of competition and bargaining power of the firm:

$$w_{jst} = \beta \bar{p}_{jst} + \gamma_1 skillratio_{jst} + \gamma_2 X_{jst} + \delta_1 \bar{w}_{st} + \delta_2 \bar{p}_{st} + \delta_3 HHI_{st} + \delta_t + \alpha_i + \varepsilon_{jst}$$

Note that our results should be interpreted as correlations only. One of the key endogeneity issues with the specification is that we use labor revenue productivity (the problem holds even if we use revenue TFP). In a non-perfect competitive market, this productivity measure will include output prices and therefore is also a function of wages (see for example, Carlsson et al. 2016, for a discussion).

Table D.3
Wage determinants

	(1)	(2)	(3)	(4)	(5)	(6)
	OLS	OLS	OLS	OLS	FE	FE
Size group [5–9]	0.291***	0.0607***	0.279***	0.105***	–0.167***	–0.169***
	(0.0248)	(0.0214)	(0.0243)	(0.0213)	(0.0357)	(0.0334)
Size group [10–19]	0.412***	0.0468*	0.422***	0.129***	–0.289***	–0.295***
	(0.0285)	(0.0265)	(0.0267)	(0.0253)	(0.0413)	(0.0406)
Size group [20–49]	0.461***	0.0195	0.472***	0.121***	–0.418***	–0.413***
	(0.0300)	(0.0288)	(0.0273)	(0.0265)	(0.0486)	(0.0492)
Size group [50–99]	0.433***	–0.0819**	0.457***	0.0463	–0.558***	–0.552***
	(0.0378)	(0.0375)	(0.0322)	(0.0323)	(0.0564)	(0.0566)
Size group [100–199]	0.294***	–0.230***	0.301***	–0.117**	–0.874***	–0.860***
	(0.0583)	(0.0583)	(0.0519)	(0.0524)	(0.0714)	(0.0724)
Size group [200–999]	0.158***	–0.386***	0.208***	–0.232***	–0.947***	–0.919***
	(0.0525)	(0.0542)	(0.0470)	(0.0484)	(0.0944)	(0.0959)
Size group ≥ 1000	0.0479	–0.535***	0.185**	–0.292***	–1.167***	–1.168***
	(0.0892)	(0.0890)	(0.0779)	(0.0785)	(0.112)	(0.108)
Age group [5–9]	0.196***	0.168***	0.113***	0.108***	0.0172	0.00165
	(0.0188)	(0.0171)	(0.0166)	(0.0150)	(0.0206)	(0.0194)
Age group [10–14]	0.286***	0.258***	0.178***	0.172***	0.0346	0.0151
	(0.0252)	(0.0233)	(0.0222)	(0.0207)	(0.0314)	(0.0304)
Age group [15–19]	0.399***	0.376***	0.228***	0.236***	–0.000608	–0.0210
	(0.0305)	(0.0279)	(0.0268)	(0.0250)	(0.0395)	(0.0390)
Age group [20–24]	0.456***	0.441***	0.278***	0.291***	–0.0395	–0.0451
	(0.0360)	(0.0342)	(0.0317)	(0.0300)	(0.0491)	(0.0490)
Age group [25–29]	0.509***	0.469***	0.307***	0.300***	–0.0831	–0.0796
	(0.0476)	(0.0441)	(0.0429)	(0.0405)	(0.0573)	(0.0583)
Age group [30–34]	0.612***	0.575***	0.370***	0.360***	–0.0635	–0.0544
	(0.0583)	(0.0546)	(0.0486)	(0.0473)	(0.0744)	(0.0754)
Age group [35–39]	0.602***	0.553***	0.352***	0.350***	–0.0743	–0.0590
	(0.0797)	(0.0746)	(0.0732)	(0.0689)	(0.0950)	(0.0966)

	(1)	(2)	(3)	(4)	(5)	(6)
	OLS	OLS	OLS	OLS	FE	FE
Age group ≥ 40	0.705***	0.628***	0.447***	0.409***	–0.0853	–0.0656
	(0.0735)	(0.0708)	(0.0698)	(0.0688)	(0.117)	(0.118)
lnKL	1.832***	1.561***	0.454***	0.367***	0.561***	0.566***
	(0.0752)	(0.0701)	(0.0677)	(0.0630)	(0.0938)	(0.0940)
Foreign ownership	0.168***	0.144***	0.124***	0.0968***	0.0120	0.0199
	(0.0245)	(0.0229)	(0.0223)	(0.0213)	(0.0238)	(0.0242)
Abidjan	0.455***	0.302***	0.380***	0.264***	0.0357	0.0796
	(0.0266)	(0.0247)	(0.0248)	(0.0230)	(0.120)	(0.115)
San Pedro	0.194***	0.139***	0.147***	0.103**	0.125	0.201
	(0.0517)	(0.0457)	(0.0462)	(0.0421)	(0.166)	(0.169)
Bouaké	0.166	0.133	0.155	0.124	0.197	0.226
	(0.111)	(0.0904)	(0.105)	(0.0848)	(0.155)	(0.144)
Skill ratio	0.0184***	0.0133***	0.0117***	–0.0650***	–0.000490	–0.00241
	(0.00312)	(0.00225)	(0.00203)	(0.0240)	(0.0131)	(0.0128)
Share of FWA workers	–0.224***	–0.327***	–0.148**	–0.219***	0.0761	0.0452
	(0.0756)	(0.0664)	(0.0715)	(0.0637)	(0.0788)	(0.0780)
Share of other foreign workers	1.965***	1.152***	1.419***	0.816***	0.888***	0.730***
	(0.145)	(0.122)	(0.136)	(0.115)	(0.136)	(0.129)
Job creator		–0.127***		–0.0894***		–0.0585***
		(0.0119)		(0.0112)		(0.00868)
# employment layers		0.297***		0.238***		0.0939***
		(0.00789)		(0.00740)		(0.0106)
Labor productivity (log)			0.383***	0.347***	0.154***	0.150***
			(0.0104)	(0.0116)	(0.0117)	(0.0116)
Average sector LP (log)				–4.270***	–1.910***	–1.864***
				(0.457)	(0.482)	(0.480)
Average sector wage				0.402***	0.392***	0.394***
				(0.0962)	(0.146)	(0.148)
HHI of employment (sector)				1.454	1.124	0.936
				(0.964)	(1.171)	(1.160)
logLP*skill ratio				0.00464***	0.000130	0.000231
				(0.00159)	(0.000853)	(0.000832)
logLP*HHI				–0.0688	–0.0445	–0.0320
				(0.0616)	(0.0738)	(0.0733)
Constant	8.407***	9.193***	6.551***	13.11***	10.32***	10.06***
	(0.219)	(0.202)	(0.194)	(1.513)	(1.886)	(1.893)
Industry & year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	No	No	No	No	Yes	Yes
Observations	20,428	20,268	18,195	18,053	18,195	18,053
R-squared	0.374	0.457	0.494	0.553	0.115	0.128
Number of firms					6,974	6,960

Note: Clustered standard errors *** p < 0.01, ** p < 0.05, * p < 0.1. The dependent variable is a firm's average wage. LP denotes labor productivity. Wages and labor productivity are in logs.

Table D.4
Labor intensity by sector

2-digit ISIC rev 3.1	Share in aggregate VA (%)	Share in aggregate emp (%)	Aggregate L	Factor share (K)	Factor share (L)	Ratio of unskilled labor share in total labor share	% unskilled labor in total labor
01—Agriculture, hunting, and related service activities	9.612	16.426	30,055	0.744	0.256	0.516	48.10
15—Manufacture of food products and beverages	14.277	14.731	26,953	0.694	0.306	0.374	68.53
74—Other business activities	4.367	12.914	23,629	0.374	0.626	0.332	69.48
52—Retail trade, except of motor vehicles and motorcycles; repair of personal and household goods	4.632	6.448	11,797	0.586	0.414	0.231	50.61
20—Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	3.833	5.776	10,568	0.622	0.378	0.528	72.41
63—Supporting and auxiliary transport activities; activities of travel agencies	9.218	4.942	9,043	0.659	0.341	0.217	41.36
51—Wholesale trade and commission trade, except of motor vehicles and motorcycles	6.408	4.539	8,304	0.691	0.309	0.192	55.33
60—Land transport; transport via pipelines	3.041	3.980	7,282	0.478	0.522	0.287	45.41
45—Construction	1.551	3.005	5,498	0.469	0.531	0.227	49.36
24—Manufacture of chemicals and chemical products	1.709	2.929	5,360	0.534	0.466	0.299	68.44
25—Manufacture of rubber and plastics products	1.135	2.481	4,540	0.566	0.434	0.421	66.87
50—Sale, maintenance and repair of motor vehicles and motorcycles; retail sale of automotive fuel	2.091	2.220	4,062	0.628	0.372	0.208	52.58
80—Education	0.658	2.196	4,018	0.430	0.570	0.175	30.27
64—Post and telecommunications	9.780	2.011	3,680	0.776	0.224	0.064	19.71
28—Manufacture of fabricated metal products, except machinery and equipment	1.203	1.745	3,192	0.580	0.420	0.428	67.93
17—Manufacture of textiles	0.541	1.438	2,631	0.391	0.609	0.486	82.24
55—Hotels and restaurants	0.468	1.061	1,942	0.418	0.582	0.311	51.85
85—Health and social work	0.419	0.912	1,669	0.439	0.561	0.279	48.51
75—Public administration and defence; compulsory social security	0.652	0.751	1,373	0.296	0.704	0.138	34.62
22—Publishing, printing and reproduction of recorded media	0.546	0.716	1,311	0.517	0.483	0.185	42.00
21—Manufacture of paper and paper products	0.337	0.645	1,181	0.463	0.537	0.220	58.61
92—Recreational, cultural, and sporting activities	0.458	0.567	1,038	0.324	0.676	0.099	40.03
93—Other service activities	0.159	0.546	998	0.262	0.738	0.374	60.34
36—Manufacture of furniture; manufacturing n.e.c.	0.185	0.528	966	0.438	0.562	0.344	58.77
26—Manufacture of other non-metallic mineral products	0.989	0.478	874	0.789	0.211	0.239	62.00
40—Electricity, gas, steam and hot water supply	2.276	0.467	855	0.830	0.170	0.064	15.84
19—Tanning and dressing of leather; manufacture of luggage, handbags, saddlery, harness and footwear	0.102	0.436	798	0.518	0.482	0.349	54.58
72—Computer and related activities	0.445	0.377	690	0.434	0.566	0.050	19.56
70—Real estate activities	0.463	0.367	671	0.602	0.398	0.122	31.71
73—Research and development	0.181	0.364	666	0.297	0.703	0.188	42.06
13—Mining of metal ores	2.007	0.346	633	0.768	0.232	0.178	44.20
14—Other mining and quarrying	0.474	0.336	615	0.682	0.318	0.393	63.97

2-digit ISIC rev 3.1	Share in aggregate VA (%)	Share in aggregate emp (%)	Aggregate L	Factor share (K)	Factor share (L)	Ratio of unskilled labor share in total labor share	% unskilled labor in total labor
02—Forestry, logging, and related service activities	0.198	0.316	578	0.507	0.493	0.493	59.18
90—Sewage and refuse disposal, sanitation, and similar activities	0.100	0.304	556	0.485	0.515	0.374	66.21
41—Collection, purification, and distribution of water	0.477	0.275	504	0.650	0.350	0.287	48.44
23—Manufacture of coke, refined petroleum products and nuclear fuel	1.816	0.273	500	0.661	0.339	0.088	13.23
34—Manufacture of motor vehicles, trailers and semi-trailers	0.109	0.257	470	0.406	0.594	0.308	55.68
11—Extraction of crude petroleum and natural gas; service activities incidental to oil and gas extraction excluding surveying	10.961	0.233	426	0.953	0.047	0.031	13.08
05—Fishing, operation of fish hatcheries and fish farms; service activities incidental to fishing	0.094	0.231	424	0.406	0.594	0.394	57.43
67—Activities auxiliary to financial intermediation	0.305	0.225	411	0.448	0.552	0.090	31.54
16—Manufacture of tobacco products	0.479	0.166	304	0.610	0.390	0.068	12.92
35—Manufacture of other transport equipment	0.434	0.152	278	0.660	0.340	0.075	26.96
71—Renting of machinery and equipment without operator and of personal and household goods	0.087	0.141	259	0.633	0.367	0.293	48.84
18—Manufacture of wearing apparel; dressing and dyeing of fur	0.045	0.139	254	0.446	0.554	0.518	60.89
65—Financial intermediation, except insurance and pension funding	0.202	0.133	244	0.587	0.413	0.067	31.59
29—Manufacture of machinery and equipment n.e.c.	0.076	0.127	233	0.429	0.571	0.180	38.03
27—Manufacture of basic metals	0.084	0.115	211	0.552	0.448	0.275	49.99
31—Manufacture of electrical machinery and apparatus n.e.c.	0.087	0.081	148	0.482	0.518	0.144	39.18
62—Air transport	0.132	0.052	96	0.506	0.494	0.055	19.85
30—Manufacture of office, accounting and computing machinery	0.031	0.032	59	0.634	0.366	0.106	31.38
32—Manufacture of radio, television and communication equipment and apparatus	0.025	0.027	50	0.594	0.406	0.071	43.46
61—Water transport	0.020	0.011	21	0.524	0.476	0.405	42.81
66—Insurance and pension funding, except compulsory social security	0.003	0.008	15	0.309	0.691	0.086	17.87
95—Private households with employed persons	0.002	0.007	12	0.220	0.780	0.394	47.67
91—Activities of membership organizations n.e.c.	0.010	0.006	11	0.503	0.497	0.151	29.53
99—Extra-territorial organizations and bodies	0.004	0.004	7	0.387	0.613	0.033	42.86
33—Manufacture of medical, precision and optical instruments, watches and clocks	0.001	0.002	4	0.604	0.396	0.542	58.33
12—Mining of uranium and thorium ores	0.001	0.002	3	0.576	0.424	0.000	0.00
37—Recycling	0.000	0.001	2	0.510	0.490	1.000	100.00

Note: Authors' calculations using the CdB data. Labor shares is calculated as the share of industry aggregate wages in aggregate value added. Capital share is calculated as 1 – labor share. Calculations are done annually and the average over 2003–2012 is presented in the table. The share of unskilled labor is calculated as aggregate wages on unskilled (laborers, workers and apprentices) over aggregate value added.

6: EDUCATION, SKILLS, AND TRAINING FOR A COMPETITIVE WORKFORCE IN CÔTE D'IVOIRE

Kebede Feda and Laura Ralston

Côte d'Ivoire faces substantial challenges for its workforce and human capital to be competitive globally. The years of crisis affected the quality of education services and their ability to instill in children the skills they need to be productive in the labor force. As Chapter 5 highlighted, although wages are not necessarily very high in the formal sector, low worker productivity likely contributes to push up relative labor costs and may constrain expansion of formal firms. At the same time, and as mentioned in Chapters 3 and 4, education and skills also matter for productivity in agricultural and nonagricultural self-employment, in particular to ensure that individuals are able to seize opportunities such as improved technologies or business practices. In this context, Côte d'Ivoire faces an urgent challenge to ensure today's children acquire the skills that tomorrow's labor force will need, as well as to find opportunities for the current workforce to effectively upgrade their skills.

