

DIAGNOSTIC

DEMOCRATIC REPUBLIC

OF CONGO

JOB DIAGNOSTIC DEMOCRATIC REPUBLIC OF CONGO

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



© 2017 International Bank for Reconstruction and Development / The World Bank.

1818 H Street NW, Washington, DC 20433, USA.

Telephone: 202-473-1000; Internet: www.worldbank.org.

Some rights reserved

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

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

Rights and Permissions



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

Attribution—Please cite the work as follows: Reyes Aterido, Alvaro Gonzalez, Dino Merotto, Carly Petracco, and Javier Sanchez-Reaza. 2017. “Democratic Republic of Congo: Jobs Diagnostic.” World Bank, Washington, DC. License: Creative Commons Attribution CC BY 3.0 IGO.

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

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

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

All queries on rights and licenses should be addressed to World Bank Publications, The World Bank Group, 1818 H Street NW, Washington, DC 20433, USA; fax: 202-522-2625; e-mail: pubrights@worldbank.org.

Images: © World Bank Democratic Republic of Congo. Further permission required for reuse.

Project Number: P161849

ABSTRACT

The economy of the Democratic Republic of Congo is not creating sufficient jobs for its young and rapidly growing workforce. Although the Congolese economy has experienced fast growth and poverty has declined, further reducing poverty will require more dynamic job creation and continued reductions in fertility rates. The current youth bulge and potential demographic dividend will open a unique window of opportunity but will demand faster job creation. The challenge is not limited to reducing unemployment, but includes tackling inactivity and rampant underemployment. Possible avenues to address labor market shortcomings include removing obstacles and resolving market failures for firms to grow, integrating agribusinesses into value chains, facilitating urbanization, and focusing on skills, not just schooling. At the same time, a focus on productivity growth could strengthen its link to employment creation. The report, “Democratic Republic of Congo: Jobs Diagnostic”, analyzes the main challenges—at the macro, firm, and household levels—that the country faces in creating jobs. It also outlines the main obstacles to creating more and better jobs that are more inclusive of women and youth.

ACKNOWLEDGMENTS

This report was prepared by the World Bank Group's Jobs Group. The report was drafted by Javier Sanchez-Reaza with contributions from Reyes Aterido, Alvaro Gonzalez, Dino Merotto, and Carly Petracco. Crucial assistance was provided by David Keith de Padua, and Adrian Scutaro. The report was prepared under the general direction and ongoing support of Alvaro Gonzalez, Dino Merotto, Maurizia Tovo, Stefano Paternostro, and David Robalino.

Many colleagues including Maurizia Tovo, Phillippe George Leite, and Dimitris Mavridis, provided excellent inputs and comments at various stages of the report. The authors are particularly grateful to Ahmadou Moustapha Ndiaye (Country Director) and Yisgedullish Amde (Country Program Coordinator) for their ongoing support. The authors acknowledge the rich comments provided by the peer reviewers of this documents: Elizabeth Ruppert-Bulmer (Lead Economist, Jobs Group), as well as Indhira Vanessa Santos (Senior Economist, GSP01).

This report is part of the programmatic approach "DRC Jobs" (P161849) led by Maurizia Tovo, in conjunction with the Jobs Group.

This report has been made possible through a grant from the World Bank's Jobs Umbrella Trust Fund, which is supported by the Department for International Development/UK AID and the governments of Norway, Germany, and Austria; the Austrian Development Agency; and the Swedish International Development Cooperation Agency.



CONTENTS

ABBREVIATIONS	viii
OBJECTIVE AND FRAMEWORK	1
EXECUTIVE SUMMARY	3
1. ECONOMIC GROWTH AND JOBS	6
Summary.....	6
Historical Context.....	6
Economic and Labor Market Performance.....	7
2. WORKERS AND JOBS	18
Summary.....	18
Demographics and Labor Force Participation.....	18
Unemployment, Underemployment, Inactivity, and Informality.....	24
3. FIRMS AND JOBS	30
Summary.....	30
Introduction.....	30
Profile of Firms and Their Growth.....	31
Firm Performance.....	33
Firm Employment.....	35
Determinants of Employment Growth, Size, Productivity, and Wages.....	38
Informality.....	39
4. THE WAY FORWARD	41
BIBLIOGRAPHY	43
ANNEX A: ENTERPRISE SURVEY METHODOLOGY.....	45
ANNEX B: WAGE REGRESSIONS.....	46
ANNEX C: PRODUCTIVITY REGRESSIONS.....	48
ANNEX D: EMPLOYMENT GROWTH REGRESSIONS.....	50
ANNEX E: EMPLOYMENT REGRESSIONS.....	52



ABBREVIATIONS

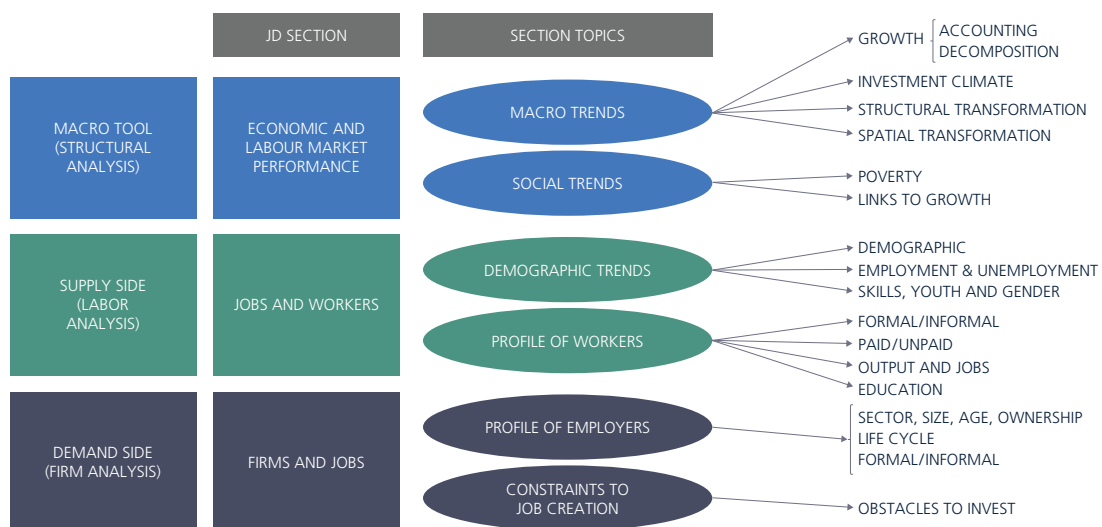
CGF.....	Congolese franc
FCV	fragility, conflict and violence
GDP.....	gross domestic product
ILO.....	International Labour Organization
INS.....	National Statistics Institute (Institut National de Statistique)
ISIC.....	International Standard Industrial Classification
MUC.....	mining, utilities, and construction
UN.....	United Nations
UNICEF	United Nations Children's Fund
WEF.....	World Economic Forum

OBJECTIVE AND FRAMEWORK

The objective of a jobs diagnostic is to identify the main challenges to job creation, as well as to improving the quality and inclusiveness of employment. It is a data-driven exercise that looks at macroeconomic and demographic factors as well as labor supply and demand, to pinpoint the main constraints to achieving a jobs-rich growth path.

A jobs diagnostic is divided in three main sections: macro and demographic trends, labor supply, and labor demand (figure 1). The first section looks at the relationships between employment growth, labor productivity, and economic growth to set the context for labor supply and demand. The fact that jobs diagnostics are data driven allows for international comparisons on the basis of standardized data sets. The second section aims to identify trends in labor supply such as working-age population, labor force and inactivity to understand the population's needs for employment and the challenges in unemployment, underemployment, waged and informal employment. In doing so, international comparisons are made on the basis of a global harmonized household database (the International Income Distribution Dataset, or I2D2). The labor supply section draws on a set of harmonized variables that are comparable across countries and time. Finally, the labor demand section uses firm-level data sets such as Enterprise Surveys that allow for some international benchmarking, or censuses of enterprises to find the links between sectoral productivity, size, age and other firm characteristics to assess the constraints on employment growth, productivity and wages. The demand for labor is a derived demand arising from the production of goods and services by entrepreneurs to meet the demand for products in an economy. The analysis also focuses on who gets the jobs created in the economy, and what determines earnings and employment. As the economy transforms and as firms rise and fall, workers must transition across occupations, between places, across firms and between jobs.

Figure 1
Structure and coverage of a jobs diagnostic



A jobs diagnostic analyzes a country's economic transformations in relation to other experiences. There are three aspects to these transformations:

- Structural transformation (the movement of labor across sectors)
- Spatial transformation (or urbanization; the movement of labor across places)
- Organizational transformation (or formalization; the movement from informality to formal work, and from self-employment to waged employment)

A jobs diagnostic also identifies the characteristics of those who can access jobs in the economy and those who are left behind, which in turn shows whether jobs outcomes in the economy are becoming inclusive of the young, the poor, women, and other disadvantaged groups (Merotto, Weber, and Aterido, forthcoming).



EXECUTIVE SUMMARY

Firms in the Democratic Republic of Congo face obstacles to growth. Although the economy has grown at a fast pace, jobs have not been created at the scale and quality that have been demanded. The reason for insufficient labor demand lies in the fact that firms face risks and obstacles to growing, hiring, and becoming productive.

The territorial imbalance determines the challenges in employment, underemployment, and inactivity. On the one hand, jobs in rural areas are mostly in agriculture and unpaid. Rural activities are still unable to achieve economies of scale that boost their productivity. Thus, rural workers, particularly youth, end up underemployed and find migration to urban areas enticing. On the other hand, urban areas have been unable to accommodate a growing number of workers—particularly women—into slowly expanding waged jobs. Consequently, urban workers experience the lion's share of unemployment. One of the most pervasive consequences of the constraints on firm growth is discouragement of workers, which ends in a growing inactivity rate. Although mining has been productive, its capital-intensive nature and few links with the local economy have hampered significant job creation.

Demographic changes compound the challenges. Despite a fall, fertility rates remain extremely high, and the size of the working-age population has started to increase. In the next 12 years, the country will need to create 18 million new jobs and address both underemployment and inactivity while boosting productivity. The change in the age-structure pyramid could bring an opportunity to grow faster and further reduce poverty. However, this window of opportunity will not last forever; it must be seized by boosting employment so that the growing working-age population is gainfully employed.

SUMMARY OF FINDINGS

Recent growth performance in the Democratic Republic of Congo has led to lower poverty, but to reduce poverty further, more jobs will be required. A postconflict rebound coupled with the global commodity price boom has enabled the economy to enjoy rapid economic growth. The acceleration has been driven mostly by the boom in industry (due to mining and construction), but it has also spilled over to the services sectors. Growth has also been fueled by productivity and labor force participation, despite contracting employment rates. Nonetheless, and despite the beginning of a decline, poverty remains exceptionally high. To reduce it even further, the economy may need growth that is more diversified and jobs-rich.

Demographics present an additional challenge to providing jobs for a growing youthful population. By 2030, the country will have 66 million workers, which will demand that the economy create about 18 million new jobs in the next 12 years. The youth bulge is a potential demographic dividend that represents an opportunity and a challenge. Two indicators may signal the coming demographic dividend. First, fertility rates peaked at 7.3 children per woman in 1995 and steadily waned to 6 per woman in 2012. Second, many who were younger than 15 in 2005 have since joined the economically active population. This period of a declining dependency ratio represents a window of opportunity: a limited period before the dependency ratio begins to rise again (at the point when the society has more producers than consumers), allowing for further development. To reap this demographic dividend, it is important that new entrants to the labor market can find employment and that current workers can improve the quality of their employment. But at an average annual growth rate of 5.3 percent for the working-age population, this window of opportunity also represents a challenge.

For the demographic dividend to yield a positive spiral of growth and job creation, young and female workers must be given opportunities. Young workers find it increasingly difficult to participate in the labor

market. Between 2005 and 2012, the share of youth who were neither in school nor participating in work grew. For girls, the increase was more pronounced than for boys. The lack of employment opportunities may have led to an increase in inactivity. Dwindling employment rates and modest increases in unemployment suggest a growing group of discouraged workers who are no longer seeking employment and have removed themselves from the labor force. This inactivity grew, particularly among women and the young, and chiefly in rural areas. Two-thirds of the inactive population lives in rural areas, and when they find employment, informal work is the norm.

Though self-employment and unpaid work continue to shape the labor market, wage employment has started to grow, albeit less so for women. Associated with agriculture, self-employment continues to be the dominant form of employment. At the same time, unpaid work is concentrated in rural areas. Driven by the private sector, wage employment has expanded, and its concentration around the capital has started to wane. Women remain at a higher risk of more transient employment status. Female workers are significantly less likely to be in wage employment and less likely to be employers than are male workers.

Education is a determinant in explaining employment. Overall education levels have improved impressively across the country. Although education is a determinant of employment status and higher educational attainment leads to a decreased likelihood of being self-employed, the returns to education are diminishing. Urbanization has helped to close the gender gap in education, but the gender wage gap persists despite education levels. The 28 percent wage gap in favor of men in 2005 widened to over 38 percent in 2012.

Having an education does not necessarily lead to a job, but it improves the prospects of income. Education and chances of employment are negatively correlated. For those with no schooling or only primary schooling, unemployment rates have remained about 2.5 percent. In contrast, for those with tertiary education, the unemployment rate is six times greater (13.7 percent). One explanation for the seemingly inverse relationship between higher levels of education and employment could lie in the capacity of the labor market to absorb highly educated workers. Another could be the worker's ability to sustain a longer job search so as to find a more suitable match: those with higher education typically have economic backing from their families, which enables them to engage in a longer job search.

Although unemployment affects urban areas, the real problem is underemployment. Unemployment is predominantly an urban phenomenon: 83 percent of the unemployed are urban dwellers. In contrast, underemployment is sizable, particularly in rural areas and among youth. In 2012, 45 percent of workers were classified as underemployed.¹

For manufacturing firms to provide better jobs, their productivity must improve. Average labor productivity is relatively low for manufacturing firms. Most manufacturing firms are too small to invest significant capital to improve productivity. Just a few large, productive manufacturing firms are responsible for most of the sector's value added. Manufacturing is not only lagging in productivity, but also in job creation. Most jobs are generated by firms in mining, utilities, and construction.

Most of the growth in labor productivity has resulted from structural change. Current conditions indicate that productivity has accrued chiefly from shifting labor across sectors, rather than from improving sectoral efficiency. About 80 percent of the growth in labor productivity has come from a proportionate increase in workers from lower-productivity jobs in agriculture moving to relatively higher-productivity jobs in services and industry.

Unfortunately, productivity is not necessarily associated with more employment. Perhaps one of the most striking features of firm size and potential job growth lies in their poor relationship to productivity. Productive firms in the country are, unexpectedly, smaller firms. This might signal that, for the most part, productivity gains accrue to a firm through its shedding of labor. The fact that productive firms do not grow may signal misallocations or market failures.

¹ This jobs diagnostic considers that a worker is underemployed when she or he is available and willing to work but works for fewer hours than in a regular workday. The threshold varies from country to country; this diagnostic considers those who work fewer than 35 hours per day as underemployed.

A poor business environment that hinders the private sector might be at the heart of underemployment, informality, and inactivity. The poor business environment likely impedes private sector development and the creation of productive jobs. The challenging environment includes infrastructure that is poor, regulatory processes that are uncertain, and a bureaucracy that is inefficient and arbitrary. The inefficiencies and arbitrariness of public sector bureaucracies and their rules are prime ingredients for the corruption that plagues the country. It continues to rank near the bottom of a number of international indices on competitiveness.

This environment generates a vast number of small, informal household enterprises but not many productive, jobs-producing formal firms. The high level of informality is partly due to the low opportunity cost of opening a microbusiness. That said, the most important reason is that informal enterprises provide incomes where formal jobs are unavailable.

The relatively high share of firms in the commercial sector may be an adaptation to a risky and difficult business climate. Entry and exit is comparatively low cost in the commercial sector, which may indicate that it is risky. Firms are concentrated in sectors from which they can exit easily if business conditions turn negative. When this is the case, the kind of uncertainty that volatility brings also makes it less likely that firms will invest and grow and hire more workers.

Barriers to growth—not so much barriers to entry—seem to hamper firms' performance. The relatively high share of firms that are young indicates few difficulties with entry, but problems with growth. Firms that enter the market small, stay small or even shrink, whereas (some) big firms grow. How a firm is established determines how it will grow and the employment it will generate. In other words, employment is determined by a firm's size at establishment. Larger firms are more likely to grow their workforce.



1. ECONOMIC GROWTH AND JOBS

SUMMARY

Fast-paced growth has contributed to reducing poverty in the Democratic Republic of Congo. Recent higher growth rates were fueled by productivity gains that resulted from labor movements out of low value added agriculture into higher value added services. Strong growth performance was also the result of rising participation in the labor force. This structural transformation was characterized by negligible industrialization and accompanied by a spatial transformation, and thus urbanization. The benefits of these structural and spatial transformations translated into poverty reduction.

However, continued conflict and the recent slip in commodity prices are impinging on growth and compromising further reductions in poverty. As copper and other commodity prices have fallen, economic growth has slowed. In addition, conflicts in the eastern regions continue, making the investment climate difficult.

The challenge of creating jobs-rich, inclusive growth is compounded by the rapid growth in the youthful population. The country's youth bulge will lead to an unprecedented increase in the working-age population (67 percent) by 2030. The demand created by those young workers will require that the economy create about 18 million new jobs in the next 12 years.

HISTORICAL CONTEXT

The economic damage from war was significant. The conflicts between 1996 and 2002 had profound effects on the economy. Lost lives and wealth destruction led to a reduction in GDP per capita. The conflicts accelerated declines that had started over 40 years ago. GDP per capita peaked in 1974 but dropped by over 20 percent during the years that followed, then stabilized in the 1980s. Starting in 1988, a new, significant, and continuous fall in GDP per capita likely helped to set the wheels of conflict in motion again. In the conflicts between 1996 and 2002, GDP per capita plummeted, reaching some of the lowest levels in the world. Recovery has been fragile (box 1.1). It is based on the extraction industry, paradoxically located in areas of conflict even today. This is the backdrop to the jobs story that is analyzed in this diagnostic.

The Democratic Republic of Congo is emerging from postconflict status, but progress is slow and uneven. The civil war ended in 2002, having destroyed the country's infrastructure and social fabric. National parliamentary and presidential elections were held in 2006 and 2011, the latter marred by violence and contestations of the results. Although progress has been made towards peace, armed conflicts continue to simmer in the east. Enormous challenges remain, with about 77 percent of the population living in poverty and all the Millennium Development Goals set for 2015 missed. The business environment in the country is one of the worst in the world. The 2017 Doing Business Report ranks the country among the most difficult to do business with, rating it 184th of 190 countries studied, and noting its consistently poor comparative performance across all indicators. Similarly, the 2016–2017 Global Competitiveness Index ranked the country 129th of 138. In addition, state institutions remain weak and the capacity to implement much-needed reforms is insufficient.

Reforms are helping with recovery. Despite a destabilizing military conflict in the eastern regions, the economy is currently recovering at rapid rates as a result of improvements in political and economic governance since the 2011 elections, as well as strong commitment to reforms in private sector development and public administration. The financial sector, among the least developed in Sub-Saharan Africa, has recovered from the financial crisis in 2008–10 and been recapitalized. Yet, while domestic credit to the private sector has been growing since the 2006 level of \$170 million, reaching \$2.4 billion in 2015, less than 5 percent of the 70 million inhabitants

BOX 1.1: THE FRAGILE RECOVERY

The Democratic Republic of Congo still suffers from the impact of a major war during the 1990s. This war had two phases: one in 1996–97 and one in 1998–2002. A period of relative prosperity during 1960–70 was based on copper and other commodity exports, which proved unsustainable when copper prices collapsed in the mid-1970s. Lack of investment sapped the potential of the mining sector, and both corporate and public institutions were too weak to absorb the commodity price shock; policies became unsustainable. The country descended rapidly from prosperity to war, with unpaid soldiers ransacking Kinshasa, the nation’s capital, in 1991–93, bringing destruction from which the city has not yet recovered. Infrastructure collapsed, and today only four provincial capitals can be reached by road from Kinshasa. From 1997 to 2003, the country destabilized even further, entering two wars that cost millions of lives.

The end of the second war in 2002 coincided with a recovery in mining prices on international markets. Mines that had been closed as a result of nationalization and war were reopened as part of joint ventures with international partners. As mining production increased, so did demand for transport and security services as well as financing for trade and construction projects. Key infrastructure bottlenecks were not addressed, however, and social liabilities blocked the reform of state-owned enterprises. Growth in the agriculture and informal sectors was initially subdued but picked up after 2006 in those provinces where peace and security had improved.

Source: Herderschee, Kaiser, and Samba 2012.

have a bank account, compared with the average of 24 percent across Sub-Saharan Africa.² The total assets of the banking sector amount to over 40 percent of GDP (\$3.6 billion) and are about 90 percent dollarized.

However, continuing uncertainties about the business environment and economy restrain banks from lending. Productive finance from the banking sector is particularly difficult for micro, small and medium-sized enterprises (MSMEs) to access, at least at terms affordable to all but the best-established enterprises with highly securitized financing proposals by the Central Bank of Congo. Although supervision enforcement by the Central Bank improved since 2011, with assistance from the International Monetary Fund, the legacy of lax enforcement has triggered caution among investors, creditors, and development partners contemplating financial intermediation using existing institutions. Consequently, although access to finance is improving, it remains one of the major constraints for private sector development.

