

Employment patterns and conditions in construction and manufacturing in Ethiopia

A comparative analysis of the road building and light manufacturing sectors

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Acknowledgements

This report was compiled by Florian Schaefer (London School of Economics) and Carlos Oya (SOAS, University of London), and benefited from the contributions of various researchers participating in the IDCEA project during the inception phase, data collection and data analysis. In particular we would like to acknowledge the contributions of Tang Xiaoyang, Weiwei Chen, Sam-Kee Cheng, Âurea Mouzinho, Lucile Franchet, and Sarah Graf. Special thanks go to Christina Wolf for her vital role in developing the project.

We are greatly indebted to our Ethiopia field team for their hard work and dedication. Our field team consisted of Alemayehu Hussein, Eyob Alemayehu, Mihretu Aberra, Tesfay Bulto, Yordanos Fisseha, and Zelalem Wakjira. The team was led by Fekadu Yeshitila and Hailu Bekele. Haileyesus Andualem, Yichun Li, and Ma Jie managed and coordinated the field research.

This research would not have been possible without the institutional support and coordination provided by the Ethiopian Economics Association, especially Assefa Admassie, Amin Abdella, and Asfaw Sisay, and the Forum for Social Studies, especially Meheret Ayenew, Leulseged Lemma, and Tigist Negussie.

We would like to thank the Ethiopian Investment Commission, the Ministry of Industry, the Ethiopian Road Authority, the Office of the President of

Oromia, the Office of the President of SNNPR, the Ethiopian Leather Industry Development Institute, the Ethiopian Textile Industry Development Institute, and the Ethiopian Confederation of Trade Unions for their support during our research. We are grateful to the various companies which opened their doors to our field team and granted their time to answer our questions. Last, but by no means least, we thank the hundreds of workers who patiently responded to our questions and shared their experiences with us.

Research partners: SOAS, University of London; Ethiopian Economics Association; Forum for Social Studies; Renmin University.

Photos by: Davide Scalenghe 2019

Funding body: Economic and Social Research Council and UKAid (United Kingdom)



Contents

Acknowledgements	2
Acronyms	4
Executive summary	4
1 Introduction	6
2 Research questions and analytical framework	8
2.1 Research questions	9
2.2 Conceptual framework	10
3 Research design and sample characteristics	12
3.1 Overall research design and comparative framework	12
3.2 Data collection tools	13
3.3 Sampling process and outcomes	14
4 The Ethiopian economic context: foreign direct investment and industrial strategy	17
5 Job creation and labour supply characteristics	22
5.1 Workforce localization patterns	22
5.2 Labour force characteristics	23
5.3 Migration	26
6 Labour outcomes: wages and working conditions in comparative perspective	28
6.1 Job security and formality	28
6.2 Wages	30
Payment per month	30
Payment per hour	35
Explaining differences in wages	38
6.3 Comparing non-wage working conditions	42
Non-wage benefits	42
Health and safety	43
Management-worker interactions	45
6.4 Unions, collective bargaining and labour conflict	46
6.5 Training and skill development	48
7 Conclusions and policy recommendations	50
References	53

Acronyms

AGOA	African Growth and Opportunity Act
CSA	Central Statistical Agency
EBA	Everything but Arms
EIC	Ethiopian Investment Commission
EIC	Ethiopian Investment Commission
EIZ	Eastern Industrial Zone
ETB	Ethiopian birr
FDI	Foreign direct investment
HIP	Hawassa Industrial Park
ILO	International Labour Organisation
SOE	State-owned enterprise
SSA	Sub-Saharan Africa



Executive summary

This report presents some of the main findings of the *Industrial development, construction and employment in Africa* (IDCEA) research project. As part of this project we undertook research on employment dynamics and effects in the infrastructure construction and light manufacturing sectors in Ethiopia. The main focus of this report is on findings emerging from a quantitative survey of 837 workers across 40 companies in three key sub-sectors for Ethiopian aspirations of structural transformation: light manufacturing industries (textile and garment, leather products) and infrastructure building (road construction).

We find that the emerging sectors and particularly new foreign investors have substantially contributed to job creation in manufacturing and construction in recent years, to a great extent facilitated by the state's role in infrastructural development and an industrial policy framework conducive to foreign direct investment (FDI) in manufacturing. Contrary to widespread perceptions that foreign firms and

especially Chinese companies rely on large numbers of expatriate workers, we find that workforce localization rates are over 90% and broadly similar across firms regardless of their origin.

The characteristics of the labour force we encountered in the surveys are consistent with the labour market needs of the country. Manufacturing workers are generally young, female and also relatively educated, with less than 20% not having completed primary education. Manufacturing labour market segments are strongly gendered, suggesting gender discrimination. Construction workers are quite different from manufacturing employees. Construction workers are much less educated, older, and more likely to be married than their counterparts in the manufacturing sector. Road building in Ethiopia remains a largely male domain. Across both sectors, many of the jobs created by leading firms in both the construction and manufacturing sector are filled by people who migrated in order to take up the job.

The quality of jobs these workers find varies significantly across and within sectors. The report shows comparisons of wage rates across sectors and firms by origin. Simple comparisons between firms by origin suggest relatively small differences in wages, sometimes not statistically significant. However, overall, wages across Chinese and other firms are broadly similar when we consider the effects of other worker and company attributes such as: age of workers, tenure in job, location effects, including being in industrial parks, and other differences as shown in the report. We see large differences between the wages paid to unskilled and semi-skilled workers in both sectors, with greater variation in the construction sector, where specific skills are in higher demand. Regression analysis suggests that the biggest effects on wages come from the skill level of the respondent, from working in the manufacturing rather than the construction sector (due to lower wages in manufacturing), and from working for a company located in an industrial park. When we control for these and other factors the independent effect of the origin of the firm largely disappears. In other words, once a range of variables is taken into account, whether a firm is Chinese, Ethiopian or other foreign does not really have a significant impact on wages. There are various aspects of industrial park labour dynamics that explain the lower wages found in these hubs. The locations of hubs, value chain specificities and the pattern of industrial relations prevailing in industrial parks all contribute to these differences.

Besides wages, there is variation in the provision of a number of non-wage benefits and allowances,

with better provision generally in the manufacturing sector, where labour relations tend to be more stable and more formalized. Occupational hazard is more significant in the construction sector. Chinese firms seem to perform slightly better in terms of incidence of accidents and injuries, especially compared to Ethiopian firms.

Labour relations in factories and construction sites are not particularly harmonious. Significant proportions of workers have experienced abuse. This is particularly the case in foreign firms subject to competitive pressures due to their integration into global production networks. Difficult labour relations are not helped by the fact that rates of unionisation in the manufacturing sector are low and unions are near-absent in road construction companies. As a result, we find very low rates of collective bargaining between workers and management, which also increases the likelihood of labour conflict. Strike action is very common in these sectors in Ethiopia.

The Ethiopian government places significant emphasis on the role of manufacturing sectors in training a low-skilled labour force. Training provision is much higher in the manufacturing sector, where most workers report having received training, than in the construction sector. In this regard there are no differences in terms of company origin, and Chinese firms contribute to training as much as other firms, especially in the manufacturing sector. Beyond technical skills and particularly in factories, managers insist on the need to teach 'soft skills' to ease the transition from farm to factory for their employees.

Based on these findings we offer the following policy recommendations:

- Continue to focus on promoting labour intensive sectors, while minimising the use of expatriate labour in these sectors
- Promote sector collective bargaining. Ensure firms abide by labour legislation and engage unions at workplace to improve labour relations, wage bargaining and better manage work culture clashes
- Adopt sector minimum wages to allow for a decent standard of living
- Implement a more coherent skill development policy framework that systematically connects infrastructure contracts, investment agreements, firm-level training needs and national skill development systems by adopting reciprocal control mechanisms, i.e. subjecting firms to different incentives based on achievement of skill development goals linked to labour force upgrading.
- Improve the planning and performance of urban eco-systems around industrial hubs and provision of local services to workers.

1 Introduction

Emerging economies in sub-Saharan Africa (SSA, or Africa hereafter) have experienced accelerated growth and varying degrees of structural change in recent years, especially since the early 2000s. In some countries, such as Ethiopia, growth has been resilient, even during the post-2008 global recession. Indeed, Ethiopia is today seen as the leading example of a new industrialization drive in Africa and a hub for foreign direct investment (FDI) into the manufacturing sector in the past ten years. However, prevailing employment structures in Ethiopia still reflect a lack of higher-productivity jobs and much reliance on low-productivity agricultural and 'informal' service activities, with relatively high unemployment rates in large urban centres, improvements since the 1990s notwithstanding (World Bank, 2016; Martins, 2017). Therefore, accelerated growth in infrastructure development and higher productivity manufacturing are important cornerstones of the current development strategies in the country.

International investors and contractors from different parts of the world have contributed to these processes as they tap into growing opportunities for business growth in Africa. Ethiopia has been an important destination for such investment flows, as well as for the increasing number of international construction contractors, especially from China, who have been building much needed economic infrastructure since the early 2000s. China's growing economic engagement in Africa is attracting widespread attention, and is generating debates both in the continent and beyond about the implications for Africa's economic development. In 2017, Africa represented 30% of total overseas revenues for Chinese contractors, up from 13% in 2000 (SAIS-CARI, 2019). In the same year, 60% of contract revenues by the top 250 international contractors in Africa was accounted for by Chinese firms, up from 15% in 2004 (Wolf and Cheng, 2018). Between 2014 and 2017 Ethiopia accounted for nearly 15% of all contract revenues of Chinese construction firms in SSA, meaning it ranked first in Africa, followed by Angola (calculations based on data from SAIS-CARI database). Chinese FDI has also been growing rapidly in Africa, and especially in Ethiopia, where the FDI stock doubled between 2014 and 2017, to over \$2bn, representing 5% of total Chinese FDI stock to SSA (calculations based on data from SAIS-CARI database).

What is more significant, a large proportion of this investment has gone to manufacturing, unlike in other African countries where mining and services attract a larger proportion. Such investments volumes obviously generate new employment. According to data from the Ethiopian Investment Commission (EIC), foreign investors created a total of 183,661 manufacturing jobs in Ethiopia in the period 2000-2017, with Chinese firms accounting for 21% of these new jobs (Cheru and Oqubay, 2019). These are significant numbers in both the Ethiopian and more broadly African contexts.

Chinese and other foreign firms, particularly in light manufacturing value chains, have already grasped the key advantages of a country like Ethiopia.

As Shen (2015) reports, based on interviews with Chinese investors, wages in Ethiopia are seen as particularly attractive, even by African standards, as they represent only one-fifth of comparable levels in China, and are even lower than the low wages found in Bangladesh. Even with initially low labour productivity, due to the lack of industrial experience, overall unit labour costs remain 'exceptionally competitive', especially if a medium-term outlook of five years or more is considered by investors in their assessment of unit labour costs. Combined with preferential access to the US and EU markets via the US' African Growth and Opportunity Act (AGOA) and the EU's Everything but Arms (EBA) agreement the Ethiopian market environment is highly attractive. However, low wages and market access are not the only ingredients needed to persuade firms from distant areas of the world to expand or relocate in unknown territory. Supply chain organisation and the quality of infrastructure, especially electricity costs and supply, as well as the credibility of government agencies dealing with FDI are equally important ingredients (Sun 2017; Cheru and Oqubay, 2019). Without this basic economic infrastructure, even extremely low wages would not be enough to attract investors in large numbers. Hence a symbiotic growth of infrastructure building and industrial investments may put Ethiopia on a path towards accelerated industrialisation.

This project focuses on the employment implications of these economic dynamics. Ethiopia's aspirations to becoming a manufacturing hub in Africa hinge on the speed with which an industrial labour force is formed and upgraded in Ethiopia (Oya, 2018). A number of aspects of these employment dynamics are relevant. First is the creation of much-needed jobs in contexts of rapidly growing numbers of labour market entrants, especially youth (World Bank, 2014). There is an opportunity to substantially expand labour demand in higher-productivity non-agricultural sectors, which may contribute to building an industrial workforce in Africa. Jobs in modern construction services and manufacturing can be mutually reinforcing in terms of relevant skill development. On this issue, a contentious question is whether Chinese firms create substantial number of jobs or largely rely on expat labour, an issue that has attracted a heated debate and a wide variation in estimates of workforce localization rates (Sautman and Yan, 2015; Jenkins, 2019) with 'On this issue, a contentious question is whether Chinese firms create substantial numbers of jobs or largely rely on expat labour, an issue that has attracted a heated debate and a wide variation in estimates of workforce localization rates (Sautman and Yan, 2015; Jenkins, 2019)

Second, the creation of new jobs does not necessarily mean 'decent work'. Therefore, an important question is whether the working conditions found in these sectors, and specifically among these emerging employers are better than existing norms in African countries and how they vary across different types of employers and investors. The existing evidence base for this important question is limited. There has been substantial media attention and advocacy around working conditions in Chinese firms in Africa (Baah et al., 2009; HRW, 2011), strikingly more than on overall employment conditions in local firms or other foreign firms. The available evidence points to a wage premium among non-Chinese foreign firms and lower average wages in Chinese firms. There are also some reports on working conditions in Chinese firms in selected African countries, but they often lack comparators, methodological rigour or reliable quantitative data from workers' surveys (Baah et al., 2009; HRW 2011; Shelton and Kabemba, 2012)¹.

Much research is based solely on qualitative evidence and company management interviews (McKinsey, 2017). The small number of studies that offer comparative evidence on working conditions by firm origin are based on interviews with top-level managers and not on large-scale quantitative surveys of workers. They generally only control for firm-level attributes and not individual worker characteristics (Coniglio et al., 2015; Rounds and Huang, 2017). In particular, there is a lack of substantial sector-level evidence for comparisons. Important variables are not sufficiently controlled for, and, as a result, these studies do not shed sufficient light on comparative working conditions. This project aims to fill this research gap. Therefore, statistical results in this report will be presented with a breakdown by firm origin contrasting data for Chinese firms and firms of other origins.

This report presents the main findings of our research on employment dynamics and effects in the infrastructure construction and light manufacturing sectors in Ethiopia. The focus is on the results of a quantitative survey of 837 workers employed by leading road construction and manufacturing firms in Ethiopia. Key insights from extensive qualitative research are also included, but a more thorough analysis of qualitative results will be published in separate reports and articles. The report is organised as follows. Section 2 presents the research questions and briefly introduces the conceptual framework underpinning the research design and analysis. Section 3 contains the main features of the research design and process as well as the main sample characteristics. This is followed by Section 4, which provides a contextual overview of Ethiopia's current economic dynamics with a special focus on its industrial strategy and the main features of the labour market. Section 5 presents the first set of findings from the surveys of firms and workers, with special emphasis on the social and demographic profiles of sampled workers. Section 6 contains the main results of our research on working conditions, with a particular focus on wages and their determinants. This section also includes evidence on non-wage working conditions, unionisation, and skill development issues. The report concludes with a summary of findings and some avenues for policy implications.

¹ There are important critical assessments of the emerging literature on working conditions in Chinese firms in Africa (Lee, 2017; Yan and Sautman, 2013).

2 Research questions and analytical framework

This study focuses on the dynamics of employment creation in the emerging sectors of infrastructure building and manufacturing, and particularly on the employment conditions found therein. This section presents the main research questions and the core analytical framework, with an emphasis on the need to transcend 'methodological nationalism' inherent in some of the literature on working conditions in Chinese firms in Africa, in the attempt to understand variations in working conditions, as well as the drivers of job creation, in light of the combined effects of a wide range of factors at global, national and local level, beyond, but obviously not excluding, firm origin.



2.1 Research questions

The study is structured around four main research questions:

Research Question 1

What are the patterns and determinants of job creation (and labour localization) in manufacturing and infrastructure development in SSA (Ethiopia and Angola)?

This question focuses particularly on the balance between the use of local/national and expatriate labour and the conditions that shape variation in job creation, across sectors, firms and over time. A subsidiary question is whether workforce localization rates in Chinese firms are significantly different than other firms and why.

Research Question 2

What are the extrinsic (objective) working conditions in the leading firms of the infrastructure construction and manufacturing sectors in Angola and Ethiopia?

This is the main focus of the research and in particular the range of factors affecting variation in wages, as well as the nature of labour regimes in different sectors and for different firms, domestic and foreign. Given the interest in comparisons among firms of different origin, there will be some focus on contrasting results between Chinese, national and other foreign firms.

Research Question 3

To what extent and how do foreign and domestic companies contribute to skill development for African workers in these sectors?

Linked to the question on working conditions, particular attention is given to the patterns and variation in processes of skill development as well as how firms, especially foreign companies, deal with skill shortages in emerging non-agricultural sectors. Skill development and better working conditions are linked to social upgrading of African workers and this study provides evidence on these aspects.

Research Question 4

What are the characteristics of the emerging non-agricultural workforce and their implications for future structural transformations?

We are interested in the long and uneven process of building an industrial labour force. The study aims to provide emerging profiles of workers in sectors that are expected to generate a significant number of jobs and draw labour from low-productivity sectors, especially agriculture.

2.2 Conceptual framework

Our analytical framework builds on a comprehensive and comparative review of different strands of literature spanning the following topics: (a) labour process theory and labour regimes in contemporary capitalism; (b) the geography of global value chains and production networks and new international division of labour configurations; (c) effects of FDI on employment outcomes and skill development; and (d) the role of Chinese firms in the dynamics of structural transformation and employment creation in Africa.

Based on insights from these different conceptual traditions and empirical applications, we developed a conceptual analytical framework that combines three different and interconnected levels of analysis to explain the multiple determinants of labour outcomes in a given context (see Figure 1 – Multi-scalar labour regime configuration). Variants of this multi-scalar approach have been deployed in recent research on local labour regimes, labour standards and competitive pressures in global value chains (Smith et al., 2018; Baglioni, 2018).

First, beginning at the bottom, are the micro-level workplace dynamics and ‘raw’ encounters between employers and workers over wages, productivity imperatives, safety, effort, and labour time. The theoretical framework we draw on in our explanation is based on the notion of labour regimes, i.e. “the interrelations of (segmented) labour markets and recruitment, conditions of employment and labour processes, and forms of enterprise authority and control, when they coalesce in sociologically well-defined clusters with their own discernible ‘logic’ and effects” (Bernstein, 2007: 7). In addition, labour regimes incorporate the institutions of social reproduction which, taken together, ensure that workers can be mobilised, motivated, utilised in production, and reproduced (Taylor and Rioux, 2018).

Second are the characteristics and dynamics of a particular sector or global production network, which cuts across national boundaries and generates specific imperatives of labour control and standards, through market structures, competition, global chain rules, and technology, and which are intimately linked with skill requirements, spatial

dimensions of labour processes, and even prevailing work culture and management ethos (Anner, 2015). Integration into sophisticated global production networks serving consumer markets in high-income countries is different to ‘simply’ exporting goods. While all exporting companies are exposed to the ‘disciplining’ effects of international markets, the pressures they face are very different to those found in the global production networks that produce relatively high-quality goods for sale in the US and EU. These networks are organised and controlled by powerful and demanding lead companies that impose rapid turnaround times and low profit margins on their suppliers. For suppliers tied into such global production networks these pressures result in a very different organisation of the labour process, by which we mean the conversation of labour power, which is a person’s capacity to work over a given time period, into realised work (Taylor and Rioux, 2018). A priori, we expect labour processes in companies tied into global production networks to be subject to much more detailed managerial interference, and managers to rely on more sophisticated – and often harsher – labour control regimes.