6.1 SCHOOLING, EDUCATIONAL ATTAINMENT, AND SKILLS

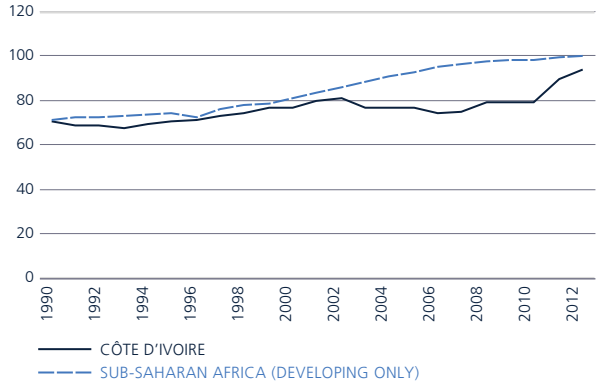
6.1.1 Basic education and skills

Participation in primary education has been negatively affected by the crisis between 2002 and 2011 and Côte d'Ivoire has not yet fully caught up with other countries in the region.[106] Before 2002 Côte d'Ivoire was almost on par with average primary education enrollment rates for developing countries in Sub-Saharan African. However, the gross enrollment rate (GER), which measures total enrollment relative to the primary age population, has deteriorated from 2002. In 2002 gross enrollment was 77 percent and it decreased to as low as 70 percent in 2007. While there was some catch-up in enrollment during the years of peace between 2008 and 2010, where the rate stepped back up to around 73 percent, the most significant improvement came after 2011 when the rate increased to 90 percent by 2014. In 2015, the government declared schooling compulsory for children up to 16. This should help close the gap in enrollment rates with respect to Sub-Saharan Africa, where the GER in primary education was 99.6 percent in 2013. In fact, some patterns in inequality in access to education are more pronounced in Côte d'Ivoire than other Sub-Saharan African developing countries, and addressing access and enrollment in basic education remains an important policy consideration to ensure that all children are effectively enrolled and attending school.

Enrollment in secondary and tertiary education remains relatively low but is similar to other countries in Sub-Saharan African. While a complete time series of data is not available in Côte d'Ivoire, for the years in which data is available, enrollment in secondary and tertiary education appears similar to the mean rate for developing countries in Sub-Saharan Africa (Figure 6.1). For example, gross enrollment in secondary education increased from 24.3 percent to 39.1 percent between 1999 and 2013 in Côte d'Ivoire, while the mean rate

[106] This analysis is based on the data reported on gross primary enrollment rates in the World Development Indicators (WDI) accessed in July 2016. The WDI cites the source as the United Nations Educational, Scientific, and Cultural Organization (UNESCO) Institute for Statistics and the definition of gross enrollment as the ratio of total enrollment, regardless of age, to the population of the age group that officially corresponds to the level of education shown.

Figure 6.1
Gross enrollment in primary school (%)



Source: World Development Indicators.

increased from 25.6 percent to 41.2 percent. On tertiary education, Côte d'Ivoire does better than the mean and enrollment increased from 6.6 percent to 9.1 percent over the same years, compared to 4.0 percent to 8.1 percent for Sub-Saharan African developing countries. While on par with other countries in Sub-Saharan Africa, enrollment in secondary and tertiary education remains relatively low by international standards.

Female enrollment in primary education is particularly low in Côte d'Ivoire. Enrollment in primary education lags other Sub-Saharan African developing countries, and the problem appears most acute among females (Figures 6.2a and 6.2b). Before the conflict that began in 2002 enrollment of females in primary school in Côte d'Ivoire stood about 15 percentage points below the regional average at 65 percent compared to 80 percent, while enrollment of males was closer at 88 percent compared to 93 percent. Both the enrollment of boys and girls was detrimentally affected by the conflict and crises. However, by 2014, the most recent year for which data is available, male enrollment had recovered to 96 percent compared to a regional average of 103 percent, while female enrollment stood at 84 percent, still more than 10 percentage points below the regional average of 96 percent. As such, inequality in access to education is particularly marked among women. This analysis can be complemented with other Côte d'Ivoire specific sources of information on GERs, such as the 2012 Demographic Health Survey and the 2013 Employment Survey (ENSETE 2013). While these show higher aggregate GERs of 95.7 percent and 100.8 percent, respectively, they also uncover gender gaps with the male/female rates being 101.9 percent / 89.3 percent and 107.3 percent / 94.3 percent, respectively.

Cost is one of the main reasons for not enrolling in education. According to recent survey data, many of the youth in Côte d'Ivoire are constrained in their ability to attend school due to the cost of attending

Figure 6.2a
Female gross enrollment in primary school (%)

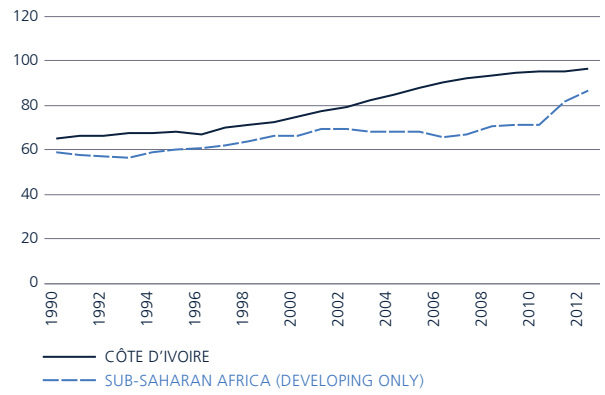
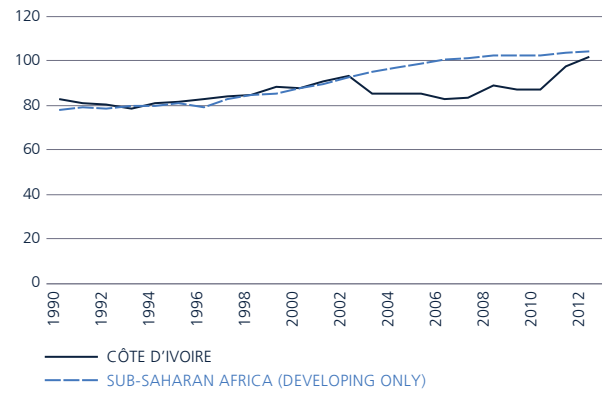
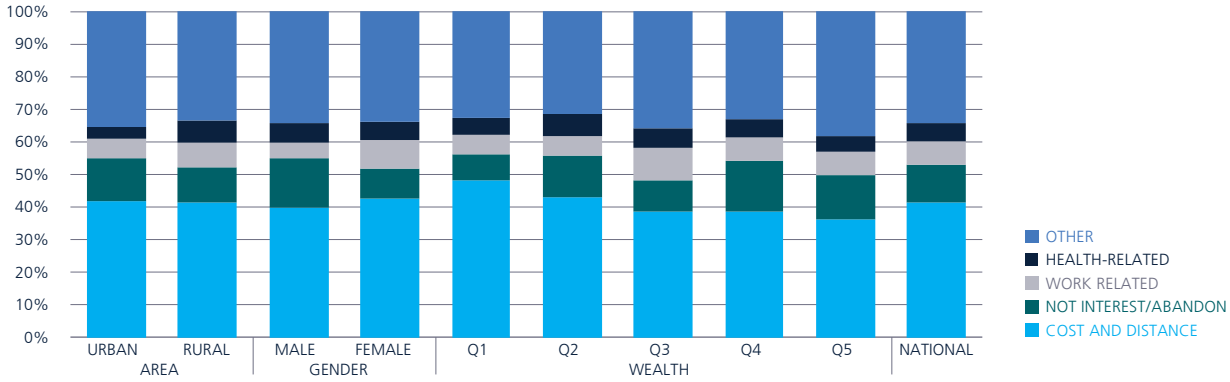


Figure 6.2b
Male gross enrollment in primary school (%)



Source: World Development Indicators.

Figure 6.3a
Reasons for not being in school



Source: Authors' calculation, from 2013 National Employment Survey (ENSETE 2013).

(Figure 6.3a).[107] This reason is more prevalent among females and youth living in the lowest-income groups. A lack of interest in attending school is actually more prevalent among males, urban youth, or youth from higher-income groups. This indicates that the majority of the groups with the lowest educational attainment (females, the poor, and those in rural areas) are constrained in their access to education. These groups also state that having to work is another common reason why they cannot attend school. Lower educational attainment in the current population of youth is more likely due to barriers to access.

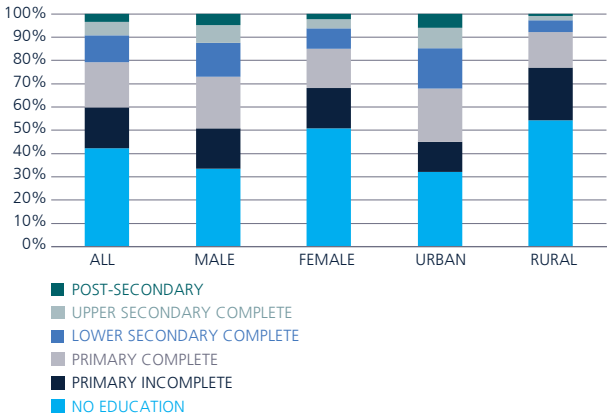
In light of the historical enrollment patterns, educational attainment remains modest among the youth of working age in Côte d'Ivoire. According to the national employment survey collected in February 2014, over 50 percent of youth between the ages of 15 and 34 lack a complete primary education. Approximately 37.5 percent have no education and 17.5 percent have not completed primary school. This reflects the low primary enrollment rates over the last 30 years—for example, in the early 1990s gross enrollment was below 70 percent. So while enrollment rates have improved, there is still a deficit of human capital in the current working-age population, even among those in the younger cohorts. Recent improvements in enrollment will benefit the next generations of youths entering the working-age population, and the overall education profile of the working-age population will take time to change substantially.

Only a minority of the youth of working age have secondary or tertiary education. Approximately 13 percent have completed lower-secondary education, 6 percent upper-secondary education, and 5 percent post-secondary education. This implies that only around 24 percent of working-age youth have completed more than primary education. As Côte d'Ivoire eyes to become an emerging economy over the next decade, the current stock of human capital may hinder its global competitiveness.

Educational attainment—like enrollment—is unequal in Côte d'Ivoire. Females, the poor, and those living in rural areas have less education (Figures 6.3b and 6.3c). There are stark differences in the educational attainment of females and males in Côte d'Ivoire as about 47 percent of females ages 15–34 have no education, while over 71 percent of males have some level of education. There are also proportionately more males in higher levels of education: 24 percent relative to 18 percent with complete primary schooling, 23.5 percent relative to 14 percent with any secondary schooling, and 6.5 percent relative to 3.5 percent with post-secondary schooling. Larger differences exist between the level of educational attainment of youth living in urban relative to rural areas: 23.5 percent relative to 19 percent with complete primary schooling, 29 percent relative to 9 percent with secondary schooling, and 9 percent relative to 1.5 percent with post-secondary schooling. As can be expected, educational attainment is significantly correlated with income as only 26 percent of the youth in the lowest-income quintile have completed primary education compared to 69 percent in the highest-income quintile. It is among the wealthiest

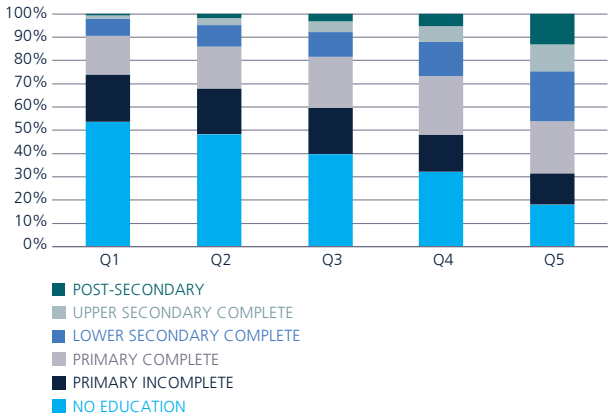
[107] The survey lumps cost and distance, but according to the latest education country status report the distance accounts only for 2.1 percent among those reasons in the 6–11 years population and for 1.4 percent in the 12–15 years population.

Figure 6.3b
Educational attainment, ages 15–34



Source: Authors' calculation, from 2013 national employment survey (ENSETE 2013).

Figure 6.3c
Educational attainment, ages 15–34, by wealth quintiles



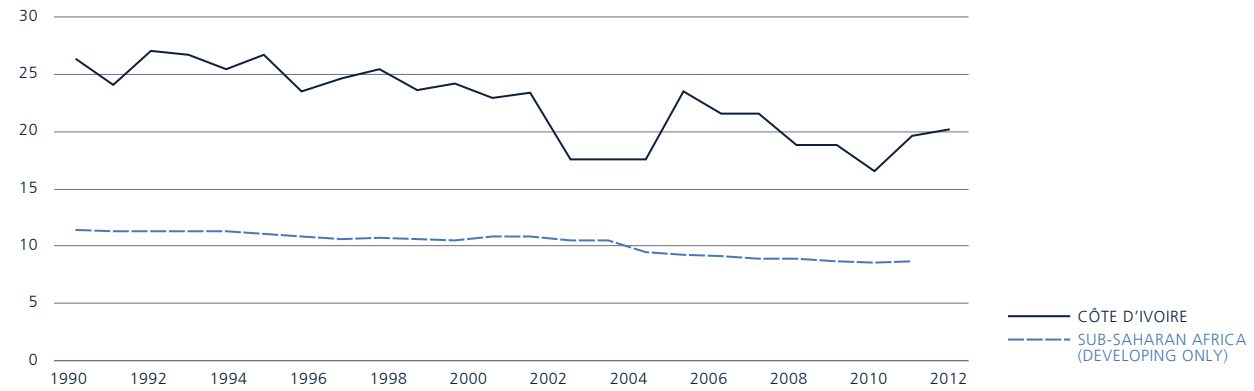
Source: Authors' calculation, from 2013 national employment survey (ENSETE 2013).

income groups that secondary and tertiary educational attainment is concentrated. This variation in educational attainment is likely due to a combination of factors, including inequality in the provision of education across different areas and socioeconomic groups, demand-side aspects, and barriers to access across different groups.

Quality of primary education in Côte d'Ivoire lags other Sub-Saharan African developing countries, limiting the skills that children can acquire in school. Both the rate of children repeating grades in primary school and the literacy attainment in the current working-age population highlights significant issues in the quality of education in Côte d'Ivoire (Figures 6.4 and 6.5). The primary school repeater rate is still in the order of 10–15 percentage points higher than other Sub-Saharan African countries, even though it has been declining in recent years.

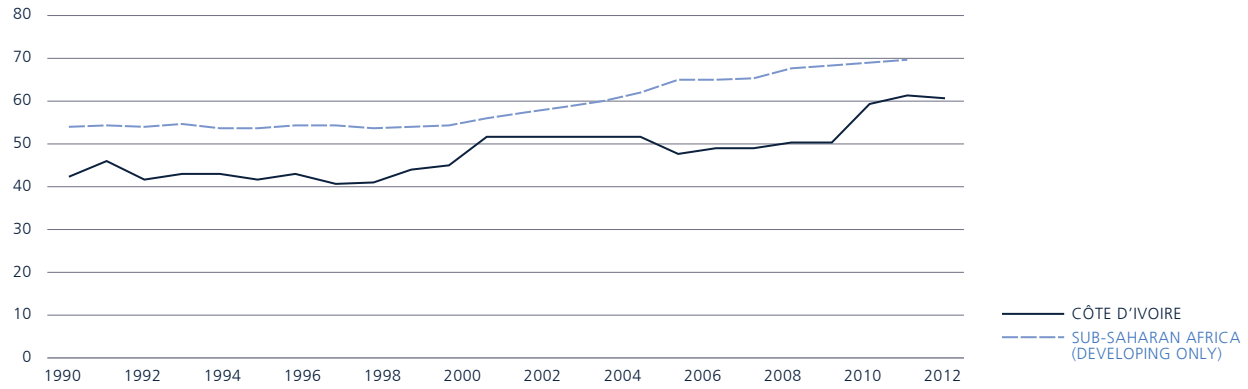
Issues with the quality of education have implication for the skills children are able to acquire through the education system. While educational attainment has increased in recent years, many children are not learning much in school. Data from standardized test scores of young children who are currently enrolled in school show that many are not acquiring sufficient skills over time. Earlier data on test scores from the 2009 PASEC *Programme d'analyse des systèmes éducatifs de la confemen*) evaluations reveal a low level of French and Math skills, and limited improvements in these skills during the school year (République de Côte d'Ivoire, 2012). For instance, up to 40 percent students display severe shortage in French and Mathematics skills when entering the CE1 level (*Cours élémentaire première année*, second grade of primary school). A full school year later, the

Figure 6.4
Repeaters, primary, total (% of total enrollment)



Source: World Development Indicators.