The country also faces a major challenge in terms of inclusion, particularly for youth and women. Between 2005 and 2012, more than 40 percent of the unemployed were young workers (aged 15 to 24). Youth unemployment is particularly pernicious in urban areas, and the government has no viable policy yet to deal with this problem. The shortage of jobs spurs growth in the informal sector and, due to weak supportive structures, many young workers turn to a life of crime. In addition, although women are the main providers in their households in most of the country and especially in rural areas, the majority are not yet part of the private sector development effort owing to customary laws that force them to get their husband’s authorization before entering into activities such as signing contracts, purchasing property, incorporating businesses, or filing lawsuits.

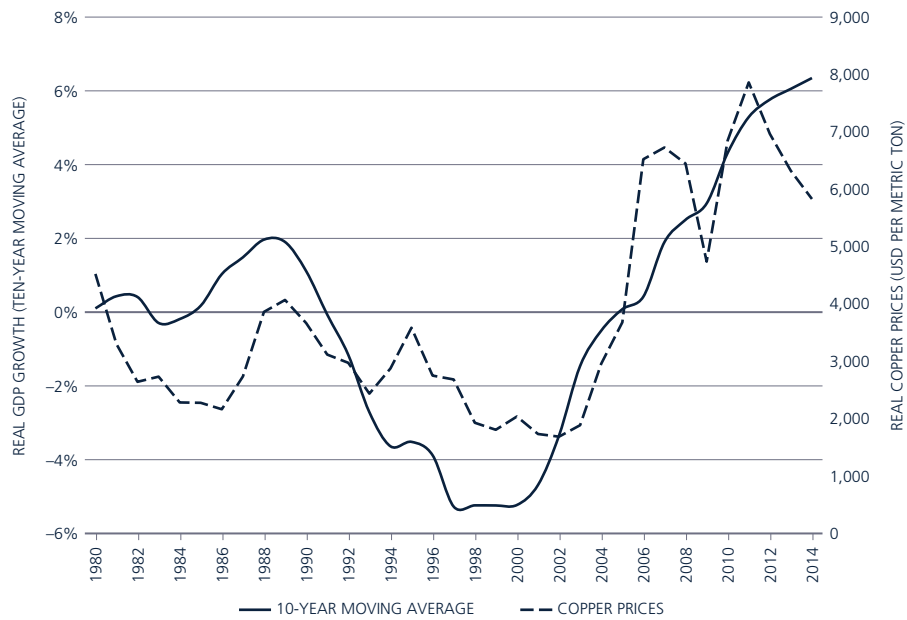
ECONOMIC AND LABOR MARKET PERFORMANCE

Rich in and dependent upon extractive industries, the economy has been strongly affected by changes in copper and oil prices, and by conflict. In the 1970s and 1980s, real economic growth was volatile, averaging zero in the 1970s and +2 percent in the 1980s. Following a peak around 1988, the decline in copper and oil prices throughout the 1990s—combined with conflict—caused the economy to collapse. Real GDP fell by 7 percent per year on average during the 1990s (figures 1.1 and 1.2), while population growth averaged over 3 percent per year. GDP per capita had peaked in 1974 and fallen precipitously during the ensuing two decades.

The steep decline in prosperity coincided with the slide in world commodity prices. Real copper prices peaked in 1974, then again in 1980 and 1989, before falling dramatically until reaching a nadir in 2002. The conflicts

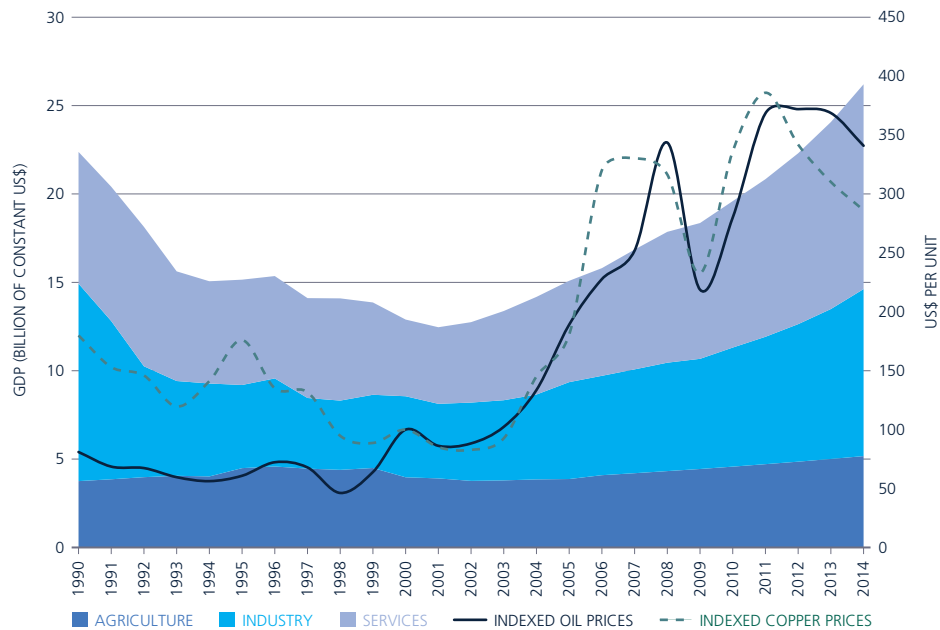
² All dollar amounts are U.S. dollars unless otherwise indicated.

Figure 1.1
Real copper prices and 10-year moving average real GDP growth rates, 1980–2014



Source: World Bank, World Development Indicators (accessed November 21, 2016), <http://data.worldbank.org/indicator/SP.POP.TOTL?locations=CD>.

Figure 1.2
Sectoral GDP and indexed commodity prices, 1990–2014

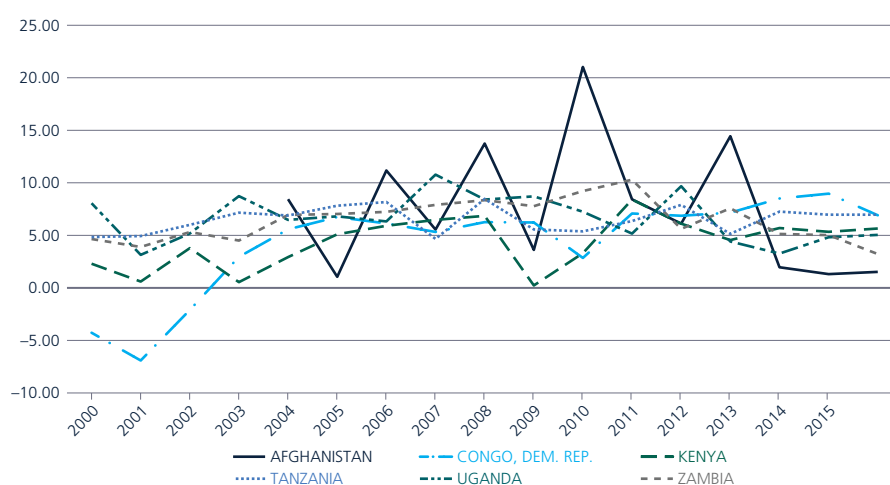


Source: World Bank, World Development Indicators (accessed November 21, 2016), <http://data.worldbank.org/indicator/SP.POP.TOTL?locations=CD>.

between 1996 and 2002 further eroded per capita income to a level among the lowest in the world. However, as the 10-year moving average growth rate in figure 1.1 shows, the country's economic woes long preceded the conflict.

During the postconflict rebound and coupled with the global commodity price boom, the economy enjoyed rapid economic growth. Between 2010 and 2015, the economy grew at an average annual rate of 7.4 percent (figure 1.3). To put this into a regional context, it is three times faster than the growth of the world economy (2.4 percent) and almost twice as fast as the average for Sub-Saharan Africa (4.2 percent). It also exceeds the averages for low-income countries and for lower-middle-income countries, at 5.1 and 5.3 percent respectively. Since 2013, GDP growth in the country has accelerated to overtake fast-growing regional neighbors Kenya, Tanzania, Uganda, and Zambia. The acceleration in growth was driven mostly by the boom in industry (due to mining and construction), but it also spilled over to the services sector (figure 1.2). During the boom years, however, agriculture grew very little.

Figure 1.3
GDP growth in the Democratic Republic of Congo and selected comparators, 2000–15



Source: Based on JobStructure Tool, Jobs Group, World Bank.

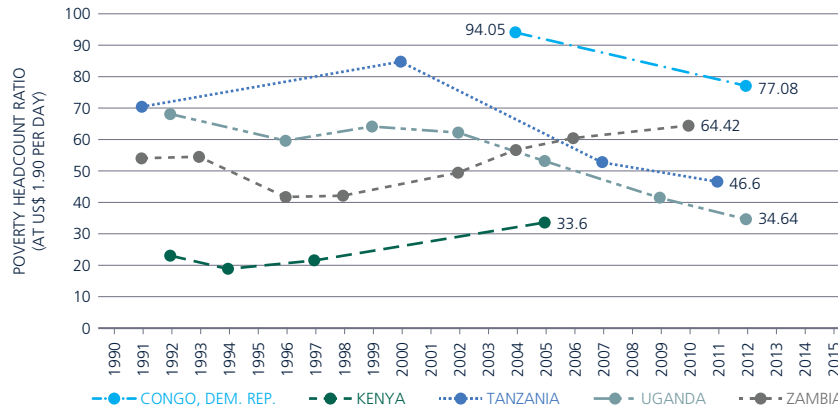
Poverty

The acceleration in growth and the postconflict rebound reduced poverty, but slowly. Poverty declined at an average annual rate of 2.5 percent between 2004 and 2015. Although the progress is significant, and more than 10 million Congolese no longer live in poverty, other countries in the region reduced poverty faster. In Tanzania, headcount poverty fell at an average of almost 7 percent annually (figure 1.4). Uganda reduced poverty nearly twice as fast as the Democratic Republic of Congo, at an average annual rate of almost 5 percent.

Poverty remains exceptionally high, particularly in rural areas. It is highest in the rural and relatively isolated Eastern province, where the conflict and the booming mining industry coexist. Using the US\$1.90 poverty line (at purchasing power parity), over 77 percent of Congolese are poor. Over 85 percent of workers earn less than US\$3.10 per day. The United Nations (UN) Multidimensional Poverty Index in 2016 was 0.369.³ More than 72 percent of the population experiences multidimensional poverty (UN 2016a). According to UN (2016a), at 72.5 percent, the multidimensional poverty headcount is 4.6 percentage points lower than income poverty (77.1), implying that individuals living below the income poverty line may have access to non-income resources. Rural areas are at a particular disadvantage. At 64.9 percent, the poverty headcount for rural areas, using the national poverty line, is 3.3 percent higher than the national poverty headcount for urban areas (World Bank 2016).

³ Percentage of the population that is multidimensionally poor, adjusted by the intensity of the deprivations. For details on how the Multidimensional Poverty Index is calculated, see technical note 5 at http://hdr.undp.org/sites/default/files/hdr2016_technical_notes.pdf [UN 2016b].

Figure 1.4
Poverty in the Democratic Republic of Congo and comparators, 1990–2012



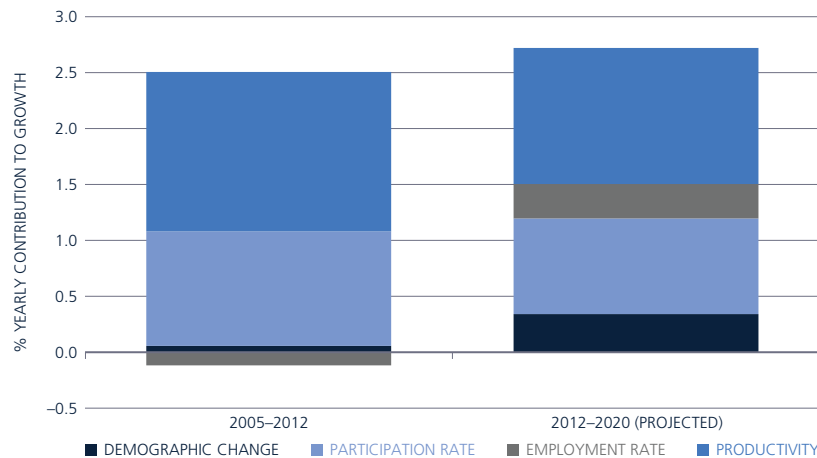
Source: World Bank, World Development Indicators (accessed November 21, 2016), <http://data.worldbank.org/indicator/SP.POP.TOTL?locations=CD>.

Sources of Growth: Sectoral and Spatial Transformation

To reduce poverty faster through growth may require taking a more diversified and jobs-rich growth path. As is common in so many mineral-rich economies, the mining boom has not created a commensurate boom in employment. In fact, as the working-age population and labor force participation rates were rising in the country, the employment rate was falling. Most productivity gains were accrued by manufacturing activities. In contrast, services' labor productivity contracted, while hardly any change was observed in agriculture. Improving the productivity of work in informal services in urban areas may be important if the country is to maintain the recent pace of structural change.

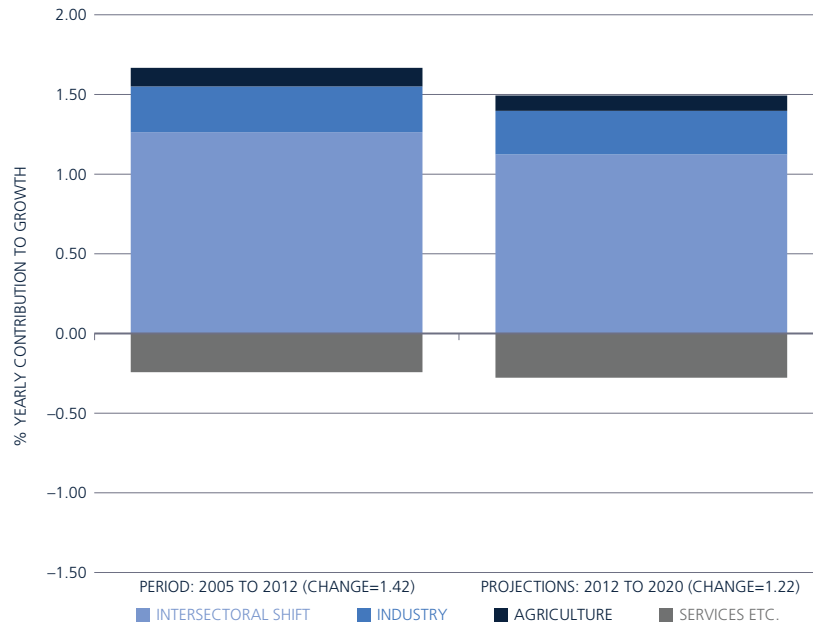
Between 2005 and 2012, per capita GDP growth was driven by productivity and rising labor force participation rates, but the employment rate fell. Labor productivity grew annually by an average of 1.4 percent, accounting for 60 percent of the 2.4 percent growth in average annual GDP per capita (figure 1.5). Demographic change contributed little to per capita income growth because, owing to the high fertility rate and youthfulness of the population, the total population continued to grow at a rate similar to that of the working-age population. The UN Population Division's mid-range forecasts suggest that this situation will not

Figure 1.5
Growth decomposition, value added, 2005–20



Source: Based on JobStructure Tool, Jobs Group, World Bank.

Figure 1.6
Productivity decomposition by sector, 2005–20

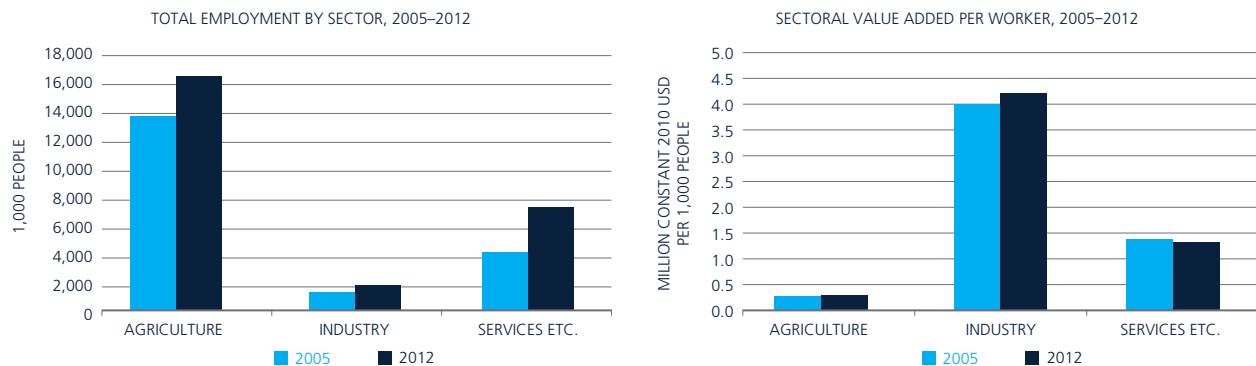


Source: Based on JobStructure Tool, Jobs Group, World Bank.

change until after 2030, barring major shifts in adolescent girls’ education, in access to modern contraception, and in female participation in the labor force. The remaining 40 percent of per capita income growth (not contributed by labor productivity) came almost entirely from growth in labor force participation. The labor force grew by 4.4 percent per year, while the working-age population an average annual growth of 3.3 percent for the working-age population.

Most improvements in average labor productivity growth resulted from structural changes. As figures 1.6 and 1.7 show, between 2005 and 2012 about 80 percent of the growth in labor productivity came from a proportionate increase in workers moving from lower-productivity jobs in agriculture to relatively higher-productivity jobs in services and industry. Agricultural employment continued to rise, and agriculture still employed most workers—more than 16 million in 2012. But as the economy grew, workers were shifting to

Figure 1.7
Sectoral employment and labor productivity, 2005 and 2012



Source: Based on JobStructure Tool, Jobs Group, World Bank.

employment in the booming sectors (figure 1.7a), especially services, where employment almost doubled in seven years. As one would expect, productivity in industry rose with the real increases in copper and oil prices, but average productivity in agriculture barely changed, and in services it fell, suggesting that the new jobs created in services were informal ones with lower hours⁴ (figure 1.7 right side).

Employment growth in industry is slow. As total employment increased from about 19 million workers in 2005 to over 25 million in 2012, employment numbers for major sectors rose across the board. Employment in services grew the fastest (8.4 percent annually), which led to an increase in its share of total employment, from 21.8 percent in 2005 to 28.6 percent in 2012 (figure 1.7). Manufacturing employment grew by 4.3 percent, in line with total employment. In contrast, agricultural employment grew by 2.8 percent, which shrunk its share of the total, from 71.1 to 64.3 percent (figure 1.7).

Gaps in labor productivity between sectors are wide. That said, the size and growth of labor productivity in industry sets it apart. With over 60 percent of employment in agriculture, the potential gains from increasing the low level of agricultural productivity and facilitating the movement of workers to non-agricultural work are large. Industrial value added per worker in 2012 was 14 times larger than that of agriculture and 3 times that of services (figure 1.7b). Labor productivity (value added per worker) in services is almost 5 times that of agriculture. Although employment in industry has expanded, it remains small—roughly 1.8 million jobs out of 25.6 million in total. This in part reflects the dominance of capital-intensive mining in the industrial sector. This sector is likely to have limited capacity to absorb labor, and so relatively few workers can benefit directly from this high productivity (that is, with better wages). Alternatively, commercial agriculture may have the potential to create waged work, but it may also be a stimulus both for off-farm service jobs (in transport, storage, packing houses, and trading) and for agro-processing jobs.

If trends hold, demographic factors may start to contribute to per capita income growth in the coming decade. Running growth rates for the labor force, employment, and GDP between 2005–12 and 2020 using UN medium-range projections for the population and working age shows there is some potential for demographic changes to contribute more to per capita income growth. If trends were to continue, labor productivity growth through sector-level reallocation would still be the main driver of per capita income growth, but at 1.2 percent, its contribution would be smaller (figure 1.6b). The second biggest driver of per capita income growth would be the expansion in the scale of labor force growth. If recent historical growth (4.4 percent) persists, the participation rate will rise from 74.3 in 2012 to 79.5 in 2020. Although still smaller than the contribution of productivity and participation, the contribution of demographic change—or the increase in the share of the working-age population—would expand from only 0.06 percent to 0.34 percent.

Demographics

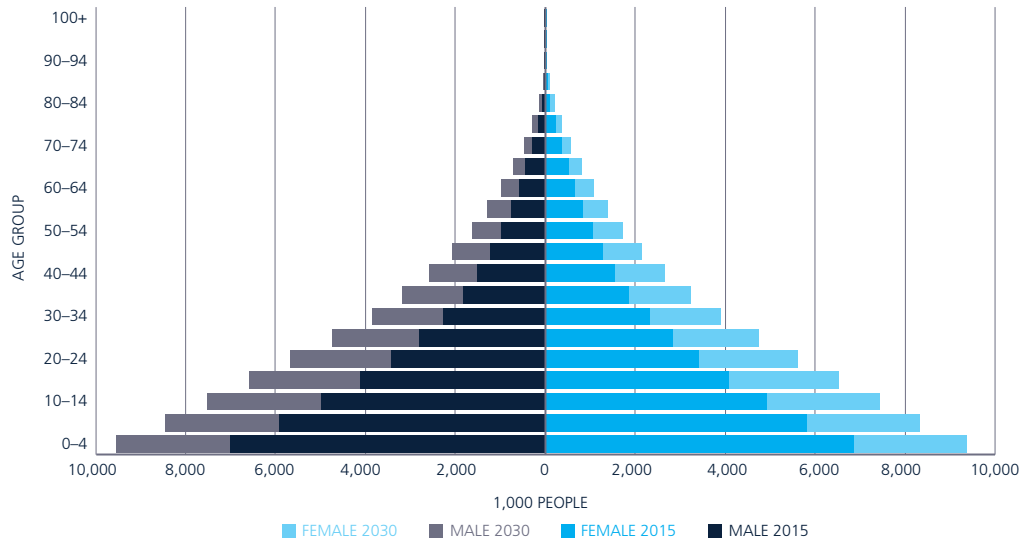
The challenge of creating jobs-rich, inclusive growth is compounded by the rapid growth in the youthful population. The youth bulge means the working-age population will grow by 67 percent between 2015 and 2030, demanding that the economy create about 18 million new jobs in 15 years. UN mid-range projections show that the population will expand from 77 million people in 2015 to 90 million in 2020. The projected shares of the working-age population are 51 and 52 percent of the total population. This translates into the country having 39.4 million potential workers in 2015 and nearly 47 million in 2020—about 8 million more. By 2030 the population will reach 120 million, with 55 percent (66 million) in the working-age population—19 million more than in 2015. From 2015, the size of the working-age population is projected to grow by 1.5 million to 2 million people each year. Consequently, by 2035, the working-age population will nearly double with respect to 2015. Since the size of the labor force is typically about two-thirds that of the working-age population, these estimates may mean an annual growth of the labor force in excess of 1 million workers.