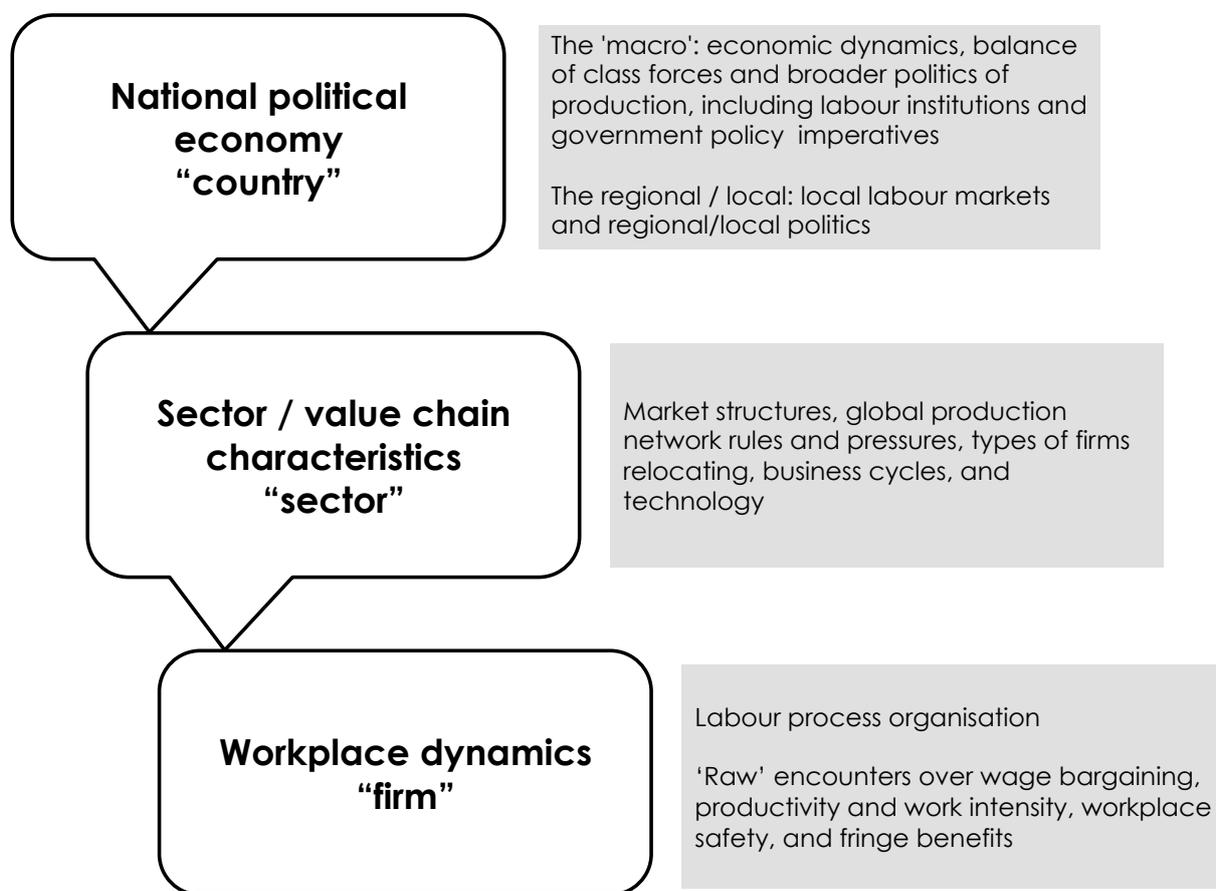
Third is the national political economy, and particularly the macroeconomic dynamics shaping economic transformations and structural change alongside the macro-level politics of production and state–society relations which shape labour supply dynamics and the arenas of different struggles, whether over the extent of commodification, the limits to labour reproduction, or claims over representation. In this case, the relations between state, capital, and labour and the institutions that underpin these relations are critical to understanding labour outcomes. Through this analytical lens, it is possible to explore the combination of a wide range of factors in determining labour standards for a particular firm and sector.

Considering such a variety of factors is necessary to avoid methodological determinism when particular issues are in focus, such as the nationality of firms, the country or the global value chain.

Much of the early literature on labour and Chinese firms in Africa has focused on the labour practices in these firms as if they were unique, culturally driven, and detached from the economic realities and imperatives of the sectors and labour markets they are part of. There are already some important contributions that have questioned the 'Chinese exceptionalism' in labour studies

in other contexts (Chan, 2015). The specific combinations of factors considered in this multi-scalar labour regime configuration constitute a framework where the origin of a firm may be just one of many determinants and possibly strongly associated with other sector, firm and context attributes, which together account for variation in wages and other working conditions.

Figure 1 – Multi-scalar labour regime configuration



Source: Authors' elaboration.

3 Research design and sample characteristics



3.1 Overall research design and comparative framework

We adopted a research design based on a sequential mixed methods approach that was operationalised through a carefully designed comparative framework. As argued in the introduction, one of the key problems with the existing literature on labour issues in Chinese firms is the lack of adequate comparators and contextual evidence.

Overall, the labour surveys at firm level were carried out in a 2-by-2-by-3-by-2 comparative framework:

- two countries (Ethiopia and Angola);
- two sectors (manufacturing and construction) and specific sub-sectors within each of these;
- three origins (national/domestic, Chinese and other foreign);
- two varieties of Chinese capital (private and state), which may be extended to similar varieties of Ethiopian capital, with distributions relevant to each sub-sector (e.g. Chinese state-owned enterprises are mainly found in infrastructure construction and private firms mostly in manufacturing within these samples).

² We use the terms unskilled and low-skilled interchangeably.

In order to reduce excessive variation in outcomes, the surveys focused on the type of workers, namely unskilled and semi-skilled labour, that represent the vast majority of jobs created in the target sectors, especially by foreign companies in Ethiopia². According to evidence collected through interviews with managers and HR departments in selected companies in target sectors, most jobs created for national workers in Ethiopia are in low-skilled or semi-skilled categories, with many semi-skilled workers having been upgraded from unskilled status through on-the-job training and direct work experience. Typically, eight out ten jobs created by firms in these sectors are within these target skill categories.

3.2 Data collection tools

To be able to depict how the labour force dynamics result from interactions across the three dimensions identified above, i.e. the country, the sectors and the firm, we collected an integrated mixture of both quantitative and qualitative primary data. We used four main data collection tools: structured quantitative interviews with workers, a structured quantitative firm questionnaire, semi-structured qualitative interviews with key informants, and semi-structured work-life history interviews with selected workers. Table 1 gives an overview of the qualitative interviews we conducted, while our main quantitative sample is discussed in the next section. Prior to beginning primary data collection we conducted extensive literature reviews of the academic and policy-oriented literature and compiled the existing

secondary data from line ministries and the Ethiopian Central Statistical Agency. Our primary data collection strategies differed for data at the level of the country, the sectors and the firms. At the level of the country we conducted qualitative semi-structured interviews with key policy makers in relevant line ministries and the Ethiopian Investment Commission, international organisations, non-governmental organisations, and representatives of the national trade union federation, the Confederation of Ethiopia Trade Unions (CETU). At the sectoral levels we conducted similar interviews with civil servants in sectoral development agencies of the Ethiopian government and sectoral trade union federations. We also used interview with company managers to explore the structure of value chains and production networks across the two sectors.

Table 1 - Overview of qualitative interviews

Interview category	Number	Share (%)
Government	27	18
Company management	72	48
Worker life histories	33	22
Trade unions	9	6
International organisations	6	4
Non-governmental organisations	3	2
TOTAL	150	100

Most of our primary data collection was focused at the level of the company. Here we pursued five separate, but interrelated, avenues of data gathering. First, we conducted quantitative interviews with workers across a carefully selected sample of firms. Our sampling procedure for the quantitative survey is outlined below. Second, we conducted qualitative semi-structured interviews with company managers and local trade union representatives.

Third, we administered a quantitative firm questionnaire to collect firm-level characteristics. Fourth, we conducted in-depth qualitative work-life histories with selected workers from the main quantitative questionnaire. And fifth, we conducted a quantitative brief follow-up survey with 120 workers in the manufacturing sector focused on job turnover and changes in earnings.

3.3 Sampling process and outcomes

We sampled firms in the relevant sectors and then low- and semi-skilled workers within each firm. All of the workers we sampled were nationals of Ethiopia. While selection within each firm was randomised, the sampling of firms was purposive using the following analytical and empirical criteria:

- ✓ Firms in sectors where job creation for low- and semi-skilled workers had been very significant in the last decade.
- ✓ Firms in sectors where there was a large enough pool of firms of the categories needed for this research: Chinese, domestic and other foreign.
- ✓ Firms in sectors where more unskilled or semi-skilled labour can be hired, i.e. where barriers to entry are lower, in order to capture some new labour market entrants in such sectors.

In Ethiopia these criteria led us to select three sub-sectors: textiles and garments as well as leather products for manufacturing, and road building in the construction sector, the latter linked to the scaling up of state investment in infrastructure.

Once specific sub-sectors were selected, we conducted extensive scoping research to gather the necessary information for company selection. Our sample of companies was selected according to the following criteria:

- ✓ Firms had to be important generators of employment, i.e. the largest and more significant job creators within each subsector (e.g. road building, textiles and garment, leather products).
- ✓ We included firms that were considered as among the most important in each sector (from interviews in scoping phase) but were also active at the time of the survey, which was especially important for the road construction sector, since activity and employment depend on active projects. Additionally, for logistical reasons we prioritised construction projects closer to Addis Ababa.
- ✓ We included both large and medium firms, but not small-scale firms, using the scale standards within each sector.
- ✓ We ensured that we selected at least some examples of enterprises that were known for best practice in labour standards, so that the sample had a 'top benchmark' against which other firms could be compared, instead of a sector 'average' for which there was no secondary information.

The final sample included all of the most analytically important firms across the three subsectors, according to these criteria. Table 2 - Sample of firms by sector and company origin presents an overview of the sampled companies by sector and company origin. Given the centrality of manufacturing to the development strategies of successive Ethiopian governments, we included more firms in the manufacturing sector than in the construction sector. In the latter sector we are also constrained by the small number of other foreign companies with active projects at the time of research.

Table 2 - Sample of firms by sector and company origin

Company origin	Manufacturing	Construction	Total
Chinese	8	6	14
Other foreign	9	3	12
Ethiopian	8	6	14
Total	25	15	40

In all cases, explicit authorization for the study was sought from employers, and informed consent was sought from workers prior to interviews. Workers were interviewed either inside or outside the premises of their workplaces, depending on access in each case. In any case, when interviews happened at the workplace, survey teams made every effort to stay out of sight and earshot from managers and supervisors in order to ensure independence and privacy. In no case were managers or supervisors present during interviews. One aim of the project was to try to obtain representative samples within each company or site. In the manufacturing sector the sample was restricted only to workers directly involved in production, so as to exclude cleaners, security guards and other ancillary staff, as well as clerical and administrative workers. This meant following a number of basic principles for selection:

First, there should be a large enough absolute sample size for each site/firm: it was decided that sample sizes within each firm/site would range between 20-30 depending on the relative size of total employment in the firm/site. Larger samples sizes within same firm/site would not add much precision and would add to costs unnecessarily. Moreover, the aim was to cover a reasonable number of firms/sites, as variation was expected to happen more between than within them.

Second, we aimed to work with precise and unbiased sampling frames (i.e. lists of workers). In order to construct suitable local sampling frames, field supervisors were trained in and employed a variety of procedures, including making on-site lists of workers in sections of the factory or site, working with employee lists provided by the company which were then independently checked for completeness by field supervisors, or using systematic random sampling, which obviated the need for precise sampling frames.

Third, independent of how sampling frames were constructed, interview respondents were randomly selected by field supervisors, who used laptops or tablets to generate random numbers.

To create representative samples at company level we stratified the sampling by skill level, i.e. low- and semi-skilled, and matched the distribution of the



sample to the distribution of workers across different tasks within the factory or site. Our definitions of skill groups are based on the tasks people perform, rather than on education levels or work experience. We arrived at these definitions after conducting large numbers of interviews with company managers. In manufacturing, we consider workers to be low-skilled if they work in positions that require only minimal training, regardless of their work experience, while we considered line supervisors and workers in similar positions of responsibility to be semi-skilled. A typical low-skilled manufacturing worker in the manufacturing sector is a production worker operating a simple machine. In the construction sector, we considered workers with specialised skills, such as carpenters or masons, as well as all construction machine operators, to be semi-skilled. Construction workers without such skills, who typically work as assistants or helpers to those with specialised skills, were considered low-skilled. We did not sample skilled workers, such as engineers, designers, or managers.

In manufacturing, our sampling procedure began with an in-depth interview with management staff, generally either from production management or HR, to determine the proportions of semi-skilled and unskilled workers in the factory, as well as their distribution across production departments. Semi-skilled workers were oversampled to ensure sufficient numbers were present in the final sample and we interviewed a minimum of three semi-skilled workers per company. The selection of workers for the sample was then weighted to mirror the distribution of production workers across the different production department (e.g. cutting, sewing, finishing, quality control & packaging in garments). Where a list of workers was available, and field supervisors were able to independently verify its completeness using cross-checks, this was used as a basis for selection. Where no list was available field supervisors used systematic random sampling by using random numbers to select first production lines or machine clusters and then particular workstations within lines or clusters. Where interviews with management revealed systematic differences between production lines or machine clusters, e.g. lines of different experience or productivity levels, care was taken to include all such categories in the sample.

In construction, our focus on roads meant that workers on a given project were spaced out across distinct sub-sites, often over distances of 50km or more. Our sampling procedure therefore began with a detailed discussion with project managers in the project headquarters or main site to identify both the composition of the labour force in terms of semi-skilled and unskilled workers, as well as their distribution across different sub-sites. Road construction projects proceed by conducting different types of work (e.g. earth work, structural construction, surfacing, etc.) simultaneously across different sub-sites. As different types of work vary greatly in their capital- vs labour-intensity, as well as in the skill levels required to perform the work, sub-sites in a road construction project differ systematically from one another. Sub-sites were therefore selected to ensure the sample matched the composition of the labour force across the project. Among similar sub-sites selection was randomised. Enumerators and supervisors then travelled to each of the selected sub-sites. Within each subsite, the numbers of workers were limited so supervisors were able to construct lists of workers and their skill levels and use random number generators to select from these lists.

Table 3 - Sample of workers by sector and company origin

Sector	Chinese	Other foreign	Ethiopian	Total
Manufacturing	167	197	170	303
Construction	124	59	120	534
Total	291	256	290	837

Table 3 - Sample of workers by sector and company origin presents the composition of our sample of workers by sector and company origin. The category 'other foreign' includes all companies that are neither Chinese nor Ethiopian. About 64% of our sample works in the manufacturing sector, and we have a rough balance across the different company origins. As above we were constrained by the limited availability of other foreign firms in the construction sector. Of the workers in the manufacturing sector 55% were employed in a company operating inside one of Ethiopia's industrial parks.

After conducting the main quantitative worker survey using the above sample, we purposively selected two subsamples of our main survey sample for in-depth qualitative work-life histories and for a follow-up phone survey. In both cases the samples were selected using the quantitative data in hand to provide an analytically interesting selection of workers of different skill levels and different levels of experienced across a wide variety of companies. The follow-up phone survey was confined to the manufacturing sector.

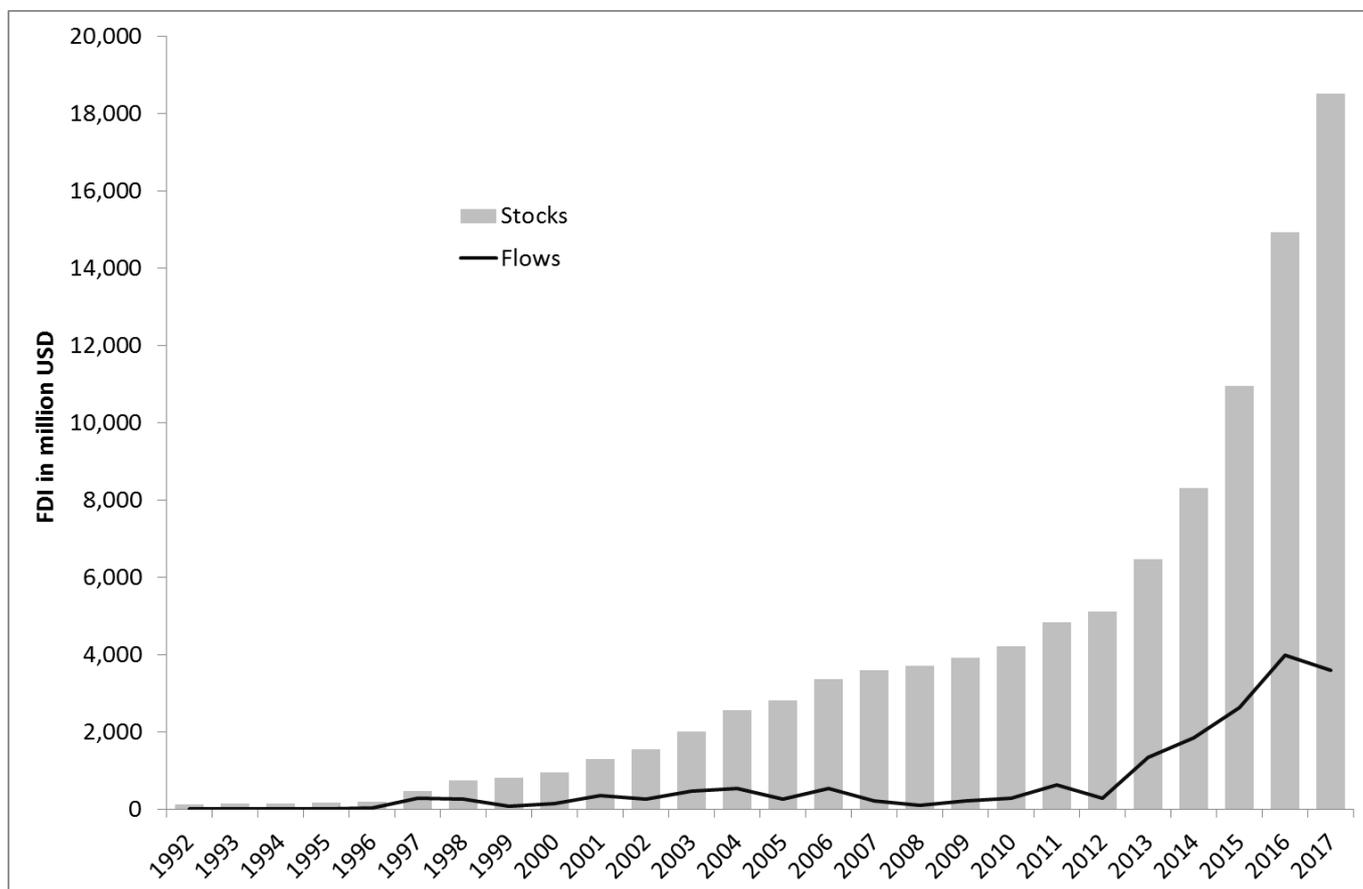
4 The Ethiopian economic context: foreign direct investment and industrial strategy



Ethiopia is a low-income country with a long history of autocratic rule, civil strife, and war. In 1975 the quasi-feudal regime of Emperor Haile Selassie was toppled by a coalition of disgruntled soldiers and radicalised students. The military quickly took over the revolution and established a ruthless dictatorship and a planned economy. A civil war ensued and in 1991 the Ethiopian Peoples' Revolutionary Democratic Front (EPRDF) took power. Since then the EPRDF governments have turned towards a market economy, while maintaining autocratic control of the political system and mass media. The EPRDF sought

political legitimacy through economic development. Ethiopia's first industrialisation strategy was published in 2002 and after 2005 the government officially adopted a strategy of state-led industrialisation (Weis, 2016). This strategy rests on two key planks: one is the use of foreign direct investment to drive manufacturing development. Experienced foreign manufacturing companies are expected not just help create jobs for Ethiopia's large and young population, but also to bring in capital and expertise. The other plank is strategic investment in basic infrastructure financed both through overseas loans and Ethiopian government funds.