Figure 6.5
Primary completion rate, total (% of relevant age group)



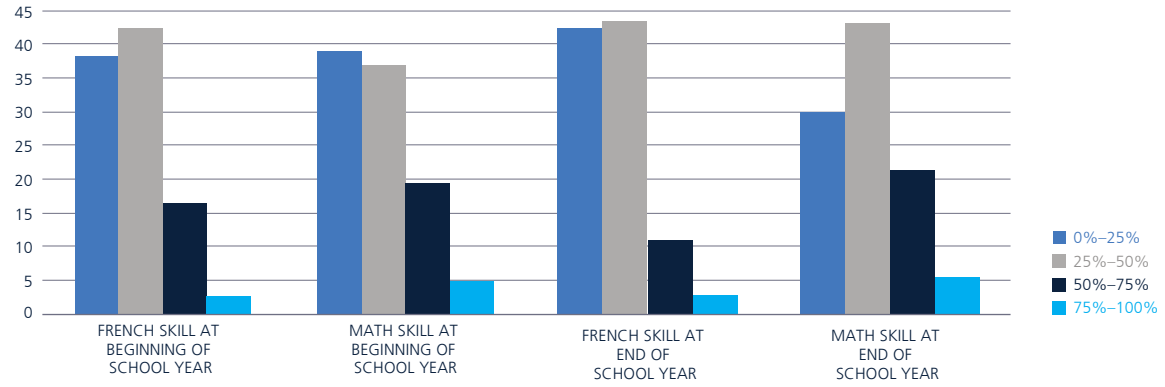
Source: World Development Indicators.

share of students with severe shortage in French skills does not decrease, and the share of students with severe shortage in Math skills only decrease slightly to 30 percent. At the end of the school year, only 14 percent of students score are assessed to have sufficient skills in French, and 27 percent in Math (Figure 6.6a). More recent cross-country comparison data from PASEC 2014 evaluations show that students at CM2 level (*Cours moyen deuxième année*, fifth grade of primary school, PASEC, 2016) are behind relative to other Francophone countries in the region (Figure 6.6b). Math scores are particularly low and less than 25 percent of students meet minimum competence requirements. French scores are more comparable to the average level obtained in other countries but still less than 45 percent of students meet the minimum requirements.

Due to enrollment gaps and limited acquisition of skills among children attending schools, literacy rates are relatively low.[108] It is difficult to find internationally comparable time-series data on literacy rates. WDI data suggest that literacy rates have declined in Côte d'Ivoire for both adults above 15 and youth between 15 and 24 over the period 2000–2012 (Figures 6.7a and 6.7b). Adults in 2000 were likely to have had a higher skill level when entering the workforce than was the case for adults entering the workforce in 2012.

Côte d'Ivoire lags other emerging African economies, such as Nigeria, with respect to educational attainment (Figures 6.8a and 6.8b). For example, in 2010 approximately 46 percent of 20–64-year-olds had no education in Côte d'Ivoire, while this was the case for only about 33 percent of Nigerian 20–64-year-olds. Côte d'Ivoire also

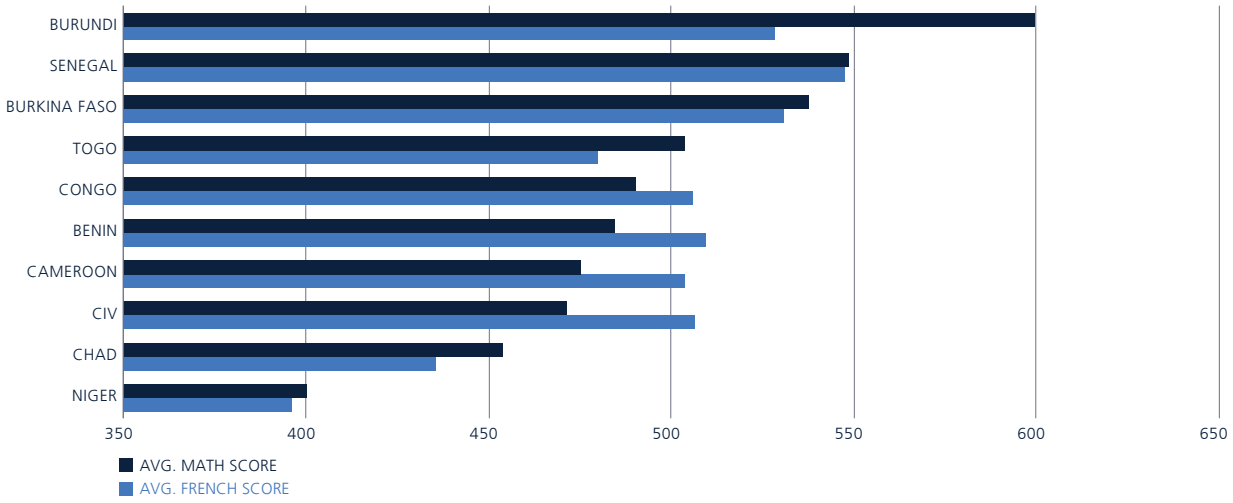
Figure 6.6a
Level of skills compared to expected norm in young children



Source: Results from 2009 PASEC evaluations for children at entry and exit of CE1 primary school level (République de Côte d'Ivoire, 2012).

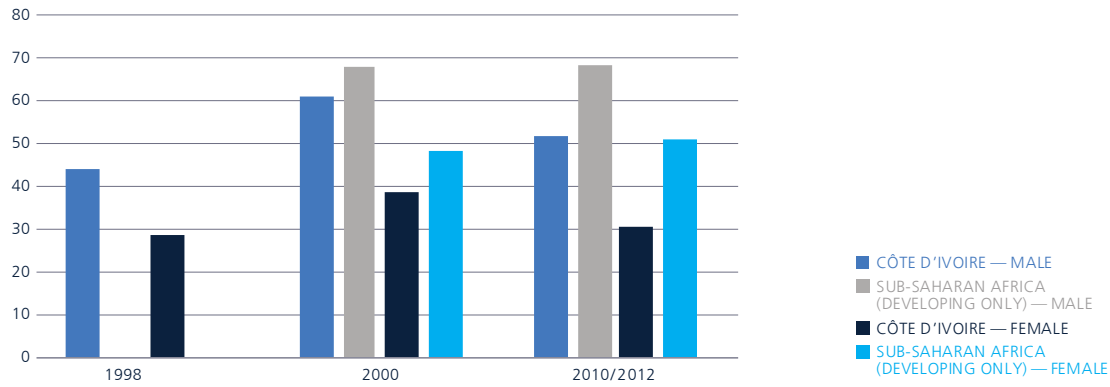
[108] This part of the analysis is based on WDI data which cites the UNESCO Institute for Statistics as the data source.

Figure 6.6b
Average scores in PASEC 2014



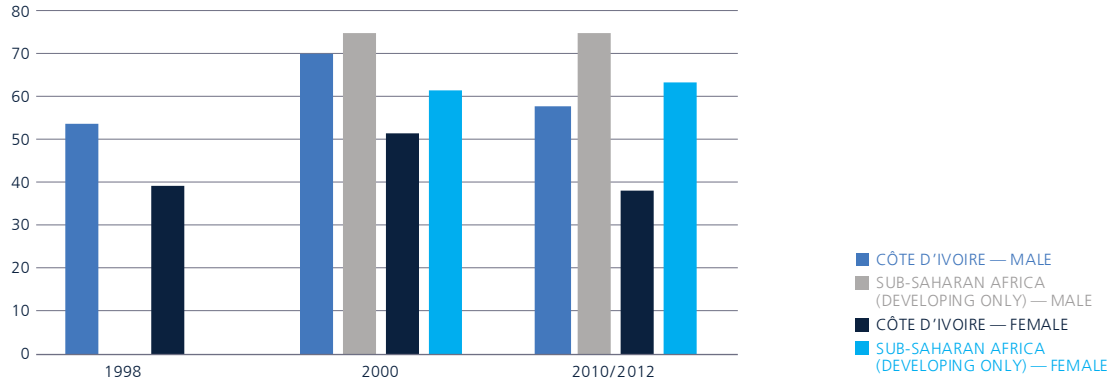
Source: Results from 2014 PASEC evaluations (PASEC, 2006).

Figure 6.7a
Literacy rate, adult total (% of people ages 15+)



Source: World Development Indicators.

Figure 6.7b
Literacy rate, youth total (% of people ages 15–24)



Source: World Development Indicators.

has a much larger percentage of 20–64-year-olds with incomplete primary education compared to Nigeria (20 percent compared to 5 percent). While Nigeria is growing the proportion of the population with upper-secondary and post-secondary education, the baseline and forecast estimates for Côte d'Ivoire are also more modest.

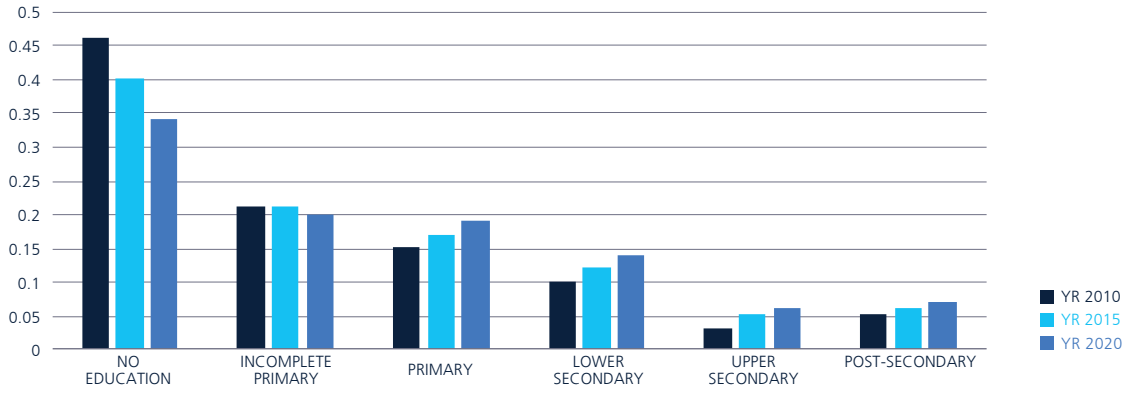
Compared to non-African emerging economies, such as Indonesia, Côte d'Ivoire has substantial progress to make to catch up with regard to educational attainment, particularly on primary education (Figure 6.8c). Indonesia far surpasses Côte d'Ivoire on primary and secondary educational attainment among 20–64-year-olds. This demonstrates the ambitious transition that Côte d'Ivoire must navigate with regard to skilling its workforce to become competitive globally with other emerging economies.

Low female educational attainment constrains labor productivity in Côte d'Ivoire (Figure 6.9). Compared to Nigeria and Indonesia, Côte d'Ivoire has a higher proportion of female working-age population with no or incomplete primary education. While Nigeria also lags Indonesia in primary and lower-secondary education for females, it does relatively better in upper-secondary and post-secondary education. Côte d'Ivoire, however, lags Indonesia across all categories of education for females.

6.1.2 Higher education

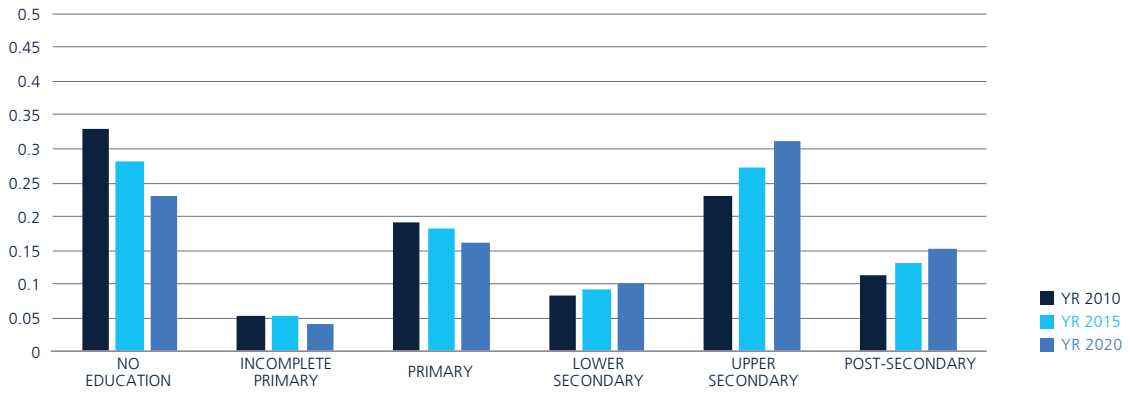
The 2011 crisis in Côte d'Ivoire marked a watershed moment for higher education in the country, with significant disruption to education provision in public universities. The government shut down three of its main public universities for 18 months in 2011–2012 in an effort to stabilize peacekeeping efforts in the country

Figure 6.8a
Côte d'Ivoire — educational attainment — 20–64-year-old



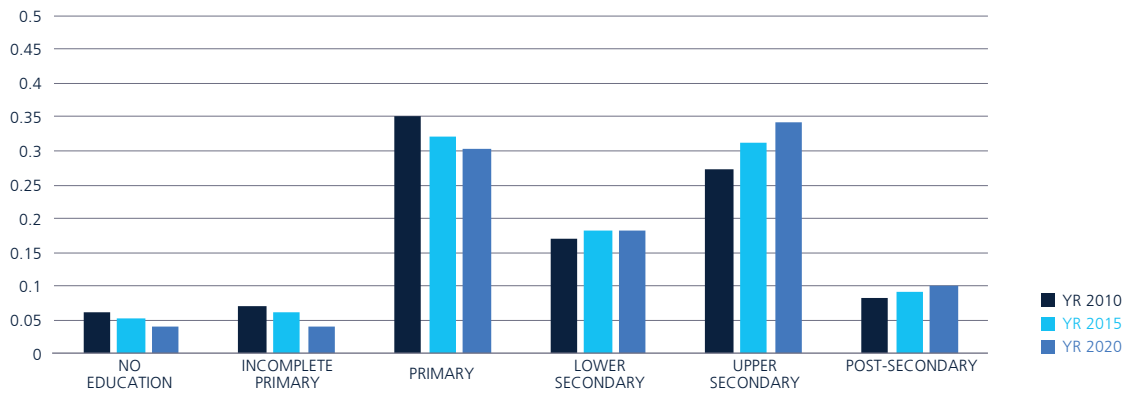
Source: World Development Indicators.