High youthfulness and fertility drive the growth in the future workforce. In 2015, children (those between the ages of 0 and 14) accounted for 46 percent of the population, while the working-age population (between the ages of 15 and 64) accounted for 51 percent. The elderly (age 65 and over) accounted for 3 percent. Consequently, the population pyramid shows a young population bulge, and it is slim where it depicts the

⁴ Labor force data do not allow adjustment of the labor productivity measure for hours worked in a sector.

elderly (figure 1.8). Although the pyramid is less steep in the next generation, to 2030, the Democratic Republic of Congo will remain a youthful country for some time to come. This suggests that to reduce the burden on the economy the country needs to generate millions more jobs while improving productivity.

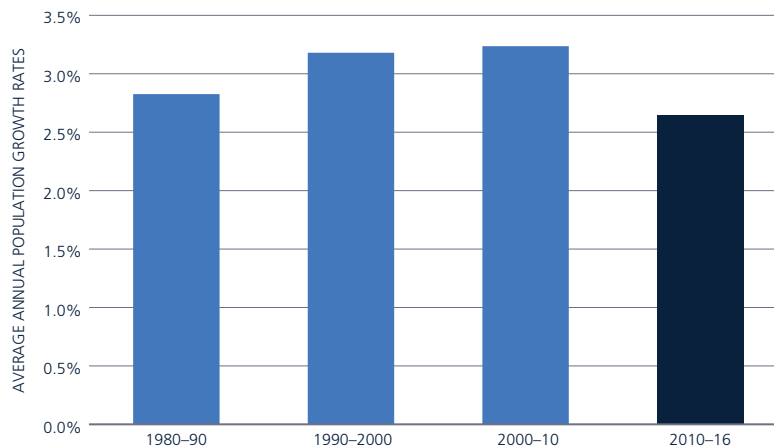
Figure 1.8
Population distribution by age cohort, 2015 and 2030



Source: UN (2015), *2015 Revision of World Population Prospects* (accessed November 22, 2016), <https://esa.un.org/unpd/wpp/>.

Population growth has started to decline slowly. With an estimated population in excess of 77 million people, the Democratic Republic of Congo is one of Africa’s largest countries. Its population is growing at faster rates than those of other African countries. During the 1980s, the population grew annually at an average of 2.8 percent. The rate increased to 3.2 percent during the 1990s and remained practically unchanged during the first decade of the 21st century. However, in the 2010–2016 period, it slowed to an annual average of 2.6 percent (figure 1.9), due in part to a decline in fertility rates. Until the turn of the century, Congolese women were having more than seven children on average, one of the highest fertility rates in the world. Since 2014, the rate has gone down to about six children. Declining fertility rates are

Figure 1.9
Population growth, 1980–2016

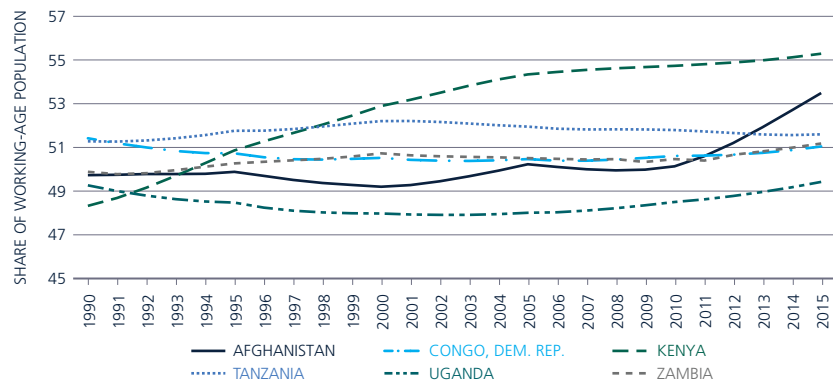


Source: World Bank, World Development Indicators (November 21, 2016), <http://data.worldbank.org/indicator/SP.POP.TOTL?locations=CD>.

a positive development; however, the decline is still low when compared with other countries affected by fragility, conflict, and violence (FCV) and other African neighbors.

The size of the working-age population remains nearly unchanged. The share of the working-age population has remained at about 51 percent since 1980 (figure 1.10). When compared with countries that face similar FCV challenges and with its neighbors, the Democratic Republic of Congo shows almost no change in the working-age population. FCV-affected countries such as Haiti and Afghanistan have for some time experienced increases in working-age population. In contrast, in neighboring countries such as Uganda and Tanzania the share has held steady.

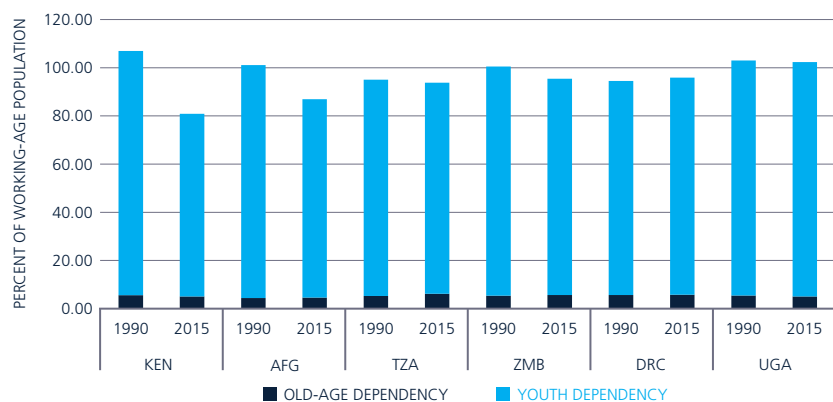
Figure 1.10
Working-age population distribution by age cohort, selected countries, 1990–2015



Source: World Bank, World Development Indicators (accessed November 21, 2016), <http://data.worldbank.org/indicator/SP.POP.TOTL?locations=CD>.

Stubbornly high youth dependency ratios represent a macroeconomic and fiscal challenge. The total dependency ratio (share of dependents relative to working-age population) increased from 94.5 in 1990 to 95.9 percent in 2015 with youth (ages 0–14) accounting for the bulk of dependents. The Democratic Republic of Congo is one of only four low-income countries (the others being Malawi, Niger, and Somalia) where the dependency ratio rose from 1990 to 2015 (figure 1.11). The macro-fiscal challenges associated with high youth

Figure 1.11
Age dependency ratio distribution, 1990 and 2015



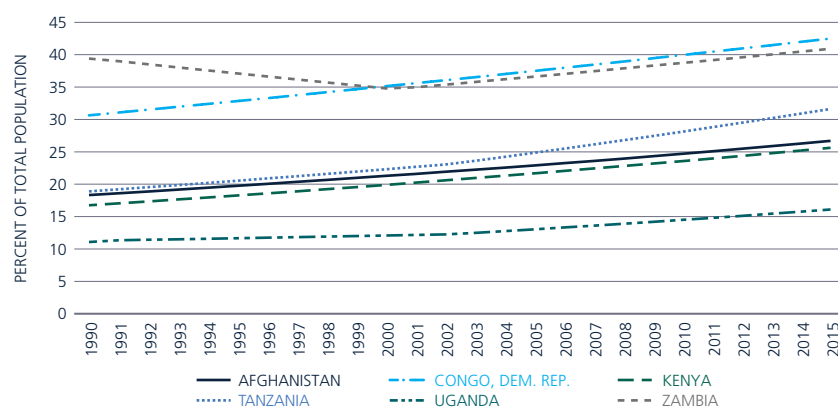
Source: World Bank, World Development Indicators (accessed November 21, 2016), <http://data.worldbank.org/indicator/SP.POP.TOTL?locations=CD>.

dependency—improving education coverage and quality, improving maternal–child health, creating enough jobs, building sufficient infrastructure to sustain growth—are especially pronounced, and they compound the country’s jobs challenge.

Urbanization

Urbanization rates are already relatively high. In 2015, the share of the urban population was 42.5 percent, despite the country’s low-income status. This was close to the urban population share of Angola (44.1 percent in 2015), which is already classified as an upper-middle-income country. The Democratic Republic of Congo’s urbanization is unusually high for its level of income. The urban population share is also almost double that of Kenya and much higher than almost any other comparator (figure 1.12). That said, with an urban share half as large, Kenya’s GDP per capita is almost three times as great.

Figure 1.12
Urbanization in the Democratic Republic of Congo and comparators, 1990-2015



Source: Based on JobStructure Tool, Jobs Group, World Bank.

Urbanization poses particular challenges for good access to jobs for those in sprawling slums. The type of urbanization in the Democratic Republic of Congo has resulted in the proliferation of slums. In 2014, it was estimated that 75 percent of the urban population lived in slums. Part of the problem is the primacy that Kinshasa represents in the Congolese urban system. Slums such as those in Kinshasa are usually associated with unconnected, poorly planned and managed urban areas that represent physical barriers for workers trying to commute and access better-paid jobs. Distance and urban fragmentation increase job search costs as well as commuting times and costs (Gobillon, Selod, and Zenou, 2007). Such a spatial mismatch can lead to significant productivity-reducing inefficiencies (such as congestion, lack of urban infrastructure, and low-quality urban jobs) and requires better management of the urbanization process.

Migration is likely fueling urbanization patterns. Although no internal migration data are available, data from labor force surveys conducted in 2005 and 2012 indicate that rural-to-urban migration is substantial. Across the board, for every labor market indicator, average annual growth rates in urban areas are two or three times faster than those in rural areas (table 1.1). The gap is wider for youth. The working-age population in urban areas grew at an average annual growth rate that is over five times the rate in rural areas (table 1.2). In terms of the labor force, although urban areas experienced an average annual growth of 5.5 percent, participation in rural areas contracted by 0.2 percent. A similar trend is observed for employment. The largest growth was experienced in wage employment in urban areas, whereas the largest contraction was in unpaid work in rural areas. Sluggish growth in the labor market in rural areas (in terms of both working-age population and labor force participation) relative to the high-paced expansion of the urban labor market suggests that workers are migrating from rural to urban areas. The facts that the largest contraction

Table 1.1
Labor market indicators for urban and rural areas, 2005 and 2012

Indicator	Urban			Rural		
	2012 (thousands)	2005 (thousands)	Average annual growth (%)	2012 (thousands)	2005	Average annual growth (%)
Working-age population	16,400	8,773	8.9	23,600	18,800	3.2
Labor force participation	8,595	4,791	8.3	18,300	14,900	2.9
Unemployment	701	377	8.9	200	136	5.5
Employment	7,894	4,415	8.3	18,100	14,800	2.9
Waged	2,965	1,286	11.9	1,315	913	5.2
Unpaid	675	388	7.9	4,632	5,039	-1.2

Source: Based on INS 2014b.

Table 1.2
Labor market indicators for youth (by type of region), 2005 and 2012

Indicator	Youth, urban			Youth, rural		
	2012 (thousands)	2005 (thousands)	Average annual growth (%)	2012 (thousands)	2005 (thousands)	Average annual growth (%)
Working-age population	5,779	3,342	7.8	7,295	6,552	1.5
Labor force participation	1,189	810	5.5	3,505	3,543	-0.2
Unemployment	203	114	8.2	79,550	63,477	3.2
Employment	986	695	5.0	3,425	3,480	-0.2
Waged	243	117	10.4	168	131	3.6
Unpaid	209	153	4.4	1,562	1,827	-2.2

Source: Based on INS 2014b.

is in young, unpaid workers in rural areas and that the fastest expansion is in waged employment in urban areas may also suggest that younger workers, typically working unpaid in their families, are migrating to urban areas in search of waged employment.

Urbanization might be linked not only to incentives to migrate, but also to in situ population growth in urban areas. One explanation for urbanization at lower levels of income lies in consumption externalities. That is, countries such as the Democratic Republic of Congo might be urbanizing despite job creation and in order to be able to be close to basic services (such as water, sewage, schooling, and health care) and urban amenities. Another explanation, put forward by Fox (2011), is that Africa's urbanization is driven by natural (in situ) population growth in urban areas, rather than by migration. In the case of the Democratic Republic of Congo, FCV might also be important elements that explain the high urbanization levels when incomes are not growing as fast. Rich mineral-extraction sites in eastern provinces are linked to conflict, so it is possible that FCV could be displacing families that head to larger and safer cities such as Kinshasa (see box 1.2).

BOX 1.2: MIGRATION, DISPLACEMENT, AND FCV-AFFECTED COUNTRIES

Migration trends in the Democratic Republic of Congo are determined by history and the consequences of conflict in terms of displacement. Almost one-fifth of Congolese people (18.4 percent) have not always lived in their locality of current residence. Of those migrants, a slightly larger proportion were women: migration rates by gender (19.4 percent for women and 17.3 percent for men) show that women are slightly more likely to migrate. With the exception of the capital, migration is as strong in urban environments as it is in rural ones. Despite Kinshasa having a smaller proportion of migrants than the average (14.8 percent), at over 11 million people, the region's absolute migration numbers are second to none.

Migrants are for the most part drawn to similar regions, in successive waves. Internal migration flows from urban areas to secondary cities, and from these to the capital. In the countryside, migrants are themselves rural residents (62.5 percent). Similarly, in urban areas, about two-thirds (66.4 percent) of migrants were already urban dwellers. The proportion of urban immigrants is highest in Kinshasa, at 76.9 percent.

Migration is primarily either motivated by the need to follow a family member or forced by conflict. Almost half (47.3 percent) of respondents in the INS labor force survey for 2012 followed or joined a family member; only small proportions moved to study (7.6 percent) or to work (8.9 percent). Migration can also be forced: 7.5 percent of migrants had to move because of conflicts. These war-induced migrants mainly resided in the countryside, with only a small share heading to Kinshasa (2.1 percent). Kinshasa has the highest proportion of student-related migration, driven to take advantage of the institutions concentrated in the capital.

Source: INS 2014c.



2. WORKERS AND JOBS

SUMMARY

The Democratic Republic of Congo is a young country. Its youth “bulge” could offer a unique opportunity to grow faster in the near future, provided workers are able to find gainful employment. However, inactivity rates are soaring, and despite the majority of Congolese being employed, the labor force has started to shrink, compromising the potential demographic dividend.

Traditional forms of employment are slowly giving way to wage employment, albeit without much industrialization. The most prevalent forms of employment remain self-employment and unpaid work in the agriculture sector in rural areas. Yet, the share of workers involved in wage work is increasing, driven by the private sector. Although employment rates are not determined by educational levels, obtaining wage work does depend on educational attainment. Employment in industry has remained stable, as labor shed by agriculture is flowing into services instead of contributing to industrialization.

Underemployment, informality, and inactivity are among the most challenging features of the labor market. Unemployment is remarkably low and occurs mostly in urban areas. However, youth unemployment is high across the country. One possible explanation for low unemployment is high rates of underemployment. Rampant in rural areas and among youth, underemployment does not discriminate by educational attainment. Informality, or working without a contract, is also pervasive but affects mostly the young and less educated. The proportion of the working-age population that is inactive is growing and presents a serious challenge for the country.

DEMOGRAPHICS AND LABOR FORCE PARTICIPATION

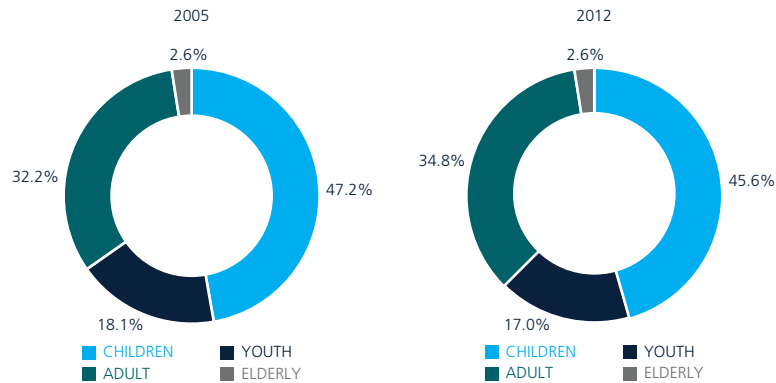
The relatively young and growing population could be the driving force behind economic prosperity in future decades. The ingredients for a larger, better-educated workforce that is more employable can be realized if institutions are strengthened and viable economic policies are put in place. The large numbers of youth growing up today present tremendous opportunities and risks. We look at this large and growing labor force (potential and realized) to see how ready they are to drive and participate in the country’s economic potential.

Over the span of seven years, the age composition of the population has remained nearly unchanged. Small changes took place in the proportions of adults, children, and youth: while the proportions of children and youth shrank, that of adults grew (figure 2.1). Greater changes were observed in urban areas, which experienced growth across all age categories.⁵ For example, the share of 25 to 64 year olds in urban areas grew from 30 percent to 39 percent.

The country has a sizable yet slowly contracting youth bulge. The majority of the 26 million citizens who are not economically active are children younger than 15. These children represent “workers in waiting.” This youth bulge is both a current challenge and a future opportunity. The present-day challenge is for the government to provide adequate educational opportunities for these children. The future opportunity, and challenge, is to answer the demand that these children will make upon entering the labor market. There is some evidence that the youth bulge has already begun contracting. The number of those not in the working-age population declined slightly between 2005 and 2012, from 26.4 million to 25.6 million. With the proportion of children

⁵ Urbanization progressed slowly during the seven years between surveys. In 2005 just 33 percent of the population lived in urban areas. By 2012 that share was up to nearly 40 percent.

Figure 2.1
Age demographics, 2005 and 2012

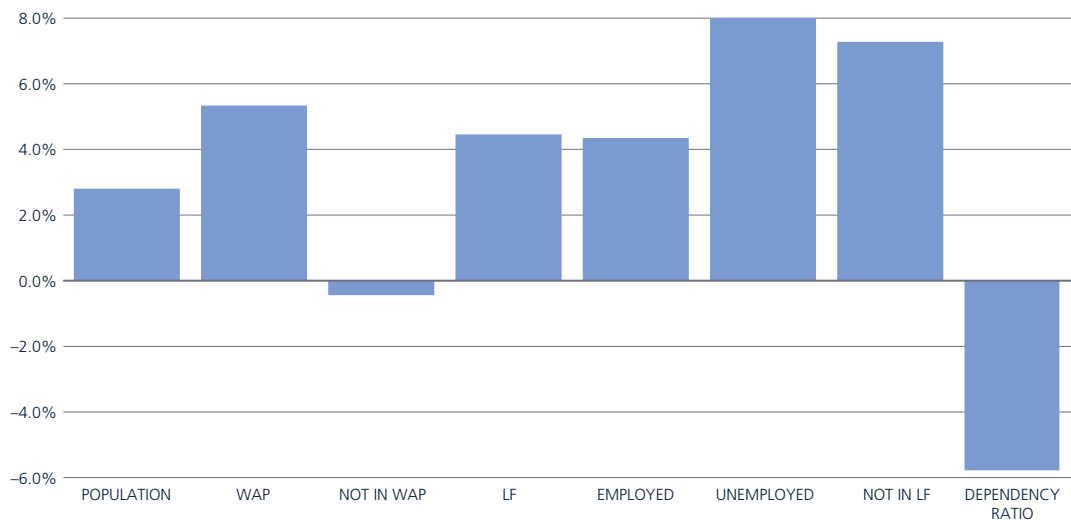


Source: Based on INS 2014b.

under 15 shrinking at an annual average rate of 0.4 percent, the country is losing over 100,000 future workers every year. All things being equal, the country could find itself with a 1 million fewer workers by 2023.

The youth bulge presages a potential demographic dividend that represents an opportunity and a challenge. Two shifts may signal a coming demographic dividend. First, fertility rates peaked at 7.27 children per woman in 1995 and then waned steadily to 6.04 in 2012. Second, many who were younger than 15 in 2005 have since joined the economically active population. As a result, the working-age population (15 to 64 years old) grew from 27.6 million to over 40 million between 2005 and 2012. This resulted in changes in the age dependency ratio—the ratio of those not in the labor force to those in the labor force—from 0.96 in 2005 to 0.64 in seven years. According to the UN (2007), this period of declining dependency ratio represents a window of opportunity, a limited period before the dependency ratio begins to increase again when there are more producers than consumers in the society, allowing for further development. To reap this demographic dividend, is important that new entrants into the labor market are able to find employment and that current workers are able to improve the quality of their current employment. But at an average annual growth rate of 5.3 percent in the working-age population (figure 2.2), this window of opportunity also represents a challenge.