Figure 2 - Ethiopian inward FDI stocks and annual flows, 1992-2017



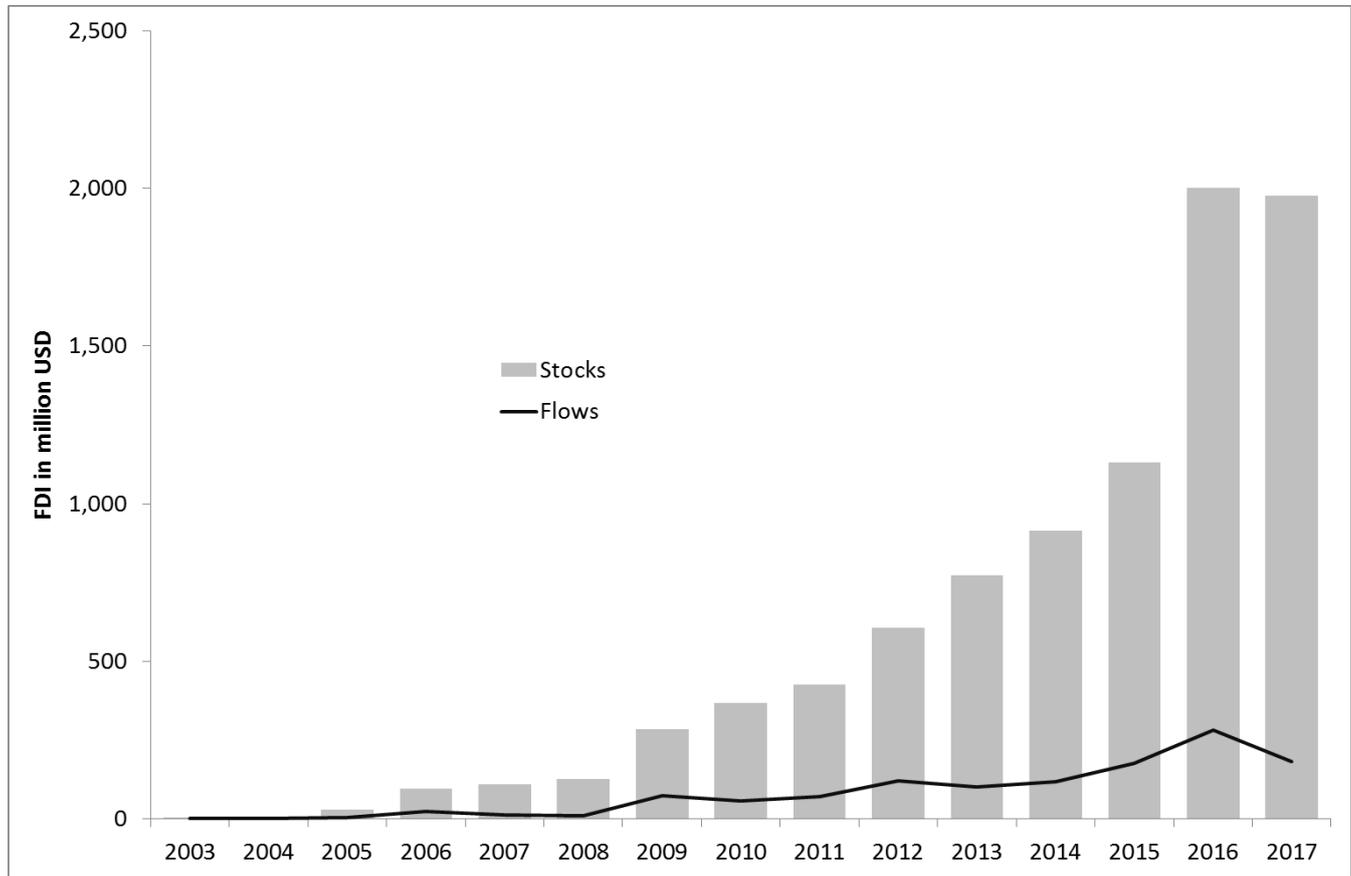
Source: UNCTADSTAT

As seen in Figure 2, the government has succeeded in greatly increasing FDI inflows and FDI growth accelerated sharply after 2012³. Annual FDI inflows, which had averaged around USD 300 million during the 2000s, reached a high of almost USD 4 billion in 2016 and by 2017

reported FDI stocks stood at over USD 18.5 billion. Most of this investment has flowed into the Ethiopian manufacturing sector. According to the Ethiopian Investment Commission, the share of FDI flows going to manufacturing increased from 70% in 2007 to 89% in 2016/17 (EIC, 2017).

³ These figures are taken from the UNCTADSTAT database. The Ethiopian Investment Commission reports similar, but slightly higher, inflows between 2006/07 and 2016/17, see EIC (2017).

Figure 3 - Chinese FDI stocks and annual flows to Ethiopia, 1992-2017



Source: China Africa Research Initiative (SAIS-CARI)

Along with competitors from the EU, the US and other parts of Asia, Chinese companies have invested heavily in Ethiopia.

Figure 3 shows annual stocks and flows of Chinese FDI into Ethiopia using data compiled by SAIS-CARI.⁴ Chinese FDI into Ethiopia grew rapidly after 2008 and by 2017 annual flows had reached USD 181 million, while stocks stood at USD 1.75 billion. Chinese investors in Ethiopia have been especially drawn to the construction and manufacturing sectors. These investments occurred in context of rapid manufacturing growth in Ethiopia, where manufacturing value-added increased six-fold

between 1990 and 2017 (Schaefer et al., forthcoming). In building up basic infrastructure Ethiopia relies heavily on overseas contractors. Consequently, Ethiopia is an important recipient of Chinese contracted overseas project, and, as in many parts of Africa, Chinese construction contractors have been very successful in winning contracts in Ethiopia. In 2016 alone Chinese contractors reported USD 4.7 billion worth of project revenue from in Ethiopia, equivalent to 6.7% of Ethiopian GDP, and 26 of the 32 international construction contractors operating in Ethiopia in 2017 were Chinese (Wolf and Cheng, 2018). While most Chinese manufacturing companies in Ethiopia are private enterprises, Chinese construction companies are either national or provincial SOEs.

⁴ The China Africa Research Initiative at Johns Hopkins School of Advanced International Studies publishes careful compilations of data on the economic activities of Chinese actors in Africa. These data have been assembled from Chinese statistical yearbooks and bulletins. Reporting inaccuracies in the underlying datasets mean that stocks and flows do not match.

Table 4 - Industrial parks and job creation in Ethiopia

Name	Ownership	Sector	Employment in 2018	Status
Eastern Industrial Zone	Private	Mixed	10,500	Operational since 2012
Bole Lemi I	Government	Textile & garments	15,000	Operational since 2015
Hawassa Phase I	Government	Textile & garments	24,000	Operational since 2016
Mekelle	Government	Textile & garments	3,800	Operational since 2017
Kombolcha	Government	Textile & garments	3,800	Operational since 2017
Adama	Government	Garment, textile & machinery	1,500	Partly operational
Huajian Industrial Park	Private	Mixed	4,600	Partly operational
Velocity Shoe City	Private	Leather products	1,700	Partly operational

Source: Ethiopian Investment Commission

In the manufacturing sector, the Ethiopian government is seeking to concentrate FDI into a series of new industrial parks. To help attract investors the Ethiopian government seeks large-scale international manufacturers to act as anchor companies for its new parks, in what government officials call 'building verticality' (Oqubay, 2019). Anchor companies are encouraged to relocate part of their production networks of suppliers to Ethiopia. Table 4 gives an overview of the industrial parks that are currently active, along with official estimates of the number of jobs created in each by 2018. Parks concentrate manufacturing companies so that they can be provided with services more easily. The services provided to companies by the government differ from park to park, but all parks have a dedicated power supply. The Hawassa Industrial Park offers also investors a 'one-stop shop' facility for dealing with government offices for customs and licencing, a zero liquid discharge water treatment plant, and has a tenants' association that meets regularly to coordinate among companies and with federal and local government officials.

The three largest parks are the privately-owned Eastern Industrial Zone (EIZ), a pioneer in hosting foreign industrial investors in Ethiopia, and the

government-owned Bole Lemi industrial park and Hawassa Industrial park (HIP), in Addis Ababa and Hawassa, respectively. The EIZ was officially opened by Chinese investors in 2012 as Ethiopia's first modern industrial park, and was followed later by Bole Lemi. The current flagship park, the Hawassa Industrial Park, only opened in 2016. The parks vary in terms of their sectoral orientation. The EIZ houses manufacturing companies across a number of different sectors, while Bole Lemi is focused on textiles, garments, and leather products, and the HIP is open only to textile and garment companies.

Job creation in Ethiopian industrial parks has been rapid and around 65,000 jobs had been created across all parks by 2018.

Hawassa is by far the largest, with around 24,000 workers in 2018, followed by Bole Lemi with 15,000 workers and the Eastern Industrial Zone with around 10,500. At full capacity the Hawassa Industrial park is supposed to employ more than 50,000 people. Almost all of these jobs have been created through the use of FDI. At the time of research the EIZ, Bole Lemi and Hawassa industrial parks were being used exclusively by foreign investors.

Ethiopia is currently considered a country with strong prospects for manufacturing-driven structural transformation (Oqubay, 2019). Martins (2017) argues, based on labour force surveys between 1999 and 2013, that there has been significant structural change in terms of shares of value added, but that shifts in the composition of employment have lagged behind. This data does not of course take into account the substantial job creation in the manufacturing sector since 2012. According to ILO data (ILOSTAT), recorded wage employment (primarily in formal sector occupations) almost doubled in the period 2007-17, while the labour force grew by 40% in the same period. Unemployment and underemployment rates have declined in both urban and rural areas since the 1990s (World Bank, 2016: 33), and labour force participation rates have increased with dependency ratios declining (EEA, 2016). However, despite these positive trends and an ongoing urbanisation process, the rural population grew by 23 million between 2001 and 2014, of whom 13.1 million are of working age (EEA, 2016). Many of these new rural labour market entrants are unlikely to be able to depend on land-based livelihoods, made increasingly precarious by land fragmentation and climate change. New labour market entrants are more educated than previous cohorts. Therefore, progress in generating decent permanent jobs for the rapidly expanding young and better educated labour force is critical both for economic and political stability and to improve the weak bargaining power of those employed in emerging sectors.

There are no signs yet of significant labour market tightening, at least in the 'formal' sector, largely because of the substantial pool of new labour market entrants. Studies of real wages in urban Ethiopia show a worrying decline, with significant fluctuations as a result of food price inflation

dynamics. The World Bank found real wage declines between 2003 and 2014, despite a more educated labour force and generally expanding employment (World Bank, 2016). According to the ILO (2018), in the period 2008-17, the annual real wage growth was negative (-0.8%), and well below the SSA median of +2.7%. These trends in real wages reflect weak workers' bargaining power, partly driven by the vast reserve army of labour in the countryside and growing urban centres, and partly by imperfect adjustments of nominal wages to inflation spikes, which reflect the influence of sticky nominal wages in the public sector and knock-on effects on wage setting in the private sector.

Despite increases in education, Ethiopia's skills gap remains substantial, especially considering the needs of a rapidly expanding industrial sector. Despite vast improvements since 1991, workers in Ethiopia on average have lower education levels and worse nutritional indicators than in many other African countries (Sender et al., 2005). In 2016, 47.8% of Ethiopian women aged 15 to 49 had no education, while just 10.4% had some secondary education. Amongst men the figures were 30.3% and 13.2%, respectively. Educational outcomes are most dire in rural areas where 56.8% of women and 32.5% of men aged 49 and under have no education. While educational outcomes are improving in both urban and rural areas, with 20% of women and 12.2% of men aged 15 to 24 recorded as having no education, 36.2% of women and 21.5% of men in this age bracket are illiterate (CSA, 2017). The median number of years of schooling completed for those aged 15 to 19 was just 5.1 years for both women and men. To develop skills relevant to the manufacturing sector Ethiopia has greatly expanded the provision of technical and vocational training (TVET). However, the curricula used in the country's TVET system have been criticised for being of limited use in improving firm-level productivity (World Bank, 2015).

5 Job creation and labour supply characteristics



This section presents an overview of findings with respect to three aspects. First is the evidence on workforce localization patterns, i.e. the extent to which firms rely on Ethiopian workers in their operations and the contribution to job creation within the target sectors. Second, the main

socio-demographic characteristics of the workers sampled in this study, to contribute to an overall profile of the emerging workforce in these sectors. And third, an overview of migration patterns and the relative significance of a migrant labour force, especially in manufacturing firms.

5.1 Workforce localization patterns

An important aspect in understanding the overall employment effects of foreign direct investment is looking at how many jobs are created for national workers. In this regard, there are persistent and widespread perceptions among government officials, researchers and industry informants about Chinese firms in particular. The common narrative in many policy and private sector circles is that Chinese firms employ a 'majority' of Chinese workers, especially in infrastructure projects. During scoping research multiple respondents even suggested that Chinese SOEs were expected to "create jobs" for Chinese workers given the "labour market situation in China". There is already substantial evidence that questions this narrative through a synthesis of firms surveys across several African countries which suggests that workforce localization rates in Chinese companies average 85% across a wide range of African countries, with substantial variation according to type of sector and firm (Sautman and Yan, 2015; McKinsey, 2017). In Ethiopia we found this perception of low reliance on local workers to be categorically untrue.

Looking at all staff in Chinese and foreign companies, we find localisation rates of around 90% with little variation across ownership types.

The vast majority of expatriate workers in Chinese and foreign companies in Ethiopia are in managerial or skilled technical positions. If we restrict our view to the categories of workers most of interest to us, that is to low- and semi-skilled workers, we find that most Chinese and other foreign companies employ no expatriate workers in these positions. In those companies that do, expatriate workers make up no more than 3% of semi-skilled workers. No company reported employing expatriate workers in low-skilled positions. This is in line with a strategy of minimising operating costs, as expatriate workers are much more expensive than Ethiopian workers in the same position. From our qualitative interviews we learnt that a common pattern for newly-arrived foreign investors is to bring in some expatriate staff in semi-skilled

positions to assist with start-up and to help train Ethiopian workers. These expatriates are generally drawn down as soon as they can be replaced with Ethiopian workers. To an extent this outcome is due to the Ethiopian government's firm stance in preventing the use of expat labour for positions where there is enough available labour force in the country. Visa restrictions and monitoring of labour hiring, especially in sectors where foreign workers are more likely to be found (construction) are some of the policy interventions contributing to localization rates that are higher than many other African countries, and especially Angola, where this study also conducted surveys.

However, many companies found it difficult to recruit suitable Ethiopian candidates for managerial positions, especially in the manufacturing sector, and in firms integrated in global production networks where organizational knowhow requirements are greater. In our qualitative interviews the most frequently cited barriers

to greater local recruitment for managerial and skilled positions, such as the lack of experienced candidates and the perceived low quality of many university degrees. Especially in the manufacturing sector, foreign managers frequently complained that Ethiopian university graduates had received an overly theoretical education with not enough emphasis on, or exposure to, the practical issues common to production processes. This raises questions about the eco-system of skill formation, which is central to industrial upgrading (Best, 2018). In this respect, there is need for a more coherent and better coordinated skill development policy framework that systematically connects infrastructure contracts, investment agreements, firm-level training needs and national skill development systems. The significant growth of universities and technical colleges in Ethiopia ought to produce the necessary labour force for skilled and managerial positions, but stronger and more institutionalised connections with the real world of factory work in globally competitive enterprises are needed.

5.2 Labour force characteristics

As laid out in Section 2, one of the aims of this research project has been to document the characteristics of the labour force in the rapidly expanding light manufacturing and infrastructure construction sectors. As employment opportunities increase it is important to understand who is filling these positions, in terms of the demographic and socio-economic backgrounds. Equally important is to analyse how this differs across companies of different origins. Table 5 provides an overview of some of the key characteristics of the respondents in our sample, disaggregated by sector, skill group and company origin.

The recent expansion of large - and medium-scale manufacturing in the textile & garment and leather products sub-sectors has created large numbers of new jobs, which have complemented the jobs in older companies.

As shown in Table 5, manufacturing workers are generally young and female. On average, workers are 25 years old and 75.3% are women. The majority, 67.6%, have never been married. In the Ethiopian context, this is a further indicator of the relative youthfulness of these workforces. Ethiopia is a very religious country and marriage is an extremely common life choice. Despite low-skilled manufacturing workers requiring only very limited training to be able to begin working, the workers in our sample are relatively educated, with 52.8% having completed at least year 10 and another 17.4% having additionally completed a technical and vocational training (TVET) course. Only 16.2% have not completed primary school. This is in contrast with average national statistics, which show that (primary) grade-8 completion rate was 54% in 2015/16 and gross enrolment rate in secondary education barely reached 30% (Rekiso, 2019). Therefore, the sample of industrial workers in our study is substantially more educated than the national average and closer to prevailing rates in Addis Ababa. Many companies impose minimum

education requirements for new hires, commonly demanding that workers have completed at least year eight or even year ten. As we did not sample skilled workers, very few respondents in our sample have completed a university degree.

As skills are acquired primarily through on-the-job training and work experience it is not surprising that semi-skilled workers are, on average, older than low-skilled workers. Semi-skilled workers are much more likely to have completed at least primary school, but otherwise differences in education are less pronounced. Strikingly, semi-skilled workers are much less likely to be female.

There are important differences in the labour force characteristics between companies of different origins, i.e. Chinese, other foreign and Ethiopian, for both low- and semi-skilled workers.

Among the low-skilled workers, employees of Ethiopian companies are much older than workers Chinese or other foreign owned firms, where workers are very close to one another in average age, and also have markedly lower levels of education. While women form the majority of the low-skilled labour force across all company types, this is most pronounced in other foreign firms. As they tend to be older, both low- and semi-skilled workers in Ethiopian companies are much more likely to be married than workers in other company types.

As with low-skilled employees, semi-skilled workers in Ethiopian companies also tend to be much older than their counterparts in Chinese and other foreign enterprises, where again the average age of workers is very similar. Across all company types, semi-skilled workers are much more likely than low-skilled workers to be men. Workers in these types of manufacturing jobs are generally promoted to these positions from among the broader low-skilled labour force, so this pattern probably reflects sexist perceptions among managers about the relative capabilities of female and male employees. Especially notable here is the very low share of women among semi-skilled workers in Chinese companies, where they comprise just 15% of such

staff. By contrast, in other foreign and Ethiopian companies women make up 82.1% and 50% of semi-skilled workers, respectively.

Workers in the construction sector differ systematically from those in the manufacturing sector, as shown in Table 5. Most notable is the difference in gender composition. Only 15% of the workers in our construction sample were women. In stark contrast to other types of construction, such as urban housing, where female workers are far more common, road building in Ethiopia remains a largely male domain. Ethiopia is unusual in this regard, as the construction labour forces in many countries are overwhelmingly male. Where women are present as workers on road construction sites it is almost exclusively as low-skilled employees doing relatively simple work. Our random samples did not pick up a single case of a female semi-skilled worker in the construction sector.