Figure 6.8b
Nigeria — educational attainment — 20–64-year-old



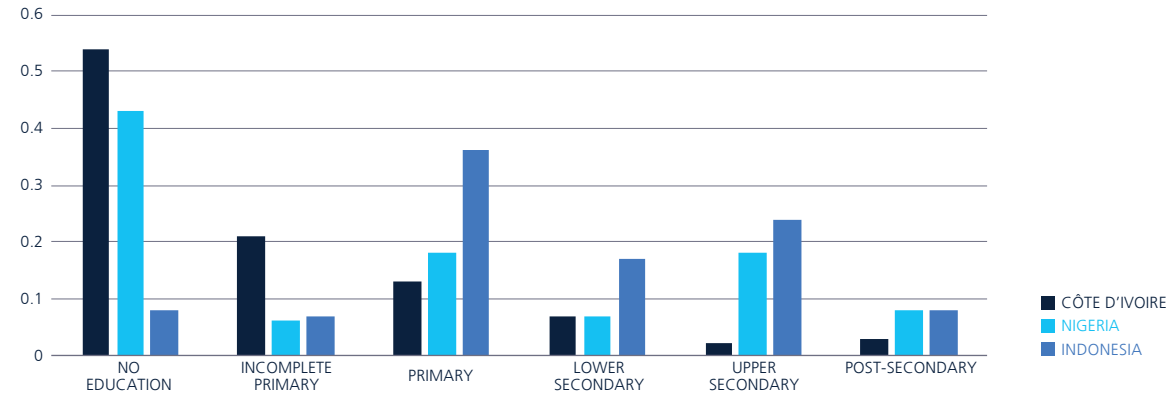
Source: World Development Indicators.

Figure 6.8c
Indonesia — educational attainment — 20–64-year-old



Source: World Development Indicators.

Figure 6.9
Côte d'Ivoire — female educational attainment — (20–64-year-old, 2010)



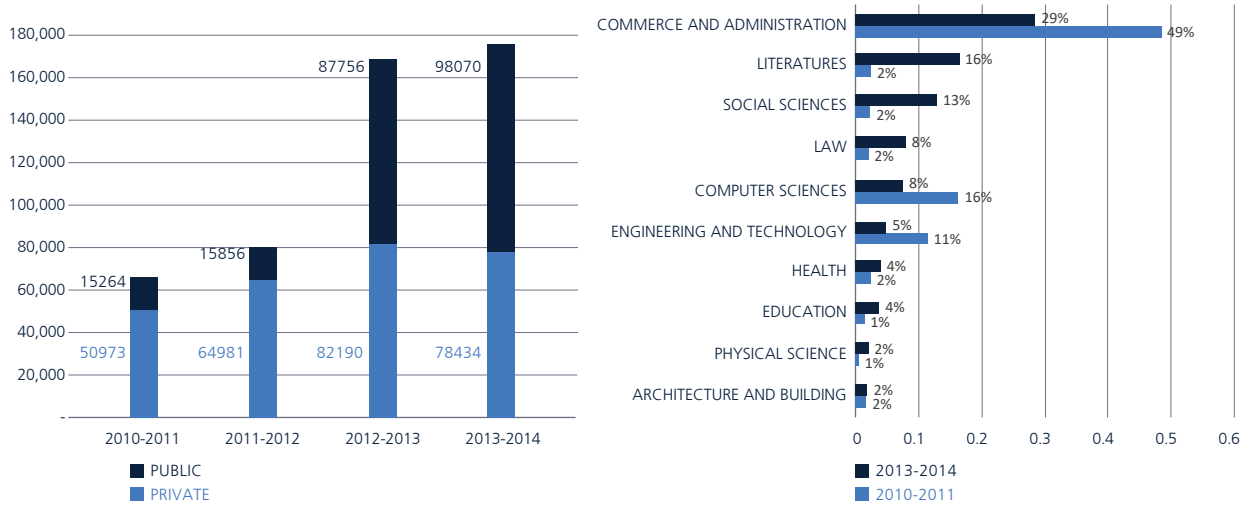
Source: World Development Indicators.

and engage in rehabilitation of physical structures and equipment that had suffered extensive damages during the conflict period. At the same time, the government began the implementation of the new License-Master-Doctorate system (LMD) in 2012 which was originally adopted through a legislation in 2009 but not operationalized until 2012. The move toward the LMD system is expected to improve efficiency in higher education by streamlining educational channels, providing international accreditation, and therefore increasing competitiveness of the workforce and increasing potential labor mobility across regional and international frontiers.

Since 2012, with the end of the crisis and with increased socio-political stability, enrollment in higher education returned to its pre-crisis levels with a total of 176,000 enrolled, equivalent to 866 enrolled for every 100,000 people in the country. Figure 6.10 shows the trend in enrollment by type of institution and by field of study. It indicates that enrollment in public institutions rebounded strongly in 2012 and 2013, reaching over 98,000 students in 2013–2014. It also indicates that private institutions play a key role in accommodating students in higher education. It was especially important during the conflict period where private institutions accounted for 80 percent of total enrollment, ensuring continuity in studies for students who could afford it. In 2013–2014, the share of enrollment in private schools decreased to 44 percent.

Between 2010–2011 and 2013–2014, there have been important shifts in students' fields of study in higher education. The general trend in field of studies indicates that while Commerce and Administration was still the most popular field in 2013–2014, the share of enrollment in this field decreased between 2010–2011

Figure 6.10
Trends of higher education and fields of studies



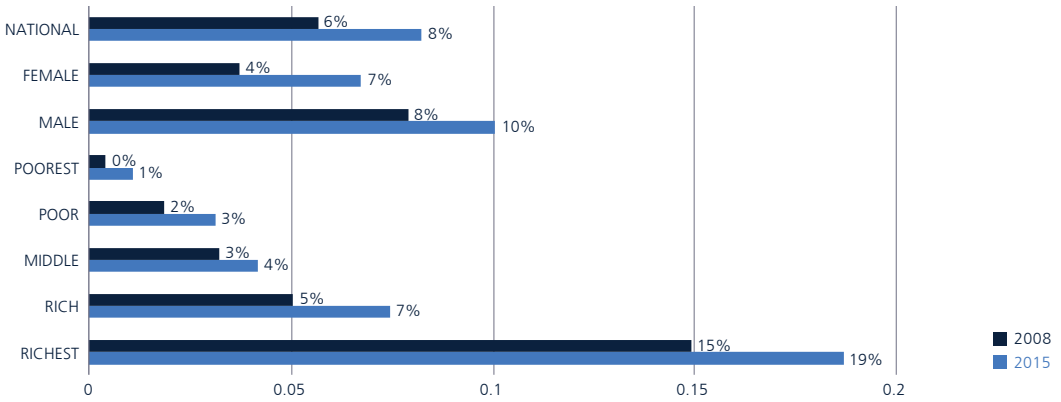
Source: Author's estimation using Education Management Education System (EMIS), Côte d'Ivoire.

and 2013–2014. In parallel, enrollment in Science fields has also been on the decline while other areas such as Literature and Social Sciences seem to have captured a greater enrollment share.

With regard to access to higher education, there has been little improvement between 2008 and 2015, and persistent disparities in access by gender and by wealth quintile. Figure 6.11 shows the higher education GER by gender and by wealth quintiles. At the national level, access to higher education remains relatively unchanged, increasing from 6 percent to 8 percent between 2008 and 2015. The figure also indicates that the gender gap decreased slightly over time with female GER improving from 4 percent to 7 percent compared to male GER which increased from 8 percent to 10 percent over the same time period. The access by wealth quintile indicates that higher education is most likely accessed by affluent families and the trend indicates a worsening of the situation between 2008 and 2015. In 2015, for example, 19 percent of the richest households enrolled in higher education compared to 1 percent in the lowest quintile.

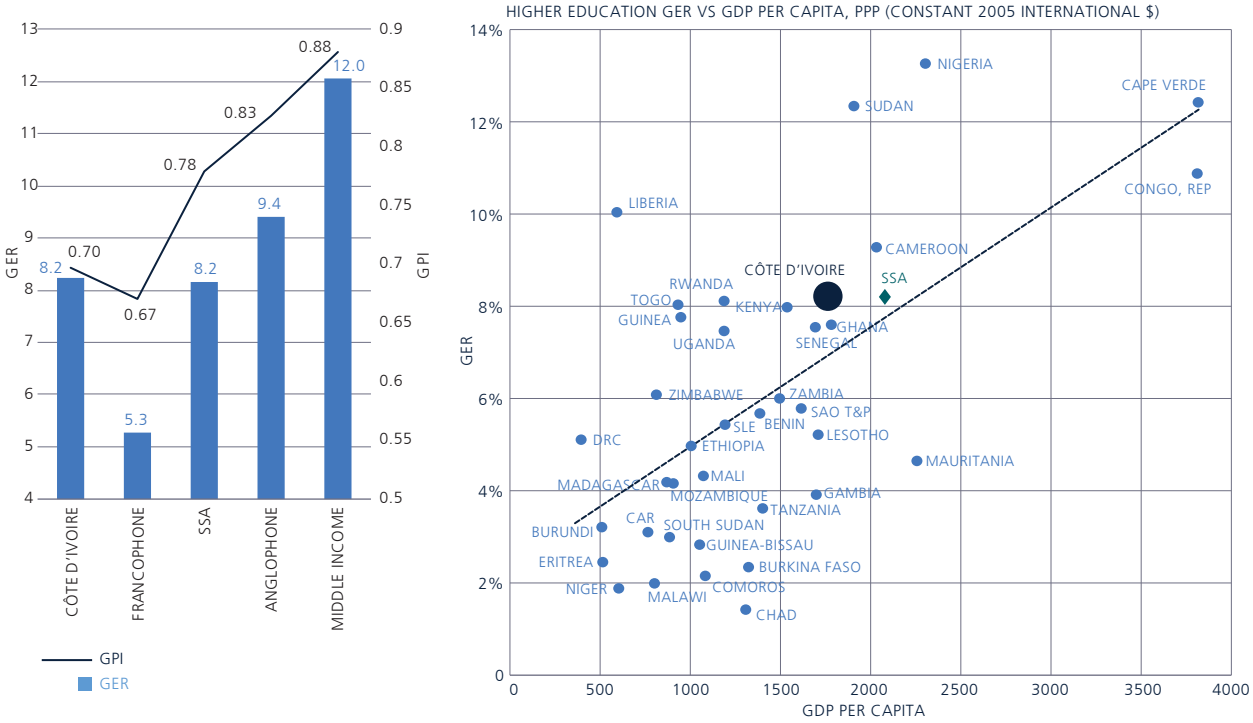
An international comparison of access to higher education in Côte d'Ivoire indicates that while the country's performance is good relative to other Francophone countries in Sub-Saharan Africa, there is still room for improvement, especially in comparison with other middle-income countries. Figure 6.12 shows the higher education GER and gender parity index (GPI) for Côte d'Ivoire and other comparison groups as well as the GER relative to the country's GDP per capita.

Figure 6.11
Higher education Gross Enrollment Rate



Source: Author's estimation using ENV 2008 and 2015.

Figure 6.12
Higher education Gross Enrollment Rate



Source: Author's estimation using ENV 2008 and 2015, and latest household surveys and UNESCO Institute for Statistics (UIS) for other countries.

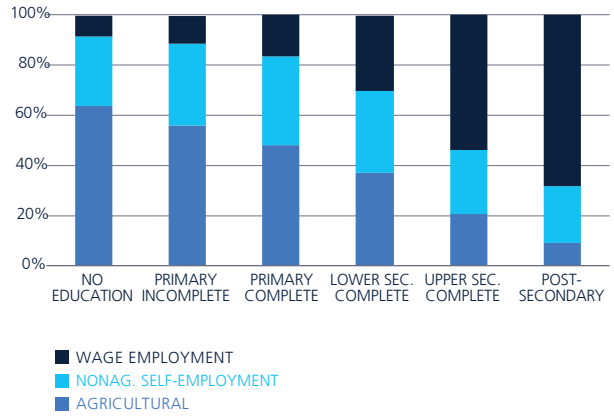
With a GER of 8 percent and a GPI of 0.7, Côte d'Ivoire tends to perform much better than other Francophone countries in Sub-Saharan Africa which have a corresponding GER of 5.3 and a GPI of 0.67. Côte d'Ivoire's performance is closer to the Sub-Saharan Africa average of 8 percent GER, although it underperforms in comparison with the 0.78 GPI Sub-Saharan Africa average. With regard to GDP per capita, Côte d'Ivoire is among the best-performing GERs in the Sub-Saharan Africa region. On the other hand, when comparing its performance with middle-income countries which have a GER of 12 percent and a GPI of 0.88, Côte d'Ivoire still lags, indicating that the country still has significant room for improvement in access at this level of education.

6.2 EDUCATIONAL OUTCOMES AND EMPLOYMENT

Education influences access to employment sectors. In Côte d'Ivoire, most low-skilled individuals are concentrated in agriculture, while individuals with secondary education or higher are more likely to be employed in the wage sector (Figure 6.13). As indicated above, the share of individuals with less than secondary education is high, so that the majority of the population is in fact concentrated in the bottom of the education distribution, and as such mostly work in agriculture and nonagricultural self-employment. Nonagricultural self-employment involves individuals from all levels of education.

Sector of employment sector varies by gender as well as by education. Employment in agriculture is more prevalent among males, while nonagricultural self-employment is more prevalent among females (Figures 6.14a and 6.14b). With no education there is high proportion of males and females in agriculture (69 percent and 60 percent, respectively). However, as education levels increase, females are more likely to be engaged in nonagricultural self-employment than men, who instead stay in agriculture or access wage employment. There are more males in wage employment at each education level, indicating that this sector is harder for females to enter. This could be due to personal preferences or constraints, such as difficulties in balancing childcare with fixed hours wage work or a desire for the flexibility self-employment enables, or due to the unwillingness of employers to hire females.

Figure 6.13
Employment sector by education attainment



Source: Authors' calculation, from 2013 national employment survey (ENSETE 2013).