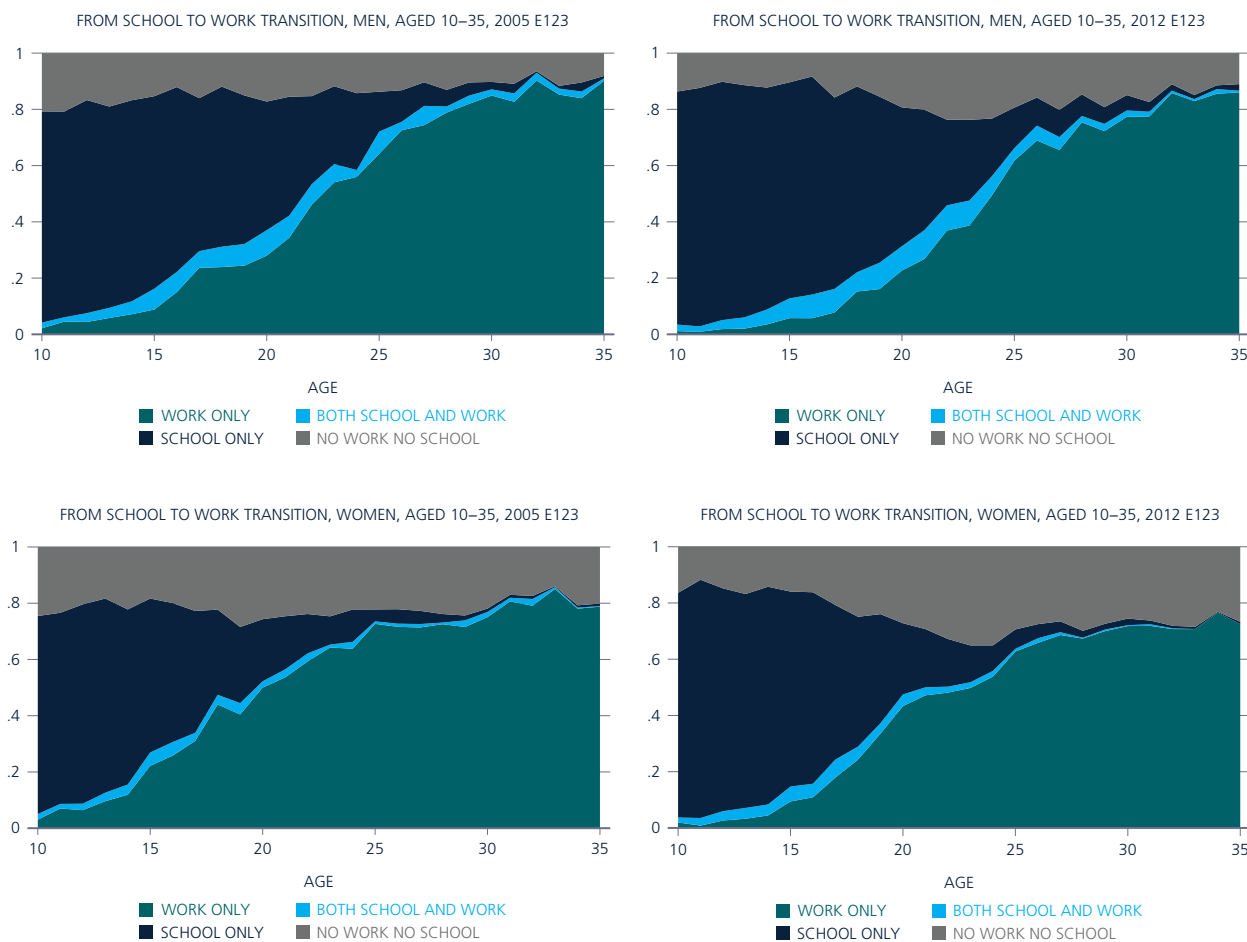
Figure 2.2
Labor conditions: Annual average growth rates, 2005–12



Source: Based on INS 2014b.

Young workers find it increasingly difficult to participate in the labor market. Over the course of the seven years reviewed, the proportion of youth enrolled in school grew (see figure 2.3a and 2.3b). However, the share of those neither in school nor participating in the workforce also grew. For girls, the increase was more pronounced than for boys (see figure 2.3c and 2.3d). If the demographic dividend is to be realized, the odds of finding productive employment for youth must go up. At present, these odds are disappointingly low.

Figure 2.3
School-to-work transition by gender, 2005 and 2012



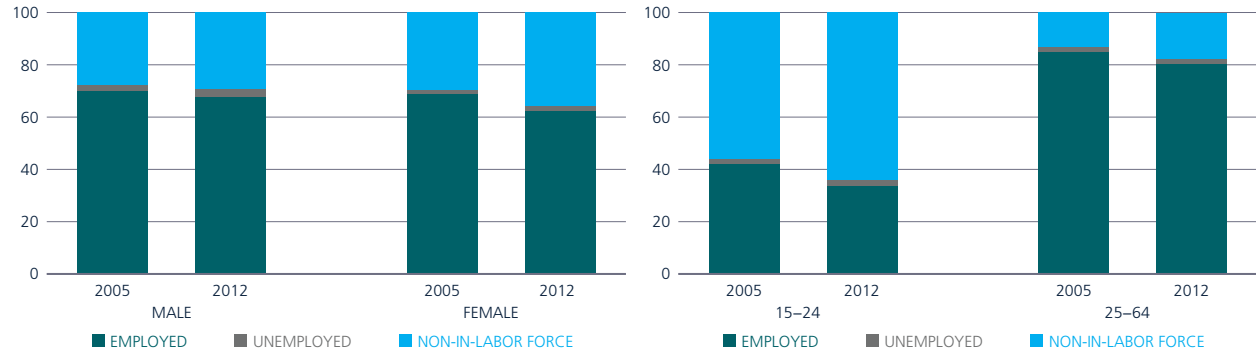
Source: Based on INS 2014b.
Note: Data cover people age 10 to 35.

The size of the labor force has shrunk. The country is simultaneously experiencing an increase in the working-age population and a decrease in labor force participation. From 2005 to 2012, labor force participation declined from 74 to 67 percent. This decline occurred across demographic groups: first, across rural and urban areas, despite an overall higher employment rate in rural areas; and second, across genders. Participation of both female and male workers declined, though the drop was larger for female workers (figure 2.4a). The decline in participation was also more pronounced for youth than for older workers (figure 2.4b). However, the demographic dividend will be attenuated if the country remains unable to create a sufficient number of jobs for the working-age population.

Structure of the Labor Market

The majority of working-age Congolese are employed. According to the 2012 Survey of Employment, Informal Sector and Household Consumption, two-thirds of the working-age population is employed, while

Figure 2.4
Labor force participation share by gender, 2005 and 2012

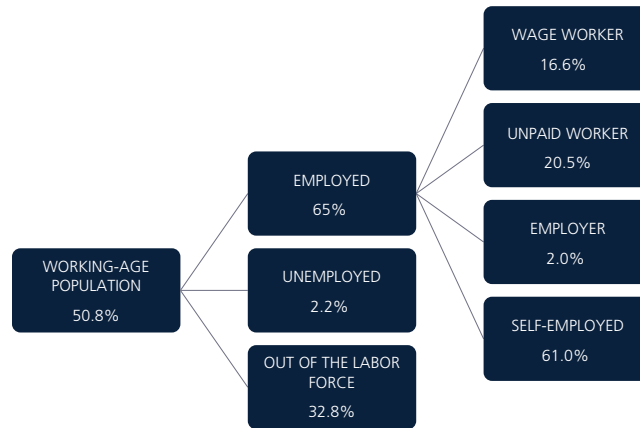


Source: Based on INS 2014b.

only 2.2 percent is unemployed. However, almost one-third of the working-age population is not in the labor force (figure 2.5).

Lack of employment opportunities may have led to an increase in inactivity. Over the seven-year period, there has been an ever-so-slight absolute increase in the unemployment rate, from 1.9 to 2.2 percent. Taken together, it may be that the contraction in employment has not resulted in a proportional increase in unemployment. Rather, the result has been a growing group of discouraged workers who are no longer seeking employment and have removed themselves from the labor force.⁶

Figure 2.5
Labor market structure, 2012

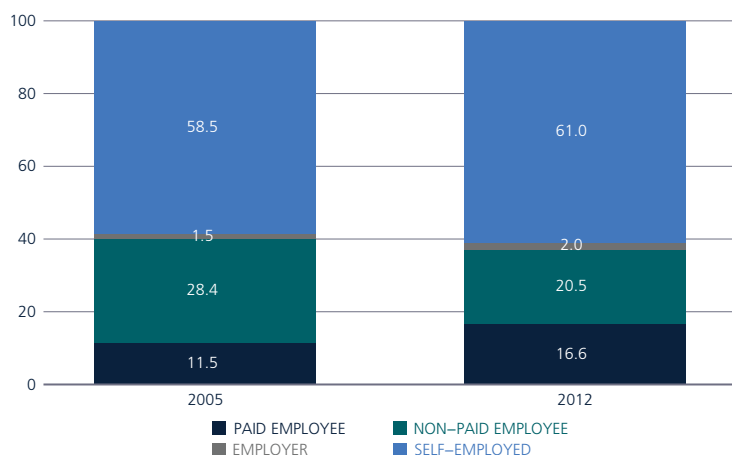


Source: Based on INS 2014b.

Self-employment continues to be the dominant form of employment. Growing slightly from 58 to 61 percent from 2005 to 2012, self-employment is the most pervasive form of employment (figure 2.6). Drilling down, it is possible to see that 45 percent of all workers are self-employed in the agriculture sector, compared with just 17 percent in other sectors.

⁶ Discrepancies in unemployment between this jobs diagnostic and official figures from the National Institute of Statistics [INS 2014a] stem from varying definitions of the minimum working age. The INS uses the age of 10, whereas the jobs diagnostic relies on the international standard of 15 years of age set by the ILO [see ILO 1973].

Figure 2.6
Employment status, 2005 and 2012



Source: Based on INS 2014b.

Unpaid work is concentrated in rural areas. From 2005 to 2012, the share of unpaid workers in the labor force dropped from 28 to 20.5 (figure 2.6). Of those unpaid workers in 2005, just 5 percent of urban workers were unpaid, compared with 25 percent of rural workers. More than 90 percent of rural and unpaid workers were laboring in the agriculture sector. By 2012, the share of unpaid workers in rural areas had decreased to 20 percent, though the vast majority (95 percent) remained in the agriculture sector.

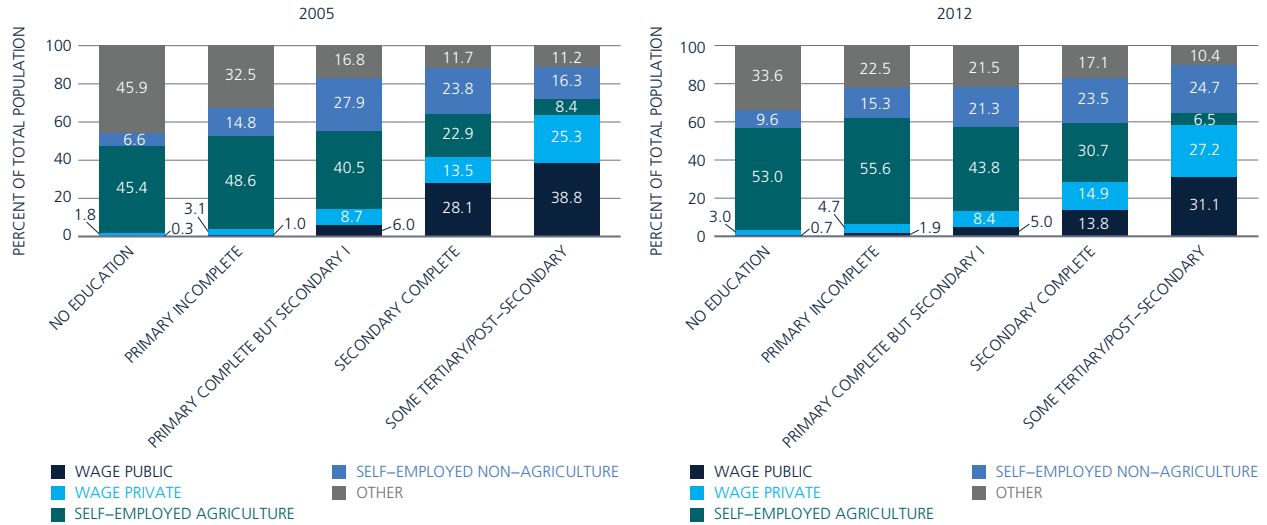
Wage employment increased over this period, driven mostly by the private sector. Overall, the share of workers in wage employment grew from 11.5 to 16.6 percent (figure 2.6). While the proportion of workers in public sector wage positions rose 1.4 percent, the corresponding share in private sector wage positions rose by 2 percent. At a regional level, wage work is becoming less concentrated in the capital. In 2005, Kinshasa was home to 37 percent of all wage workers, but seven years later that proportion was down to 27 percent. The Katanga region gained the most, with one-quarter of all wage workers now located in that region.

Education is a determinant of employment status. Higher educational attainment leads to a decreased likelihood of being self-employed in agriculture, while increasing the chances of being self-employed outside of agriculture and being a wage employee (figure 2.7). However, the returns to education are diminishing (see the comparison in figure 2.7). In 2012, 31 percent of those with postsecondary education were in public wage employment, down from 39 percent in 2005. The shift has been even more drastic for those who have completed only secondary education: in 2012, 30 percent were involved in self-employment in agriculture, up from 23 percent in 2005.⁷

Services is the only sector with a growing share of employment. In 2005, the agriculture sector employed 71 percent of workers, while services and industry employed 22 and 7 percent, respectively (figure 2.8a). However, the share of the work force engaged in agriculture in a given region varied greatly, from 5.8 percent in Kinshasa to 75.5 percent in Province Orientale. In 2012, the share of workers in industry had remained constant, while services had grown to employ nearly 29 percent of workers (figure 2.8b). Within the services sector, financial and business services, along with other unspecified services, had wit-

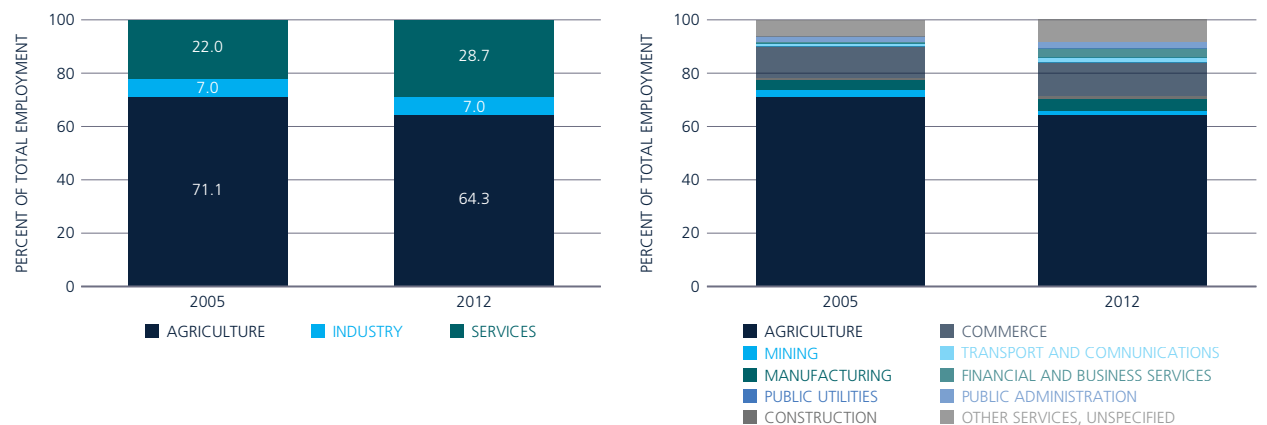
⁷ The economic intuition behind these results is that skills, and not necessarily education, is the element that enables workers to be employed in higher value added activities. Although the jobs diagnostic recognizes that education and skills are not the same thing, a data-driven diagnosis can rely only on the measurable part of skills—schooling.

Figure 2.7
Employment status by educational attainment, 2005 and 2012



Source: Based on INS 2014b.

Figure 2.8
Employment share by sector, 2005 and 2012



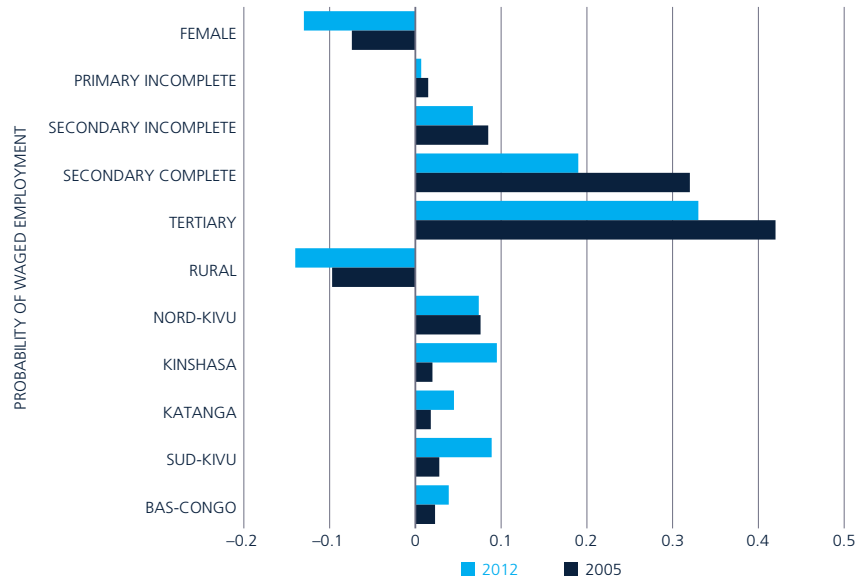
Source: Based on INS 2014b.

nessed the most growth (figure 2.8 right panel). Nonetheless, agriculture still employed two-thirds of all workers in the country.

Women remain at higher risk of more transient employment. Although the percentage of women working in unpaid positions decreased from 37 to 31 percent between 2005 and 2012, that is still a far greater proportion than the proportion of men in the same type of work, which decreased from 8 to 7 percent. In addition, female workers are significantly less likely to be in wage employment and less likely to be employers than are male workers (figure 2.9).

Women and rural workers are less likely to find wage employment. The results of a probit model of wage employment for 2005 and 2012, confirm that women are significantly less likely to be engaged in wage employment (figure 2.9). Moreover, the likelihood was stronger in 2012 than in 2005. Furthermore, those residing in rural areas are also significantly less likely to engage in wage employment than are those residing in urban areas.

Figure 2.9
Predicted probit probabilities for waged employment, 2005 and 2012, selected results

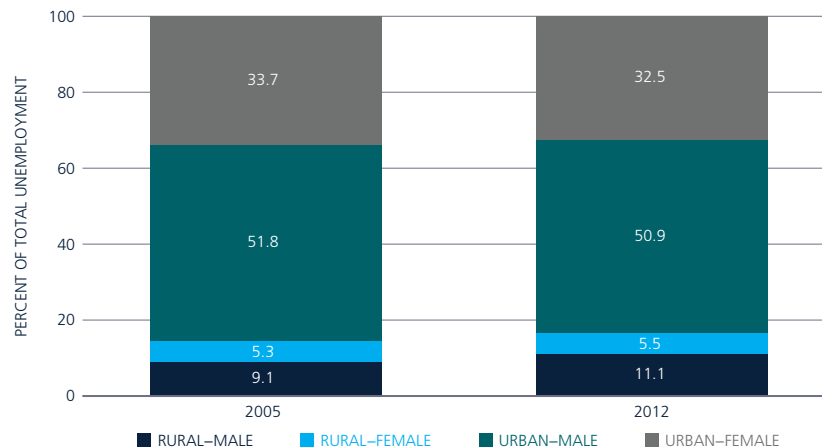


Source: Based on INS 2014b.

UNEMPLOYMENT, UNDEREMPLOYMENT, INACTIVITY, AND INFORMALITY

Unemployment is predominantly an urban phenomenon. Trends in unemployment rates suggest a minor increase between 2005 and 2012. At 2.2 percent in 2012, unemployment was remarkably low. However, 83 percent of the unemployed are urban dwellers. Men are affected more by unemployment; urban men accounted for 50.9 percent of unemployment in 2012, whereas rural men accounted for 11.1 percent (figure 2.10).