Construction workers are much less educated, older, and more likely to be married than their counterparts in the manufacturing sector. Where in manufacturing the modal educational achievement was to have completed year 10, in construction it is to have either enjoyed no formal education at all or to have not completed primary education, which in Ethiopia goes up to year 8. Low-skilled construction workers in particular have very low education levels, with 47% of such employees in Chinese firms, 50% in other foreign firms, and nearly 60% in Ethiopian firms not having completed primary education. Despite the often technical nature of construction work, fewer workers had completed a technical and vocational training course than in the manufacturing sector, especially among the low-skilled workers. Workers in the construction sector are on average almost 27 years old, making them around 2 years older on average than their counterparts in manufacturing sector. Almost 50% of our construction sample was married, but we do not observe the same marked systematic differences across ownership types as in the manufacturing sector. Differences across ownership type are less clear-cut than in manufacturing sector, but workers on Chinese construction sites are on average younger and better educated than in other foreign or Ethiopian firms, and workers in Ethiopian firms have the lowest education levels across both skill levels.

Clearly though, the low-skilled labour force in the construction sector is very different to that in the manufacturing sector. These differences are largely a function of low barriers to entry in construction. Road building projects recruit low-skilled locally from among the rural populations surrounding the project site. They impose no minimum educational thresholds or perform screening exercises, as is common for some of the manufacturing jobs in industrial parks.

These differences can also be seen in broad indicators of socio-economic status, such as land ownership and asset ownership. For instance, around 31% of low-skilled construction workers personally own land, the majority in rural areas, compared to just under 6% for low-skilled manufacturing workers.⁵ In other words, many low-skilled construction workers retain direct links to the agricultural sector through personal land ownership.

Table 5 - Sample characteristics by sector, skill group and company origin

	Low-skilled manufacturing			Semi-skilled manufacturing			Manufacturing total
	Chinese	Other foreign	Ethiopian	Chinese	Other foreign	Ethiopian	
Age	21.7	22.4	29.8	24.6	24.3	36.7	25
Female (%)	71.5	91.7	72.3	15	82.1	50	75.3
Never married (%)	79.2	75.6	48.7	70	75	40	67.6
Education (%)							
None or primary incomplete	10.4	12.5	34	5	3.57	1	16.8
Primary (year 8) completed	5.6	8.9	16.7	0	7.14	15	9.9
Year 10 completed	57	63.1	42	50	53.5	25	53.4
TVET	25.7	13.7	5.6	15	31.1	50	17.2
Undergraduate degree	1.4	1.8	0.7	30	3.57	5	2.7

	Low-skilled construction			Semi-skilled construction			Construction total
	Chinese	Other foreign	Ethiopian	Chinese	Other foreign	Ethiopian	
Age	24.3	27.7	24.8	27.7	29.7	33.8	26.9
Female (%)	10.5	25.7	33.7	0	0	0	15.2
Never married (%)	64.5	31.4	62.79	43.8	29.2	32.4	50.5
Education (%)							
None or primary incomplete	47.2	50	59.32	16.7	20.8	40	41.5
Primary (year 8) completed	18.1	15.6	25.4	27.8	12.5	23.3	21.1
Year 10 completed	33.4	25	11.9	35.3	50	30	29.1
TVET	1.4	6.25	3.39	20.8	12.5	6.7	7.6
Undergraduate degree	0	0	0	0	4.2	0	0.4

Source: IDCEA survey, 2017

To illustrate the differences in socio-economic status of workers across the sample we construct a very simple unweighted asset index based on the individual ownership of a mobile phone, high-quality shoes, a radio/cassette/CD/MP3 player, a TV, an electric

lamp, a gas or electric cooker, and metal or wooden bed. The asset index equals zero if the respondent owns none of these items and increases by one for ownership of each of the listed items, up to a maximum of seven. While this index is of course crude

⁵ Please note that this refers to whether the respondent personally own land, not whether anyone in the wider household or network of economically-linked persons owns land. In the latter case the figures would be much higher.

and needs to be interpreted with caution, a lower score on this index is therefore indicative of greater material deprivation. In contemporary urban Ethiopia

none of these items would be considered a luxury. Table 6 shows the results of this index by sector and ownership type.

Table 6 - Asset index by sector and ownership

	Construction				Manufacturing			
	Chinese	Other foreign	Ethiopian	Total	Chinese	Other foreign	Ethiopian	Total
Asset index (0-7)	2.3	3	2.4	2.5	2.8	2.9	4.1	3.2

Source: IDCEA survey, 2017

Once again the results differ greatly by sector. Manufacturing workers are relatively better off with a score of 3.2 compared to construction workers with a score 2.5 overall. In the manufacturing sector we find large differences between Ethiopian company workers, who score 4.1 on average, making them by the best-off subset of the sample, and workers in Chinese and other foreign firms, who score 2.8 and 2.9, respectively. This difference may also be related to the age difference and the longer industrial employment histories of

workers employed in Ethiopian factories. In the construction sector the main difference is between workers in other foreign companies, on the one hand, and workers in Chinese and Ethiopian companies, on the other. Workers in the latter two score 2.3 and 2.4, respectively, while workers in other foreign companies score an average of 3. These differences are small though, and, as our sample of construction workers in other foreign companies is small, should be interpreted with caution.

5.3 Migration

Persistent un- and underemployment in many parts of the country make labour migration a common feature among young jobseekers in Ethiopia.

While there is substantial labour migration out of Ethiopia, in particular to the Middle East and Europe, and the poor and conflict-prone Horn of Africa generates large movements of refugees into Ethiopia, migration in search of work inside the country is mostly internal and all respondents interviewed for this project were Ethiopian citizens and born in Ethiopia.⁶ Many of the jobs created by leading firms in both the construction and manufacturing sector are filled by people who migrated in order to take up the job.

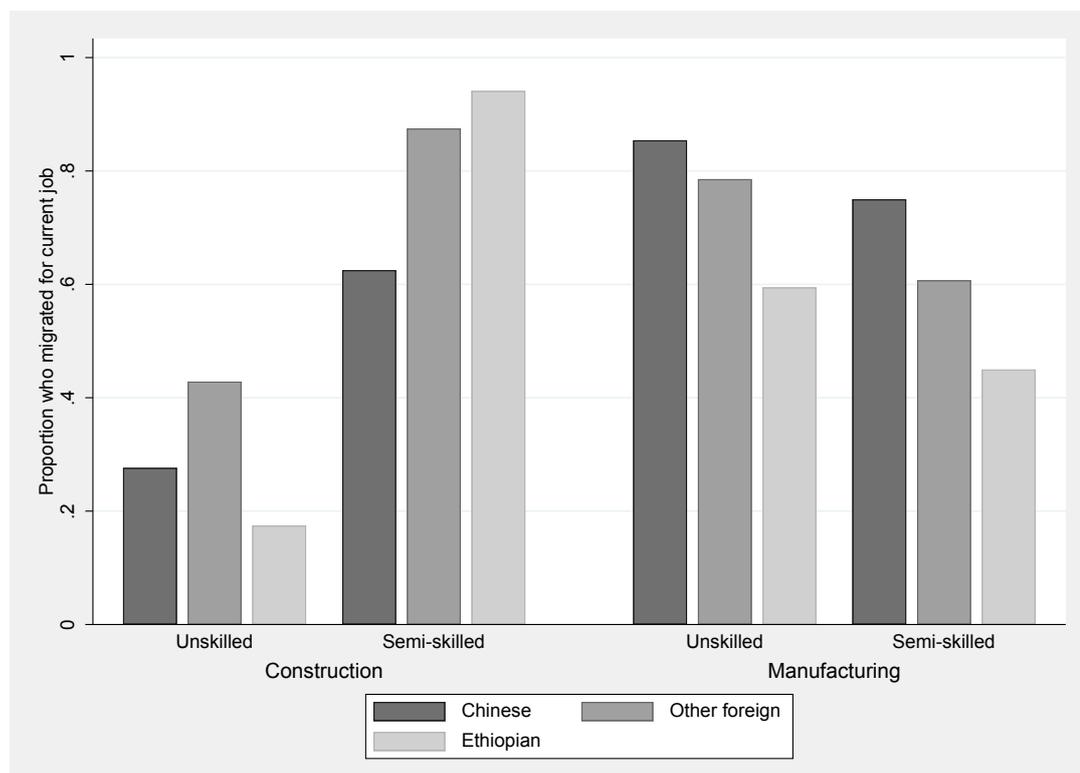
However, the experience of migration varies in important ways. Figure 4 shows the proportion of respondents who report having migrated for their current job by sector, skill level of the respondent, and

firm ownership. In the construction sector, migration patterns are related to the way in which road project are organised, which dictate hiring practices. Semi-skilled construction workers require years of training, and in the case of machine operators and drivers, special licences to be able to work, making them a valuable resource. According to our qualitative interviews with company managers in the road construction sector, firms tend to retain their semi-skilled staff, especially machine operators but also trained carpenters and masons, from project to project, while low-skilled staff are generally recruited locally around the project site. This explains the large differences in reported migration experiences between low- and semi-skilled workers in construction. Ethiopian construction firms, of course, have been active in the country the longest and therefore have a well-developed pool of semi-skilled workers, meaning that almost all of their semi-skilled workers report having moved for the current job. Some of the observed variation between firms of

different ownership is also due to the sites at which firms were active. Projects close to larger population centres had the option of hiring more of their semi-

skilled staff locally, while projects in more remote areas had to rely on bringing their own semi-skilled workers to a much greater extent.

Figure 4 - Migration for current job by sector, skill level and firm ownership



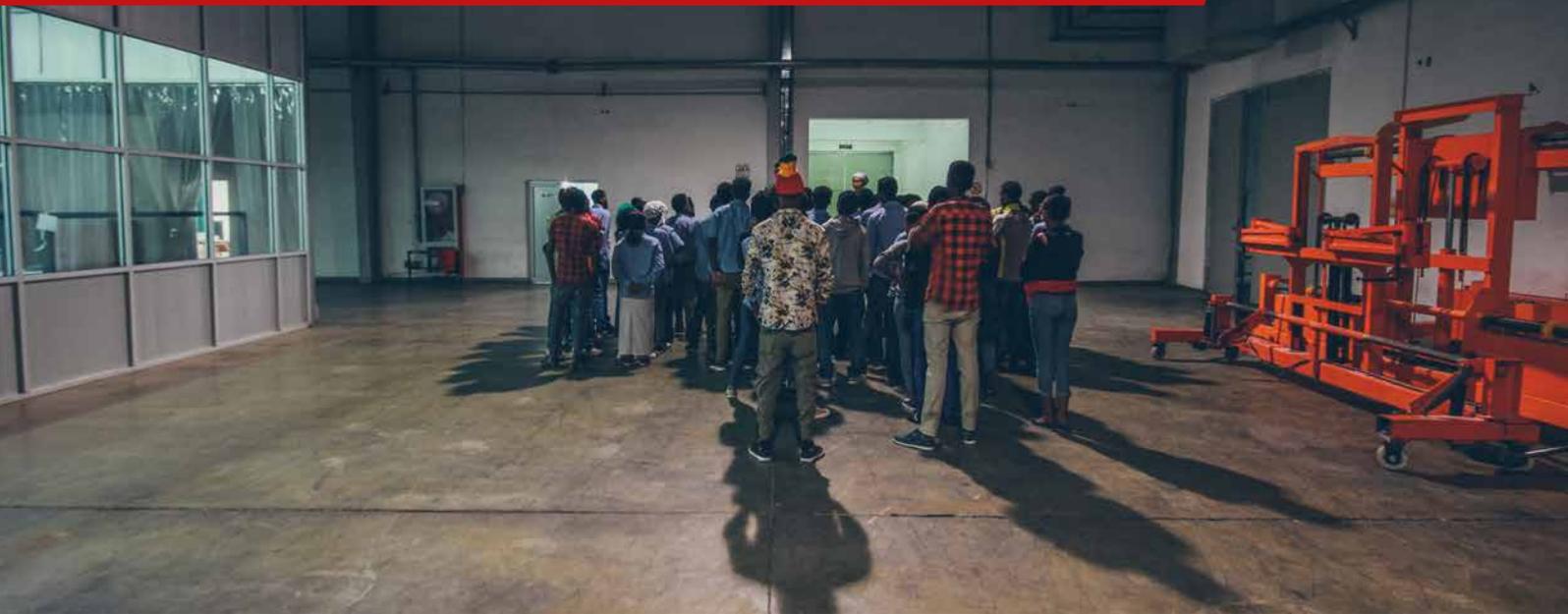
Source: IDCEA survey, 2017

In the manufacturing sector most workers also have recent internal migration experiences, with 72.7% reporting having migrated for their current jobs. This reflects the concentration of manufacturing jobs in and around Addis Ababa, as well as in the new industrial parks, of which the park in Hawassa is the most prominent. However, we observe the opposite pattern to the construction sector with regard to skill levels. In manufacturing, across all ownership types, semi-skilled workers are slightly less likely to have recently migrated than low-skilled workers. Unlike their counterparts in road construction, semi-skilled workers in the manufacturing sector in many cases have not received special training. They tend to be former low-skilled production workers who have been promoted to positions such as line manager. Both Chinese and other foreign manufacturing companies employ more recent migrants than

Ethiopian enterprises do. Some of this variation across company ownership is explained by the locations of factories. Industrial parks attract large numbers of migrants in search of work and in many park locations local government agencies actively support such recruitment. Companies located in industrial parks are therefore far more likely to be employing migrant workers than companies outside of these parks. Among the respondents in the Hawassa Industrial Park 75% report having migrated for their current job, as did 85% of workers in Bole Lemi and 87% in the Eastern Industrial Zone. Conversely, only 62% of respondents not working in industrial parks report migrating for their job. At the time of our survey these industrial parks housed exclusively foreign companies, while all of the Ethiopian companies we surveyed were located in or near large population centres, which made it easier for Ethiopian firms to hire locally.

⁶ In addition to job seekers, recent violent conflict in a number of areas inside Ethiopia has led to large numbers of internally displaced people.

6 Labour outcomes: wages and working conditions in comparative perspective



This section presents the main set of findings regarding working conditions. The primary focus is on wages and their determinants. We provide detailed evidence on whether origin of firms matters or not and if so why. Sector specificity for wage determination is also discussed, so that the second level of analysis of the labour regime configuration

is brought to light. This analysis is complemented by a descriptive analysis of other non-wage working conditions, issues of collective action, and structural impediments to better conditions. The section also discusses results of our analysis with respect to patterns of training provision and their effects.

6.1 Job security and formality

Levels of job security and formality differ substantially between the manufacturing and construction sectors. While in the road construction sector companies seek to maintain flexible labour forces to be able to redeploy workers across project cycles and fire them after project completion, companies in the large-scale manufacturing sector build up permanent labour forces and seek to manage spikes in demand through overtime and accelerated production. We assess formality by looking at whether workers are in a direct employment relationship with the companies they work for, or whether they are subject to brokerage. We also look at whether workers have a written contract or not, and whether, in the absence of a written contract, workers have had key aspects of the implicit contract explained to them verbally. Lastly, we also look at reported job tenure to see how long people actually remain with their employers. At the time of data collection in 2017 Ethiopian labour law stipulated that workers have to be made permanent after being continuously employed for 40 days.

Across the entire manufacturing sample workers uniformly reported being directly employed by the company they produced for, meaning that systems of labour brokerage or agency work, which have been observed in other contexts, such as India and China (Lerche et al., 2017), appear to be absent here, at least insofar as large companies are concerned. However, 31% of manufacturing workers were found not to have a written work contract, and both unskilled and semi-skilled workers were similarly affected. The share of workers without a written contract was very similar in Ethiopian and other foreign companies, where 28% lacked a contract, but higher in Chinese manufacturing companies, where 38% of workers were affected. Of the manufacturing workers lacking a written contract 80% had received a verbal explanation of key terms of employment. This leaves 6% of our sample of manufacturing workers labouring under unclear contractual terms.

In the road construction sector, subcontracting of work packages among companies is part of the normal practice of project delivery. In Ethiopia, all road construction contractors are graded by the government. Grades range from one to nine, with grade one being the highest. The grade a company receives is supposed to reflect its capabilities in terms of equipment, staffing, finance, and experience. The types of road projects we looked at, asphalt and gravel roads, are always awarded to grade one contractors. These contractors will then subcontract parts of the overall project work package to lower-grade contractors, who may in turn employ even lower-grade companies. A common example of work that gets outsourced by grade one main contractors in road construction is structural work, such as bridges and drainage ditches. Nonetheless, in Ethiopia this system of graded outsourcing to lower-tier contractors does not appear to translate into agency labour or work gangs. Similar to the manufacturing sector, construction workers in our sample almost all reported being in a direct working relationship with their employer, that is, they were not employed via labour brokers. A very different picture to the manufacturing sector emerges with regard work contracts, though. Unlike in manufacturing, where most workers had a written contract, 65% of construction workers report having no such contract. Among unskilled workers the rate is 78%, while among semi-skilled construction workers 39% have no written contract. Of the workers with no written contract, around 60% had instead had key elements explained to them verbally, leaving 25% of our total construction sample working without a clear contractual relationship. There is no discernible difference in the rates of workers lacking a written contract across Ethiopian, Chinese and other foreign construction companies.

The relatively greater formalisation in the employment relationships of semi-skilled workers reflects the bifurcated hiring practices of road construction contractors in Ethiopia.

Semi-skilled workers, such as heavy machine operators or carpenters for instance, are much more likely to remain with a given company across multiple projects, reflecting the time and effort that went into their training, while unskilled workers are typically considered more easily replaceable and are often fired at the end of a project. While both types of workers are 'permanent' under Ethiopian labour law, semi-skilled workers are much more likely to be truly permanent, while unskilled workers are permanent only until the end of the project.

Job tenure therefore differs greatly by both sector and ownership type, as can be seen in Table 7. In construction, job tenure is generally relatively short. Ethiopian companies have retained their workers for 2.6 on average, or almost twice as long as Chinese companies and more than two and a half times as long as other foreign companies have. The job tenure in manufacturing is much more varied. Both other foreign and Chinese companies have short tenure periods of between 1.1 and 1.5 years on average, but Ethiopian companies are very different. Here workers have remained with the same company for an average of 7.5 years. In part this reflects the fact that the Ethiopian companies in our sample were much older than the Chinese and other foreign firms, some of which had only entered Ethiopia recently at the time of research.

Table 7 - Job tenure by sector and ownership

	Construction			Manufacturing		
	Chinese	Other foreign	Ethiopian	Chinese	Other foreign	Ethiopian
Job tenure (years)	1.4	1	2.6	1.1	1.5	7.5

Source: IDCEA survey, 2017

6.2 Wages

The wages paid to workers depend on a number of factors, including the productivity of workers as well as the structural and associational power they are able to bring to bear on wage negotiations (Silver, 2003). Both productivity and workers' bargaining power are determined in part by the sector in which the company is active. We therefore make all wage comparisons within sectors, or control for the sector of activity. To facilitate like-for-like comparison, we also report wages separately for unskilled and semi-skilled workers.

We find substantial differences in reported wages across sectors and ownership types, when looking at both monthly and hourly wages.

After providing an overview of the results for both earnings types, we explore the underlying reasons for the reported differences further using regression analysis.