Figure 6.14a
Employment sector by education attainment, males

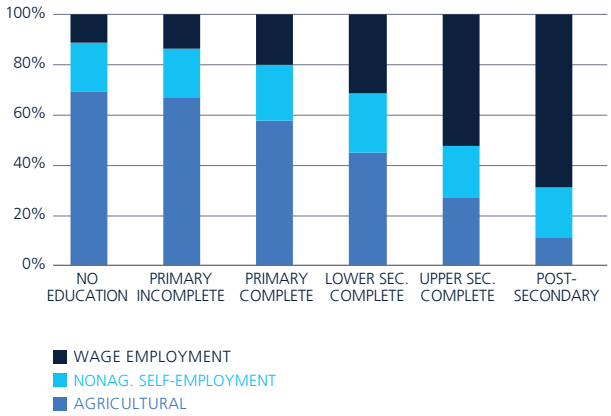
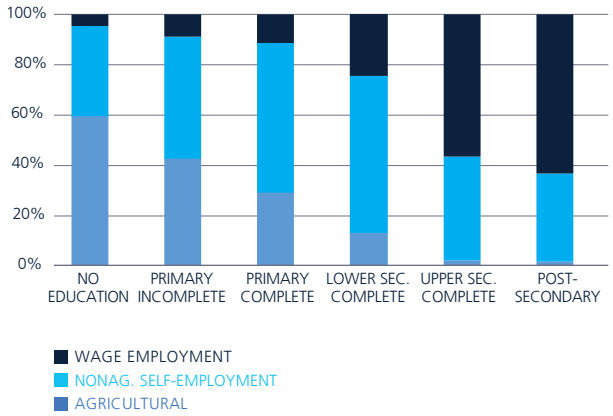
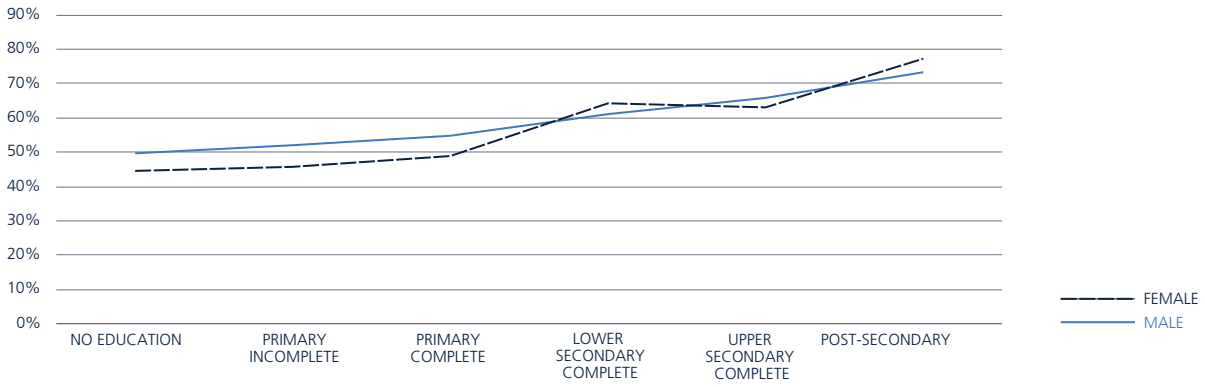


Figure 6.14b
Employment sector by education attainment, females



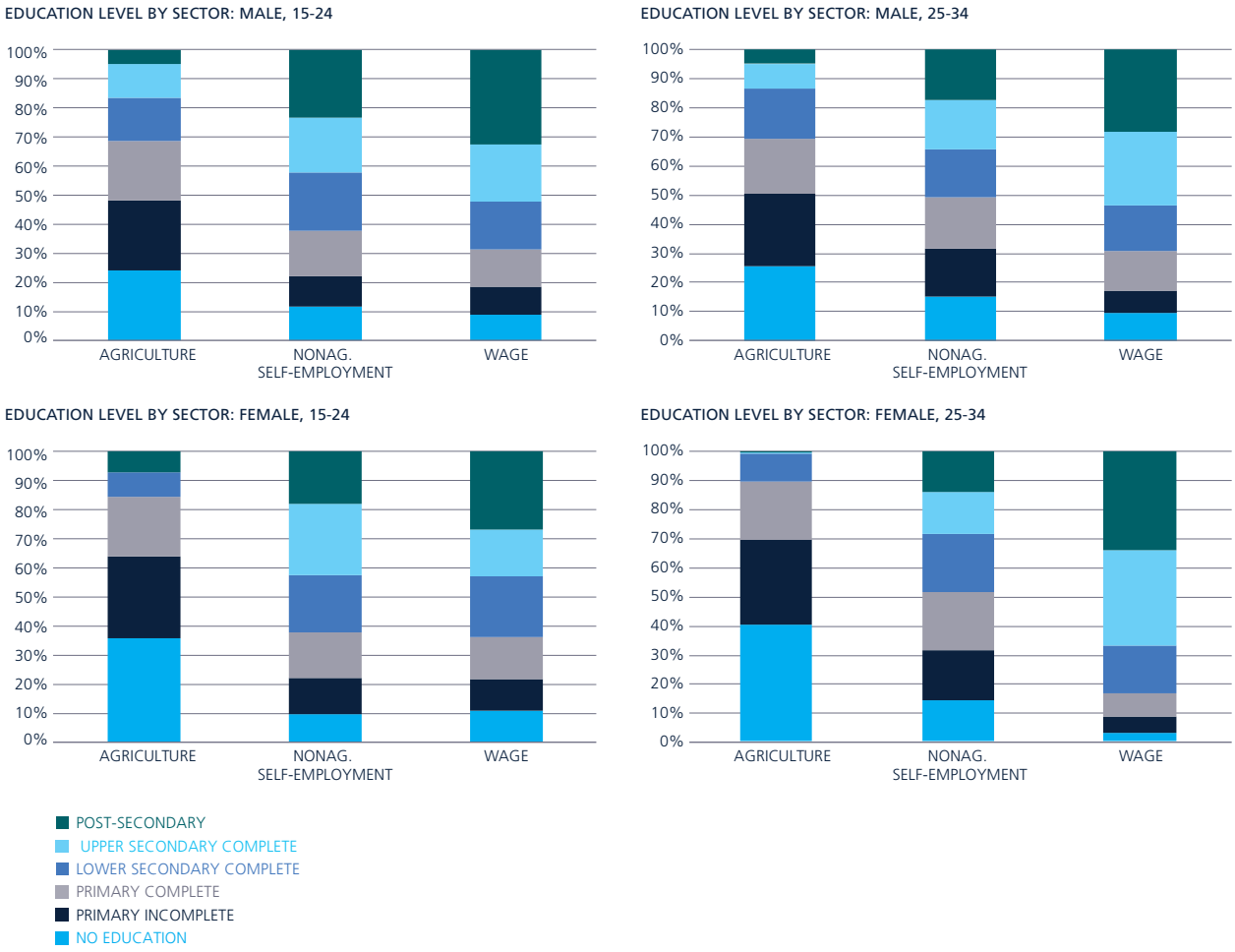
Source: Authors' calculation, from 2013 national employment survey (ENSETE 2013).

Figure 6.15
Access to contracts in wage work



Source: Authors' calculation, from 2013 national employment survey (ENSETE 2013).

Figure 6.16
Education level by sector, by gender, and age group



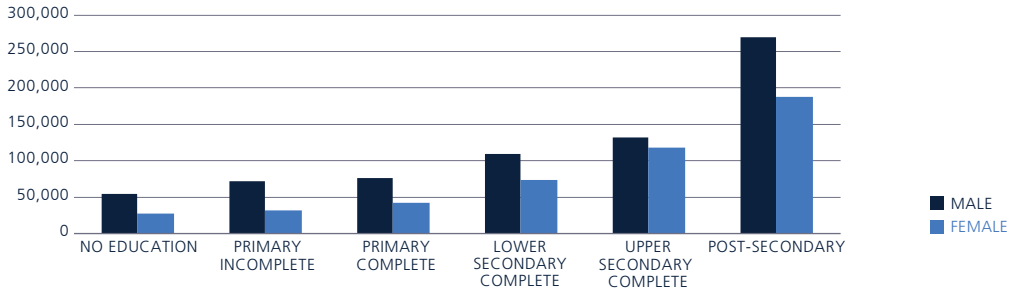
Source: Authors' calculation, from 2013 national employment survey (ENSETE 2013).

Among those that are wage employed, access to formal wage jobs with a contract increases with education for both males and females (Figure 6.15). With no education or incomplete primary education, only about 50 percent of males obtain contracts in the wage sector, with post-secondary this increases to over 70 percent. With no education or incomplete primary education, only about 45 percent of females obtain contracts in the wage sector, with post-secondary this increases to almost 85 percent.

The skill mix by employment sector varies by gender (Figure 6.16). For example, in agriculture females have very low levels of education, with over 80 percent 15–24-year-olds and 25–34-year-olds having no or only primary education. In contrast, among 15–24-year-old males and 25–34-year-old males, about 30 percent working in agriculture have lower-secondary education or higher. In the wage sector, the females that do find employment have higher levels of education relative to their male counterparts. While the evidence is only suggestive, females may need a high level of education to access jobs in the wage sector. Nonagricultural self-employment shows a similar level of educational skill mix among males and females. As such, this sector may be a catch-all category that occupies females that are too educated to find attractive employment opportunities through agriculture, yet do not move into the wage sector.

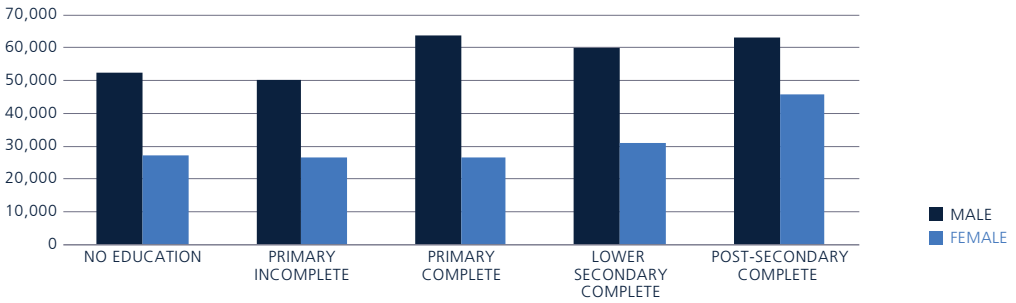
There are positive education earnings premia in wage work for both males and females, although there is heterogeneity in earning profiles for each gender (Figure 6.17). For males there is a significant jump up in wages from upper-secondary to post-secondary (CFAF 132,000 per month to CFAF 270,000 per month). The rest of the wage profile increases with education but at lower rate. For females the earnings premia

Figure 6.17
Monthly income in wage work, by education level



Source: Authors' calculation, from 2013 national employment survey (ENSETE 2013).

Figure 6.18
Monthly income in nonagricultural self-employment, by education level



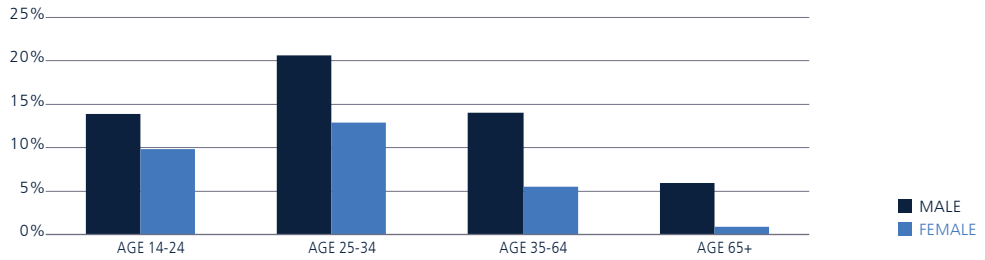
Source: Authors' calculation, from 2013 national employment survey (ENSETE 2013).

for primary education are low (from CFAF 27,000 per month with no education to CFAF 43,000 per month with complete primary), but are quite substantial at higher levels of education. Moreover, the relative increase in earnings premia for any secondary education are greater for females than males (CFAF 43,000–74,000 per month moving to lower-secondary, CFAF 43,000–118,000 CFA per month moving to upper-secondary compared to CFAF 76,000–109,000 per month and CFAF 76,000–132,000 per month for males, respectively). Despite high relative earnings premia, in absolute returns the premia are lower for females as shown by the persistence of a gender gap in earnings. Overall women receive far lower wages at all levels of the education distribution in wage work.

Despite a prevalence of females in nonagricultural self-employment, males obtain higher earnings. In addition, greater educational attainment only raises earnings for females with the highest educational achievement (Figure 6.18). For both males and females, the correlation between educational attainment and earnings in nonagricultural self-employment is weak. For example, for males with no education the mean earnings is CFAF 52,000 per month and those with upper-secondary education or more only increase their earnings to CFAF 63,000 per month. The benefits to additional years of education are stronger for females with the highest levels of education (upper-secondary or above) as their average earnings are about CFAF 46,000 per month, relative to CFAF 31,000 per month or below for other levels of education. Most striking, however, is the gender gap in earnings at all levels of education, averaging over CFAF 20,000 per month. This may reflect differences in access to other inputs that are not captured in this analysis.[109] Complementary analysis in Chapter 4 shows that it is mainly those individuals that lack basic numeracy skills or have minimal levels of education that are occupied in self-employment (see Box C.1 and Table C.2 in Annex C for more details and results).

[109] Chapter 4 provides more detailed discussions on this topic.

Figure 6.19
Participation in training in the previous 5 years



Source: Authors' calculation, from 2013 national employment survey (ENSETE 2013).

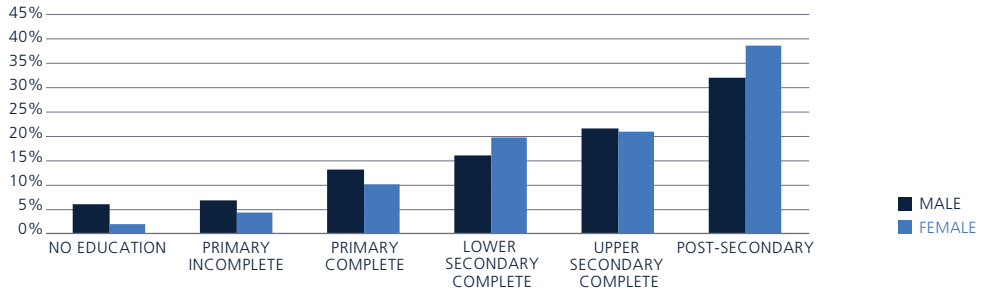
6.3. TRAINING AND EMPLOYMENT

Few individuals have opportunities to acquire skills outside the education system. In the last 5 years, 15 percent of males and 9 percent of females in the working-age population participated in some form of training outside the education system (Figure 6.19). Participation in training outside the education system[110] is most common among the 25–34 age group, where 21 percent of males and 13 percent of females have participated. For all age groups participation in post-school training is more common among males than females.

Individuals with low educational achievement have limited opportunities to access post-school training (Figure 6.20). Participation in training increases with education level, and at a greater rate for females compared to males. For example, at no education 6 percent of males report having taken training in last 5 years compared to 2 percent of females, but at post-secondary education 32 percent of males report having taken training in last 5 years compared to 39 percent of females. Common reasons for not participating in training programs include being in school (for 14–24-year-olds), having a job (for 25–34-year-olds) and the lack of means or lack of institutions (all age groups).

Training that are provided by private providers is the most common. Traditional apprenticeship is the most prevalent form of post-school training, particularly among males (Figure 6.21). About 59 percent of 14–24-year-old males and 44 percent of 25–34-year-old males who participate in post-school training report taking part in this type of training. Formal apprenticeship and then private technical and vocational training are the next most prevalent forms of training for both males and females. These types of training are more common among the older age group of 25–34-year-olds than the 14–24-year-olds. While traditional apprenticeships are the most common type of training for females, fewer participate compared to males. Formal apprenticeships and private training command a significant share of female training participants.

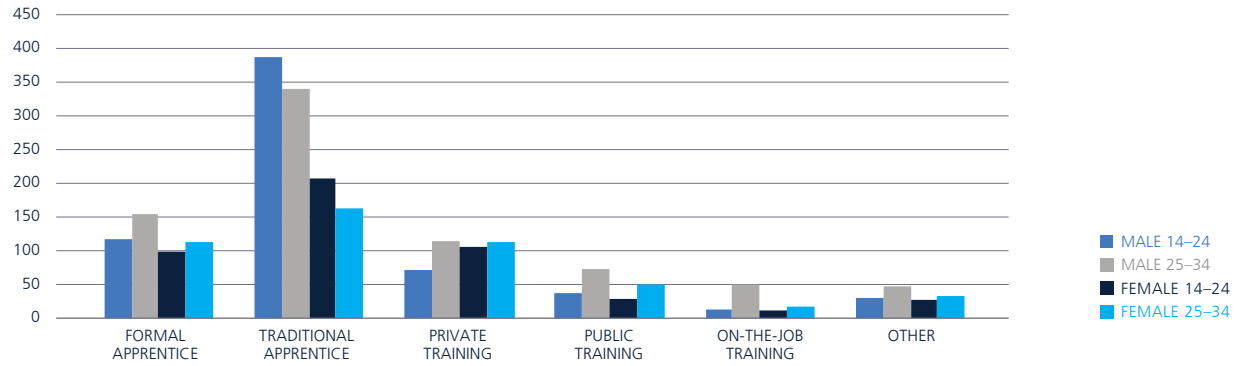
Figure 6.20
Participation in training, by gender and education levels



Source: Authors' calculation, from 2013 national employment survey (ENSETE 2013).