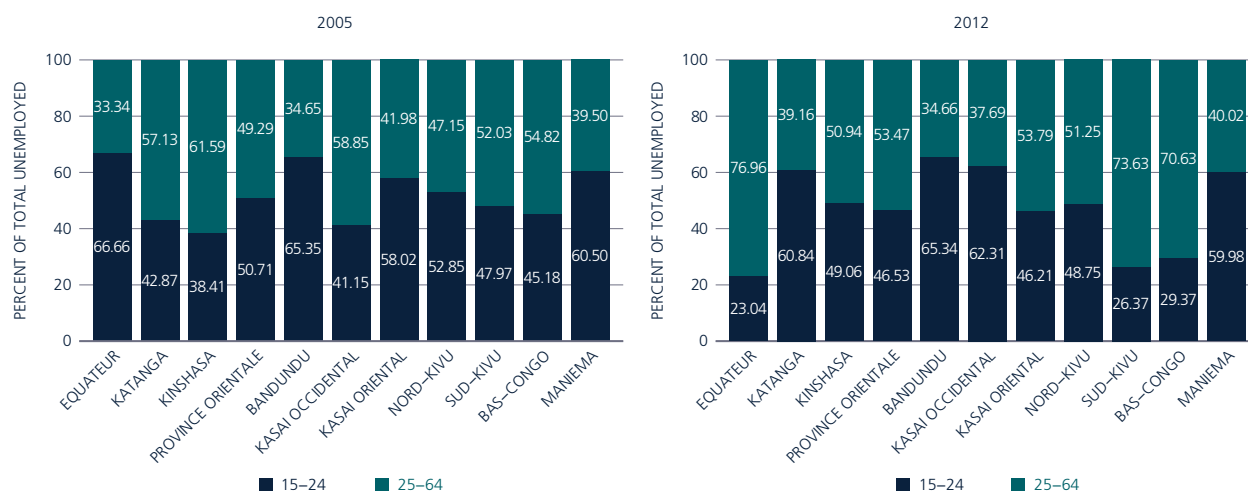
Figure 2.10
Unemployment share by location and gender, 2005 and 2012



Source: Based on INS 2014b.

Unemployment rates for young workers remain constant, though there is wide variation by region. In both 2005 and 2012, workers between the age of 15 and 24 constituted about 40 percent of the unemployed population (figure 2.11). However, viewed from a regional perspective, that rate varied widely, more so in 2012

Figure 2.11
Unemployment by age and region, 2005 and 2012



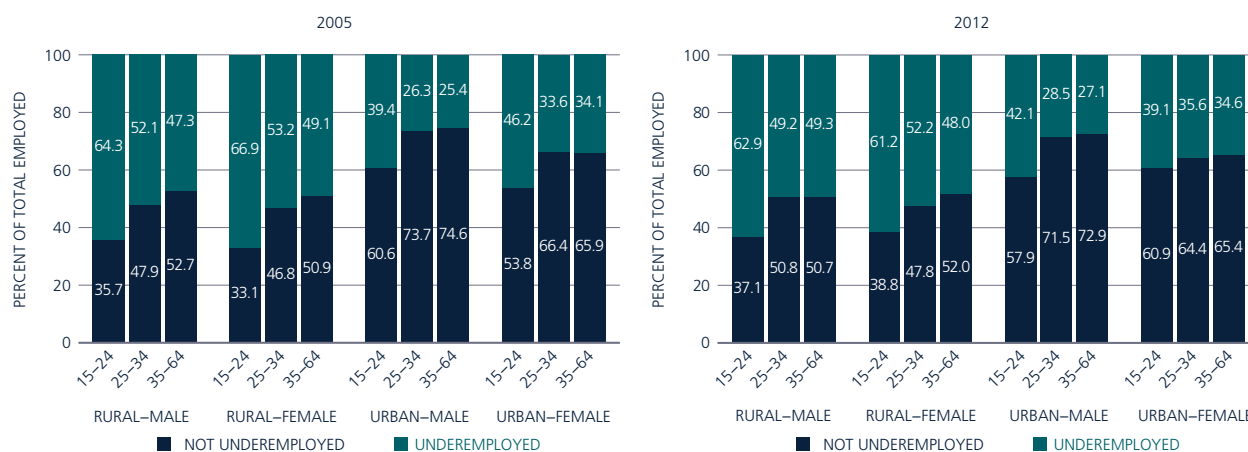
Source: Based on INS 2014b.

than in 2005. In the middle of the last decade, unemployment rates for youth were as low as 33 percent in the Equateur region and as high as 62 percent in the Kinshasa region. In 2012 that range varied from 35 percent in Bandundu to 77 percent in Equateur.

Unemployment has become prevalent across all levels of educational attainment. In 2005, 40 percent of unemployed women and 33 percent of unemployed men had only incomplete primary school as their highest level of education. Those with some tertiary or postsecondary schooling represented just 8.5 percent of unemployed men and 7.3 percent of unemployed women. By 2012, unemployment had become more evenly distributed among education levels. Unemployment rates for workers with postsecondary education ranged from 17.7 percent for women to 21 percent for men.

Underemployment is sizable, particularly in rural areas and among youth. Underemployment can be defined as fewer than 35 hours of work per week. In 2012, 45 percent of workers were classified as underemployed. Underemployment is most evident in rural areas and among youth. In 2005, rural workers experienced higher levels of underemployment (figure 2.12a). Underemployment was particularly pernicious among

Figure 2.12
Underemployment by gender and region, 2005 and 2012



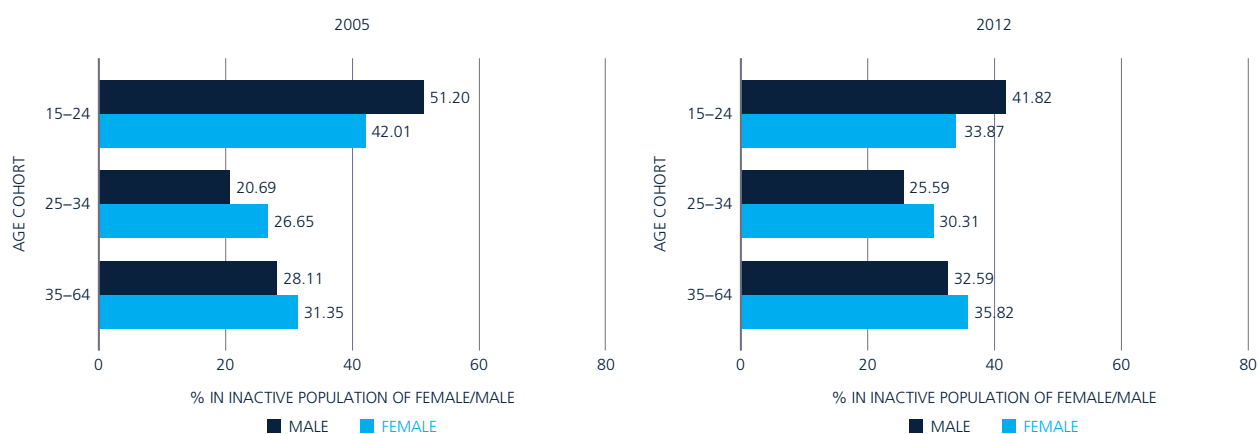
Source: Based on INS 2014b.

young workers, regardless of gender and location. Furthermore, there is evidence that female workers were underemployed at slightly higher rates than male workers. In 2012, underemployment in rural areas had marginally improved, whereas in urban areas it showed a slight deterioration (figure 2.12b).

Education does not shield workers from inactivity, especially women. Women with different education backgrounds face similar underemployment challenges. Female workers with no education, as well as those with postsecondary and tertiary education, have an inactivity rate of about 19 to 22 percent. Inactivity rates for women remain at those levels even when making the distinction between urban and rural areas. Conversely, male workers experience lower levels of inactivity. For highly educated male workers, inactivity rates stood at 15 to 17 percent for rural and urban areas, respectively.

Inactivity grew, particularly among women and the young. Between 2005 and 2012, almost a million new jobs were created per year. Yet, job creation was not enough to meet the demand from a growing working-age population. Insufficient job creation was the result of two forces working in the same direction. First, employment rates contracted by 4.6 percent. Second, the proportion of the working-age population that was neither in school nor at work increased by 7.2 percent. This increase in inactivity took place at the same time that the inactivity rate for youth fell (figure 2.13) and that for older workers increased. Interestingly, the youngest working-age group is the only one in which men’s inactivity rates are greater than women’s (figure 2.13). For older age groups (25 to 34 years and 35 to 64 years), inactivity rates have risen for both male and female workers but remain higher for female workers.

Figure 2.13
Shares of inactive working-age population by age and gender, 2005 and 2012



Source: Based on INS 2014b.

Inactivity chiefly affects rural areas. Two-thirds of the inactive population are in rural areas. This ratio is consistent across time. Moreover, it is in rural areas that the age disparity is more evident. In 2012, young male workers represented 80 percent of all inactive male workers in rural areas. A lower but still striking 65 percent of young female workers were inactive in rural areas. In urban areas, young workers represent 66 of inactive men and 49 percent of inactive women, respectively.

Informality in working conditions remains prevalent. Formality of working conditions can be measured by the existence of a work contract.⁸ In both 2005 and 2012 less than 5 percent of workers reported having a work contract. Given that the majority of workers are either self-employed and/or working in agriculture, such a low formality level is not surprising. At more than 40 percent and growing, informality was even high among

⁸ The informal sector is notoriously difficult to measure in any country. Nevertheless, a study conducted in 2004 by the Institut National de Statistique in the Kinshasa region counted almost 540,000 nonregistered enterprises, producing an annual value added of CGF 485 billion. These informal enterprises generated 692,000 jobs, which accounted for 70 percent of employment in the region, compared with 12 percent for the formal private sector and 17 percent for the public sector [Herderschee, Kaiser, and Mukoko Samba 2012]. Although dated, these numbers point to the profound and important role that informal work plays in the country.

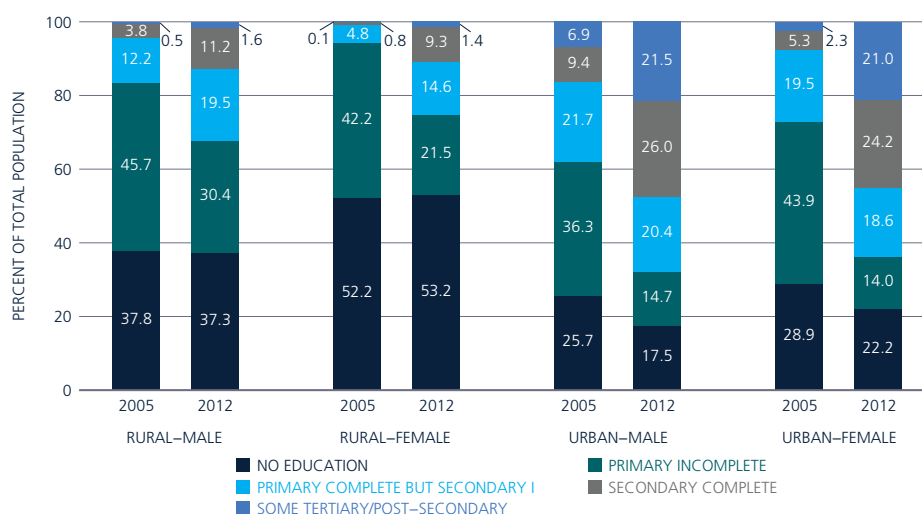
wage workers. When broken out by gender, male workers have been slightly favored with contracts compared with female workers. However, the gap has closed between 2005 and 2012.

Informality is the norm for the young and the less educated. Those aged between 15 and 24 years are the most likely to work without a contract. Even though the situation improved over the 2005–2012 period, by the end, just 35 percent of youth in wage employment had a contract. In terms of education, the majority of workers who have not completed primary school worked without a contract. However, the tipping point seems to appear when a worker has completed at least primary school: at that point, the majority of workers benefit from having a contract. The proportion increases with more education; nearly 80 percent of workers with some tertiary or postsecondary education were in formal jobs. However, there does not appear to be a major difference between the rural and urban populations with regard to formal wage employment.

Returns to Education in the Labor Market

Overall education levels improved impressively across the country. From 2005 to 2012 the percentage of Congolese without an education dropped from 40 to 35 percent. The largest gains in this area came in urban areas where the share of men without education dropped from 26 to 18 percent, and the share of women from 29 to 22 percent (figure 2.14). Gains were accrued by workers with other education levels. In urban areas, the share of workers who had completed at least secondary school increased from 16 to 47 percent for men, and from 8 to 45 percent for women. In rural areas, little change was experienced for workers with no schooling. Instead, gains were made among those who had completed primary school. The near doubling (from 17 to 33 percent) in the share of rural men with primary education was overshadowed by a fourfold increase (from 6 to 25 percent) among rural women.

Figure 2.14
Education by location and gender, 2005 and 2012



Source: Based on INS 2014b.

Urbanization also helped to close the gender gap in education. Urbanization has nearly closed the gender gap in education, particularly for higher levels of schooling. By 2012, 21.5 percent of male workers had some postsecondary education, a threefold increase from 2005. At a similar 21 percent for female workers, progress was even more dramatic: a nine-fold increase over the 2005 share. In rural parts of the country, although the increase in schooling has been impressive, a gender gap in education remains. More women have no education at all, and those that do attain lower rates than men.

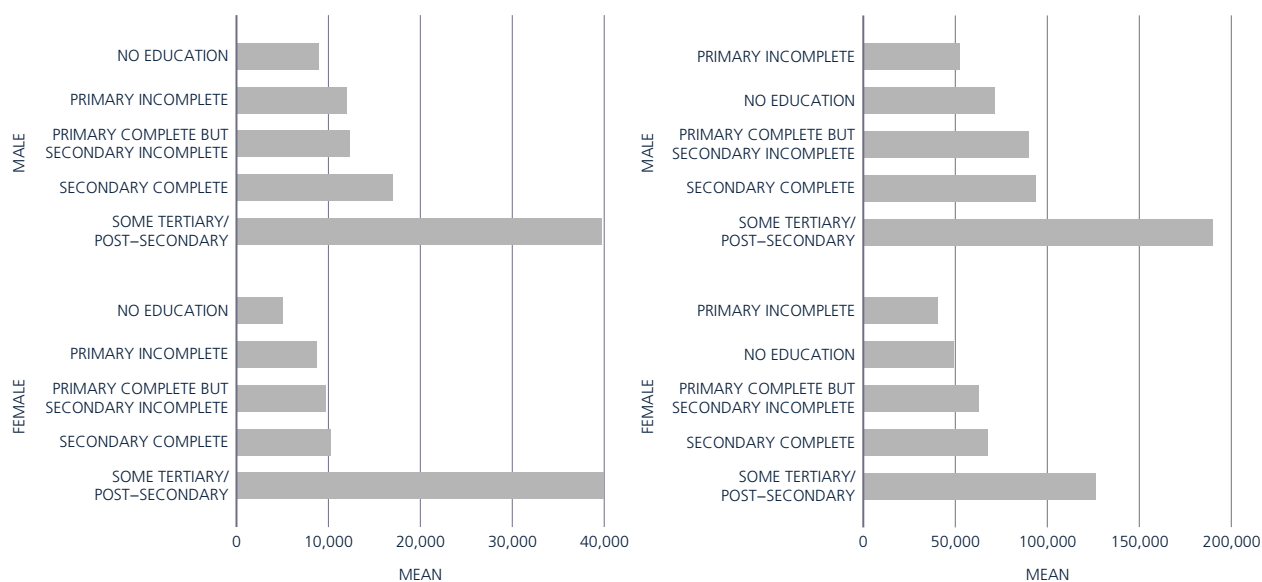
Chances of employment and education are negatively correlated. For those with no schooling or only primary schooling, unemployment rates have been about 2.5 percent. However, for those with a secondary

degree the unemployment rate nearly triples, to 7.35 percent. What is more, for those with tertiary education, unemployment rate sits at 13.7 percent—six times greater than for those with no or little education. Paradoxically, it seems as if more investment in schooling hinders access to employment. One explanation for the seemingly inverse relationship between higher levels of education and employment could lie in the capacity of the labor market to absorb highly educated workers. Another possible explanation could be the ability to sustain a longer job search to find a more suitable match: those with higher education typically have the economic backing from their families to engage in a longer job search.

Returns to education come in the form of wages. Among all paid workers there is a marked difference in the wage rate as education increases. In 2005, the difference between the average wage for a worker with no education and one with incomplete secondary education was CGF 5,000, and the difference between a worker with no education and some tertiary or postsecondary education was nearly CGF 30,000. By 2012 that difference had jumped to nearly CGF 100,000.⁹

The gender wage gap increased, especially with regard to the most educated. Average monthly earnings for all paid workers in 2005 reveal a gender wage gap at lower levels of education (figure 2.15a). However, for the top earners, the gender gap virtually disappears. Despite wages having increased across education levels, male workers' wages have increased much more than that of female workers (figure 2.15b). By sector of employment, construction and public utilities are the highest wage payers for both men and women. Agriculture and manufacturing are the lowest wage payers for both genders.

Figure 2.15
Mean monthly earnings by gender and education level, 2005 and 2012

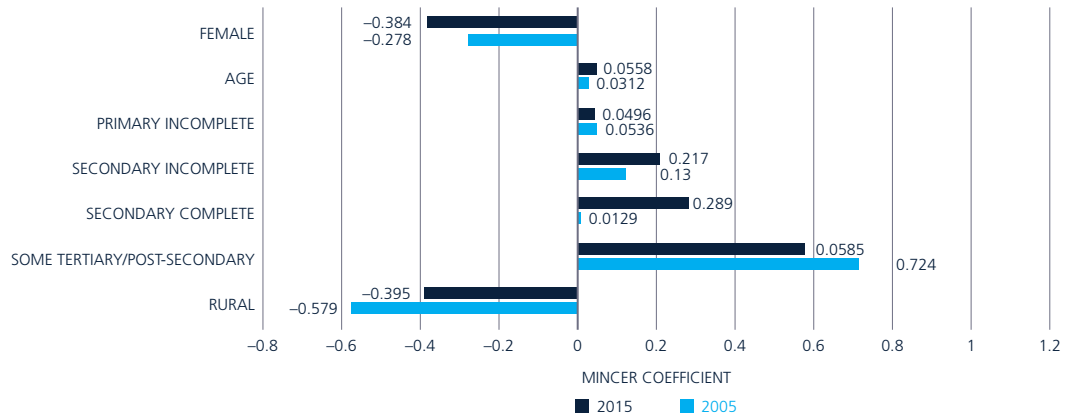


Source: Based on INS 2014b.

The gender wage gap persists despite education levels. The results of Mincer regressions show that greater education results in higher wages. Education is undeniably the key to increasing wages. In fact, the greatest returns come at the highest levels of education, i.e. completing secondary school or further (figure 2.16). However, education being equal, the gender gap is difficult to close. The 28 percent wage gap in favor of men in 2005 has only widened, to over 38 percent in 2012 (figure 2.16). The Mincer regressions also find that the gap between rural and urban wage earners, though persistent, is contracting.

⁹ All CGF values are adjusted to 2010.

Figure 2.16
 Predicted probabilities for earnings differentials, 2005 and 2012, selected results



Source: Based on INS 2014b.

Note: Mincer regressions control for individual characteristics and the effects of education level, work status, and sector on workers' earnings. In the regression results, we employ Heckman selection-corrected Mincer returns to education as well as employment types. To take into account the problem of selection into employment, a Heckman selection correction method is applied to present additional information for wage estimations. This is a two-step procedure in which first an employment indicator (1 if employed, 0 if not) is estimated on observables and then the estimated probability of employment enters the wage estimation. Models are estimated on full samples as defined, as well as subsamples of women and men for each year separately.



3. FIRMS AND JOBS

SUMMARY

A poor business environment determines firms' sectoral concentration, size, and growth. In the Democratic Republic of Congo, the poor business environment seems to hamper the development of the private sector and the creation of productive jobs. This environment results in a vast number of small, informal household enterprises but not many productive, jobs-producing formal firms. Most firms are in the commerce sector, which allows them to exit easily if business conditions turn negative. The related uncertainty about conditions also makes them less likely to invest, grow, and hire more workers.

Firms are relatively young, informal, and small, and they struggle to grow. The fact that the typical firm is relatively young suggests that there are few problems with entry but more problems with growth. The typical firm (95 percent of all firms) is also small. When firms enter the market small, they remain small. Only firms that are large at birth, particularly those connected to external markets, are able to grow.

Improving firms' likelihood to grow and improve productivity would be necessary but not sufficient conditions for job creation. And enabling growth would not guarantee productivity gains since a firm's size or age does not determine its performance. One of the most striking features of Congolese firms is that firm productivity is not associated with employment growth. Work is needed at the value chain level to connect firms to national and international markets so as to generate the much-needed jobs.

INTRODUCTION

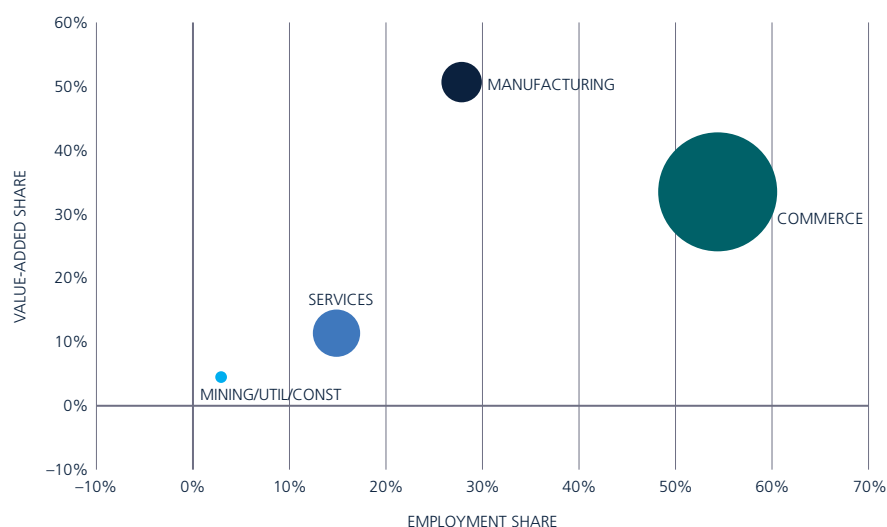
The poor business environment likely impedes private sector development and the creation of productive jobs. Extreme challenges in the business environment include infrastructure that is poor, regulatory processes that are uncertain, and a bureaucracy that is inefficient and arbitrary. The processes, inefficiencies, and arbitrariness of public sector bureaucracies and rules are good ingredients for the corruption that also plagues the country. It continues to rank near the bottom of a number of international indices on competitiveness. The 2016–2017 Global Competitiveness Index ranked it 129th of 138 countries (WEF 2017). According to the World Economic Forum, infrastructure is the competitiveness pillar with the lowest marks, followed closely by technological readiness, and higher education and training.