Payment per month

Monthly wage estimates are based on reported cash take-home pay for workers and do not include transport allowances, food provision, or other fringe benefits. Cash take-home pay is nonetheless a good measure of the command over commodities workers enjoy, as fringe benefits such as food and transport are mostly provided in kind. Figure 5 shows mean monthly wages and estimated confidence intervals for low-skilled workers by sector and ownership type. As shown there average monthly wages for low-skilled workers in the manufacturing sector were ETB 1,217 (95%-CI from 1,165 to 1,270) for workers in Chinese companies, ETB 1,269 in other foreign companies (95%-CI from 1,213 to 1,325), and ETB 1,450 (95%-CI from 1,376 to 1,523) in Ethiopian firms. At 2017 market exchange rates this is equivalent to about USD 53, USD 55 and USD 63, respectively.⁷ These wages are roughly in line, once we account for inflation, with wages in flower farms, estimated at a range between ETB 800 and ETB 1,100 in 2014 (Melese 2015).

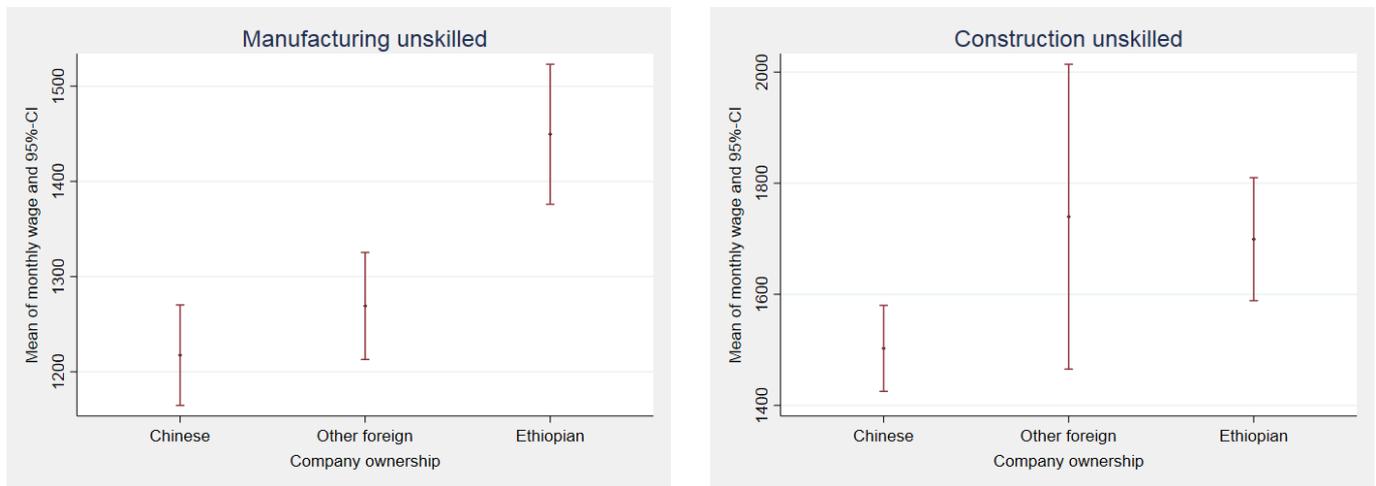
⁷ USD 1 was worth ETB 23.08 in mid-2017.



Wages for low-skilled workers in the construction sector are higher than in manufacturing across all ownership types.

In the construction sector, low-skilled workers in Chinese companies earn an average of ETB 1,503 (95%-CI from 1,425 to 1,580), while workers in other foreign firms earn ETB 1,740 (95%-CI from 1,465 to 2,015) and Ethiopian companies pay ETB 1,699 (95%-CI from 1,588 to 1,810), or about USD 65, USD 75 and USD 74, respectively, in 2017 dollars. The confidence interval for construction workers at other foreign firms is wide due to the relatively small size of that sub-sample, coupled with the wide dispersion of reported wages across companies. These comparisons suggest that there are few instances where differences are statistically significant, and that such differences are primarily between Ethiopian manufacturing firms on the one hand and Chinese and other foreign firms on the other hand.

Figure 5 - Monthly wages of unskilled workers by sector

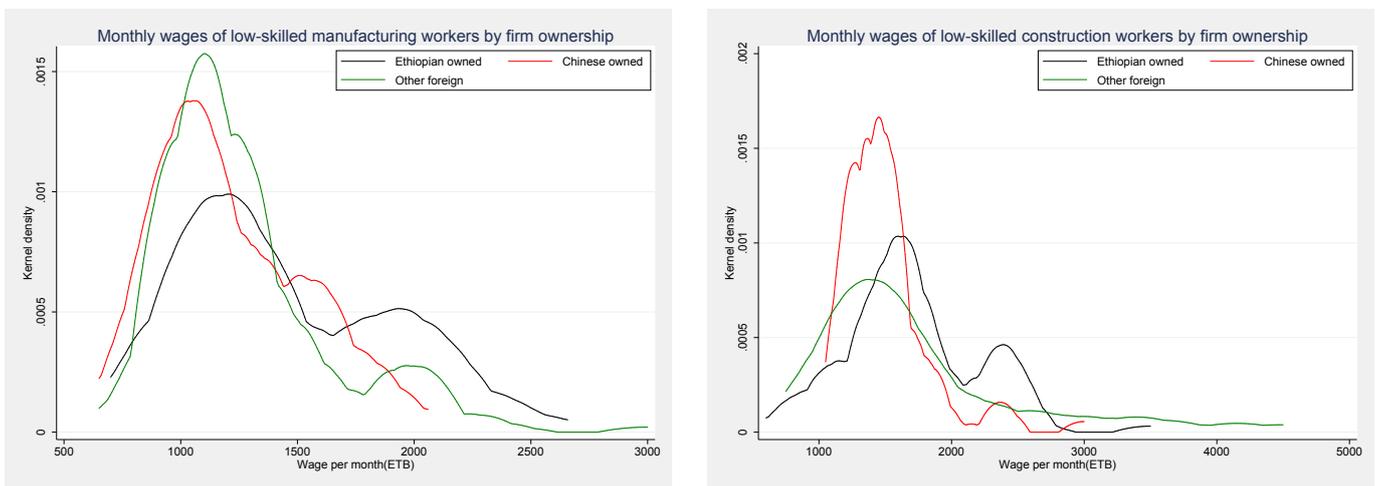


Source: IDCEA survey, 2017

Mean wages provide only a partial picture though, and in particular do not convey much information on the distribution of wages. Figure 6 presents density plots depicting the distribution of the monthly wages of low-skilled workers by sector and ownership type. In both sectors we see that the distribution of wages is narrower in Chinese companies. This is especially

notable in the manufacturing sector, where other foreign and Ethiopian companies have much longer right hand tails than Chinese companies do. In other words, there is more wage dispersion in non-Chinese companies and higher paid workers in other foreign and Ethiopian companies earn more than their peers in Chinese companies.

Figure 6 - Distribution of monthly wages of unskilled workers by sector



Source: IDCEA survey, 2017

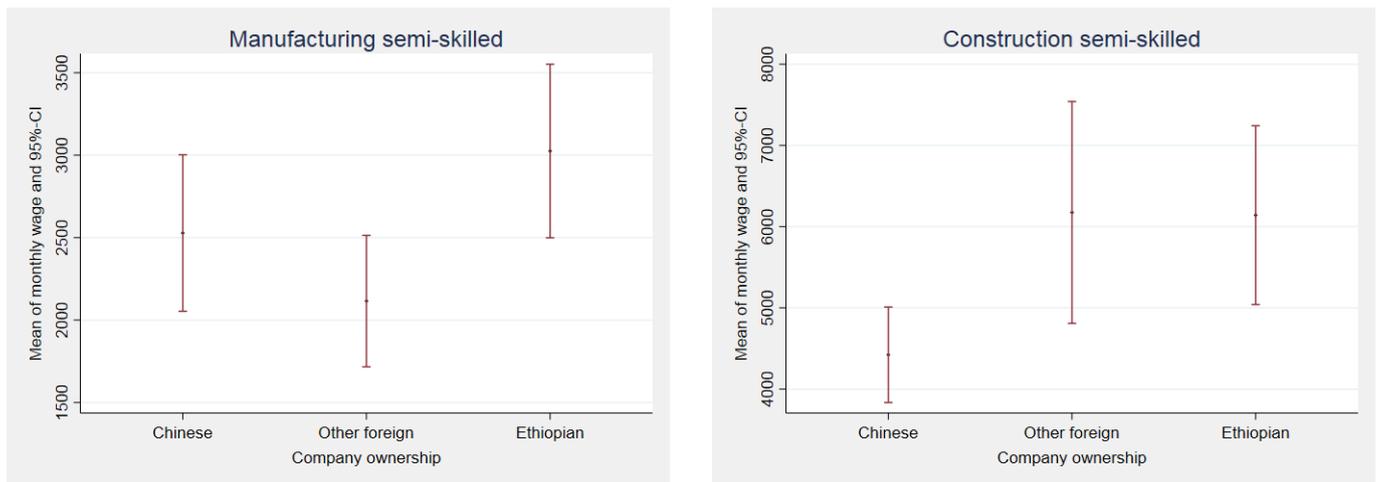
For semi-skilled workers the divisions in earnings along ownership lines present a more mixed picture. Figure 7 shows the mean monthly earnings for semi-skilled workers, again by sector and ownership. In the manufacturing sector, semi-skilled workers in

Chinese companies are paid a mean monthly salary of ETB 2,528 (95%-CI from 2,050 to 3,006). The corresponding figures for other foreign and Ethiopian firms are ETB 2,115 (95%-CI from 1,714 to 2,517) and ETB 3,025 (95%-CI from 2,495 to

3,556), respectively, or USD 110, USD 92, USD 131 in 2017 dollars. Earnings for semi-skilled workers in the construction sector are substantially higher. Semi-skilled construction workers in Chinese companies have mean monthly cash earnings of ETB 4,422

(95%-CI from 3,831 to 5,014), compared to ETB 6,175 (95%-CI from 4,800 to 7,550) in other foreign companies and ETB 6,141 (95%-CI from 5,033 to 7,249). This equates to USD 192, USD 268 and USD 266, respectively, in 2017 dollars.

Figure 7 - Monthly wages of semi-skilled workers by sector

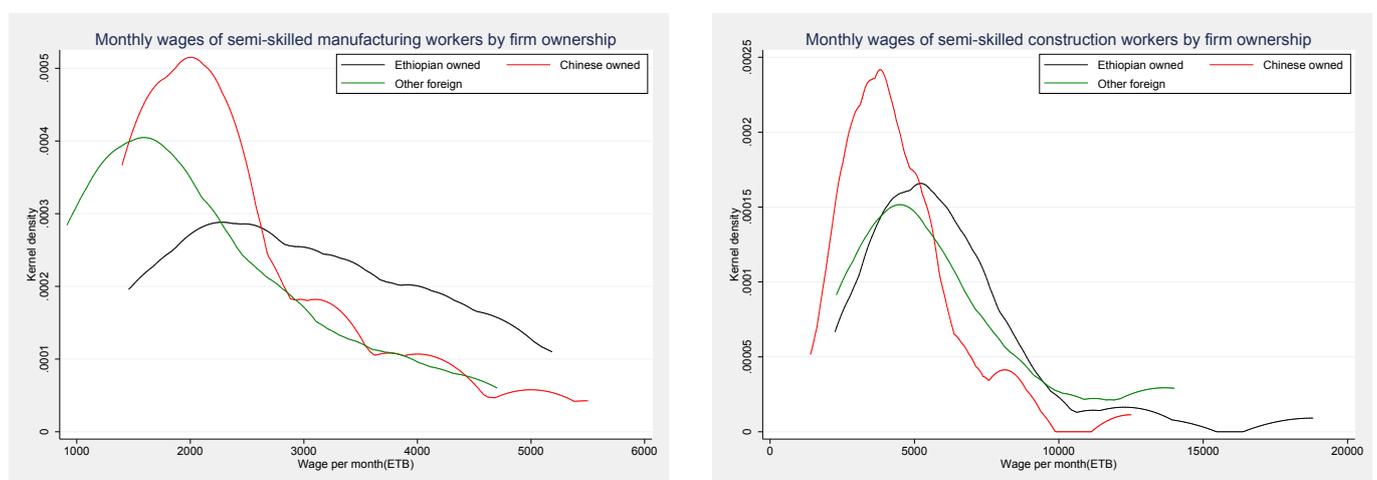


Source: IDCEA survey, 2017

Similar to above, Figure 8 shows the distributions of wage earnings across sectors and ownership types, this time for semi-skilled workers. In the manufacturing sector the spread of wages is broadly comparable across ownership types, but Ethiopian companies have greater incidences of higher earnings. By contrast, in the construction

sector both other foreign and Ethiopian firms have greater proportions of workers on higher pay and Ethiopian firms especially have higher maximum salaries. In the construction sector Ethiopian firms have a much wider dispersion of monthly wages than either Chinese or other foreign firms, and Ethiopian companies also have higher maximum salaries.

Figure 8 - Distribution of monthly wages of semi-skilled workers by sector



Source: IDCEA survey, 2017

In sum, we see large differences between the wages paid to unskilled and semi-skilled workers in both sectors, and this variation is much more pronounced in the construction sector.

Semi-skilled construction workers have comparatively rare skills, which require years of training and possibly even certification in the form of particular licences, e.g. for construction machine operators. Such skills can be very valuable to construction companies and allow semi-skilled workers to demand higher remuneration. Semi-skilled

workers in labour-intensive manufacturing, by contrast, are generally production line supervisors. While supervisors might be in responsible for the performance of dozens of workers, they are often themselves former line workers. From qualitative interviews we know that effective line supervisors are crucial to the ability of manufacturing to meet production targets. Comparatively speaking though, they are probably easier for a company to replace than a semi-skilled construction worker. Overall, line supervisors have fewer specialised skills compared to semi-skilled construction workers. In addition, earnings differentials across workers appear to be driven in part by ownership, but there is also significant heterogeneity within each category.

Table 8 - Mean monthly manufacturing wages by gender

	Monthly wage (ETB)	95% Confidence interval		
		Std. error	Lower bound	Upper bound
Unskilled				
Female	1,280	21	1,240	1,321
Male	1,425	41	1,344	1,507
Semi-skilled				
Female	2,237	174	1,894	2,580
Male	2,805	218	2,375	3,236

Source: IDCEA survey, 2017

However, not all workers have equal chances of becoming semi-skilled.

Promotion patterns in many companies are profoundly sexist and heavily favour men over women in promotion decisions. Despite collecting random samples within skillgroups, just 9% of our female respondents in the manufacturing sector were semi-skilled, compared to 25% of men.

Our sample contains no female semi-skilled construction workers, while 41% of male construction respondents were semi-skilled. Gender discrimination is not limited to promotion decisions. We also find substantial a substantial gender wage gap within each

skillgroup. As our construction sample is mostly male, we restrict this analysis to the manufacturing sector. Table 8 shows the mean monthly manufacturing wages, along with standard errors and 95%-confidence intervals, broken down by gender for both unskilled and semi-skilled workers. While the average wage received by male unskilled workers was ETB 1,425 (95%-CI from 1,344 to 1,507), female workers on average were paid just ETB 1,280 (95%-CI from 1,240 to 1,321), or 11% less. The difference in point estimates is even starker for semi-skilled manufacturing workers. The mean monthly payment for semi-skilled male workers was ETB 2,805 (95%-CI from 2,375 to 3,236), but just ETB 2,237 for female workers (95%-CI from 1,894 to 2,580), which is a difference of over 20%. While the difference for semi-skilled workers is not statistically significant because of large variation among male workers, the data are consistent with a large gender pay gap.

Workers are generally less concerned with nominal value of wages, that is, the exact amount of cash they receive, than with their real value, i.e. how much that amount of cash can buy. Above we have converted wages in ETB into USD using market exchange rates for 2017. Converting at market exchange rates is useful for comparing dollar amounts across countries, but is less useful for capturing the impact wages have on livelihood options. Alternatively, wages can also be converted into so-called international dollars to try to better reflect their purchasing power in particular country contexts. Expressing wages in terms of international dollars that have been adjusted for purchasing power parity (PPP) is meant to give a better reflection of the ability of a given amount of money to buy goods and services by adjusting for the local price level. Wages expressed in PPP terms can then be compared to international poverty lines, which are expressed in the same units. For reporting purposes the World Bank uses a number of poverty lines. The most well-known defines extreme poverty in low-income countries as living with less than \$1.90 in PPP terms. In addition, a new poverty line for lower-middle income countries was set at \$3.20 (PPP). Few would argue that such lines represent true measures of complex phenomena such as poverty and deprivation and there are arguments as to whether these lines are set too low, but these lines are nonetheless the commonly used measures of poverty. In PPP terms \$1,90 a day would mean a monthly income of about \$58 and \$3.20 implies a monthly income of around \$96.

We find that, in PPP terms, no workers in our sample earn less than the \$3.20 poverty line and all workers earn more than twice as much as \$1.90 per day, which is the reference for poorer countries.

Low-skilled manufacturing workers earn between \$130 - \$155 per month in PPP terms, while low-skilled construction workers are paid between \$161 and \$187.⁸ Semi-skilled workers range between \$227 and \$324 per month in manufacturing, and between \$447 and \$662 in construction, again in PPP terms. For comparison, according to 2015 poverty data around 62% of the Ethiopian population lived on incomes

⁸ The 2017 PPP conversion factor for private consumption in Ethiopia was ETB 9,33 to \$1 (PPP).

below the \$3.20 poverty line and 27% lived below the \$1.90 line (World Bank, 2019).

PPP figures should be interpreted with caution though. PPP conversion factors are supposed to be based on comprehensive price surveys for each country. However, the last survey-based PPP updates were published in 2011, and so constructing PPP conversion factors for 2017 has to rely on extrapolation. For the purposes of this report we use the 2017 PPP conversion factor for private consumption in Ethiopia, as calculated by the World Bank. It is not clear how well these conversion factors represent the particular consumption pattern in Ethiopia in 2017. And while we find that none of our respondents are poor, as measured by international poverty lines, we know from qualitative interviews that this does not always correspond with our respondents' subjective experience.

To illustrate local consumption patterns, we also look at how wages compare to monthly expenditure. Large numbers of respondents report that the wages they receive are not sufficient to cover their monthly expenditure.

These expenditures are modest by international standards, and food is the largest expenditure item for most, with 56% estimating the food share of their monthly expenditure at more than half of their total expenditure, of whom 20% report that they spend three-quarters of their income on food. Even then half of our respondents report that they do not consume meat or dairy products on a weekly basis. In the manufacturing sector, just 27% of low-skilled workers and 41% of semi-skilled workers state that their earnings are sufficient. The situation is a little better in the construction sector, but still only 42% of low-skilled construction workers report sufficient income. Semi-skilled workers construction are the most secure group in terms of livelihoods and 75% report sufficient earnings.