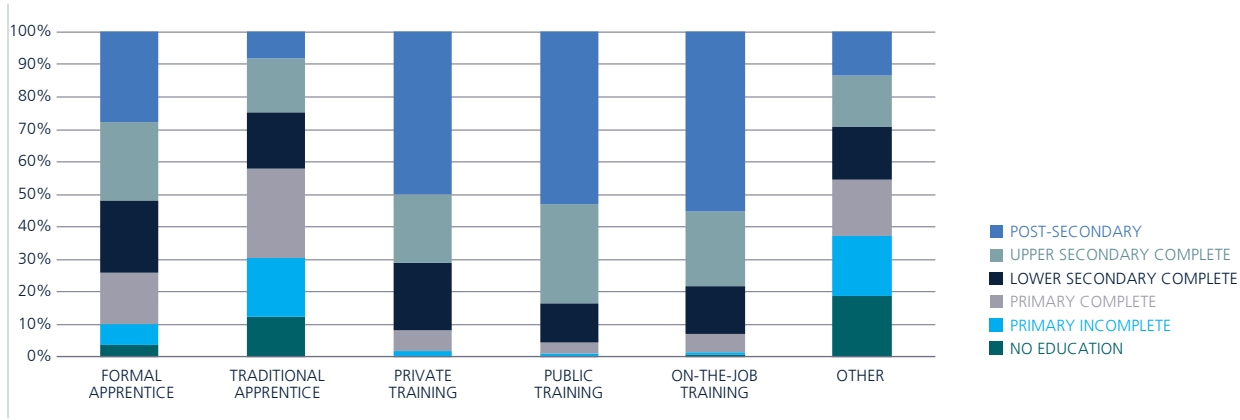
[110] In this section, we focus on training provided outside the formal education system, sometimes referred as 'post-school' training.

Figure 6.21
Most common types of training



Source: Authors' calculation, from 2013 national employment survey (ENSETE 2013).

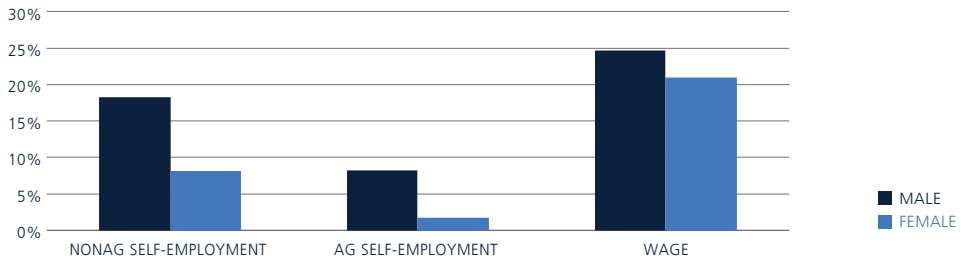
Figure 6.22
Education level by type of training



Source: Authors' calculation, from 2013 national employment survey (ENSETE 2013).

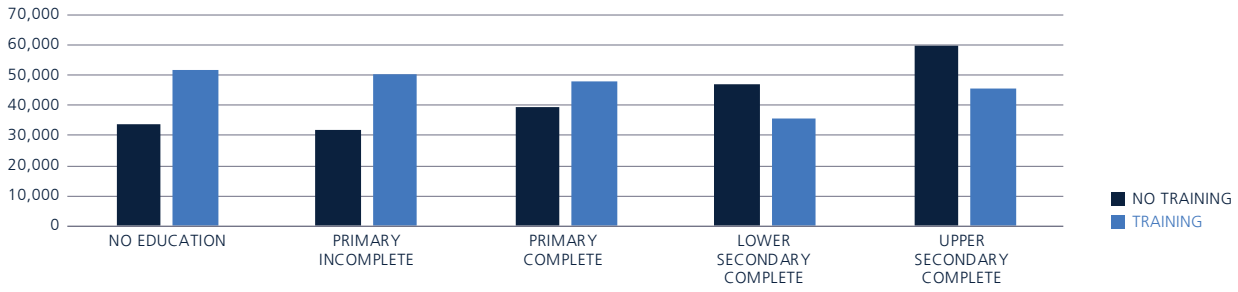
Traditional apprenticeships attract participants from all levels of education, while private, public, and on-the-job training attract more highly educated participants (Figure 6.22). About 58 percent of the participants in traditional apprenticeships have primary education or less. This proportion decreases to 25 percent in formal apprenticeships, 29 percent in private training, 17 percent in public training, and 22 percent in enterprise training. Training offered under traditional apprenticeships is the most accessible to individuals with lower levels of educational attainment, while other types of training have additional educational requirements. As described in the next section, traditional apprenticeships are provided by private master-craftsmen in micro and small enterprises. They involve apprentices providing free or low-cost labor in exchange for being taught vocation-specific skills.

Figure 6.23
Participation in training by employment sector



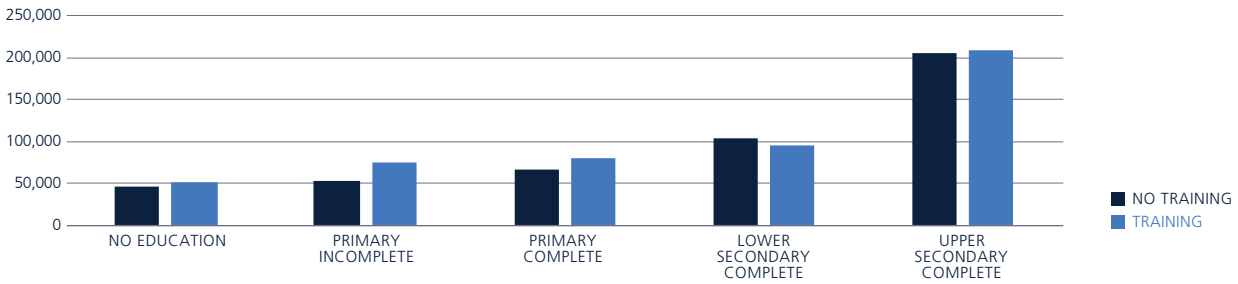
Source: Authors' calculation, from 2013 national employment survey (ENSETE 2013).

Figure 6.24a
Monthly income and training in nonagricultural self-employment



Source: Authors' calculation, from 2013 national employment survey (ENSETE 2013).

Figure 6.24b
Monthly income and training in nonagricultural wage employment



Source: Authors' calculation, from 2013 national employment survey (ENSETE 2013).

Those involved in the wage sector have the highest participation in training outside the education system (Figure 6.23). This is aligned with the observation that most training participants have higher levels of education and that most highly educated individuals find employment in the wage sector. Most training opportunities are designed to promote access to wage employment. Traditional apprenticeship is the main source of skills for nonagricultural self-employment. In contrast, there are very few sources of training in the agricultural sector. Only a very small share of those involved in agricultural self-employment have participated in any training (8 percent males, 2 percent females).

Data on returns to post-school training are limited, but evidence is mixed. Post-school training appears mostly associated with higher earnings for those with low levels of education in nonagricultural self-employment (Figures 6.24a and 6.24b). Limited association between post-school training and earnings is observed for those with higher levels of education or in the wage sector. Despite the higher participation in training by those with high levels of educational attainment and those who are employed in the wage sector, there appears to be little or no gain in average earnings for these groups. Individuals who have primary education or less do appear to gain, with regard to average earnings, when they participate in training. The gain in earnings is greater for those employed in nonfarm household enterprise than the wage sector. These results could suggest that training is pursued, on the one hand, as a complement to education for those with high levels of education but lower initial productivity to help them access higher-paying employment, and on the other hand it is pursued by those with low levels of education who would like to pursue self-employment in a specific skilled trade to access higher potential earnings. Regardless, however, training is pursued by a minority of the workforce and the current data suggest that it has little effect on earnings for the majority of the participants. Existing data are not sufficient to further examine the change in productivity of individuals who enroll in training and the quality of training.

6.4 THE APPRENTICESHIP MARKET

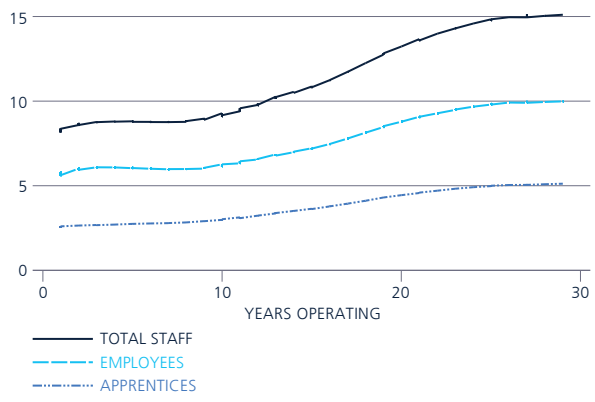
While informal apprenticeships are the main source of post-school training—in particular for low-skilled youths—they are often overlooked in policy discussions on skills, which tend to focus on the education system and publicly provided training. Until recently, very limited data existed on Côte d'Ivoire on the way the apprenticeship market functions, including on the profile of firms offering apprenticeships, or the process through which apprentices find firms and firms find apprentices. This section presents highlights from a recent survey of firms expressing interest to host apprentices as part of the Youth Employment and Skills Development Project (PEJEDEC, see Crépon and Premand, 2017) in urban areas including the cities of Abidjan, Adzopé, Divo, Gagnoa, Daoukro, Mankono, Bouaké, and Man. Although the sample is not nationally representative, it helps shed light on the way apprenticeships are structured and the types of skills that are valued by firms. It also provide insights on the potential role for public policy in the sector.

Informal apprenticeships are often provided by micro and small enterprises, mostly in the informal sector. The large majority of enterprises hosting apprentices are informal: 16 percent have an official legal status, 22 percent are formally registered and 34 percent use any accounting system. While these firms are informal, they tend to be in business for over a decade (13.5 years on average). On average, they have 7 employees. Only about half of these employees work autonomously without supervision, but firms have on average 3.4 apprentices. As such, firms rely heavily on apprentices for labor. Apprentices account for nearly half the workforce of these micro and small enterprises, and this share does not change much over time as firms tend to grow little with additional years of operation (Figure 6.25).

While the self-reported reasons to take apprentices given by enterprise owners are largely altruistic, economic considerations are likely prevalent. Enterprise owners often cited altruistic reasons for offering apprenticeships: over 80 percent of respondents stated their reason for taking apprentices was to help youth or share their knowledge with youth. Only 12 percent answered that their motivation to recruit apprentices was for labor or to train qualified workers for their enterprise. However, as mentioned above, apprentices constitute a large share of the workforce for many enterprises. In addition, while 31 percent of firms never hire employees, 25 percent hire staff internally from their apprentice pool (Figure 6.26). As such, hiring of apprentices is the most common recruitment method. Finally, apprentices also pay for training, and these revenues are at times not negligible for the micro and small firms offering apprenticeships.

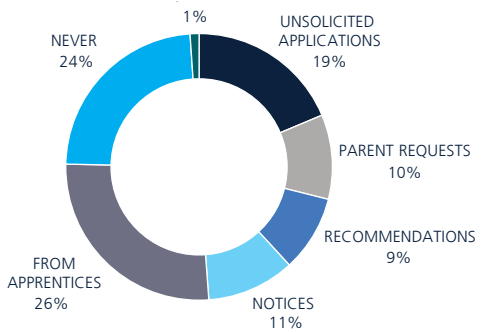
Some master-craftsmen charge fees to apprentices, and apprenticeships often contribute to firms' revenues, but apprentices also start to be paid relatively soon. Fees tend to be broken down in two parts: a registration cost and then a fee paid at regular or non-regular intervals. About half of apprentices pay registration fees at the beginning of the apprenticeship, and about a quarter pay training fees. Many enterprises collect training fee payments irregularly, and, on average, fees are paid for a little less than a year. At the same

Figure 6.25
Workforce composition by microenterprise age



Source: PEJEDEC Apprenticeship Impact Evaluation baseline survey, see Crépon and Premand, 2017.

Figure 6.26
Main methods used by firms to recruit permanent employees



Source: PEJEDEC Impact Evaluation baseline survey, see Crépon and Premand, 2017.

time, apprentices start being paid by the firm relatively soon, after approximately 6 months on average. Overall, the median duration of apprenticeship is reported to be 6 years.

Many firm owners consider behavioral skills as the most important characteristic sought in apprentices, as well as one of the most difficult characteristic to find. Few enterprises report that they search for apprentices with a certain education level or certain technical skills. On the other hand, a lot of enterprises want an apprentice who is respectful, obedient, hardworking, disciplined, honest, who does not steal, and has good morals. Respect is also reported as being the most difficult characteristic to find in an apprentice. Possibly in part due to their search of these behavioral skills that are difficult to observe, enterprises mostly rely on social networks and relatives to recruit apprentices. About 84 percent of enterprises hire apprentices at the request of the apprentices' parents. Only 8 percent of firms hire apprentices via unsolicited applications and only 1 percent recruit through advertising.

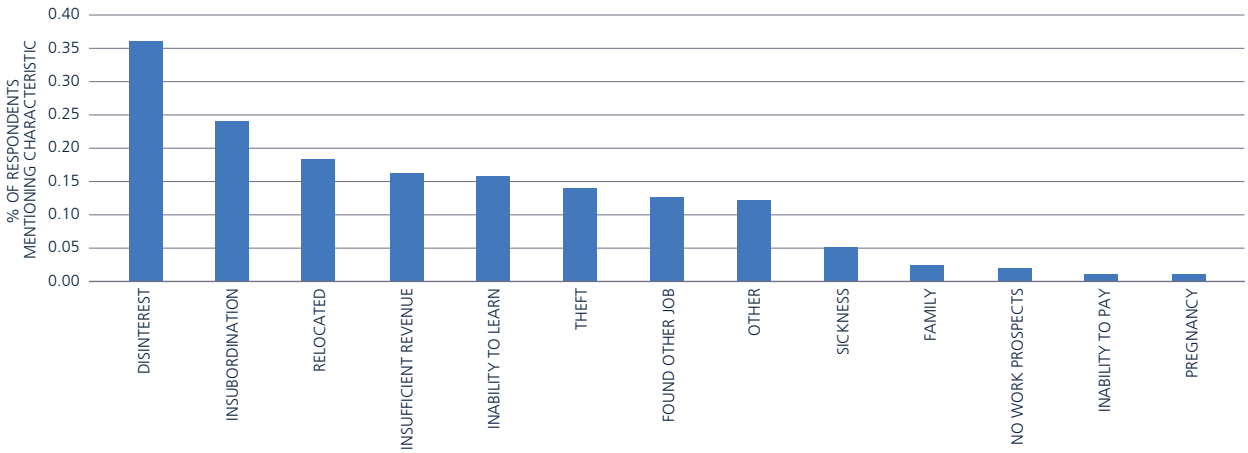
The quality of training obtained during traditional apprenticeships is likely limited. Firms typically report having some but not all the material needed to train the apprentice. Master-craftsmen who mentor and train apprentices tend to have low level of education and training. Master-craftsmen have very low level of education on average, with only 20 percent having completed primary school and less than 1 percent having completed high school; 40 percent have no schooling. In addition to having low levels of education, only 7 percent of masters took a training course in the last year, and the last time masters took a training course was an average of 10 years ago. About 71 percent of transfers report a need to take additional training Finally, a vast majority of apprenticeship trainers are men, as women are often concentrated in occupations such as sowing and hairdressing.