This environment results in a vast number of small, informal household enterprises, but not many productive, jobs-producing formal firms. This high level of informality is partly due to the low opportunity cost of opening a microbusiness. The most important reason is that these enterprises provide incomes where formal jobs are unavailable. For these reasons, the country needs both more and better formal sector jobs. This requires growth and improvements in firm-level productivity, and formal firms must be at the center of this effort. This chapter looks at the recent performance of formal firms that survive in this difficult environment. Addressing their constraints may lead to the jobs-rich growth that the country needs.

PROFILE OF FIRMS AND THEIR GROWTH

Most firms are in the commercial sector. Over three-quarters of firms are enterprises operating in the commercial sector (figure 3.1).¹⁰ The second largest sector in terms of number of firms is services, with over 12 percent. Over 8 percent of firms are in manufacturing and just over 1 percent are in the mining, utilities, and construction (MUC) sector.

Figure 3.1
Sectoral composition of firms, 2012



Source: Based on World Bank 2013.

Note: MUC = mining, utilities, and construction. Bubble size depicts the sector's share of all firms.

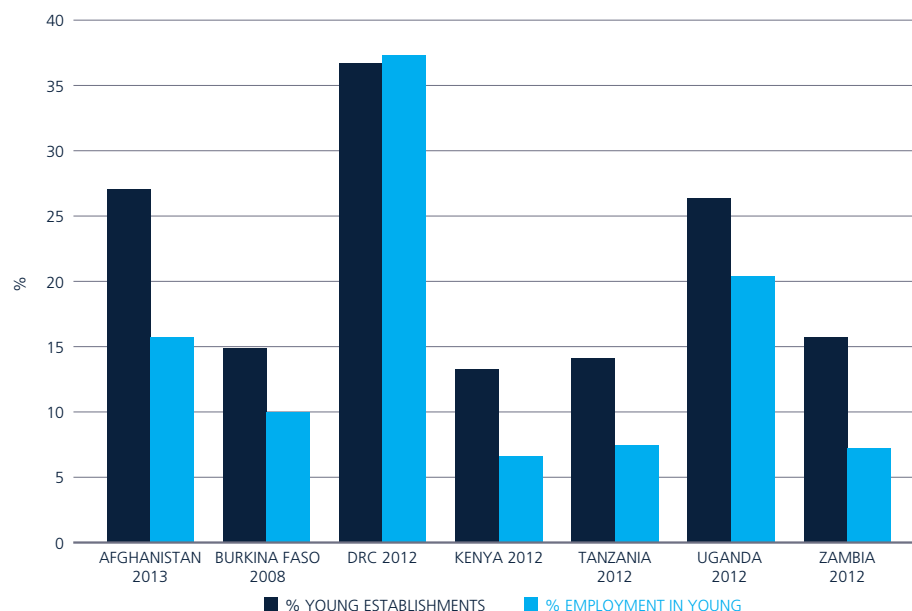
The relatively high share of firms in the commercial sector may be an adaptation to a risky and difficult business climate. Entry and exit are comparatively low cost in commerce, which allows firms to exit easily if business conditions turn negative. When this is the case, the kind of uncertainty that volatility brings also makes it less likely that firms will invest and grow and hire more workers.

The typical firm is relatively young. In this sample, 70 percent of firms have been in the market for fewer than nine years. Those firms constitute almost 60 percent of non-farming employment. Firms with fewer than five years make up 45 percent of all firms in the country, and a similar share (41.6 percent) of non-farming employment (figure 3.2). This is a strikingly young population of firms when compared with those of Afghanistan, Burkina Faso, Kenya, Tanzania, Uganda, and Zambia. The highest share of young firms is no more than 27 percent, in Afghanistan.

The relatively high share of firms that are young indicates few problems with entry, but problems with growth. There are indications that firms do not grow. Although the Enterprise Survey sample is a cross-sectional data set that prevents us from making judgments about the dynamics of firm evolution and growth, descriptive statistics indicate a predominance of micro and small firms: nearly 95 percent of all firms are micro (1–5 employees) or small (6–9). Firms with 10 to 19 employees represent 3 percent of the total, and the proportion decreases as the number of employees grows (table 3.1).

¹⁰ The analysis is based on the 2013 World Bank Enterprise Survey. The data were collected throughout 2012. The sample of firms is stratified by size, sector, and location. The unit of analysis is the formal “establishment” in the manufacturing and service sectors located in 12 main cities. Employment refers to permanent work, which is likely to have less measurement error than temporary work and is of higher concern for policymakers. The reader should bear in mind the potential restrictions of working with the Enterprise Survey data set: this sample comprises solely of formal [registered] firms in urban areas. Nevertheless, it remains the sole firm-level data available for analyzing the labor demand challenges.

Figure 3.2
Proportion of young firms and their employment share, comparator countries



Source: Based on World Bank 2013.

Table 3.1
Firm distribution by size

Size by employees	Number	Share (%)
1–9	8,264	95
10–19	292	3
20–49	100	1
50–99	39	0
100–499	31	0
500+	3	0
Total	8,728	100

Source: Based on World Bank 2013.

The typical firm is small. In terms of employment, 95 percent work in micro to small firms of fewer than nine employees. In terms of annual turnover, 95 percent of firms have sales that are less than the second quartile in the distribution (table 3.2). Only 5 percent of firms benefit from higher turnover.

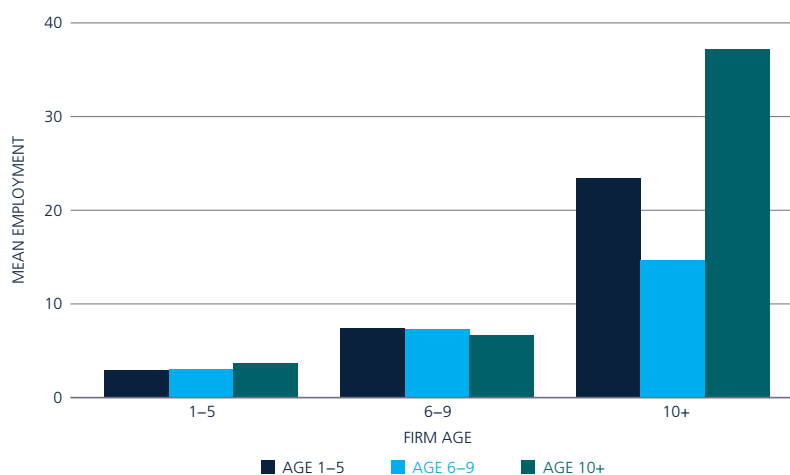
Firms that enter the market small, stay small (or even shrink) while big firms grow (some). Using cross-sectional data, it may be possible to decipher the possible life cycle of firms, from birth to about year 10, with respect to the number of employees these firms hire and let go. The average micro firm at birth employs, on average, 3 employees. When young, the average firm adds another worker to reach 3.7 workers by age of 10 (figure 3.3). If the firm at birth hired between 6 and 9 employees, that firm shrinks 10 years later. Only firms that start relatively larger—with at least 10 workers—grow substantially over the 10 years.

Table 3.2
Firm distribution by sector and turnover

Quartile	%				Total
	MUC	Manufacturing	Commerce	Services	
1st	0.00	2.93	31.15	1.64	35.71
2nd	0.49	4.95	45.13	8.50	59.07
3rd	0.04	0.68	3.17	1.24	5.13
4th	0.01	0.05	0.01	0.01	0.09
Total	0.55	8.61	79.46	11.38	100.00

Source: Based on World Bank 2013.
Note: MUC = mining, utilities, and construction.

Figure 3.3
Average firm size by age and size at birth, 2012 (number of workers)



Source: Based on World Bank 2013.

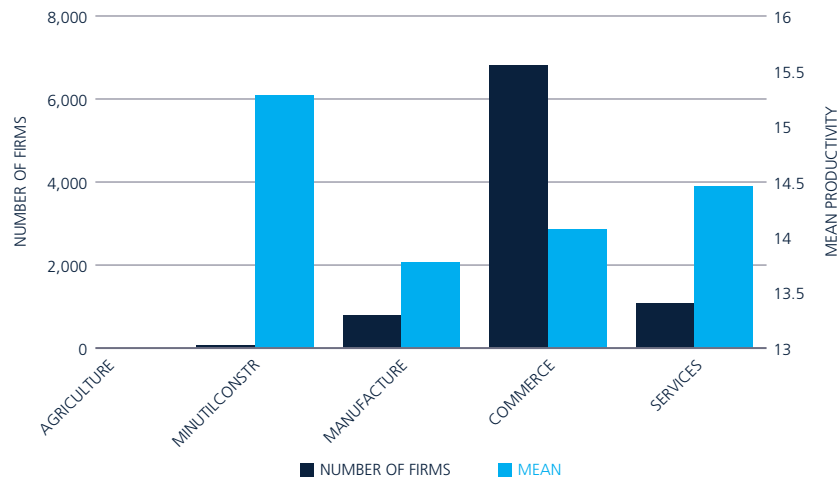
FIRM PERFORMANCE

Firm performance is evaluated by looking at labor productivity. Because firm characteristics are important in explaining firm performance, it is important to identify which of these characteristics are most correlated with better performance.

Average labor productivity is relatively low for manufacturing firms. The Enterprise Survey 2012 provides some insights into firm productivity.¹¹ When output per employee is used as a firm-level productivity measure, average productivity is lower for firms in manufacturing (figure 3.4). High levels of value

¹¹Firm-level data are scant. In order to make inferences regarding firm performance, the jobs diagnostic relied on the data collected by the Enterprise Surveys. This chapter refers to the 2012 data set, which covers 941 respondent firms. Micro firms [fewer than 5 employees] represent 44 percent of the sample [or 412 firms] and a further 41 percent [or 386 firms] were small firms [between 5 and 19 employees]. Medium-size and large firms make the remaining 15 percent [117 and 26 firms, respectively]. See the sampling methodology at www.enterprisesurveys.org. The Enterprise Surveys 2013 [with data for 2012], conducted a survey of private sector non-agricultural firms [see methodology in annex 3A]. The data used here are from the Enterprise Survey data set using the median weights.

Figure 3.4
Productivity by sector, 2012

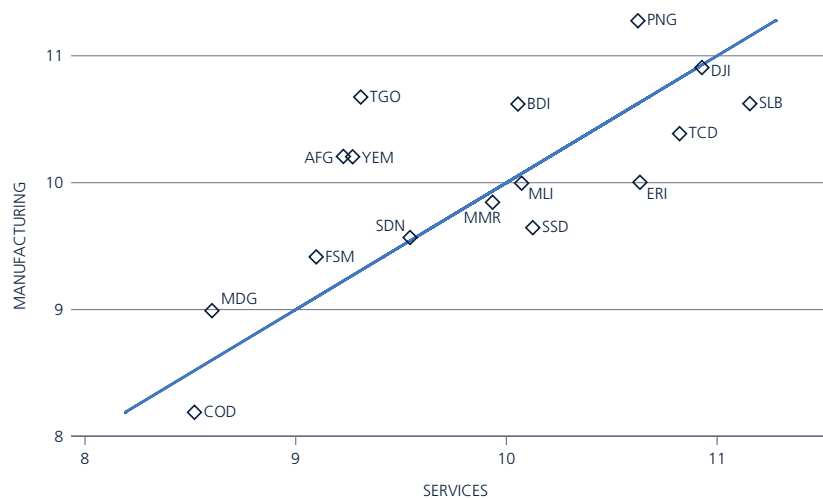


Source: Based on World Bank 2013.
Note: MUC = mining, utilities, and construction.

added and low firm-level productivity can coexist in manufacturing, given the diversity of firm sizes in the sector. Most of the firms in manufacturing are too small to be able to invest significant capital to improve productivity. A few large and productive manufacturing firms might be responsible for most of the sector's value added.

Productivity levels in manufacturing are low even when compared with other FCV countries. At first glance, such low levels of productivity in manufacturing seem to be a common challenge among FCV countries. Indeed, using the median instead of the mean seems to suggest that most firms in manufacturing in the country operate at lower levels of productivity, not only lower than other sectors in the country but also far below any other FCV country (figure 3.5).

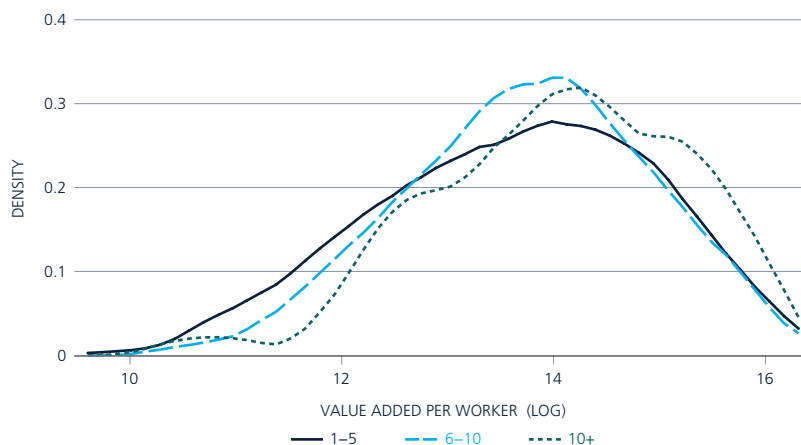
Figure 3.5
Median productivity across FCV countries by sector



Source: Based on World Bank 2013.

However, neither size nor age seems to be associated with productivity. Productivity, measured as value added per worker, shows similar trends across firm ages. Firm distribution analysis for value added shows slight differences in peaks and distribution shapes—particularly skewedness—across firms aged 1 to 5 years, aged 6 to 10 years, and aged over 10 years (figure 3.6).

Figure 3.6
Firm distribution in value added per worker by age, 2012



Source: Based on World Bank 2013.

Firm performance matters because good performance translates into better jobs. Analysis of the Enterprise Survey data on the relationship between wages and performance in the country is a case in point; a firm’s age and productivity determine wages—not its size. Although firms that are larger at birth tend to become larger in employment and seem to drive productivity, they are not the ones with the highest wages. The variables related to size in the wage models in annex B show no statistical significance across firm size and model composition. Instead, past productivity (understood as productivity levels during the three years prior to 2013), seems to be driving wages. Productivity allows the firm to hire at higher wages, which is in line with the literature. Similarly, variables that account for older firms show positive and statistically significant coefficients that suggest that older firms may have more stable workforces with presumably lower turnover.¹² Such workforce stability could foster the job learning that leads to greater productivity levels.

FIRM EMPLOYMENT

Micro firms in the commercial sector employ the most workers. Nearly 80 percent of commercial jobs are found in micro firms (1–9 employees). Over 54 percent of total non-farming employment is in commercial firms (table 3.3).

Proportionally to the number of firms in manufacturing, its share of employment is significant. Though only 8 percent of firms operate in manufacturing, they employ over one-quarter (27.8 percent) of all workers (table 3.3). Compared with the relatively low number of manufacturing establishments, therefore,

¹² Older firms are considered as those aged 10 to 19 [variable *age_10to19*], 20 to 29 [variable *age_20to29*], and over 30 years [variable *age_30plus*], but not those aged 6 to 9 years [variable *age_6to9*].

Table 3.3
Firm-level employment size by sector, 2012

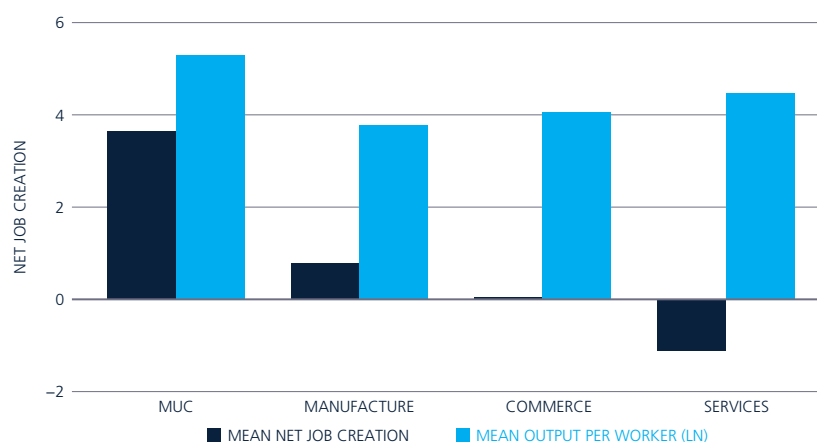
	MinUtilConstr	Manufacture	Commerce	Services	Total
Size 1	0.00%	0.02%	0.83%	0.01%	0.86%
Size 2–5	0.44%	4.26%	38.96%	6.37%	50.03%
Size 6–9	0.06%	1.36%	3.58%	1.42%	6.43%
Size 10–19	0.17%	1.78%	3.96%	2.77%	8.69%
Size 20–99	0.52%	5.97%	3.06%	2.51%	12.06%
100+	1.73%	14.46%	3.98%	1.77%	21.93%
Total	2.92%	27.84%	54.37%	14.87%	100.00%

Source: Based on World Bank 2013.
Note: MUC = mining, utilities, and construction.

manufacturing more than pulls its weight with respect to employment. Manufacturing firms are thus likely to be bigger than other firms, and this holds true: the numbers of firms in services, as well as in MUC, and their shares of employment are similar.

Manufacturing also lags behind mining in terms of net job creation.¹³ Most job creation is generated by firms in MUC. These firms are not only more productive, but their net job creation outperforms that of firms in all other sectors. Average job creation in MUC is by far the largest across sectors (figure 3.7). Indeed, while the mean job creation by firms in MUC increased, that in services contracted and that in commerce stagnated. Manufacturing was the only other sector with noticeable gains in average employment per firm.

Figure 3.7
Mean productivity and mean net job creation by sector, 2012



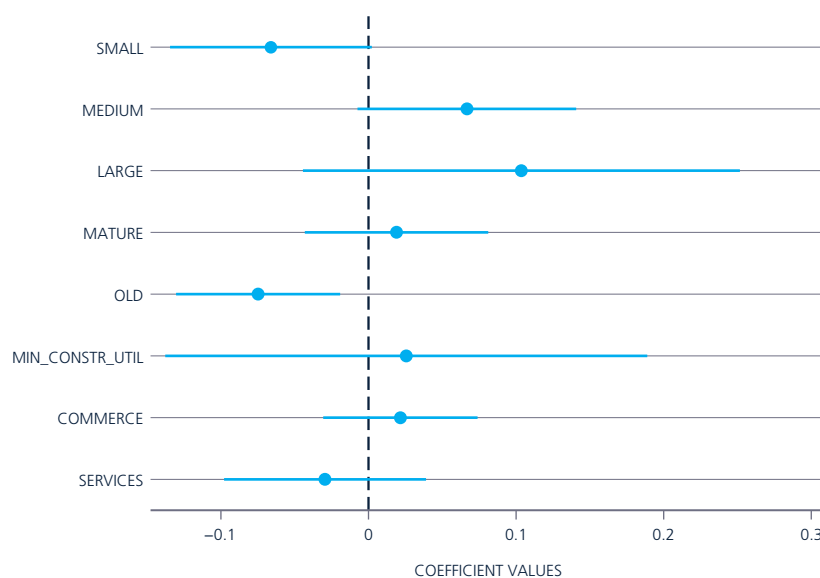
Source: Based on World Bank 2013.
Note: MUC = mining, utilities, and construction. Productivity is not scaled.

¹³ Owing to data constraints, net job creation here refers to the expansion and contraction of the firms in the sample in the last three years.

Productivity is not associated with more employment. Perhaps one of the most striking features of firm size and potential job growth lies in its poor relationship to productivity. Productive firms are unexpectedly smaller.¹⁴ This might signal that for the most part, productivity gains accrue to a firm through its shedding of labor. One caveat to this suggestion is that at a certain threshold, in the higher percentiles of productivity, firms tend to be relatively larger; that is, there is a non-linear relationship between employment and productivity that is positive and statistically significant exclusively among those firms at the higher productivity levels.¹⁵ Firms that were the most productive firms three years ago (see *log of real product 3 years ago* in variable in model 3 in annex C), are not more likely to be larger, underscoring the lack of relationship between productivity and employment. Overall, the fact that productive firms do not grow may signal misallocations or market failures.

Larger firms are more likely to expand their workforce. Firm size determines employment growth. Small firms are negatively associated with employment growth (figure 3.8). Conversely, medium-size firms and, in particular, large firms are positively and strongly associated with employment growth. Similarly, mature but not old firms are correlated with employment growth (see full results in annex D).

Figure 3.8
Determinants of employment growth, 2012



Source: Based on World Bank 2013.

Note: Coefficients and 95% CI from ordinary least squares regression with these location controls omitted: micro, young, manufacturing.

Employment is determined by size at birth and the age of the firm. Results from regressions controlling for firm characteristics, including two-digit sector identification and location, show that one of the best predictors of employment is size at birth (see annex E).¹⁶ Firms that are small at birth are likely to remain small.¹⁷ Older firms are also more likely to be larger, which signals higher survival rates for larger firms. Since age is associated with size, it is also possible that firms may grow as they age.¹⁸

¹⁴ The variable *output per worker* in columns 24 and 25 of annex C shows negative and statistically significant coefficients, and so do higher quartiles in column 26, as well as the quartiles of value added per worker in column 29.