Workers whose income is insufficient to meet their needs use a number of coping strategies, including taking on debt. Across the whole sample, 27% of workers who report insufficient earning are in debt, compared to just 12% of workers who report that their

earnings do cover expenditures. Of the workers who report insufficient income, 70% rely on additional income from other household members. This leads to precarious livelihoods. Only 35% of workers with insufficient income report having any savings, while 71% of those with sufficient income have been able to accumulate some savings. A direct comparison of reported monthly expenditures and monthly wages

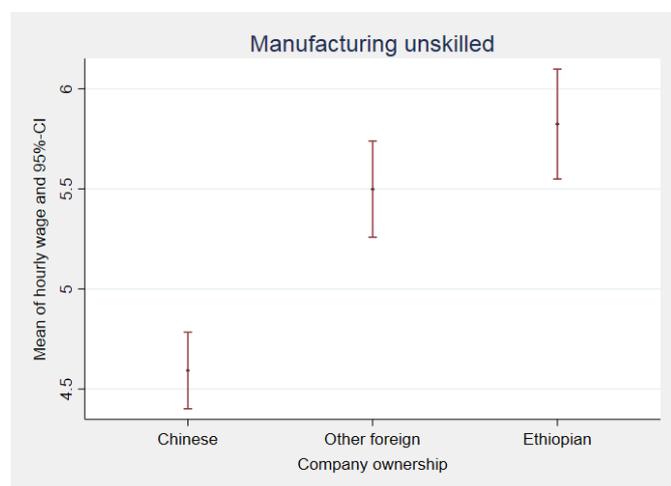
makes clear why. The mean difference between monthly wage and expenditure is just ETB 11, or 0.8% of their income, for unskilled manufacturing workers and ETB 404, 16% of income, for semi-skilled manufacturing workers. In the construction sector the corresponding figures are ETB 430 and ETB 2,052, 26% and 38% of their monthly incomes, respectively.

Payment per hour

Monthly take-home pay provides the strongest measure of workers' spending power and is therefore a useful gauge for evaluating the livelihood options of workers. However, it fails to take into account the time actually spent at work, which can vary widely across companies. In addition to monthly earnings, we therefore also report hourly wages, which are a

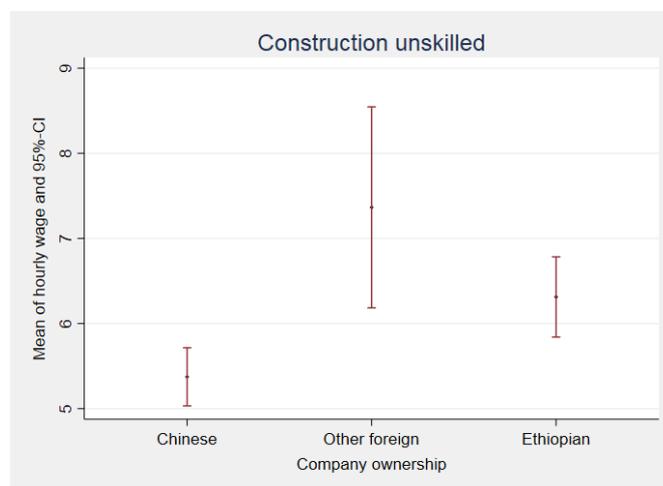
better measure of the remuneration of actual labour output. Our estimates of hourly earnings have been constructed from data we collected on reported take-home pay, working days, and working hours. Where information was missing we inferred the hourly wages using the average working hours from all other workers at the company in question.

Figure 9 - Hourly wages of unskilled workers by sector



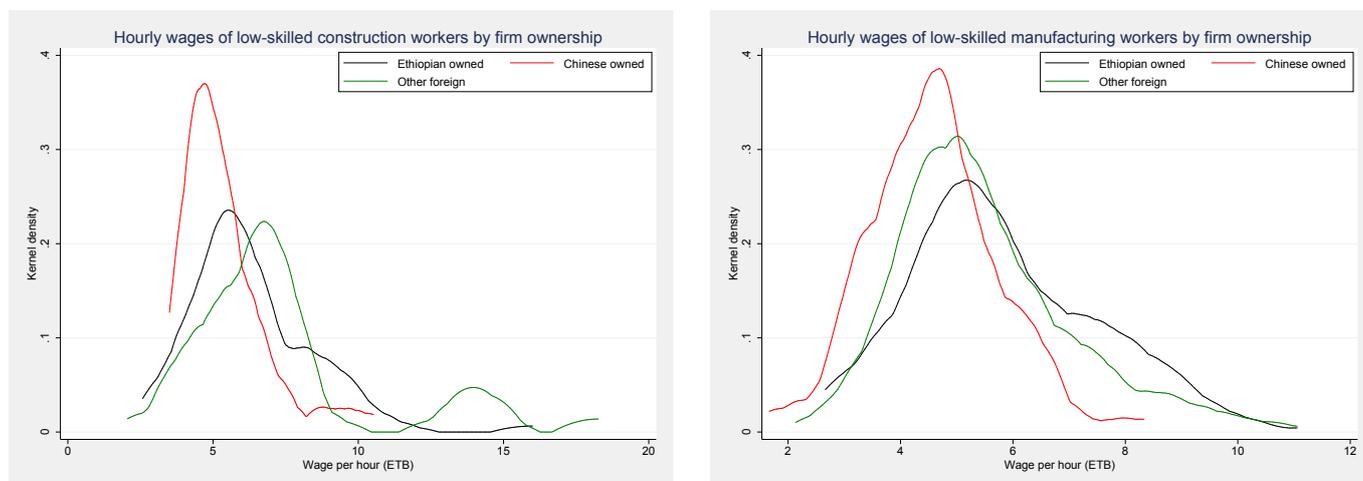
Source: IDCEA survey, 2017

Figure 9 shows the point estimates of mean hourly wages of unskilled worker by company ownership in the manufacturing and construction sector, along with 95%-confidence intervals. Mean differences in hourly wages by ownership type in the construction sector are relatively small, but statistically significant, with mean hourly wages of ETB 5.4 (95%-CI from 5 to 5.7) for Chinese companies, ETB 6.3 for Ethiopian companies (95%-CI from 6.2 to 8.5), and ETB 7.4 for other foreign companies (95%-CI from 6.2 to 8.5).



A similar picture emerges when looking at wages in the low-skilled manufacturing sector. Hourly wages for low-skilled workers in Chinese manufacturing companies are lower than in either Ethiopian or other foreign companies, with mean wages of ETB 4.6 for Chinese companies (95%-CI from 4.4 to 4.8), ETB 5.5 for other foreign companies (95%-CI from 5.3 to 5.7), and ETB 5.8 for Ethiopian companies (95%-CI from 5.5 to 6.1).

Figure 10 - Distribution of hourly wages of unskilled workers by sector

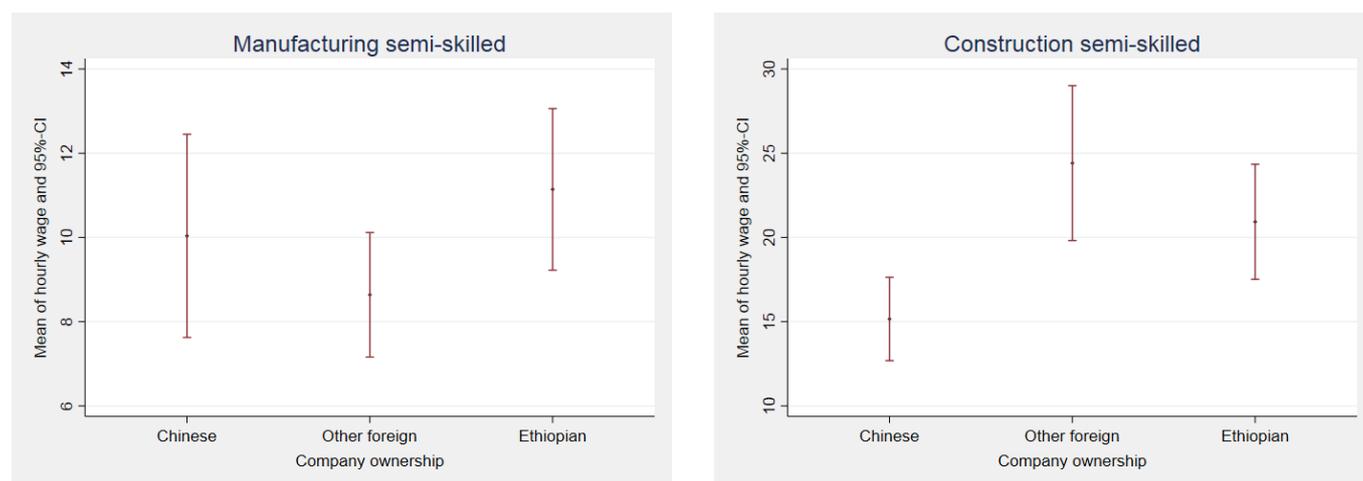


Source: IDCEA survey, 2017

Figure 10 shows the distributions of hourly wages for low-skilled workers in the Ethiopian construction industry by company ownership. While there is substantial overlap in the distributions of wages paid by Chinese, other foreign and Ethiopian companies, the differences in average wages are driven by substantial right-hand tails in the wage distribution that are absent for Chinese companies. In other

words, Ethiopian and other foreign companies have more instances of relatively high hourly wages than Chinese companies do. The distributions in the manufacturing sector display much greater overlap than for construction, but Ethiopian and other foreign once again have longer right tails, indicating a greater share of low-skilled workers on higher hourly wages.

Figure 11 - Hourly wages of semi-skilled workers by sector



Source: IDCEA survey, 2017

As depicted in Figure 11, the hourly wages of semi-skilled workers in the construction sector show a similar pattern of differences by company ownership to those of unskilled workers, while the wages of semi-skilled workers in the manufacturing sector exhibit less divergence. In construction, semi-skilled workers in Chinese companies were paid a mean

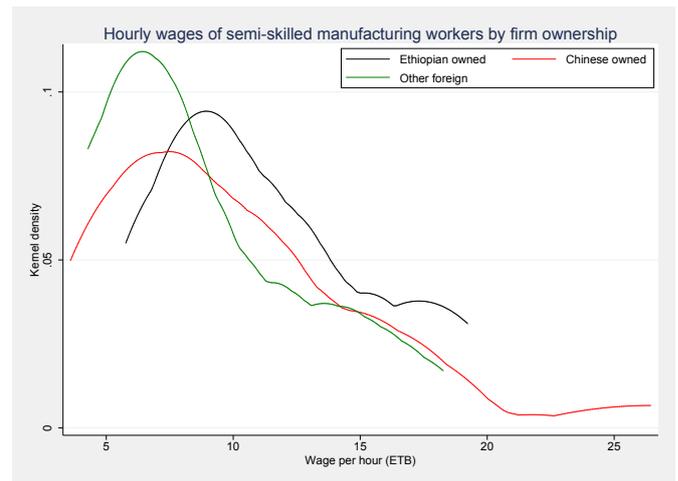
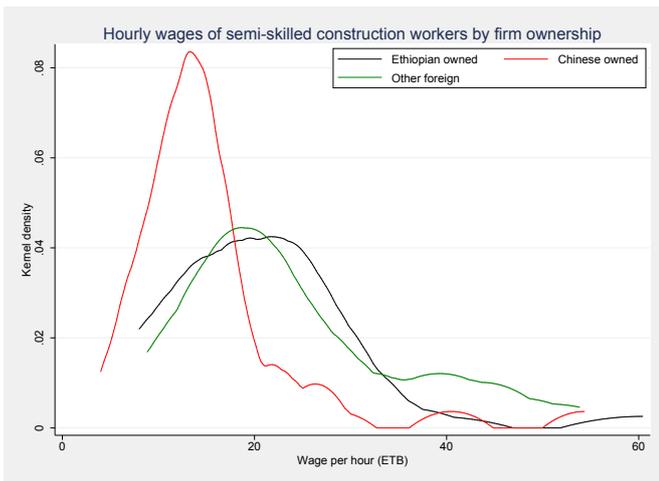
hourly wage of ETB 15.2 (95%-CI from 12.7 to 17.6) while other foreign firms paid ETB 24.4 (95%-CI from 19.8 to 29) and Ethiopian companies paid ETB 20.9 (95%-CI from 17.5 to 24.4). As noted above, wages for semi-skilled workers in manufacturing sector are much lower than in construction, and this remains true once working hours are taken into account.



Accordingly, in the manufacturing sector, Chinese firms paid semi-skilled workers a mean hourly wage of ETB 10 (95%-CI from 7.6 to 12.5), compared to ETB 8.6 for other foreign firms (95%-CI from 7.2 to 10.1) and ETB 11.1 for Ethiopian firms (95%-CI from 9.2 to 13.1). Notably, other foreign firms pay the worst wages for semi-skilled workers.

Figure 12 shows the distributions of hourly wages for semi-skilled workers in the construction and manufacturing sectors. Looking at the construction sector, it is clear that the spread of wages for all companies is very wide for semi-skilled workers, which reflects the variety of roles that workers in this category fulfil in road construction. While Ethiopian and other foreign companies have relatively more staff on higher wages, compared to Chinese companies, the right-hand tails are similar across origins, which is a marked contrast to the distributions of wages for unskilled workers. The spread of wages paid to semi-skilled manufacturing workers is much narrower, compared to the construction sector. In manufacturing, firms of all origins have similar distributions, though in this case Chinese companies have the longest right-hand tails.

Figure 12 - Distribution of hourly wages of semi-skilled workers by sector



Source: IDCEA survey, 2017

Explaining differences in wages

Up to now we have concerned ourselves with the amount of cash wages reported by workers in firms of different ownership and across sectors, without exploring what explains these differences. To understand what determines the pay of individual workers, we use regression analysis, which allows us to look at the partial effects of a range of contributing factors. Table 9 reports the results of OLS regressions using the log of monthly individual cash wages as our dependent variable. Across all models we control for individual worker characteristics such as age, gender, migration experience, years in education, the skill group of the job performed (i.e. low- or semi-skilled), job tenure measured in years, years of experience in construction and manufacturing prior to taking up the current job, and a simple index of asset ownership to capture socio-economic status. We also control for the sector. Models (2) and (4) add controls for company ownership, with Ethiopian firms as the reference category, and for the log of total employment at the company, as a proxy for firm size. Lastly, models (3) and (6) also control for whether or not the company is located in an industrial park. In models (1), (2) and (3) we use heteroscedasticity-robust standard errors, and in models (4), (5) and (6) we cluster the standard errors by firms, giving us 40 clusters. For models (1), (2) and (3) we report standardised coefficients, i.e. coefficients expressed in standard deviation units. This means that the coefficients for models (1), (2) and (3) are not directly comparable to the coefficient for models (4), (5) and (6). For all models standard errors are given in parentheses and p-values in italics below. As our main aim is to compare wages across firms all estimates presented here are unweighted.

Expressing the regression coefficients in standard deviation units, as in models (1), (2) and (3) allows us to directly compare the size of effects measured in different units in one common unit. From model (3) we can see that the biggest impacts on wages are, in order, the skill level of the respondent, working in the manufacturing rather than the construction sector, and working for a company located in an industrial

park. The large and positive effect of being semi-skilled rather than low-skilled simply reflects the higher salaries paid to those with rarer skill sets, which gives them a better set of exit options and therefore greater bargaining power. Wages in the manufacturing sector are lower than in construction across both skill groups, though, as seen above, the difference is much larger for semi-skilled workers. Compared to their peers in manufacturing, semi-skilled construction workers have more specialised skills that require long periods of training and, in some cases, formal certification. This explains why prior experience in construction has a large effect, while prior experience in manufacturing does not. While models (1) to (3) are useful, we prefer to use clustered standard errors, which better reflects the way in which the sample was constructed.



Table 9 - OLS regression of monthly wages

Dependent variable: log of monthly wages

	(1) Robust SEs	(2) Robust SEs	(3) Robust SEs	(4) Clustered SEs	(5) Clustered SEs	(6) Clustered SEs
Respondent's age	0.020 (0.0019) <i>0.489</i>	0.017 (0.0019) <i>0.545</i>	0.008 (0.0019) <i>0.778</i>	0.00135 (0.0020) <i>0.510</i>	0.00115 (0.0016) <i>0.480</i>	0.000533 (0.0017) <i>0.753</i>
Male	0.066 (0.0267) <i>0.006</i>	0.079 (0.0269) <i>0.001</i>	0.080 (0.0266) <i>0.001</i>	0.0732 (0.0382) <i>0.063</i>	0.0885 (0.0332) <i>0.011</i>	0.0893 (0.0322) <i>0.008</i>
Migrated	0.138 (0.0260) <i>0.000</i>	0.142 (0.0259) <i>0.000</i>	0.150 (0.0252) <i>0.000</i>	0.158 (0.0358) <i>0.000</i>	0.164 (0.0362) <i>0.000</i>	0.172 (0.0349) <i>0.000</i>
Years in education	0.094 (0.0034) <i>0.000</i>	0.120 (0.0035) <i>0.000</i>	0.113 (0.0035) <i>0.000</i>	0.0140 (0.0043) <i>0.002</i>	0.0178 (0.0044) <i>0.000</i>	0.0169 (0.0043) <i>0.000</i>
Semi-skilled	0.469 (0.0378) <i>0.000</i>	0.468 (0.0375) <i>0.000</i>	0.473 (0.0362) <i>0.000</i>	0.638 (0.0538) <i>0.000</i>	0.636 (0.0507) <i>0.000</i>	0.644 (0.0518) <i>0.000</i>
Years in job	0.144 (0.0029) <i>0.000</i>	0.118 (0.0028) <i>0.000</i>	0.101 (0.0028) <i>0.001</i>	0.0133 (0.0046) <i>0.007</i>	0.0109 (0.0046) <i>0.023</i>	0.00939 (0.0046) <i>0.047</i>
Const. experience	0.140 (0.0102) <i>0.000</i>	0.144 (0.0101) <i>0.000</i>	0.146 (0.0102) <i>0.000</i>	0.0430 (0.0141) <i>0.004</i>	0.0439 (0.0139) <i>0.003</i>	0.0446 (0.0142) <i>0.003</i>
Manu. experience	0.038 (0.0077) <i>0.156</i>	0.034 (0.0073) <i>0.177</i>	0.029 (0.0075) <i>0.259</i>	0.0110 (0.0100) <i>0.281</i>	0.00993 (0.0093) <i>0.294</i>	0.00849 (0.0096) <i>0.380</i>
Asset index	0.139 (0.0073) <i>0.000</i>	0.128 (0.0072) <i>0.000</i>	0.113 (0.0071) <i>0.000</i>	0.0436 (0.0095) <i>0.000</i>	0.0401 (0.0085) <i>0.000</i>	0.0354 (0.0076) <i>0.000</i>
Manu. sector	-0.381 (0.0362) <i>0.000</i>	-0.368 (0.0357) <i>0.000</i>	-0.260 (0.0412) <i>0.000</i>	-0.442 (0.0430) <i>0.000</i>	-0.427 (0.0426) <i>0.000</i>	-0.302 (0.0546) <i>0.000</i>
Chinese		-0.119 (0.0287) <i>0.000</i>	-0.040 (0.0328) <i>0.154</i>		-0.139 (0.0509) <i>0.009</i>	-0.0468 (0.0544) <i>0.395</i>
Other foreign		-0.058 (0.0294) <i>0.019</i>	0.016 (0.0319) <i>0.552</i>		-0.0691 (0.0663) <i>0.303</i>	0.0190 (0.0605) <i>0.755</i>
Employment (log)		0.061 (0.0101) <i>0.005</i>	0.086 (0.0099) <i>0.000</i>		0.0287 (0.0219) <i>0.198</i>	0.0402 (0.0192) <i>0.043</i>
Industrial park			-0.184 (0.0321) <i>0.000</i>			-0.213 (0.0640) <i>0.002</i>
Adjusted R ²	0.688	0.698	0.712	0.688	0.698	0.712
F	115.2	93.67	95.39	45.95	45.30	50.34
Observations	817	817	817	817	817	817

Standard errors in parentheses, p-values in italics. Models (1) to (3) have standardized coefficients.