At the same time, a large number of apprentices are observed leaving before completing their training. In fact, the number of apprentices who were reported to leave prematurely is more than twice the number who completed training. Firm owners report that many apprentices quit because of lack of interest or inability to learn (Figure 6.27). Consistent with the emphasis on behavioral skills and the challenges in screening for these skills, employers also report that many apprentices leave prematurely because they were either disobedient or accused of theft.

6.5. POLICY DIRECTIONS

To achieve its objective of becoming an emerging economy and being globally competitive, Côte d'Ivoire will need to further improve the skill level of its workforce. Côte d'Ivoire faces substantial challenges for its workforce and human capital to be competitive globally. The years of crisis affected the quality of education services and the opportunities for children to acquire the skills needed to be productive when they join the labor force. On the one hand, Côte d'Ivoire needs to rapidly overhaul its education system to have an impact on

Figure 6.27
Reasons for apprentices leaving before finishing the apprenticeship, as reported by firms



Source: PEJEDEC Impact Evaluation baseline survey, see Crépon and Premand, 2017.

the flow of incoming youths joining the labor force. On the other hand, interventions in the post-school training areas can provide opportunities for the current workforce to effectively upgrade their skills.

Continued efforts are needed to ensure universal access to primary and secondary education. Fundamental skills such as literacy and numeracy obtained through primary education are important for household enterprise activities and agriculture, the largest sectors of employment in the economy. Numeracy skills enable individuals to better manage their finances and literacy can help them participate more effectively in markets. Fundamental skills such as numeracy and literacy are also prerequisites for achievements at higher levels of education and for access to higher skill occupations. Yet currently approximately 55 percent of 15–34-year-olds in Côte d'Ivoire have incomplete or no primary education. The situation is particularly worrisome among females and in rural locations, where 64 percent and 71 percent have incomplete or no primary education. This contrasts with other emerging economies such as Nigeria and Indonesia, where among 20–64-year-olds, 38 percent and 13 percent have incomplete or no primary education, relative to 67 percent in Côte d'Ivoire. In 2015, the government declared schooling compulsory for children up to age 16. Addressing access and enrollment in both primary and secondary school remains an important policy consideration to accelerate the effective implementation of the compulsory schooling laws and ensure that all children are effectively enrolled and attending school. Supporting complete enrollment will require significant investments to meet a substantial increase in coverage. The move to make secondary education compulsory will help youth better transition into the formal sector where secondary education is often the minimum educational attainment required to access wage jobs.

Human capital projections for Côte d'Ivoire show that achieving universal primary education (Millennium Development Goal 2) by 2020, will reduce the incidence of youth entering the labor force without having completed the primary cycle by 12 percentage points (from 23 percent to 11 percent) and eliminate the share of those entering the labor force with no education by 2025. Figure 6.28 shows the projection of the education composition of youth ages 15–24 with regard to educational attainment by 2045 under two scenarios: (a) the trend of dropout and retention remains the same until 2045 and (b) the MDG of universal primary education is achieved by 2020 (see Annex E for details on methodology). The first scenario assumes that no major investment or reform takes place to change the trend of the current retention rates at all levels of the education cycle; the second is the more ambitious yet achievable assumption that the MDG is met by 2020 with major investments and reforms in education.[111] These projections highlight how the composition of tomorrow's workforce can be modified dramatically if major investments and reforms are undertaken today. For instance, if the current trend persists, about 18 percent of youth aged 15–24 will the enter labor force without completing primary by 2030. But achievement of MDG Goal 2 by 2020 will ensure that all youth at labor force entry age have completed primary education by 2030.

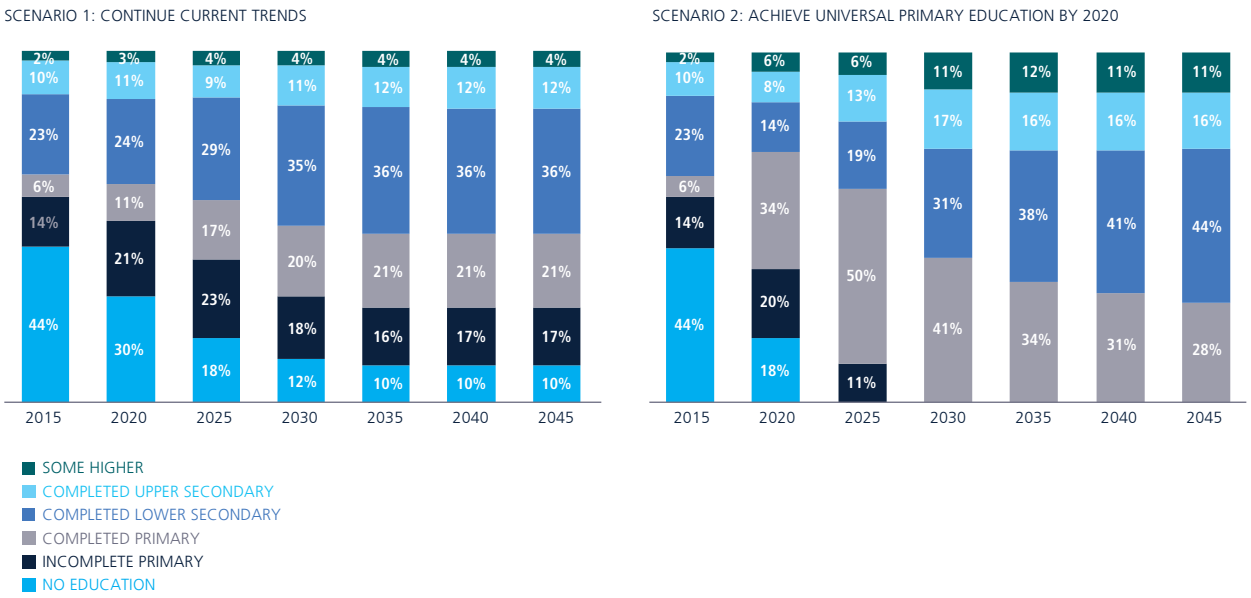
If current trends persist, with transition rates remaining as they were in 2015, close to 27 percent of youth ages 15–24 would enter the labor force by 2045 without completing primary education or with no education. In contrast, if the MDG were to be met by 2020 with sufficient investments in the educational system, all youth will enter the labor force having completed primary education by 2030. The latter scenario also means that 41 percent would have completed primary education by the same time, compared with just 20 percent under the former scenario (see Figure 6.28).

If MDGs are met by 2020, a greater share of the youth will have completed upper-secondary or had some higher education. Under this scenario, by 2045, about 60 percent of the youth will have completed lower- or upper-secondary and 11 percent would have some higher education compared to 48 percent and 4 percent, respectively, under the base scenario. These projections highlight the effect of short-term policy actions on long-term human capital stock and workforce skill, which is key to maintain competitiveness both in the region and internationally.

At the same time, improvements in the quality of basic education services are critical and urgent. Increases in access will not be sufficient if not accompanied by strong measures to ensure that children are

[111] The first scenario assumes that the transition rates between two 5-year consecutive levels of education remain constant over time; and the second scenario assumes universal primary education by 2020 by improving access and retention rates.

Figure 6.28
Projection of education composition of youth ages 15–24



Source: Author's estimation; ENV 2015.

effectively learning and acquiring skills while in school. While more years of education is usually positive, without increases in learning outcomes, the results can become meaningless. As highlighted in Chapter 5, labor productivity is key to ensure labor costs are competitive and for the continued expansion of formal enterprises. In this respect, results from resent PASEC data on the skills of children throughout the education system are concerning. PASEC data from 2009 and 2014 suggest that the quality of education in Côte d'Ivoire, measured in terms of test scores in French and Math, is below that of other Francophone African countries. These results point to strong skills gaps among children, which can have long-lasting consequences and limit the competitiveness of the future workforce.

As access to basic education continues to improve, Côte d'Ivoire can also prepare to have a more performing higher education system. In that regard, one key challenge is to ensure that students acquire the skills needed for productive employment, including those demanded by companies. For higher education institutions to provide professional skills, governance reform including the setup of performance-based financing and public-private partnerships would need to be considered and effectively implemented. In many ways, such reforms are important to put in place before expansion to access is tackled.

Ensuring access to skills upgrading opportunities for youths and adults who already exited the education system is challenging, particularly because so many have low educational attainment and limited skills to start with. For this subgroup, the role for public intervention is not necessarily confined to the direct provision of training. Facilitation of access and incentivizing of quality improvements in existing private training opportunities can be considered as well. For instance, traditional apprenticeship is one of the most prevalent source of training opportunities. Rather than replacing these traditional apprenticeships and attempting to set up a parallel publicly managed system, existing private informal apprenticeship arrangements could be leveraged. For example, the setup of certification frameworks allowing apprentices to take exams and become certified could be linked to financial incentives for trainers whose apprentices succeed at these exams. The setup of such an approach is not without challenges, but it would allow building on the widespread private apprenticeship system rather than attempting to replace it.

On the other hand, the current professional training system is inadequate, with many poor-performing institutions. One of the issues is that few professional training opportunities are available to low-skilled individuals, including those with less than primary or secondary education. Yet a large share of the labor force that requires skills upgrading have very limited formal education. This population could be better served,

including with more tailored curriculum allowing basic certification in certain technical areas in relatively short periods of times (for example, 6 to 18 months depending on the field). Such an approach would also provide opportunities to incentivize linkages between professional training institutions and private-led apprenticeship arrangements. At the same time, professional training opportunities are insufficient in some sectors, including those where most of the population is employed, such as agriculture. Professionalization of training in the traditional sectors may provide better prospects that development of training for sectors considered promising, but that have very limited labor shares (such as mining or extractive industries).

While most new jobs in the near future are expected to be generated outside agriculture, it currently occupies four out of five rural workers and close to half of the total labor force. Raising productivity in agriculture requires developing a rural workforce of better-educated farmers. Better-educated farmers are more likely to adopt modern farm inputs and technologies, make better use of purchased inputs and labor, choose technologies more effectively, and respond rapidly to changes in markets (Schultz 1988; Filmer et al. 2014). Improving the levels of basic educational attainment, through the development of reading, writing, and numeracy skills among the rural workforce, the efficacy of agricultural training can be significantly improved. And as rural incomes increase and technology innovations are adopted in agriculture, the demand for schooling and more technical skills will rise. This will include the ability to use digital technology to access and interpret information as it may be transformative in how farmers learn to interact optimally with markets and receive information, such as weather predictions, that impact their farming decisions (Box 6.1).

BOX 6.1: INFORMATION AND COMMUNICATION TECHNOLOGIES: ALTERING THE FLOW OF AGRICULTURAL INFORMATION

For African farmers operating in an environment of rapid climatic and economic change, the age-old questions of what to plant, when to plant, and how to plant have assumed immense importance. Answers are proliferating, as rural radio, television, the Internet, and mobile services offer an expanding array of information about specific technologies and practices, climate change, disaster management, early warning (for drought, floods, and diseases), prices, natural resource management, production efficiency, and market access (World Bank 2012a).

Researchers are rigorously testing the effectiveness of different information and communication technologies (ICTs) at reaching and benefiting farmers, focusing primarily on the transmission of price information, although initial studies on the provision of weather information are also underway. Radio, a long-standing method of communicating with farmers, has helped them to obtain better farm-gate prices by providing information on commodity prices. Internet stations with agricultural market information (e-Choupals) have done the same in Madhya Pradesh, India. Mobile phones have allowed fishermen and onshore buyers in Kerala, India, to communicate supply and price information, resulting in higher profits, lower consumer prices, and less waste. Among grain traders in Niger, the introduction of mobile phone coverage in two markets reduced the price variation between the two, ultimately increasing traders' profits, decreasing prices paid by consumers, and increasing total welfare. Cell phone coverage also reduced within-year price variation for producers.

For newer ICTs such as mobile phones and the Internet to convey agricultural information effectively, the content and mode of delivery may need to change, but what about the users themselves? Much has been made of young people's ready adoption of newer ICTs, as well as the capacity of ICTs (newer and older) to break through barriers to the acquisition of information and skills, such as distance, the inability to read and write, or the expense of producing and disseminating audiovisual information. Much has also been made of the potential for interactive ICTs to provide agricultural recommendations tailored to an individual farmer's circumstances. Yet much depends on whether the individual user of ICTs is able to frame relevant questions based on learning acquired in good primary schools, coupled with practice in imagining states of the world other than those already experienced. As discussed in this chapter, educational systems need to deliver high-quality basic education, as well as increase enrollment. Among rural youths who lack a basic cognitive foundation on which they can build, the benefits of ICTs may be slower to emerge.

Source: Reproduced from Filmer et al. (2014).
Note (a):. See Svensson and Yanagizawa (2009) on radio and farm-gate prices; Goyal (2010) on Internet stations in India; Jensen (2007) on fishers in Kerala; Aker (2010) on traders in Niger; and Aker and Fafchamps (2014) on phone coverage and variation in producer prices.

The majority of farmers, who have little education, will need access to effective agricultural extension services to sharpen their skills, access information and new technology. Traditional extension services are becoming less common across Africa, although the term is still used and applied to nontraditional approaches. Newer approaches empower farmers, in particular female farmers, and can be used to foster a more demand-orientated approach to learning where the farmers specify the information they require and select their provider of training (as described in Box 6.2). Finally, a growing and diversifying agricultural sector will create jobs that demand increasingly advanced technical and professional skills, from processing and marketing to agricultural research as has been described in Chapter 2.

BOX 6.2: INNOVATIONS IN AGRICULTURAL EXTENSION: RELYING ON FARMERS TO IMPROVE SERVICE DELIVERY

The question of whether agricultural extension services are best provided by the public sector (the traditional model), the private sector, or a range of providers continues to generate debate in light of the mixed results obtained with the traditional model.[a] This uncertainty has complicated efforts to widen the adoption of improved agricultural technologies and increase agricultural productivity. Newer models of extension, which are driven by farmers and reinforce the quality of service delivery through incentives and other innovations, are proving more effective than traditional methods, but they too encounter difficulties and constraints to effectiveness.

The impact of innovative approaches that mobilize farmers to improve returns to agricultural extension was recently evaluated on a large scale. In Malawi and Mozambique, randomized controlled trials tested multiple modalities for implementing peer and lead farming. In both experiments, communities nominated lead or peer farmers, who were trained to use sustainable land management techniques and mandated to communicate those techniques to other farmers in their village through demonstrations.

In Malawi, the social status (peer versus lead) and gender of the communicator were subject to random assignment, and a small performance-based material incentive was given to a subset of the communicators. The project designated 'shadow' communicators in control villages to provide a counterfactual. In Mozambique, lead farmers — mostly men — were already designated by the project team in all project villages at baseline. The intervention trained a random subset of these lead farmers in sustainable land management. To add a gender variation, a woman lead farmer was added to a random subset of treatment villages, since it was not possible to demote the previously chosen communicator. Small performance-based material and social incentives were distributed to a subset of the treatment villages.

The results from these large pilots suggest that female farmers can be as productive as male farmers in teaching their peers about a new technology and getting them to adopt it. Adding a woman communicator to a male-centered model for delivering extension advice can add value and change the numbers of male and female beneficiaries. Evidence on the use of performance-based incentives suggests that providing service to the community is more costly for women leaders, as they are more responsive to incentives. Finally, despite performing as well as, and in some cases better than, male communicators, female communicators still suffer from discrimination and are rated as worse teachers than men.

Overall, these results suggest that development projects that place the adoption of new agricultural techniques at the center of their theory of change may consider using peer and lead farming interventions to boost their returns. Given that female leaders appear to be as productive as male leaders in getting farmers to learn about and adopt new techniques, empowering women to take on leadership roles may not only increase equity but also add value. Performance-based incentives can play an important role in getting women leaders to devote additional time and effort to working with their community.