¹⁵ See *value added per worker [log] squared* in column 28 in annex C.

¹⁶ Francis and Honorati (2016) include size and productivity at birth as explanatory variables in their specification.

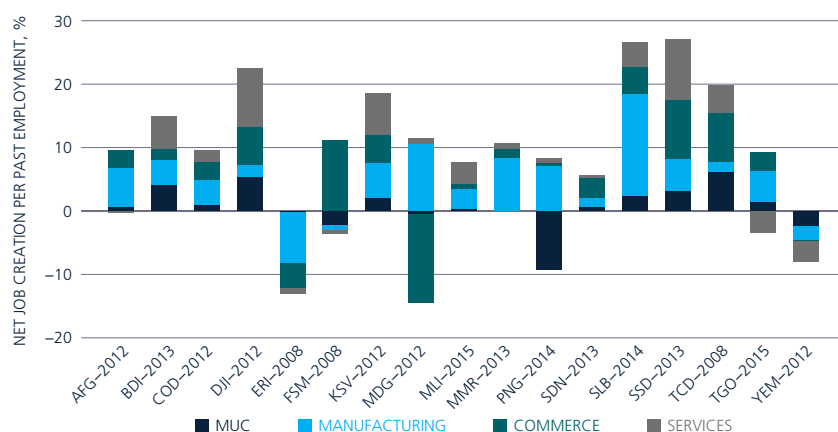
¹⁷ The coefficients across the models presented in annex E show a consistent relationship between employment and the size of the firm at birth.

¹⁸ Age and size are monotonically positively correlated.

Firms with external market links and those in concentrated sectors are more likely to be larger. The results in annex E show that, on average, foreign firms are larger than domestic ones.¹⁹ Activities that involve external markets also contribute to explaining employment across formal firms. Firms in sectors with links to goods and services in tradables tend to be larger.²⁰ Similarly, sectors with higher concentration (in terms of employment or sales)²¹ tend to have larger firms.

Manufacturing firms in the Democratic Republic of Congo also lag behind those in FCV countries in job creation. The Enterprise Surveys record the number jobs created by each firm in the last three years. The analysis here uses data from each FCV country where an Enterprise Survey was completed at about the same time as the one done in the Democratic Republic of Congo (2012). Using these data, the mean job creation of manufacturing firms in the Democratic Republic of Congo lags behind that of other FCV countries. The country has one of the lowest rates of job creation in manufacturing (figure 3.9). Only Eritrea, Micronesia, and the Republic of Yemen show a lower—and, in fact, negative—net creation of jobs.

Figure 3.9
Net job creation by sector size across FCV countries



Source: Based on World Bank 2013.
Note: MUC = mining, utilities, and construction.

Employment growth might be constrained by the missing middle. As in other African countries, employment shares in the Democratic Republic of Congo are concentrated at the two extremes of the firm-size spectrum. On the one hand, half of all non-farming jobs are found in micro firms of 2 to 5 employees (table 3.3). On the other hand, the largest firms (100 or more employees) are responsible for more than a fifth (nearly 22 percent) of all non-farming employment. These results indicate a missing middle: a reduced presence of small and medium enterprises that curtails job growth (see Ayyagari, Beck, and Demirgüç-Kunt 2003).

DETERMINANTS OF EMPLOYMENT GROWTH, SIZE, PRODUCTIVITY, AND WAGES

Productivity is associated with firm size at birth and also with external markets. When the models built to explain productivity (see annex C) are applied, the results confirm those for the employment models.²² The larger the firm is at birth, the more productive it will be. Similarly, productivity levels three years before the

¹⁹ As shown by some of the strongest coefficients across all models.

²⁰ The coefficient in model 11 [column 11] for *xvar* [showing the relationship of tradables to employment] is the largest across all the results [annex E].

²¹ Measured through the Herfindahl index [introduced in models 17 and 18 and accounted for under the *xvar* variable].

²² Measured as *output per worker [ln]* in columns 7, 8, 13, 19, and 20, or as *value-added per worker [ln]* in columns 27, 28, 33 38, 39, and 40 in annex B.

survey seemed to determine current productivity. Small and medium-size enterprises, and in particular those with 10 to 19 employees, seem to be negatively associated with productivity levels across the different measures and models. Thus, a large firm at birth will be more productive and that productivity will last over time. If, in addition, the firm is linked to external markets (tradables), the productivity outlook will be more promising.

INFORMALITY

The informal sector is important to understand in an economy such as that of the Democratic Republic of Congo. There are several ways of defining the informal sector—a simple and standard definition is that the informal sector is a set of units engaged in the production of goods and services without maintaining proper registration and complying with industrial and labor laws. These informal units typically operate at a low level of organization or household, without a detailed division of labor and capital, on one hand, and of family labor and hired labor, on the other hand, and are based mostly on casual employment, kinship or personal or social relations rather than on contractual arrangements with formal relationships. Therefore, it can be argued that people who do not find employment in the formal sector are forced to participate in the informal sector for their survival, as they cannot afford to be unemployed. This is the most acceptable way of defining the informal sector in low-income economies. An alternate view considers informality as a response to stringent regulatory and bureaucratic policies. This implies that it is vital to understand the extent to which the informality of a country is explained by underdevelopment or by regulations. In the case of the latter, it is important for policy makers to identify the type of regulations or government policies that are detrimental to the growth of the formal sector. However, in environments such as that of the Democratic Republic of Congo, where the capacity to enforce rules and regulations is questionable, there is some reason to doubt explanations that solely rely on the burden of government regulations as the main cause of informality. Either way, the prevalence of informal firms in the country makes them hard to ignore.

Informal firms are smaller and have lower productivity than even small formal firms. The results of the Survey of Informal Firms (2013) (World Bank 2014a) show that in terms of both employment and sales, informal firms are significantly smaller than small formal firms. Median monthly sales for informal firms stood at CGF 350,000 compared with a much higher figure of CGF 750,000 for small formal firms. Similarly, the median number of employees in informal firms was two, compared with eight for small formal firms. Although these results hold for both manufacturing and services firms, they show some differences. In terms of sales, the gap between formal and informal firms is much larger in manufacturing than in services; however, in terms of employment, the gap is much larger for firms in services than for firms in manufacturing (World Bank 2014).

Informal firms though smaller, can be more productive than the typical micro firm. Across the developing world, informal firms are not only small, but also extremely unproductive, even when compared with small formal firms (La Porta and Shleifer 2008). In the Democratic Republic of Congo, the case seems to differ from the international trend. In a comparison of micro and informal firms using the International Financial Statistics and a third enterprise survey conducted in the country for micro firms (the Micro Enterprise Survey),²³ Mohammad (2014) found that informal firms display higher productivity than micro firms.²⁴ The reality according to Mohammad is a bit more complex: there seems to be a section of informal firms that are dynamic and efficient and whose entrepreneurs decide to exploit existing business activities rather than to find alternative employment. When the analysis in Mohammad (2014) distinguishes between informal and micro firms by percentile of sales per worker (as a measure of productivity), a different picture emerges. At low percentile values (the first and second quartiles), informal firms are actually more productive than micro firms. In contrast, at higher productivity levels (third and fourth quartile), micro firms are slightly more productive. As Mohammad (2014) also found that labor productivity among informal firms declines with the number of employees, it is possible that barriers to job creation exist.

²³ Similar to the International Financial Statistics, the Micro Enterprise Survey is conducted using a standardized survey instrument designed to assess the business environment for micro businesses within a well-defined universe of activities. The sample in the Democratic Republic of Congo was selected using stratified random sampling across pre-identified regions and industries selected on the basis of local institutions and contract knowledge. The primary sampling units of the Micro Enterprise Survey are micro business entities [Mohammad 2014].

²⁴ Albeit the productivity gap is not statistically significant once sectoral activity is factored into the model.

Firms perceive no benefit in registering and instead see cumbersome costs. According to the survey results in World Bank (2014a), 4 in every 10 firms in the International Financial Statistics sample reported no perceived benefit of registering. In contrast, two-thirds of informal firms perceived costs of registering: (i) administrative costs (such as time, fees, and red tape), (ii) the taxes to be paid after becoming formal, (iii) corruption (formal firms face bribes) and costs, and (iv) inspections and meetings with officials after becoming formal. These barriers to formalization are strong deterrents across sectors, firm size, owners' education level, or gender (World Bank 2014a).

Moreover, larger productivity levels are associated with informality. One of the striking results of the analysis carried out in World Bank (2014a) is that higher labor productivity is associated with a larger percentage of firms reporting each of the four aforementioned reasons as a deterrent to registering. The survey results show that two-thirds of informal firms with higher productivity levels perceived administrative costs as the main formalization deterrent, whereas 48 percent of those with low productivity perceived it. The comparison is less distinct on taxes, which 62 percent of high-productivity and 57 percent of lower-productivity firms reported as the second most important barrier. At lower levels of perception, but with greater disparity, came inspections (27 versus 16 percent respectively), and bribes (31 versus 20 percent respectively). For all four reasons, the barriers to formalization perceived by higher-productivity firms were sharper than those perceived by lower-productivity ones.



4. THE WAY FORWARD

A jobs diagnostic typically limits its analysis to identifying the main challenges to employment creation and improvement. It is not in its initial intentions to recommend any particular course of action in terms of public policy. However, the findings for the Democratic Republic of Congo can be the basis for policy discussion on the main challenges and possible questions to be addressed with the country's government. It is in that spirit that this jobs diagnostic offers an initial set of policy questions for discussion.

Harnessing the demographic dividend. In the context of falling commodity prices, higher growth rates can be made possible by seizing the upcoming window of opportunity granted by the possible demographic dividend. The Democratic Republic of Congo needs to prepare to make the most of it by ensuring that most of the entrant workers find gainful employment. How can it be better prepared? The jobs diagnostic found that the country has made strides in educational attainment, but is the schooling level enough for workers' employment? And most important: are the skills achieved through schooling the same skills demanded by firms? Finding answers to these questions could help prepare entrant workers for firms' demand. In addition, the pervasive increase in inactivity rates must be addressed. Equipping young inactive workers with useful skills should be an economic priority, not only to harness the demographic dividend but also to avoid social unrest. Finally, what kind of policies can be put in place so that additional savings stemming from greater employment can be invested?

Integral solutions for firms' growth and integration. Insufficient job creation is the result of a private sector that struggles to grow. Part of the problem lies in the risk and uncertainty implied by operating in a poor business environment. Removing obstacles to firm growth such as corruption, political instability, and cumbersome tax codes could improve prospects for firm growth. Likely though, other measures would be needed, to address challenges such as lack of finance or electricity supply. Improving the business environment could be one part of the equation. However, this jobs diagnostic found that firms that were connected to external markets, whether through trade or investment, were more likely to grow in employment. Thus, in addition to a national debate on how to improve the business environment, the government could consider mapping value chains in manufacturing and agribusiness that have the most potential, through their linkages abroad, for job creation. Policies for attracting foreign direct investment and for developing local suppliers could also be avenues for discussion.

Facilitating urbanization. For all the bad reputation that urban areas get, it is not surprising that many of their benefits are often overlooked. First, people migrate to cities to improve their well-being through consumption externalities in the form of public services and other urban amenities too costly to be present in rural areas. Second, jobs in the country's urban areas are more likely to be waged, better paid, and in better conditions. Third, poverty across the globe has been reduced through urbanization. Fourth, urbanization (spatial transformation) reduces the number of workers in agriculture and leads to productivity gains stemming from structural transformation. Fifth, international studies show that urban areas with stubbornly high fertility rates, such as in the Democratic Republic of Congo, experience fertility rates of 1.8 fewer children than rural areas. Arguably, urbanization offers schooling and employment opportunities that empower women to delay maternity and limit the size of their families, thus helping address high fertility rates. However, urban areas concentrate most of the unemployment in the country; making sure unemployment remains low is one of the keys to successful urbanization. Proper urban planning that takes into account where people live and where job centers are, to reduce commuting costs and time and other spatial frictions for employment (spatial mismatch), is paramount.

Addressing underemployment in rural areas through industrialization. The farming workforce in rural areas is an advantage that should be leveraged to a greater degree. Manufacturing presents an opportunity to increase productivity and absorb employment at better wages. One possible form of industrialization lies in agribusiness. Making sure agricultural produce is processed, packaged, and shipped to urban centers domestically, but mostly abroad, is a way to improve the quality of jobs many former farmers will have. It is also a way to better link towns and secondary cities to rural areas. Capital deepening and technological modernization in agriculture would yield productivity gains and achieve economies of scale, but they most likely would mean the shedding of some of the workforce. Agribusiness development is a way to add value while absorbing a share of those former farmers. Whatever part of the agribusiness value chain a worker belongs to (farming or manufacturing), the greater use of capital would most likely ensure a full-time job that would address the underemployment challenge.

BIBLIOGRAPHY

- Annez, Patricia Clark, and Robert M. Buckley. 2009. "Chapter 1. Urbanization and Growth: Setting the Context." In *Urbanization and Growth, Commission on Growth and Development*, edited by Michael Spence, Patricia Clark Annez, and Robert M. Buckley, pp. 1–46. Washington, DC: World Bank.
- Ayyagari, Mehana, Beck, Thorsten, and Asli Demirgüç-Kunt. 2003. "Small and Medium Enterprises across the Globe: A New Database." Policy Research Working Paper No. 3127, World Bank, Washington, DC.
- Francis, David C., and Maddalena Honorati. 2016. "Deepening without Broadening? Jobs in Ghana's Private Sector." World Bank Policy Research Working Paper 7835, World Bank, Washington, DC.
- Fox, Sean. 2011. "Understanding the Origins and Pace of Africa's Urban Transition." Crisis States Working Papers Series No. 2, Working Paper No. 89, London School of Economics Crisis States Research Centre, London.
- Gobillon, Laurent, Selod, Harris, and Yves Zenou. 2007. "The Mechanisms of Spatial Mismatch." *Urban Studies* 44 (12): 2401–27.
- Harrison, Lauren. 2017. "Dodd-Frank in the DRC: Regulation, Aid, and the 'Resource Curse.'" AidData Center for Development Policy blog, June 18. <http://aiddata.org/blog/dodd-frank-in-the-drc-regulation-aid-and-the-resource-curse>.
- Herderschee, Johannes, Kaiser, Kai-Alexander, and Daniel Mukoko Samba. 2012. *The Resilience of an African Giant: Boosting Growth and Development in the Democratic Republic of Congo*. Washington, DC: World Bank.
- ILO (International Labour Organization). 1973. C138 – Minimum Age Convention, 1973 (No. 138): Convention Concerning Minimum Age for Admission to Employment. Geneva: ILO.
- INS (Institut National de la Statistique). 2014a. *Rapport Global, Enquête 1-2-3: Enquête sur l'emploi, le secteur informel et sur la consommation des ménages 2012*. Kinshasa, Democratic Republic of Congo: INS.
- . 2014b. *Enquête 1-2-3: Enquête sur l'emploi, le secteur informel et sur la consommation des ménages 2012*. Kinshasa, Democratic Republic of Congo: INS.
- . 2014c. *Enquête 1-2-3: Enquête sur l'emploi, le secteur informel et sur la consommation des ménages 2012, Rapport Global Final*. Kinshasa, Democratic Republic of Congo: INS.
- Khanam, Rasheda, and Russell Ross. 2005. "Impact of Child Labour on School Attendance and School Attainment: Evidence from Bangladesh," MPRA Paper No. 9397, Munich Personal RePEc Archive, University of Munich.
- La Porta, Rafael, and Andre Shleifer. 2008. "The Unofficial Economy and Economic Development." *Brookings Papers on Economic Activity*, Fall.
- Mohammad, Amin. 2014. "Comparing Micro and Informal Firms in DRC," unpublished draft, World Bank, Washington, DC.
- UN (United Nations). 2016a. "Briefing Note for Countries on the 2016 Human Development Report: Congo (Democratic Republic of the)." In *Human Development Report 2016*, New York: UN, http://hdr.undp.org/sites/all/themes/hdr_theme/country-notes/COD.pdf.
- . 2016b. "Technical note 5." In *Human Development Report 2016*, New York: UN, http://hdr.undp.org/sites/default/files/hdr2016_technical_notes.pdf.
- . 2007. "Indicators of Sustainable Development: Guidelines and Methodologies," United Nations, <http://www.un.org/esa/sustdev/natlinfo/indicators/guidelines.pdf>.
- UN Population Division. 2015. *The 2015 Revision of World Population Prospects*. New York: UN. <https://esa.un.org/unpd/wpp>.
- UNICEF (United Nations Children's Education Fund). 2013. *The Importance of Early Childhood Development to Education*, prepared for the Global Meeting of the Thematic Consultation on Education in the Post-2015 Development Agenda, Dakar, March 18–19.
- . 2011. "Early Childhood Education and School Readiness." New York: UN. https://www.unicef.org/education/bege_61627.html.
- UCW (Understanding Children's Work). 2017. "Democratic Republic of Congo, Multiple Indicator Cluster Survey 4 (MICS 4) 2010." UCW, Rome. <http://www.ucw-project.org/Pages/Tables.aspx?id=1535>.

WEF (World Economic Forum). 2017. "Global Competitiveness Index: 2016–2017 Edition," World Economic Forum.

World Bank. 2016. World Development Indicators. World Bank, Washington, DC. <http://data.worldbank.org/indicator/SP.POP.TOTL?locations=CD>.

———. 2014a. "DRC – Survey of Informal Firms (2013)." World Bank, Washington, DC.

———. 2014b. "Enterprise Survey (2013) in DRC: Some Results." World Bank, Washington, DC.

———. 2013. "Enterprise Surveys: DRC 2013." World Bank, Washington, DC.

ANNEX A: ENTERPRISE SURVEY METHODOLOGY

The Enterprise Surveys are an ongoing World Bank effort to collect data based on firms' experiences and enterprises' perception of the environment in which they operate. The surveys cover over 130,000 firms in 135 countries, of which 121 have been surveyed following the standard methodology. This enables better comparisons across countries and across time. Data are used to create statistically significant business environment indicators that are comparable across countries. Data for the country were collected between August 2013 and May 2014 as part of the Africa Enterprise Survey 2013. The universe of the study is the non-agricultural economy. It comprises manufacturing according to the group classification of ISIC Revision 3.1 (group D), construction (group F), services (groups G and H), and transport, storage, and communications (group I). Note that this definition excludes financial intermediation (group J), real estate and renting activities (group K, except subsector 72, IT, which was added to the population under study), and all public or utilities sectors.

The sample was selected using stratified random sampling. Three levels of stratification were used: industry, establishment size, and region. Industry stratification was designed as follows: the universe was stratified into four manufacturing industries (food; textiles and garments; chemicals and plastics; and other manufacturing) and two service sectors (retail and other services). Size stratification was defined following the standardized definition for the rollout: small (5 to 19 employees), medium (20 to 99 employees), and large (more than 99 employees). Regional stratification was defined across four regions: Center (Katanga and Mbuji Mayi), East (Bukavu, Butembo, Goma, Kisangani), South (Lkasi, Lubumbashi), and West (Boma, Kikwit, Kinshasa, Matadi).

Two sample frames were used. The first, supplied by the World Bank, comprised enterprises interviewed in the country during 2010. The Bank required that attempts be made to re-interview respondents to the 2010 survey, if they were within the selected geographical regions and met eligibility criteria. Previous rounds of surveys used different stratification criteria (or no stratification at all). Given the prevalence of small firms, and of firms located in the capital city, the presence of panel firms was limited to a maximum of 50 percent of the achieved interviews in each cell. The second frame was built by undertaking block enumeration (as a suitable sample frame from appropriate institutions in the country was not available). The block enumeration allowed the physical creation of a list of establishments to sample. The enumerated establishments with five employees or more (from the two frames) were then used as the sample frame for the Enterprise Survey in the Democratic Republic of Congo.