Models (4), (5) and (6) have wider standard errors that reflect the fact that workers within a given company face conditions that are more similar than workers across companies do. Once we add firm-level controls in model (5), we find that working in Chinese company has a large and negative effect on wages, with wages in Chinese firms being 13% lower than in Ethiopian firms. The wages of workers in other foreign firms are about 7% lower than in Ethiopian firms, though this effect is not statistically significant. Our preferred specification is model (6), which adds a control variable for company location in an industrial park. In this model, once we control for company location in an industrial park, the estimated effects of company ownership fall sharply. Chinese firms are estimated to pay about 5% less than Ethiopian firms, while other foreign firms pay about 2% more, though neither effect is statistically significant and our data is thus compatible with no effect of ownership on wages. In other words, once we account for the fact that some companies are located in industrial parks, company ownership is no longer an important determinant of wages, while location in an industrial park is.

Workers located in an industrial park, receive wages that are about 19% lower than those that do not.

The large negative effect of working for a company located in an industrial park can be explained by a number of factors. Part of the effect is due to the location of the parks themselves. Living costs are substantially higher in Addis Ababa, meaning that Addis-based workers are likely to also demand higher wages. Apart from Bole Lemi, the other industrial parks are outside of Addis Ababa so workers in those parks face lower living costs. This does not of course mean that rising living costs are not an issue outside of Addis Ababa. Our qualitative interviews show that workers in Hawassa are deeply concerned about the high and rising costs of living.

More important than the geographical location of the parks is their nature as particular spaces of wage setting and labour control.

The physical barriers around the park provide company managers with a much greater degree of control over their labour force, and inter-firm coordination bodies, such as tenant associations, at least potentially allow firms inside parks to coordinate with one another. As access to parks is controlled, employers find it easier to restrict trade union activities in the parks, and in the EIZ and HIP trade unions were de facto banned at the time of our survey. This issue is discussed in greater detail below. In the Hawassa Industrial Park a centralised programme for sourcing and screening potential employees meant that workers could not directly apply for jobs with individual companies, but rather had to go through the recruitment system shared by all companies in the park. According to our qualitative interviews this system restricted wage competition between companies and contributed to keeping wages low.

As noted in Section 4, Ethiopian industrial parks serve primarily to concentrate FDI in particular geographical locations. Moreover, the Ethiopian government tries to attract successful companies with an established presence in other countries to its industrial parks. Companies inside the industrial parks are therefore much more likely to be tied in to sophisticated global production networks, generally serving the consumer markets in high-income countries. Buyers in such networks exact string pressure on their suppliers to keep costs low, while meeting demanding targets in terms of quality and turnaround times for orders. Moreover, the nature of the global value chains in question, garments and leather products, means that profit margins for producers are generally low. Firms might therefore perceive it to be in their interest to keep wages low. On the other hand, the timing of our survey is also important. In particular in the Hawassa industrial park, many companies had only recently begun production. Our qualitative interviews tell us that in early stages of setting up a new production location efficiency is often low, especially compared to more established production locations. Coupled with the cost pressures just described this makes firms less willing to raise wages until higher rates of productivity have been achieved.



To understand the development of wages over time better, we conducted a follow-up phone survey with 140 respondents we randomly selected from among our sample of low-skilled manufacturing workers. According to this survey nominal low-skilled manufacturing wages outside of industrial parks grew 20% from 2017 to 2018, against an inflation rate of 12.7%. In the Eastern Industrial zone wages grew by 23% and in Bole Lemi workers saw a 40% increase. The latter is most likely due to the increased pressure to raise wages that resulted from the strike wave in Bole Lemi. By contrast, in the Hawassa industrial park, wages grew by only 20%, which seems to suggest that wage repression has remained in place during that period.

A consequence of repressed wages in some of the emerging industrial parks is low labour retention rates and high absenteeism, especially in the early stages after firms begin operations. In some parks sourcing workers has also become a

problem as demand from factories is not met by existing sourcing mechanisms, at least in 2017-18. This has proved a source of concern for investors and government and led to a number of tripartite negotiations, as reported in several interviews. Labour retention problems have the added effect of discouraging firms from investing in training more systematically, given the risk of losing workers to other companies or other sectors.

One of the reasons for the lower than expected wages lies in the absence of a sector-level minimum wage in Ethiopia.

The incidence of labour conflict experienced in the past two years (see section 6.4 below) and the alarmingly low labour retention rates in some parks and firms are to a large extent due to the combination of low wages and relatively high living costs many of the migrants arriving to cities hosting industrial parks face. This was a consistent finding in our interviews, as well as in other studies (see for instance Hardy and Hauge, 2019). In order to improve labour relations, a sector-level minimum wage, based on tripartite arrangements, should be introduced. Managers in construction sites suggested there were some minimum 'norms' recommended by Ethiopian authorities (power authority or road authority), such as ETB100 per day but it was not clear how this minimum was enforceable given that it was taken as a 'recommendation'. It is also possible that base wages in some industrial parks were set in relation to recommendations from government officials and in relation to national extreme poverty lines, as some managers suggested. These ad hoc recommendations, however, do not amount to an enforceable national/sector minimum wage. At the time of writing this report, there is a discussion ongoing about setting up a system to introduce a national minimum wage in Ethiopia. Furthermore, all wages (including minimum wages) must be increased regularly to keep ahead of inflation, and the wage setting process should include a robust mechanism for passing on productivity gains to workers. Finally, collective bargaining is currently limited in these settings and should be implemented in all firms to improve wage setting processes. As soon as possible, collective bargaining should take place at sector level.

6.3 Comparing non-wage working conditions

Important as wages are to workers, they only reflect part of the compensation workers receive in exchange for their labour. We therefore collected data on a wide range of non-wage benefits and measures

Non-wage benefits

In addition to wage payments all companies in our sample also provide their workers with a number of fringe benefits, though, as shown in Table 10, the exact level of provision differs both by sector and by company origin. At the sectoral level differences in provision are related both the necessity – from the employer’s points of view – of organising the labour process in a way that maximises the translation from labour time into work output. A clear example is the provision of meals, which is common in many manufacturing companies, but almost unheard of, at least for low- and semi-skilled staff, in construction companies.⁹ The regimented and interlocking structure of mass production in ordered production lines practiced in light manufacturing companies demands that all workers, or at least all workers of a given production stream, are present at the same time to make the system run efficiently, while any downtime has to be minimised due to tight production schedules imposed to serve the needs of demanding and powerful buyers. Manufacturing companies therefore have an incentive to keep workers as close to the factory as possible during the workday, making on-site food provision a cost-effective choice for many companies. Of course company location plays a role here. As Table 10 illustrates, a large majority of workers in Chinese (85%) and other foreign manufacturing companies (64%) report receiving food at work, while just 13% of employees in Ethiopian firms do. Ethiopian companies are not sited in industrial parks, which would necessitate long walks for workers to leave the park and find food outside, and Ethiopian companies are also less likely to be integrated into highly-demanding global production networks, meaning they can afford a laxer organisation of the labour process.

As discussed earlier, the construction and manufacturing sectors differ in terms of the level of formality of contractual arrangements, with the manufacturing sector generally characterised by more formal employment. This is reflected in the

of working conditions. In this section we present data on access to fringe benefits, health and safety conditions at work, and interactions between workers and management.

much higher rates at which manufacturing workers report receiving pay while not at work, such as paid sick leave and holidays, as well as access to medical care and health checks at work. By contrast, in the provision of transport, which is determined by the productive priorities of the company rather than by the needs of employees, there is no systematic difference across sectors.

The provision of accommodation is generally very limited, with the exception of construction firms, where such needs are sometimes unavoidable for certain types of workers who have to ‘travel’ with the projects in order to maintain a ready labour force in remote settings. However, in the manufacturing sector there was generally low provision of accommodation at the time of the survey. This fact contrasts with the experience of many of the companies investing in the new industrial parks, especially Chinese firms, which come from contexts where so-called ‘dormitory labour regimes’ are prevalent, i.e. where workers live in company accommodation next to the factories (Pun and Smith, 2007). In our sample, only 7% of workers are housed on company accommodation in Chinese factories, whereas in Ethiopian and other foreign firms the proportions are negligible. This might suggest housing is not an issue, that workers can easily find accommodation in the urban centres around the parks. However, our qualitative interviews suggested that housing shortages and rental costs are a serious constraint on labour sourcing and retention. Both government officials and company managers have realized that housing shortages were underestimated or that the mechanisms in place did not work as expected. This has therefore become an important policy issue that is being discussed at tripartite negotiations. There are several questions that must be addressed to find suitable solutions in the short to medium term, such as: who provides housing and bears the cost; whether housing should be within the industrial hub perimeter; how the quality of housing

⁹ Engineers and other skilled staff do often receive canteen meals in the main work camp.

can be assured and maintained; whether housing should be provided to workers only or developed to accommodate workers and their families, in order to facilitate labour retention and employment stability; whether employer accommodation should also facilitate access to shops with subsidized wage

goods in these dormitories in order to limit workers' living expenses. These are all questions that concern the development of adequate urban eco-systems around industrial hubs where thousands of young workers are expected to find and keep jobs.

Table 10 - Share of workers with access to non-wage benefits (in %) by sector and company origin

	Construction			Manufacturing		
	Chinese	Other foreign	Ethiopian	Chinese	Other foreign	Ethiopian
Meals	4.9	0	2.5	84.8	64.3	13.1
Accommodation (or allowance)	19.4	13.6	16	7.4	0.5	2
Transport (or allowance)	71.8	55.9	88.3	82.8	74.9	54.2
Paid holidays	12.9	33.9	21.9	72.5	76.2	88
Health checks at workplace	1.7	18.6	19.3	24.1	42.8	44.9
Medical care	13	39	52.9	30.3	58.7	70.1
Paid sick leave	22.8	35.6	41.2	54	64.4	89.2
Clean showers	10.5	11.9	18.5	39.8	27.7	39.3

Source: IDCEA survey, 2017

Health and safety

Ensuring the physical safety of their employees is a core duty for every employer, and is particularly important in potentially dangerous environments such as construction sites and factories.

The construction and manufacturing sector in Ethiopia have very different risk profiles, with accident being a leading cause of injury in construction, while workers in the manufacturing sector are more likely to suffer harms from inappropriate ambient workplace conditions, repetitive strain as a result of assembly line work, and work-related stress due to demanding production schedules imposed by overseas buyers. To record accidents and injuries as accurately as possible we asked respondents about injuries suffered by themselves as well as by colleagues.

Chinese companies in both sectors are less likely than their Ethiopian or other foreign counterparts to offer health checks or medical care. This is not

clearly reflected in patterns of injuries and accidents though. To begin with injuries suffered directly by the respondent, in the construction sector almost 8% of all workers had suffered an accident at work. Workers in Chinese and other foreign companies report having suffered injury following an accident during the last 12 months at very similar rates, 4% and 3% respectively, but reported accident-related injury rates are much higher in Ethiopian companies, where 14% of workers have been injured by an accident at work. Only around 2% of respondents in the construction sector had had suffered injury as a result of workplace conditions or stress, while just 1% reported repetitive strain injuries.

In the manufacturing sector, the rate of workers who have suffered injury as a result of a workplace accident drops to 6%. Breaking this down by company origin, around 4% of workers in Chinese companies, 7% of workers in other foreign companies, and 6% of workers in Ethiopian companies report having suffered injury as a result of workplace accident. While in the construction sector reports of injuries resulting from

workplace conditions, repetitive strain, or work-related stress are rare, rates in manufacturing are much higher. Around 10% of workers in Chinese and other foreign firms report injuries due to workplace conditions, as do 13% of workers in Ethiopian firms. Reported rates of stress and repetitive strain injury are higher for other firms than for companies of any other origin. Around 10% of workers in other foreign firms report injuries as a result of stress, which is substantially more than in Ethiopian companies (7%) and twice the amount report in Chinese firms (5%). Similarly, while only 5% of workers in Chinese manufacturing enterprises have suffered repetitive strain injuries, almost 13% of workers in other foreign and more than 8% of workers in Ethiopian companies had.

Turning to accidents witnessed by respondents, there was little divergence across sectors, with 30% of all construction workers and 26% of all manufacturing workers in our sample stating that they had witnessed a colleague getting injured as a result of a work-related accident. The consequences of these accidents appear to have been much more serious in the construction sector, though, where more than 13% of respondents say they have seen a colleague die, compared to less than 4% in the manufacturing sector. Across both the construction and manufacturing sector the differences between workers of firms of different origins reporting having witnessed their co-workers getting injured at work are limited. In construction, 31% of workers in Chinese companies, along with 25% in other foreign and 30% in Ethiopian firms have seen colleagues injured, compared to 28% for both Chinese and other foreign companies and 22% for Ethiopian firms in manufacturing. Workers in other foreign companies were the most likely to have witnessed a colleague dying at work. In the construction sector 17% of workers in other foreign had such an experience, as

had 14% in Ethiopian and 11% in Chinese firms. In the manufacturing sector, the numbers are lower, but other foreign firms still stand out with 6% of workers in such companies reported having witness the death of a colleague. By contrast, the same was true for less than 3% of workers in Chinese firms and less than 2% of workers in Ethiopian enterprises.

In addition to workplace incidents, a growing concern is safety in commuting to factories, especially in industrial parks.

Safety issues were reported a number of times, especially in Hawassa, and seem to have worsened in recent times. Given that many of the workers in these parks are young women from rural areas with limited experience in urban centres, their safety concerns may contribute to higher turnover and absenteeism as reported by both workers and factory managers. This is an important policy problem that relates to the process of developing industrial hubs without suitable urban eco-systems, i.e. where local transport infrastructure, for example, is limited and creates conditions for unsafe journeys to work. There may be other policy measures to improve safety issues in addition to building suitable and affordable accommodation closer to the factories.

In sum, the picture is mixed. Across sectors accidents and injuries are somewhat more frequent in construction, while comparisons by firm origin suggest that occupational hazard is slightly lower in Chinese firms compared to other firms, especially to Ethiopian firms.

Management-worker interactions

Important differences between companies of different origins emerge in measures of management behaviour towards workers. Workers in Chinese companies are more likely than their counterparts in Ethiopian or other foreign companies to report having been abused by managers. In the construction sector 45% of workers in Chinese companies report having suffered verbal abuse, while in Ethiopian and other foreign companies only 20% and 22% of workers do. Similarly, in Chinese companies almost 17% of workers report having been physically abused by managers, but in other foreign companies no workers report any such behaviour, while among the workers in Ethiopian companies there is just one case.¹⁰ The pattern in the manufacturing sector is quite different. Here there is little difference between Chinese and other foreign companies, but both of these are quite different to Ethiopian companies. In Chinese companies 62% of workers report verbal abuse, as do 58% of workers in other foreign companies, but this number drops to 35% for Ethiopian companies. This is paralleled by the figures for physical abuse. Here 22% of workers in Chinese companies and 12% of workers in other foreign companies report abuse, while the figure for Ethiopian enterprises is 4%.

In particular in other foreign and Chinese firms clashes between workers and managers often result from, and are exacerbated by, differences in work cultures and communication styles.

Such differences result in different expectations about what constitutes appropriate behaviour at work and how problems should be addressed where they arise. Such problems are exacerbated by language barriers, but arise even where almost all line supervisors and foremen are themselves Ethiopian. A typical example involves clashes between the expectation

of an unbroken work regime on part of management and the expectation that companies should respect traditional Ethiopian holidays and religious festivals on parts of workers. Such problems are made worse where companies are put under pressure by their buyers, which is more likely to happen to Chinese and other foreign companies as these participate in more demanding production networks. Although some of these clashes are often framed in 'cultural' and 'national' terms, the root lies in the clash between a strict labour discipline regime common to industrial capitalism in low-wage sectors and the rural work culture that many new labour market entrants are used to, an obstacle that has been historically shared by virtually all countries in their early stages of industrialization (Oya, 2018; Tang and Eom, 2019). This type of classic work culture clash may then be exacerbated by both managers and workers harbouring racist sentiments towards one another, making successful communication even more fraught. All of these problems are especially prevalent in relatively new companies where mutually acceptable expectations between workers and managers have not yet had time to adapt and solutions to many such conflicts have yet to be arrived at.

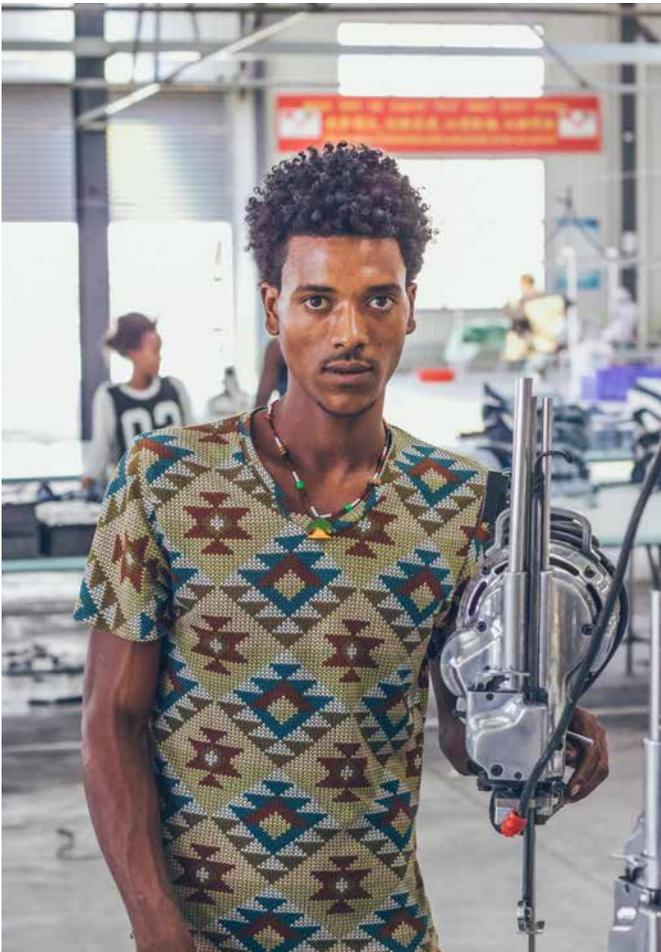
Although some of these problems in management-worker interactions may ease over time as an industrial workforce is gradually formed and new investors find their feet in the new context, a more institutionalised setting for tripartite negotiations, i.e. the introduction of collective bargaining frameworks where these issues are addressed on a regular basis, and more sustained and creative programmes of industrial and local 'cultural' induction for both workers and managers, may be needed in these early stages, especially in those areas where such problems are reported with greater frequency.

¹⁰ We defined physical abuse as being pushed, hit, kicked or forced into a stress position

6.4 Unions, collective bargaining and labour conflict

Companies of different origin also vary in terms of their attitude towards workplace organising and trade unions. What sets Ethiopian companies apart from both Chinese companies and other foreign companies in this regard is the much greater prevalence of trade unions among Ethiopian companies. These differences are driven by the manufacturing sector. In the road construction sector, where firms rely on a small core of permanent semi-skilled workers and large numbers of temporary low-skilled workers, unionisation is almost non-existent, regardless of company origin.

Among manufacturing workers, 55% of respondents in Ethiopian firms report that their workplace has a trade union, while only 26% of employees of foreign firms and 17% of workers in Chinese companies say the same. In part, these differences in unionisation rates are due to the fact that Chinese and other foreign companies are more likely to be sited in one of Ethiopia's new industrial zones, which were established to attract FDI (Weldesilassie et al., 2017).