Source: Reproduced from Filmer et al. (2014).
Note (a): For example, Birkhaeuser, Evenson, and Feder (1991) found no significant relationship between the provision of traditional extension services and farm productivity in Africa, whereas Evenson (2001) and Dercon et al. (2009) identified some successes. Anderson and Feder (2003) propose an organizational inquiry into which model of extension (public or private) can deliver superior results.

With nonagricultural self-employment and work in household enterprises emerging as one of the key contributors to the generation of new jobs, it is important to consider the government's role in equipping the workforce with the right skills for this sector. Evidence is still emerging on which skills are most useful in the household enterprise sector as well as how to cost-effectively develop these skills through large-scale programs. For example, it is not clear whether technical or vocational skills can necessarily lead to employment in a skilled profession, nor whether business or behavioral skills are the most binding constraint to household entrepreneurs when many other constraints, such as access to credit or freedom to operate, are known to exist. And even once a clearer understanding is developed on which skills are most important, it should also be recognized that training programs are not always effective or efficient at delivering these skills, even though programs may be well-funded and politically supported (Blattman and Ralston 2015). Finding a training program model that maintains high participation rates and delivers the skills that participants both want and need for their work has been notoriously difficult to implement in practice. Recent work, as described in Box 6.3, suggests that given these caveats it may be best to provide skill development programs through a more demand-focused and results-driven approach, whereby individuals can seek out an integrate range of skills that are most important to them and programs are funded based on meeting these needs.

BOX 6.3: ENTERPRISE PROJECTS BOLSTER SKILLS AND BUSINESS DEVELOPMENT IN SENEGAL AND NEPAL

The International Fund for Agricultural Development (IFAD) supports rural enterprise projects to provide the skills and other resources that help rural people, especially women and young people, to create and develop local businesses that provide income and employment off the farm. Projects may include the following components:

- **Business advisory centers** provide a range of business development services, including business orientation seminars, community-based skills training, small business management training, literacy and numeracy training, and information and referral services.
- **Rural technology facilities** support master-craftspersons, traditional apprenticeships, and the promotion, dissemination, production, and repair of technology for rural HEs and microenterprises.
- **Rural financial services**, offered in conjunction with financial institutions, include credit for on-lending to small rural businesses and training for financial institutions to provide financial services to vulnerable groups.
- **Support for rural household and microenterprise organizations** includes support for local trade associations to build partnerships with stakeholders and support for formulating and strengthening polices through a working group on enterprise development.

In Africa, IFAD has implemented rural enterprise projects in Ghana, Madagascar, Rwanda, and Senegal. Impacts and challenges of projects in Senegal are highlighted here.

The Promotion of Rural Entrepreneurship (PROMER) Project in Senegal, implemented by IFAD in 2006, sought to reduce rural poverty by fostering and consolidating profitable rural HEs and microenterprises capable of offering stable jobs. PROMER focused on strengthening and professionalizing rural entrepreneurship and improving the overall political, legal, and institutional environment for such enterprises. For its target population — rural youths and women ages 18–35 who were poor, unemployed, and out of school and who either operated or wanted to start an enterprise — PROMER provided a combination of technical and management training and funding. Technical skills training primarily involved agribusiness, including food processing, and provided skills to 700 entrepreneurs in metalworking, equipment manufacturing, textile and clothing production, and hygiene and quality monitoring. Management training was provided to about 500 entrepreneurs. The project cost CFAF 10 billion from 2006 to 2013.

PROMER helped to create 240 enterprises, consolidate 665 enterprises, create 3,750 jobs, and teach 458 people to read. It usually takes enterprises 3 to 5 years to reach their full potential, and finding a niche in the economy can be critical for success. Through the project, for example, a baker started to make traditional bread, which was in high demand in peri-urban areas but not supplied by modern bakeries. Apprentices trained informally by the baker opened 20 enterprises of their own and created about 84 jobs. Other rural enterprises were not as successful. Some developed products that succeeded in rural markets but not in urban markets because of high transport costs, poor marketing, or poor quality. Most entrepreneurs reported challenges in maintaining quality and continuous production. Rural enterprises had trouble finding an urban location in which to present their products, a result that

highlights the problem of multiple constraints. Exhibitions have played a major role in bringing some rural products to a wider market, especially furniture, and have attracted better contracts that have led to modest job creation.

Elsewhere in Nepal, about 500,000 young people enter the Nepalese labor market every year and often move into the household enterprise sector in rural locations. In 2007, the Swiss Agency for Development and Cooperation (SDC) joined with HELVETAS Swiss Intercooperation to train 100,000 youth of which 75,000 moved on to gainful employment through a program named the Employment Fund. Training was offered in about 80 occupations, for example, in construction, hospitality, garments and textile, agriculture, and electronics — to name a few — in locations all over Nepal.

Unlike many other skills training programs, the program applies a results-based financing approach that has proven to effectively lead to gainful employment upon the completion of training. Training providers are paid based on their success in training youth and subsequently connecting them with the labor market. The key result is gainful employment.

How does that work? In practice this means that training providers receive one part of their payment (40 percent) after the graduation of trainees. Then the biggest share of the payment (60 percent) is provided only if graduates are placed in gainful employment and earn an income above a predefined threshold. The program puts special emphasis on the inclusion of women and disadvantaged groups, for instance, through incentives and counseling. More than 50 percent of the trainees are women, and 80 percent are from disadvantaged communities.

The results: The program has provided skills training to over 100,000 youth. More than 75,000 of them are gainfully employed. Skills training per trainee costs US$300 on average. This investment pays off: it only takes about six months for trainees to earn this amount after graduation.

Sources: Reproduced from Filmer et al. (2014); IFAD 2011; Senegal Ministry of Agriculture 2011; http://blogs.worldbank.org/publicsphere/results-based-financing-links-masses-youth-employment-nepal.

Beyond technical skills, avenues to improve business skills and behavioral skills need to be further considered, both within and outside the education system. Technical skills are often the focus of public and private training providers, but recent data show that behavioral skills and business skills are both relevant for worker productivity and essential for success in self-employment or wage employment. However, different individuals will have different requirements in the skills that they most need to develop: financial accounting may be important to one individual, while customer service skills and team experience may be important for another individual. As discussed earlier, this implies that it is important to build flexibility into skill development programs that will enable participants to seek out the skills most useful for them, while also keeping programs results driven with the end goals on increased employment and higher incomes.

Training on business and entrepreneurship skills could be piloted in the education system, but would require careful attention to the curriculum content and the specific skills being transmitted, as well as the level at which the training is provided. Recent international evidence suggests that entrepreneurship education might be more effective earlier in the education system, with some positive results from its introduction in secondary school, but more mixed evidence when introduced in higher education. Still, the evidence remains relatively thin, so these approaches should be carefully tested first.

The acquisition of behavioral skills demanded by formal firms as well as conducive to success in self-employment is an area of global policy interest. International evidence has suggested that behavioral skills remain malleable for longer, providing opportunities to train youths even after they dropped out of school. Evidence from Uganda or Liberia has suggested positive results of delivering behavioral skills training as a complement to technical or business skills training, particularly for women (see Box 6.4). More recent approaches attempt to leverage mentors or role models in behavioral skills training delivery. There again, careful attention to the curriculum, as well as its delivery, would be essential.

BOX 6.4: LEARN. WORK. THRIVE: ADOLESCENT GIRLS INITIATIVE PILOTS HELP YOUNG WOMEN TRANSITION TO PRODUCTIVE EMPLOYMENT

More than one-third of all youth are not in employment, education, or training (NEET) and across all regions of the world young women are worse off than young men. Although the gender gap in school enrollment has been closing, these gains have not yet translated into gains in secure, paid employment. Reaching girls during adolescence is critical because decisions made and behaviors established during this period affect their horizons later in life. To this end the World Bank launched the Adolescent Girls Initiative (AGI) to understand how to help young women transition to productive employment and has now implemented pilots in Afghanistan, Haiti, Jordan, Lao People's Democratic Republic, Liberia, Nepal, Rwanda, and South Sudan.

One of the first pilots in Liberia trained about 2,500 young women for either wage employment or self-employment plus life skills, with an emphasis on job placement and follow-up support. The evaluation of the project shows that employment rose by 47 percent while earnings increased by about US$32 per month — an 80 percent increase relative to the control group. The impacts were larger for the self-employment track than for the wage employment track, but both show much larger impacts than seen in other youth skills training programs that have been rigorously evaluated to date globally.

Overall, the AGI has demonstrated ways to make skills training more female-friendly and support young women's transition to productive employment. In addition to all the lessons about working with young women, the pilots also taught a lot about how to improve the overall quality of skills training.

The five quality enh.ancement lessons, along with links to more information, can be summarized as:

Lesson 1: Skills training projects need to set realistic expectations for self-employment versus wage employment. In contexts with limited opportunities for wage employment, skills training projects should help orient youth to the likelihood of self-employment and develop content suitable to different levels of aspiration in that sphere. In Liberia, for example, a job skills track and a business skills track were offered. The size of the job skills track had to be gradually reduced from 35 percent of trainees in Round 1 to just 18 percent in Round 3 after the impact evaluation showed that the employment rate in the business skills track was much stronger. This was not easy — it involved changing the orientation of the client, the training providers, and the girls themselves.

Lesson 2: Involving the private sector can improve the market relevance and overall effectiveness of training. AGI pilots partnered with the private sector in the implementation arrangements by hiring private companies to provide training tailored to the needs of a specific firm/sector — as in the Rwanda AGI — and by hiring private sector training and employment service companies to deliver training and assist with job placement — as in Haiti, Liberia, and Nepal. Low-cost steps were also taken to engage the private sector throughout implementation. For example, the Liberia AGI organized Private Sector Working Groups to provide routine guidance on project activities and enlisted members of the private sector to inspire the trainees by serving as guest speakers in the classroom.

Lesson 3: Post-training support is critical and must be planned and budgeted for early on. Even getting the training up and running always seems like priority number one, but over the course of implementing the AGI pilots one of the lessons learned was that it was necessary to do a better job planning and budgeting for more structured and intensive post-training support from the very beginning of each project. The AGI pilots provided 3–6 months of post-training job placement assistance — such as internships, job search coaching, and so on — or business advisory services — such as business mentoring and check-ins, linkages to micro-franchises and business capital, and so on. The exact balance of classroom training versus placement support has not been rigorously tested, but our experience suggests this support can really help trainees put their new skills to use in the labor market. An extended follow-up period may be particularly important for young women just entering the labor market or breaking into non-traditional trades.

Lesson 4: Improving the monitoring and verification of employment outcomes is essential if we want to improve employment outcomes in skills training projects. Many projects do not monitor attendance or performance during training, let alone keep track of participants after training ends. AGI pilots monitored business and job performance and verified employment outcomes up to six months after classroom training ended. The pilots relied on self-reporting by service providers, then verified these claims among a random sample of

trainees (about 25 percent) by talking with employers, local women, and community members, and by accessing the trainee's business records. The percentage of employed youth in the sample was then extrapolated to the population that the training provider claimed to be employed. In Liberia and Nepal, where pilots implemented results-based contracts, this extrapolation was used as a basis for the final payment. Any inaccurate claims by training providers proportionally reduced their payment and could jeopardize eligibility for future rounds of training. In the Resource Guide (http://www.s4ye.org/agi), you can download the employment/business verification strategy from the Liberia AGI, as well as tools for monitoring and placement verification.

Lesson 5: Performance-based incentives are operationally feasible — even in fragile settings — and seem to improve outcomes, though this is an area for more rigorous testing. Results-based contracts were used for training providers in the relatively small program in Liberia, targeting 2,500 young women, as well as in the Nepal AGI, which was embedded in a larger program that trains 15,000 youth annually. Both projects achieved impressive results and we hypothesize that the performance incentives for the service providers accounts for this in part.

Sources: http://blogs.worldbank.org/voices/improving-quality-skills-training-what-adolescent-girls-initiative-pilots-can-teach-us; http://www.worldbank.org/en/results/2016/05/09/learn-work-thrive-adolescent-girls-initiative-pilots-help-young-women-transition-to-productive-employment

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ANNEX E:

HUMAN CAPITAL PROJECTIONS: ASSUMPTIONS AND METHODOLOGIES

The human capital projections performed for this chapter closely follow the International Institute for Applied Systems Analysis' (IIASA) methods of population projections in terms of required variables, as determined by Population Development Environment (PDE) software. The analysis was limited to two scenarios: (a) the constant scenario, in which the trend of drop-out and retention rates remains the same until 2045, under the assumption that no investments or reforms have taken place to alter the trends and (b) MDG attainment, in which the MDG of universal primary education is met by 2020—the Government of Côte d'Ivoire targeted MDG by 2022.

To conduct a projection of educational attainment, a baseline population distribution must first be generated by 5-year age groups, sex, and level of educational attainment. The projection in this chapter used the 2008 and 2015 national household surveys, with a base year of 2015. The model likewise requires that (a) for each 5-year increment, cohorts move to the next highest 5-year age group, (b) mortality rates specific to age, sex, and education group are applied to each period, (c) age- and sex-specific educational transition rates are applied, (d) age-, sex-, and education-specific net migrants are added or removed from the population, and (e) fertility rates specific to age, sex, and education groups are used to determine the size of the newest 0–5 age group. The projection in Côte d'Ivoire was constructed based on the below assumptions.

Migration: The effect of migration was not considered in the projection of education of the labor force, as Côte d'Ivoire had a small net migration rate, of 0.47 immigrants/1,000 as of 2015,[112] and the gross migration rate is less than 2.2 percent (International Organization for Migration). The demographic background of emigrants and immigrants are likewise similar as they typically come from neighboring countries and do not significantly affect the education profile of the labor force.

Mortality: As complete death registration data is often unavailable in developing countries, this chapter adopts the census survival approach to overcome the limitation (UN 2002). Data from the 2008 and 2015 national household surveys were used as an input into the UN's life table model to estimate age-specific mortality rates. For life expectancy, differences estimated by Barakat et al. (2010) were adopted for each education level, and the model suggested that education was positively associated with longer life expectancy. A similar methodology applied to the education system in Côte d'Ivoire led to the assumption that life expectancy increases with education by one year for each level of education, that is, none, incomplete primary, completed primary, completed lower-secondary, and completed upper-secondary.

Fertility: For this projection, fertility is considered as a demographic determinant of the projected educational profile. Age-specific fertility rates (ASFRs) were calculated by identifying live births that occurred in the 3 years preceding the survey and classifying them by the age of the mother (in 5-year age groups) at the time of birth, using data from the 2012 Demographic and Health Survey (DHS) in Côte d'Ivoire. Total fertility rates (TFR) refer to the number of live births a woman would have if she were subject to the current ASFRs for the duration of her reproductive years (15–49 years), and was likewise estimated using the 2012 DHS.

Transition: Transition rates were calculated based on the assumption that transitions take place between educational levels with the possibility of repetition, but with no reverse transition. This rate was based on UNESCO's formula which used age-grade enrollment patterns. To account for age distortions that arose from late entry, a remedial method suggested by IIASA was adopted, which states that the transition rate from one level of education to another is distributed by the proportion of age groups relevant to that same education level. Detailed procedures can be referenced from Lutz et al. (2007, 2010).

Age: Five-year age increments groups were used as an input to IIASA's population projection model for Côte d'Ivoire. Given the gap between entry in primary school and labor market entry (approximately 7–10 years), the projection in this chapter begins in 2015 so that the current stock of human capita is reflected, while the full impact of policy scenarios can be observed in 2030.

[112] http://knoema.com/atlas/C%C3%B4te-dIvoire/topics/Demographics/Population/Net-migration-rate

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