ANNEX B: WAGE REGRESSIONS

Variable definitions:

- Log of Empl at Birth* = log values of firm's employment at the moment of its birth
- Log of Real Product 3 years ago* = log values of production 3 years prior to the survey
- age_6to9* = firms with 6 to 9 years of operation
- age_10to19* = firms with 10 to 19 years of operation
- age_20to29* = firms with 20 to 29 years of operation
- age_30plus* = firms with over 30 years of operation
- sz_10to19* = firms with 10 to 19 employees
- sz_20to49* = firms with 20 to 49 employees
- sz_50to249* = firms with 50 to 249 employees
- sz_250to499* = firms with 250 to 499 employees
- sz_500plus* = firms with over 500 employees
- East* = dummy variable indicating a firm is based in the East region
- Central* = dummy variable indicating a firm is based in the Central region
- South* = dummy variable indicating a firm is based in the South region
- fdi* = firm with foreign capital
- pub* = state-owned enterprise
- xvar* = firm with links to external markets through trade
- Output per worker (log)* = log values of output (sales) per worker
- Output per worker (log) squared* = squared values of the log of output (sales) per worker

	(3)	(3)	(8)	(14)	(15)	(16)	(17)
VARIABLES	lnRwage- Past Prod & Empl	Basic	xvar=secto r_trad	xvar=herfi ndah_L	xvar=herfi ndah_rS	lnLPQ	lnLPQsq
Log of Empl at Birth	0.144 (0.147)						
Log of Real Product. 3 years ago	0.697*** (0.0774)						
age_6to9	0.136 (0.340)	0.373** (0.162)	0.373** (0.162)	0.374** (0.162)	0.394** (0.162)	0.132 (0.101)	0.125 (0.103)
age_10to19	0.807*** (0.259)	0.591*** (0.166)	0.591*** (0.166)	0.588*** (0.167)	0.594*** (0.172)	0.130 (0.102)	0.125 (0.0997)
age_20to29	0.592** (0.285)	0.879*** (0.214)	0.879*** (0.214)	0.873*** (0.218)	0.933*** (0.217)	0.273** (0.122)	0.265** (0.124)
age_30plus	1.141** (0.488)	0.756*** (0.227)	0.756*** (0.227)	0.747*** (0.234)	0.770*** (0.230)	0.314** (0.144)	0.308** (0.141)
sz_10to19	-0.477* (0.249)	-0.0430 (0.213)	-0.0430 (0.213)	-0.0365 (0.210)	-0.0519 (0.208)	-0.00746 (0.0943)	-0.00703 (0.0952)
sz_20to49	-0.772* (0.400)	0.148 (0.262)	0.148 (0.262)	0.152 (0.265)	0.122 (0.258)	0.0682 (0.120)	0.0686 (0.122)
sz_50to249	-1.563*** (0.541)	-0.0185 (0.402)	-0.0185 (0.402)	0.0204 (0.408)	-0.0102 (0.423)	-0.579 (0.481)	-0.576 (0.475)
sz_250to499	-0.557 (0.916)	-0.929 (0.769)	-0.929 (0.769)	-0.915 (0.792)	-0.918 (0.759)	-0.347 (0.304)	-0.266 (0.284)
sz_500plus	-1.680** (0.853)	0.967 (0.785)	0.967 (0.785)	1.028 (0.785)	1.039 (0.787)		
East	-0.348** (0.154)						
Central	-0.519 (0.630)						
South	-0.1000 (0.506)						
fdi		0.576** (0.245)	0.576** (0.245)	0.570** (0.243)	0.558** (0.247)	-0.424 (0.324)	-0.422 (0.325)
pub		0.524 (0.772)	0.524 (0.772)	0.518 (0.771)	0.562 (0.754)	0.855*** (0.110)	0.858*** (0.107)
xvar			1.206*** (0.307)	-0.338 (0.397)	0.107 (0.323)		
Output per Worker (log)						0.852*** (0.0439)	1.569*** (0.531)
Output per Worker (log) squared							-0.0263 (0.0197)
Constant	0.924 (0.821)	13.93*** (0.175)	12.73*** (0.245)	14.14*** (0.371)	13.77*** (0.340)	0.528 (0.634)	-4.309 (3.544)
Observations	576	791	791	791	773	607	607
R-squared	0.589	0.238	0.238	0.239	0.242	0.633	0.634
Sector dummies	YES	YES	YES	YES	YES	YES	YES
		YES	YES	YES	YES	YES	YES
Year Dummies	NO	NO	NO	NO	NO	NO	NO
Standard errors in parentheses							
*** p<0.01, ** p<0.05, * p<0.1							

ANNEX C: PRODUCTIVITY REGRESSIONS

Variable definitions:

- Log of Empl at Birth* = log values of firm's employment at the moment of its birth
- Log of Real Product 3 years ago* = log values of production 3 years prior to the survey
 - age_6to9* = firms with 6 to 9 years of operation
 - age_10to19* = firms with 10 to 19 years of operation
 - age_20to29* = firms with 20 to 29 years of operation
 - age_30plus* = firms with over 30 years of operation
 - sz_10to19* = firms with 10 to 19 employees
 - sz_20to49* = firms with 20 to 49 employees
 - sz_50to249* = firms with 50 to 249 employees
 - sz_250to499* = firms with 250 to 499 employees
 - sz_500plus* = firms with over 500 employees
 - East* = dummy variable indicating a firm is based in the East region
 - Central* = dummy variable indicating a firm is based in the Central region
 - South* = dummy variable indicating a firm is based in the South region
- MinUtilConstr* = dummy variable indicating a firm operates in mining, utilities, or construction
- Commerce* = dummy variable indicating a firm operates in the commerce sector
- Services* = dummy variable indicating a firm operates in the services sector
 - fdi* = firm with foreign capital
 - pub* = state-owned enterprise
 - xvar* = firm with links to external markets through trade
- Output per worker (log)* = log values of output (sales) per worker
- Output per worker (log) squared* = squared values of the log of output (sales) per worker

VARIABLES	Real Output per worker (ln)		Output per worker (ln)						Value Added per worker (ln)					
	(3)	(4)	(7)	(8)	(13)	(19)	(20)	(27)	(28)	(33)	(38)	(39)	(40)	
	lnrLPQ- Past Prod & Empl	lnrLPQ- Sector4	LHS=lnLPQ- Region	LHS=lnLPQ- Sector	LHS=lnLPQ- xvar=secto r_trad	LHS=lnLPQ- xvar=herfi ndahl_L	LHS=lnLPQ- xvar=herfi ndahl_rS	LHS=lnLPV- Region	LHS=lnLPV- Sector	LHS=lnLPV- xvar=secto r_trad	LHS=lnLPV- xvar=inves tment	LHS=lnLPV- xvar=herfi ndahl_L	LHS=lnLPV- xvar=herfi ndahl_rS	
Log of Empl at Birth	0.243*** (0.0772)	0.247*** (0.0796)												
Log of Real Product. 3 years ago	0.874*** (0.0322)	0.876*** (0.0325)												
age_6to9	-0.290 (0.197)	-0.291 (0.202)	0.296*** (0.0729)	0.302*** (0.0907)	0.296*** (0.0729)	0.293*** (0.0723)	0.295*** (0.0734)	0.266*** (0.0827)	0.259*** (0.0908)	0.266*** (0.0827)	0.266*** (0.0827)	0.262*** (0.0815)	0.266*** (0.0830)	
age_10to19	-0.0776 (0.195)	-0.0851 (0.201)	0.511*** (0.0977)	0.521*** (0.0831)	0.511*** (0.0977)	0.508*** (0.0984)	0.512*** (0.0979)	0.452*** (0.0914)	0.458*** (0.0747)	0.452*** (0.0914)	0.452*** (0.0914)	0.445*** (0.0940)	0.452*** (0.0919)	
age_20to29	-0.0926 (0.229)	-0.105 (0.236)	0.647*** (0.158)	0.714*** (0.140)	0.647*** (0.158)	0.640*** (0.155)	0.645*** (0.158)	0.585*** (0.165)	0.617*** (0.159)	0.585*** (0.165)	0.585*** (0.165)	0.576*** (0.162)	0.584*** (0.165)	
age_30plus	0.288 (0.385)	0.224 (0.399)	0.314 (0.194)	0.372* (0.196)	0.314 (0.194)	0.288 (0.189)	0.326 (0.195)	0.315* (0.179)	0.355* (0.175)	0.315* (0.179)	0.315* (0.179)	0.281 (0.172)	0.317* (0.177)	
sz_10to19	-0.503*** (0.160)	-0.500*** (0.166)	-0.252** (0.0975)	-0.0466 (0.125)	-0.252** (0.0975)	-0.237** (0.0938)	-0.263** (0.100)	-0.258** (0.107)	-0.0558 (0.130)	-0.258** (0.107)	-0.258** (0.107)	-0.239** (0.108)	-0.260** (0.112)	
sz_20to49	-0.430 (0.303)	-0.364 (0.326)	-0.297 (0.197)	-0.160 (0.175)	-0.297 (0.197)	-0.277 (0.198)	-0.307 (0.197)	-0.143 (0.179)	-0.0222 (0.176)	-0.143 (0.179)	-0.143 (0.179)	-0.126 (0.183)	-0.144 (0.178)	
sz_50to249	-0.400 (0.315)	-0.294 (0.342)	-0.449 (0.450)	-0.162 (0.403)	-0.449 (0.450)	-0.366 (0.458)	-0.464 (0.445)	-0.243 (0.510)	0.00162 (0.478)	-0.243 (0.510)	-0.243 (0.510)	-0.132 (0.511)	-0.245 (0.509)	
sz_250to499	-0.418 (0.679)	-0.344 (0.672)	-1.213*** (0.357)	-0.857*** (0.266)	-1.213*** (0.357)	-1.176*** (0.360)	-1.218*** (0.355)	-0.795* (0.400)	-0.337 (0.328)	-0.795* (0.400)	-0.795* (0.400)	-0.742* (0.383)	-0.796* (0.400)	
sz_500plus	-0.981 (0.624)	-0.857 (0.835)												
East	-0.176 (0.143)	-0.174 (0.147)	-0.393*** (0.0707)					-0.232*** (0.0685)						
Central	-0.0676 (0.219)	-0.0781 (0.228)	-0.303*** (0.0786)					-0.279*** (0.0806)						
South	-0.107 (0.229)	-0.106 (0.235)	-0.468*** (0.0739)					-0.441*** (0.0872)						
MinUtilConstr				0.808** (0.341)					0.936** (0.355)					
Commerce		0.112 (0.108)		0.399*** (0.0552)					0.623*** (0.0625)					
Services		0.0819 (0.120)		0.506*** (0.0859)					0.714*** (0.0947)					
fdi			0.690*** (0.206)	0.794*** (0.183)	0.690*** (0.206)	0.665*** (0.198)	0.700*** (0.201)	0.647*** (0.209)	0.712*** (0.188)	0.647*** (0.209)	0.647*** (0.209)	0.617*** (0.203)	0.649*** (0.205)	
pub			0.674 (0.438)	0.664 (0.582)	0.674 (0.438)	0.615 (0.435)	0.713 (0.442)	0.590 (0.391)	0.626 (0.534)	0.590 (0.391)	0.590 (0.391)	0.522 (0.392)	0.596 (0.396)	
xvar				0.782** (0.347)	-0.454 (0.342)	0.152 (0.221)			0.603*** (0.201)			-0.554 (0.346)	0.0257 (0.214)	
Constant	1.429*** (0.507)	1.216*** (0.444)	14.56*** (0.227)	13.62*** (0.0567)	13.78*** (0.206)	14.83*** (0.337)	14.45*** (0.287)	13.38*** (0.0644)	13.38*** (0.0669)	13.83*** (0.204)	14.43*** (0.162)	14.75*** (0.276)	14.41*** (0.235)	
Observations	605	592	654	654	654	654	654	647	647	647	647	647	647	
R-squared	0.837	0.836	0.205	0.121	0.205	0.207	0.205	0.131	0.142	0.226	0.226	0.229	0.226	
Sector dummies	YES	NO	YES	NO	YES	YES	YES	NO	NO	YES	YES	YES	YES	
Year Dummies	NO	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	
Standard errors in parentheses														
*** p<0.01, ** p<0.05, * p<0.1														

ANNEX D: EMPLOYMENT GROWTH REGRESSIONS

Variable definitions:

- age_6to9* = firms with 6 to 9 years of operation
- age_10to19* = firms with 10 to 19 years of operation
- age_20to29* = firms with 20 to 29 years of operation
- age_30plus* = firms with over 30 years of operation
- sz_10to19* = firms with 10 to 19 employees
- sz_20to49* = firms with 20 to 49 employees
- sz_50to249* = firms with 50 to 249 employees
- sz_250to499* = firms with 250 to 499 employees
- sz_500plus* = firms with over 500 employees
- MinUtilConstr* = dummy variable indicating a firm operates in mining, utilities, or construction
- Commerce* = dummy variable indicating a firm operates in the commerce sector
- Services* = dummy variable indicating a firm operates in the services sector
- xvar* = firm with links to external markets through trade
- Output per worker (log)* = log values of output (sales) per worker
- Output per worker (log) squared* = squared values of the log of output (sales) per worker
- Value-added per worker (log)* = log values of value added per worker
- Value-added per worker (log) squared* = squared values of the log of value added per worker
- Total Factor Productivity – residuals* = total factor productivity constructed using the residuals of an industry-specific Cobb-Douglas production function, assuming constant returns to scale
- Total Factor Productivity – residuals squared* = squared values of total factor productivity constructed using the residuals of an industry-specific Cobb-Douglas production function, assuming constant returns to scale

Employment Growth

VARIABLES	(1) Lg	(2) Lg	(3) exporter	(4) sh_fem	(5) herfindahl_L	(6) herfindahl_rS	(7) lnLPQ	(8) lnLPQsq	(9) lnLPV	(10) lnLPVsq	(11) TFPR	(12) TFPRsq
sza_10to19	-0.0317 (0.0370)	-0.0297 (0.0354)	-0.0301 (0.0372)	-0.0338 (0.0369)	-0.0304 (0.0355)	-0.00990 (0.0380)	-0.0374 (0.0440)	-0.0362 (0.0441)	-0.0349 (0.0447)	-0.0353 (0.0447)	-0.0720 (0.117)	-0.0350 (0.119)
sza_20to49	0.0339 (0.0480)	0.0759* (0.0437)	0.0340 (0.0481)	0.0455 (0.0474)	0.0782* (0.0438)	0.0849* (0.0460)	0.0578 (0.0614)	0.0582 (0.0614)	0.0634 (0.0618)	0.0637 (0.0618)	-0.0268 (0.162)	-0.0318 (0.161)
sza_50to249	0.0299 (0.0715)	0.0687 (0.0646)	0.0218 (0.0722)	0.0415 (0.0705)	0.0765 (0.0655)	0.0699 (0.0658)	0.0167 (0.0958)	0.0222 (0.0964)	0.0238 (0.104)	0.0218 (0.104)	-0.0711 (0.186)	-0.0518 (0.185)
sza_250to499	0.0796 (0.0868)	0.122 (0.0804)	0.0696 (0.0877)	0.125 (0.0880)	0.132 (0.0810)	0.124 (0.0861)	0.0759 (0.117)	0.0841 (0.118)	0.106 (0.125)	0.101 (0.126)	-0.105 (0.285)	-0.114 (0.283)
sza_500plus	0.0892 (0.244)	0.0471 (0.242)	0.0915 (0.245)	0.0972 (0.240)	0.0812 (0.239)	0.0694 (0.241)						
age_6to9	0.00554 (0.0325)	0.0207 (0.0318)	0.00545 (0.0327)	-0.00420 (0.0324)	0.0165 (0.0318)	0.0352 (0.0332)	0.0302 (0.0367)	0.0294 (0.0368)	0.0330 (0.0371)	0.0339 (0.0372)	-0.0363 (0.0965)	-0.0320 (0.0959)
age_10to19	-0.0810** (0.0315)	-0.0743** (0.0306)	-0.0805** (0.0316)	-0.0940*** (0.0312)	-0.0799*** (0.0305)	-0.0622* (0.0323)	-0.0834** (0.0365)	-0.0840** (0.0365)	-0.0855** (0.0368)	-0.0851** (0.0369)	0.00221 (0.0949)	0.00527 (0.0944)
age_20to29	-0.0806 (0.0507)	-0.0624 (0.0490)	-0.0848* (0.0512)	-0.0947* (0.0501)	-0.0642 (0.0489)	-0.0435 (0.0522)	-0.0580 (0.0628)	-0.0590 (0.0628)	-0.0590 (0.0630)	-0.0580 (0.0631)	-0.0413 (0.129)	-0.0104 (0.129)
age_30plus	-0.123** (0.0610)	-0.102* (0.0583)	-0.128** (0.0614)	-0.144** (0.0604)	-0.115** (0.0577)	-0.109* (0.0594)	-0.0900 (0.0719)	-0.0909 (0.0720)	-0.0926 (0.0732)	-0.0912 (0.0734)	-0.0744 (0.203)	-0.0926 (0.202)
Mining-Construction-Utilities		0.0291 (0.0847)										
Commerce		0.0219 (0.0268)										
Services		-0.0311 (0.0350)										
xvar			0.0603 (0.0637)	-0.145*** (0.0466)	-0.0530 (0.0519)	-0.0350 (0.0540)						
Output per Worker (log)							-0.0115 (0.0125)	0.0993 (0.202)				
Output per Worker (log) squared								-0.00407 (0.00741)				
Value Added per Worker (log)									-0.0143 (0.0129)	-0.0884 (0.223)		
Value Added per Worker (log) squared										0.00272 (0.00819)		
Total Factor Productivity - residuals											0.0207 (0.0260)	0.192 (0.116)
Total Factor Productivity - residuals squared												-0.0107 (0.00710)
Sector dummies (2-digits)	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Location dummies	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Constant	-0.00181 (0.0601)	0.0929*** (0.0301)	-0.00927 (0.0607)	0.0230 (0.0599)	0.108*** (0.0275)	0.102*** (0.0369)	0.260 (0.200)	-0.488 (1.375)	0.304 (0.202)	0.804 (1.516)	-0.102 (0.260)	-0.775 (0.514)
Observations	803	803	800	791	803	737	581	581	575	575	137	137
R-squared	0.093	0.051	0.093	0.110	0.050	0.043	0.093	0.094	0.096	0.096	0.189	0.206

Standard errors in parentheses

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

Omitted: micro, young, manufacturing

ANNEX E: EMPLOYMENT REGRESSIONS

Variable definitions:

- Log of Empl at Birth* = log values of firm's employment at the moment of its birth
- Log of Real Product 3 years ago* = log values of production 3 years prior to the survey
- age_6to9* = firms with 6 to 9 years of operation
- age_10to19* = firms with 10 to 19 years of operation
- age_20to29* = firms with 20 to 29 years of operation
- age_30plus* = firms with over 30 years of operation
- East* = dummy variable indicating a firm is based in the East region
- Central* = dummy variable indicating a firm is based in the Central region
- South* = dummy variable indicating a firm is based in the South region
- fdi* = firm with foreign capital
- pub* = state-owned enterprise
- xvar* = firm with links to external markets through trade
- Output per worker (log)* = log values of output (sales) per worker
- Output per worker (log) squared* = squared values of the log of output (sales) per worker
- lnLPQq2* = output per worker for the second quartile of the firms' distribution
- lnLPQq3* = output per worker for the third quartile of the firms' distribution

	(3)	(6)	(11)	(17)	(18)	(24)	(25)	(26)	(27)	(28)	(29)
VARIABLES	lnL-Past Prod & Empl	basic	xvar=secto r_trad	xvar=herfi ndahl_L	xvar=herfi ndahl_rS	lnLPQ	lnLPQsq	lnLPQ thri- tiles	lnLPV	lnLPVsq	lnLPV thri- tiles
Log of Empl at Birth	0.590*** (0.0470)										
Log of Real Product. 3 years ago	0.0201 (0.0133)										
age_6to9	0.0786 (0.0739)	0.0449 (0.0717)	0.0449 (0.0717)	0.0443 (0.0696)	0.0770 (0.0644)	0.116 (0.0700)	0.129* (0.0714)	0.106 (0.0832)	0.130* (0.0724)	0.147* (0.0737)	0.103 (0.0853)
age_10to19	0.119 (0.0792)	0.328*** (0.106)	0.328*** (0.106)	0.330*** (0.107)	0.354*** (0.104)	0.342** (0.130)	0.346** (0.130)	0.318** (0.147)	0.343** (0.130)	0.348** (0.129)	0.301** (0.142)
age_20to29	0.150 (0.114)	0.570*** (0.165)	0.570*** (0.165)	0.566*** (0.160)	0.591*** (0.163)	0.331* (0.184)	0.342* (0.188)	0.306 (0.207)	0.333* (0.184)	0.350* (0.188)	0.297 (0.199)
age_30plus	-0.298 (0.220)	0.743*** (0.243)	0.743*** (0.243)	0.753*** (0.241)	0.758*** (0.244)	0.696** (0.292)	0.697** (0.284)	0.752** (0.315)	0.653** (0.297)	0.673** (0.298)	0.671** (0.327)
East	-0.0281 (0.0666)										
Central	-0.0405 (0.110)										
South	-0.123 (0.0875)										
fdi		0.954*** (0.181)	0.954*** (0.181)	0.951*** (0.181)	0.978*** (0.201)	0.651*** (0.167)	0.630*** (0.156)	0.637*** (0.192)	0.641*** (0.164)	0.629*** (0.156)	0.607*** (0.199)
pub		0.405 (0.484)	0.405 (0.484)	0.455 (0.485)	0.773 (0.468)	0.317 (0.401)	0.329 (0.385)	0.297 (0.382)	0.326 (0.369)	0.344 (0.365)	0.318 (0.347)
xvar			1.039*** (0.346)	0.737** (0.296)	0.644** (0.237)						
Output per Worker (log)						-0.141*** (0.0366)	-1.625*** (0.544)				
Output per Worker (log) squared							0.0547** (0.0202)				
lnLPQq2								-0.279*** (0.0938)			
lnLPQq3								-0.328*** (0.114)			
Value Added per Worker (log)									-0.106*** (0.0354)	-1.342** (0.518)	
Value Added per Worker (log) squared										0.0455** (0.0194)	
lnLPVq2											-0.158* (0.0852)
lnLPVq3											-0.213* (0.108)
Constant	0.676*** (0.232)	2.031*** (0.276)	0.991*** (0.181)	1.566*** (0.355)	1.537*** (0.350)	3.893*** (0.643)	13.85*** (3.789)	2.027*** (0.299)	3.434*** (0.607)	11.72*** (3.578)	2.000*** (0.289)
Observations	611	902	902	902	832	654	654	604	647	647	597
R-squared	0.542	0.378	0.378	0.388	0.400	0.322	0.334	0.289	0.312	0.319	0.264
Sector dummies	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year Dummies	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Standard errors in parentheses											
*** p<0.01, ** p<0.05, * p<0.1											



Address: 1776 G St NW, Washington, DC 20006

Website: <http://www.worldbank.org/en/topic/jobsanddevelopment>

Twitter: @WBG_Jobs

Blog: <http://blogs.worldbank.org/jobs>