While globally there is no systematic evidence that companies in industrial parks or other special economic zones necessarily have lower rates of unionisation than companies outside (Cirera and Lakshman, 2017), companies in low-skilled labour-intensive value chains frequently seek out countries where labour institutions are weak, and unions are not recognised in some of Ethiopia's industrial parks. Among manufacturing workers based in Ethiopian industrial parks just 13% report that a union exists in their company, compared to 56% of manufacturing workers outside of industrial parks. Our interviews with trade unionists at both national and local levels indicate that other foreign and Chinese companies are often especially hostile to the establishment of local union branches. Some Chinese and other foreign firms seem to consciously discourage the formation of labour unions because they perceive that union presence leads to escalating conflicts. Their preference is to settle disputes through direct negotiation with unrepresented workers or go to court, especially in the case of construction companies. Managers reported that local labour laws and courts tend to overprotect the local workers and these firms usually lose lawsuits against the workers. Therefore, this solution does not seem to help with favourable conflict resolution from the point of view of firms.

Even where labour organisers manage to establish union branches at the enterprise level, convincing workers of the value of union membership in the face of an often hostile management can be a challenge, and many workers choose not to become union members. Qualitative interviews show that reasons range from a lack of knowledge about the role and function of trade unions to concerns about ability or willingness of union leaders to defend the interests of workers. Of all the workers who report having a union branch in their enterprise only 49% became union members themselves.

Given the low rates of unionisation in the manufacturing sector and the near-absence of unions in road construction companies, it comes as no surprise that we find very low rates of collective bargaining between workers and management.

Across the entire sample, just 13% of workers report that their wages are determined through collective bargaining, while 55% say that there is no such agreement in place. Interestingly, a large proportion of workers, 31% in fact, do not know whether or not their wages are determined through collective bargaining or not. One can easily imagine how such a lack of understanding can greatly facilitate wage suppression. Collective bargaining is low in both construction and manufacturing, with the share of workers reporting such agreements hovering around 8-9% in both sectors for Chinese and other foreign firms. Workers in Ethiopian firms report higher rates of collective bargaining in both sectors, with 13% of construction workers and 27% of manufacturing workers stating that their wages were collectively negotiated.

The absence of unions and collective bargaining arrangements does not, however, imply the absence of strike action, which is widespread in Ethiopia (Admasie, 2018) and near-universal among the firms we sampled. Workers in all but two companies in our sample reported strike action having taken place during their tenure. In the construction sector, workers at Ethiopian companies were most likely to report having witnessed strike action during their tenure, while Chinese companies were the least likely. A quarter of employees at Ethiopian companies reported work stoppages, compared to 15% at other foreign companies and 14% at Chinese construction firms. In the manufacturing sector the situation is quite different. Here workers at Ethiopian companies are the least likely to have witnessed a strike, while the employees at other foreign companies reported the most strikes. In other foreign firms 55% of workers reported strikes, compared to 36% in Chinese companies and only 19% in Ethiopian enterprises. Strikes were more likely to occur in

industrial parks, where companies were universally non-Ethiopian. Inside industrial parks 48% of workers reported strikes, but outside of parks only 25% did.

While almost all sampled companies have experienced strikes, there is a stark difference between Ethiopian companies on the one hand and Chinese and other foreign companies on the other with regard to the underlying causes of strikes. In Ethiopian companies strikes were almost universally about wages levels. While wages were also the most frequent reason to strike for workers in Chinese and other foreign companies, workers there reported many other disagreements with management, such as disputes around overtime, fringe benefits, the quality of canteen food, communication styles, and respect for national holidays. It is also worth noting that our measure of strike action, which relies on worker tenure, is less likely to pick up strike action in newer companies, so that strikes in Chinese and other foreign companies are likely to be underreported in comparison to Ethiopian companies.

Overall this evidence suggests that an improvement in labour relations and reduction in labour conflict may need concerted action towards normalizing the freedom of association and the presence of trade unions at the workplace. While managers often regard the presence of unions as risking of further workers' disruption, evidence suggests tensions and negotiations may be eased by effective and experienced union representation at firm level and by a better functioning tripartite system at national and sector level. The government should ensure firms abide by labour legislation and engage unions at the workplace to improve labour relations, wage bargaining and better manage work culture clashes.

6.5 Training and skill development

Successfully building an internationally competitive manufacturing system can be conceived of as an integrated and mutually-reinforcing process of developing production capabilities, business strategies and, crucially, skills in the labour force (Best, 2018). Due to the nature of knowledge production such skill development is not an automatic by-product of market competition and consequently cannot be undertaken by productive enterprises alone. Instead, learning of this kind requires coordinated endeavours across firms and educational institutions, supported by well-designed industrial policy packages (Stiglitz and Greenwald, 2015). Such learning processes have been central not only to driving innovation but also to adapting existing technologies for catch-up industrialisation (Amsden, 2003; Reinert, 2009).

The Ethiopian Investment Commission has recognised the vital importance of skill development for manufacturing success. The Commission advertises the country's "large pool of trainable work force available at competitive wages" (EIC, 2017: 12) as one of the reasons Ethiopia is an attractive investment location for international companies, emphasising the recent expansion of higher education and technical and vocational training (TVET). However, the share of students completing secondary education has stagnated at around 30% since 2015, and while the expansion of the TVET system has been impressive in terms of the number of people enrolled, Ministry of Education data suggested that only 15% of students learn skills directly relevant to factory work (Oya, 2018). Such concerns are shared by the managers of international companies invested in Ethiopia. In an assessment of the international competitiveness of Ethiopian manufacturing the Ethiopian Development Research Institute reports investors are concerned about a perceived lack of skilled workers and would like to see greater efforts in developing technical skills (Getahun et al., 2018). The mismatch between the reported education levels of workers and the verified skills found by employers may be partly explained by quality issues in the education system, which has expanded rapidly in terms of quantity but at the expense of quality across different schooling phases. Rekiso (2019), in this regard, notes that there is a vicious cycle of low-quality education, starting from skill acquisition in primary and secondary schools and ending with poor results in higher education and TVET.

The provision of training differs greatly across the construction and manufacturing sectors.

Figure 13 gives an overview of training provision by sector, worker skill level and firm ownership. To be clear, these figures concern only training provided to workers by their current employer. Two things are immediately striking. First, training provision is much higher in the manufacturing sector, where around 80% of workers report having received training, than in the construction sector, where between 20% and 40% report receiving training. The kind of disciplined and tightly organised labour process that companies deem necessary to generate profits in low-value added sectors such as garments and simple leather products can only be achieved if workers fit seamlessly into their production lines and perform the required operation quickly and with minimal errors. All of which requires training. Many factories, especially in industrial parks which attract many workers without prior experience in manufacturing also conduct 'soft skills' training to ease the transition from farm to factory for their employees. Such 'soft skills' training might involve administrative and organisational issues such as punctuality, behaviour at work, and compliance with targets and performance monitoring, but also issues such as personal hygiene and basic financial literacy. Our qualitative interviews indicate that many managers regard such 'soft skills', which they relate to cultivating certain attitudes in workers, as being of equal importance to more directly work-related skills, such as stitching or cutting for instance.

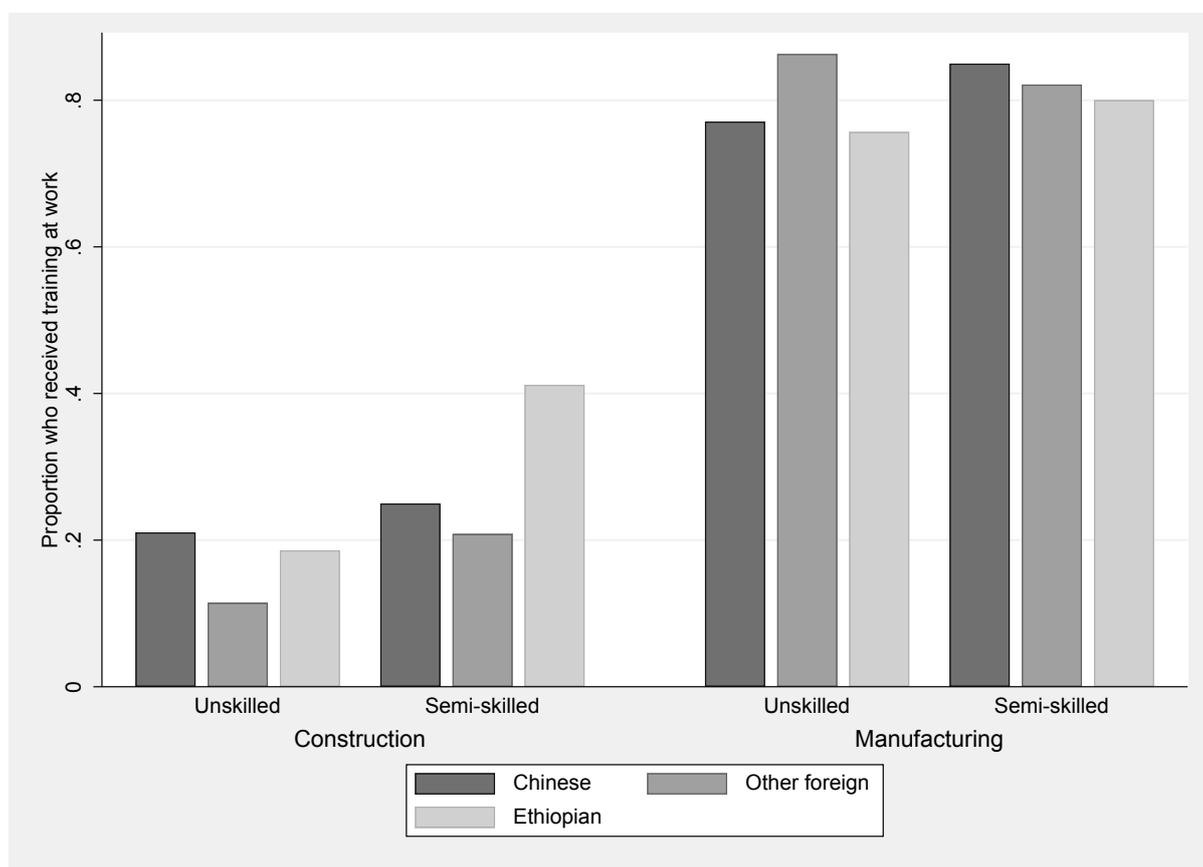
By contrast, unskilled workers in construction generally require little training as they perform mostly simple tasks, such as carrying materials or digging with hand tools, or they work as 'helpers' under the direct supervision of semi-skilled workers, such as carpenters, masons, or machine operators. In the construction sector, we found that no Chinese company offered systematic training for its Ethiopian employees, similarly to other firms, apart from short introductory classes about firm regulations and safety practices. Normally the firms let workers learn the work skill by doing it and working in teams with more experienced workers and supervisors. Learning by doing is seen as the primary mechanism of skill development in road building. The longer the employee stays in the company the wider range

of skills developed and opportunities to move up to semi-skilled positions of greater technical responsibility. There has also been some visible improvement in the availability of machine operators in Ethiopia, according to managers' interviews. As more and more Ethiopians have acquired the licenses for driving and machine operating, Chinese firms now mainly hire the drivers and operators with licenses.

Most managers in both sectors, and especially in manufacturing, complained about the perceived mismatch between the levels of education reported by prospective candidates, particularly in semi-

skilled, skilled and managerial positions, and the employable practical skills they possessed as they were tested during their inductions. One particular manager requested all their line supervisors to spend weeks as ordinary production workers so they could master the skills they were supposed to supervise. These experiences underscore the urgent need to institutionalise deeper connections and synergies between existing post-primary skill formation systems and apprenticeship and direct employment in the leading firms of strategic manufacturing and construction sectors, so that the upgrading of the Ethiopian labour force is accelerated.

Figure 13 - Provision of training by sector, worker skill level and firm ownership



Source: IDCEA survey, 2017

The second notable feature is the absence of large differences in training provision by company ownership. Among low-skilled manufacturing workers, other foreign firms are slightly more likely to provide training, while among semi-skilled workers Chinese firms provide the most training. The differences are quite small though, which reflects the fact that training provision is largely determined by the needs of organising the labour process in a

particular manner to achieve competitiveness. In the construction sector, Ethiopian firms are more likely than Chinese or other foreign companies to provide training to semi-skilled workers, which is perhaps due to the fact that Ethiopian firms tend to work on less technologically demanding road projects and therefore hire workers with lower skill levels to begin with, as can be seen in the data on education presented in Section 5.

7 Conclusions and policy recommendations



This report has presented the main findings emerging from a quantitative survey of workers in three key sub-sectors for Ethiopian aspirations of structural transformation: light manufacturing industries (textile and garment, leather products) and infrastructure building (road construction). As argued in the first part of the report, job creation in these sectors is critical for a country like Ethiopia. Secondary evidence suggests this process is unfolding but it still in its early days. Moreover, there are concerns over the quality of the new jobs created in these sectors. There are specific questions about the contribution of foreign investors, whom the Ethiopian government deems to be important players in facilitating the country's aspiration to industrialise.

We find that the emerging sectors and particularly new foreign investors have substantially contributed to job creation in manufacturing and construction in recent years, to a great extent facilitated by the state's role in pooling finance to fund ambitious infrastructural development and in offering an industrial policy framework conducive to substantial growth in FDI towards manufacturing. These investments largely create jobs for Ethiopians. Contrary to widespread perceptions that foreign firms and especially Chinese companies rely on large numbers of expatriate workers, we find that workforce localization rates are over 90% and broadly similar across firms regardless of their origin.

The characteristics of the labour force we encountered in the surveys are consistent with the labour market needs of the country. Manufacturing workers are generally young, female and also relatively educated, with less than 20% not having completed primary education. There are important differences in the labour force characteristics between companies of different origins, i.e. Chinese, other foreign and Ethiopian, for both low- and semi-skilled workers. Manufacturing labour market segments are strongly gendered as suggested by evidence that semi-skilled workers are more likely to be male, despite similar education levels with women workers in same sectors, suggesting possible gender discrimination for those positions. Among the low-skilled workers, employees of Ethiopian companies are much older than workers Chinese or other foreign owned firms, where workers are very close to one another in average age, and also have markedly lower levels of education. Construction workers are quite different from manufacturing employees. First, the gender balance is completely different, as road building in Ethiopia remains a largely male domain. Construction workers are much less educated, older, and more likely to be married than their counterparts in the manufacturing sector. The low-skilled labour force in the construction sector is very different to that in the manufacturing sector. Many of the jobs created by leading firms in both the construction and manufacturing sector are filled by people who migrated in order to take up the job.

The quality of jobs these workers find varies significantly across and within sectors. The report shows comparisons of wage rates across sectors and firms by origin. At a descriptive level, differences are essentially discernible in the case of workers employed in Ethiopian firms who earn higher monthly wages than their comparators in Chinese and other foreign firms. There is also generally more wage dispersion in non-Chinese manufacturing companies, and higher paid workers in other foreign and Ethiopian companies earn more than their peers in Chinese companies. In the construction sector Ethiopian firms have a much wider dispersion of monthly wages than either Chinese or other foreign firms, and Ethiopian companies also have higher maximum salaries. On average, differences in wages for semi-skilled workers are only statistically significant for the construction sector, between workers in Chinese firms earning slightly less than those employed by more established Ethiopian firms. There is variation within firms by origin in other worker categories so average wages are roughly comparable. In sum, results suggest some differences by firm origin, with Chinese firms paying slightly less in some categories but also see large differences between the wages paid to unskilled and semi-skilled workers in both sectors, with this variation being much more pronounced in the construction sector, where specific skills are in higher demand. Differences in hourly wage rates by ownership type are statistically significant even if relatively small, in favour of Ethiopian firms and to a lesser extent other foreign firms, across both sectors. This reflects relatively longer working hours in Chinese firms. Regression analysis suggests that the biggest effects on wages come from the skill level of the respondent, working in the manufacturing rather than the construction sector (with lower wages in manufacturing), and working for a company located in an industrial park. When we control for these and other factors the independent effect of the origin of the firm largely disappears. There are various aspects of industrial park labour dynamics that explain the lower wages found in these hubs across different types of firms. Location of hubs, sub-sector specificities and the pattern of industrial relations prevailing in industrial parks all contribute to these differences.

Besides wages, there is some variation in the provision of a number of non-wage benefits and allowances, with better provision generally in the manufacturing sector, where labour relations tend to be more stable and more formalized. Occupational hazard is also more significant in the construction sector but differences are not substantial. Chinese firms seem to perform slightly better in terms of the incidence of accidents and injuries, especially compared to Ethiopian firms.

Labour relations in factories and construction sites are not particularly harmonious. Results from our survey suggest that significant proportions of workers experience verbal abuse and have conflictual relations with managers and supervisors. This is particularly the case in foreign firms subject to competitive pressures from their global production networks and where clashes between different work cultures (between foreign managers and local workers) are common. Difficult labour relations are also not helped by the fact that rates of unionisation in the manufacturing sector are low and unions are near-absent in road construction companies. As a result, we find very low rates of collective bargaining between firms and their employees, which also increases the likelihood of labour conflict and tensions between workers and management. In consequence, strike action is very common in these sectors in Ethiopia and was near universal across all companies in our sample.

The Ethiopian government places significant emphasis on the role of manufacturing sectors in training a low-skilled labour force. It is expected that the consolidation of jobs in these sectors will contribute to the upgrading of Ethiopian workers. The survey produced data on training provision, as experienced by workers. Training provision is much higher in the manufacturing sector, where most workers report having received training, than in the construction sector. In this regard there are no real differences in terms of company origin, and Chinese firms contribute to training as much as other firms, especially in the manufacturing sector. Beyond technical skills and particularly in factories, managers insist on the need to teach 'soft skills' to ease the transition from farm to factory for their employees.

In light of these findings, we conclude our report with five recommendations for policy. First, the focus on promoting labour-intensive sectors should continue, while care must be taken to minimise the use of expatriate labour in these sectors. Second, this should be backed up by a more coherent skill development policy framework that systematically connects infrastructure contracts, investment agreements, firm-level training needs and national skill development systems. Crucially, such a policy framework should ensure compliance by adopting reciprocal control mechanisms, i.e. subjecting firms different incentives based on the achievement of skill development goals linked to labour force upgrading. These commitments may require more patience in project implementation to give companies time to train, integrate and retain their workforce. Third, wages are too low, and unnecessarily so, since most firms can afford to pay higher wages especially for the lowest paid workers, thus the government should adopt sector-based minimum wages to avoid excessively low wages among new investors. Consideration of differentiated

living costs by location would be advisable. Wages must be increased regularly to keep ahead of inflation and the wage setting process should include a mechanism for passing on productivity gains to workers. Fourth, collective bargaining should be implemented in all firms. As soon as possible, collective bargaining should take place at sector level. The government should ensure firms abide by labour legislation and engage unions at workplace to improve labour relations, wage bargaining and better manage work culture clashes. Finally, wages are not the only reason underpinning a mismatch between workers' expectations and realities in the new factories. An additional obstacle has been the slow development of the urban eco-systems, especially around the new industrial parks. This has translated into housing shortages, and excessively high living costs for migrant workers coming from rural areas. Decent affordable accommodation, inexpensive wage goods, amenities and safe commuting to the workplace are critical for labour retention and the gradual process of building an industrial workforce.



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