

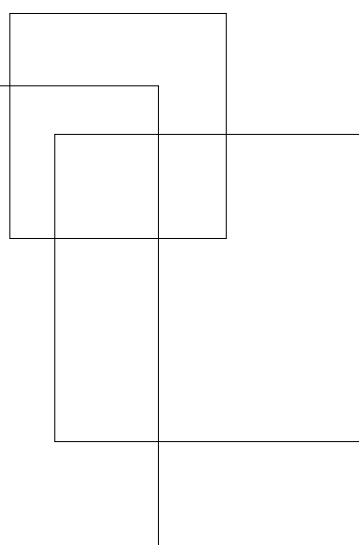


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Jobs, FDI and institutions in Sub-Saharan Africa: Evidence from firm-level data

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Evidence from firm-level data**

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Abstract

Using a unique sample of foreign-owned and domestic firms in Sub-Saharan Africa, we study the differences in the quantity and quality of jobs that they offer, and identify how these differences are determined by country-level institutional factors. After controlling for numerous firm-level characteristics, we find that foreign-owned firms offer more stable and secure jobs than domestic firms, as evidenced by their higher and lower shares of permanent full-time and temporary employment, respectively. The job stability and security advantage of foreign-owned firms is smaller in countries with higher firing costs and better governance, where domestic firms are likely to offer more stable and secure jobs. In addition, foreign-owned firms are less likely to offer unpaid work and have a lower share of these workers. They also have a higher average training intensity and pay an average wage premium, as well as wage premia to production, non-production and managerial workers. The wage premia of foreign-owned firms are lower in countries with higher governance and social policy standards, where domestic firms are likely to pay higher wages. Finally, we show that the job quality advantage of foreign-owned firms depends on the location of their parents, the mode of their establishment, their main business purpose and the most critical investment incentive received from the host country.

Keywords: Job quantity, job quality, FDI, institutions, Sub-Saharan Africa

JEL classification: F14, F16, F21, F23, F66

1 Introduction

Foreign direct investment (FDI) into developing countries has expanded rapidly in recent decades, resulting in a voluminous literature on how it affects their economies (Blomström and Kokko, 1998). Two questions that the literature has aimed at answering are whether foreign multinational enterprises (MNEs) create jobs in the host country and whether these jobs are of higher quality than those created by domestic firms. For an individual worker, the level of stability and security of employment,¹ the opportunities for training and development of human capital, and the level of wages are among the most notable aspects of job quality.

In this paper, we contribute to the literature in four ways. First, we provide novel empirical evidence on the differences in the quantity and quality of jobs offered by foreign-owned and domestic firms in Sub-Saharan Africa. Second, in addition to common measures of job quantity and job quality such as total employment and wages, we use measures based on firm-level information on employment by contract type, unpaid work, and training expenditure by type of worker and identify their association with foreign ownership. Third, we identify the association of job quantity and job quality with additional characteristics of foreign-owned firms, stemming from the location of the parent company, the mode of foreign investment, the principal motive for foreign investment, and the most critical investment incentive received from the host country. Finally, we identify how country-level institutional factors such as firing costs, governance quality, and social inclusion determine the differences in job quantity and quality between foreign-owned and domestic firms.

To focus the empirical analysis on Sub-Saharan Africa seems particularly relevant as there is very limited knowledge of the implications of inward FDI for the quantity and quality of jobs in the region. This knowledge, however, is important in order to better understand the role that the upward-trending FDI into the region can play in absorbing the rapidly growing working-age population into high-quality jobs over the coming decades. Indeed, Sub-Saharan Africa has increased remarkably its capacity to attract FDI in recent decades. Annual FDI flows into Africa increased from US\$2.8 billion to US\$54.1 billion between 1990 and 2015, increasing the FDI stock from 13.6% of GDP to 32.1% over the same period (UNCTAD and UNIDO, 2011; UNCTAD, 2016). In addition, Sub-Saharan Africa will be the region with the fastest growth in working-age population worldwide, predicted to increase by 55.3% over the coming 15 years, from 548 million in 2015 to 851 million in 2030, according to projections of the United Nations Population Division.

The empirical analysis draws on firm-level data from the UNIDO Africa Investor Survey 2010. The dataset comprises 6497 formally registered firms which are either domestic or foreign-owned, and covers all economic sectors in 19 Sub-Saharan African countries for the year 2009.² There are three main reasons for which the dataset is well-suited for our analysis. First, its detailed information on labour allows for the construction of numerous measures of the quantity and quality of jobs within firms. In particular, we create variables for total employment and its decomposition into permanent full-time, temporary and part-time employment. With additional variables, we capture unpaid work³ and permanent full-time employment by type of worker, namely, production, non-production and managerial worker. Similarly,

¹ Employment stability refers to the duration of a typical match between an employer and an employee. It depends on voluntary job change (e.g. quit) or involuntary job change (e.g. layoff). Employment security refers to the prevention from involuntary job change. Put differently, it refers to the ability of a worker to retain a desirable job (Valletta, 1999).

² Despite the relatively large share of own-account workers under informal employment, 32.9% of the region's workers in 2015 were in wage and salaried employment (ILO Trends Econometric Models, April 2016). Hence, the type of employment covered by the survey represents a significant fraction of the region's workforce.

³ Although all firms in the sample are formally registered, the share of firms which offer unpaid work is not negligible, as it amounts to 9.3%. Among foreign-owned firms, 6.7% of these offer unpaid work, while the corresponding share among domestic firms is 10.8%. Unpaid work in the formal sector is usually offered to family members or apprentices. The

we create variables for female and foreign permanent full-time employment by type of worker, as well as training intensity and wages by type of worker.

Second, using additional information on foreign-owned firms, we identify different types of these in several dimensions. Specifically, we capture heterogeneity in their business culture and human resource practices with dummy variables indicating whether their parent companies are located in high-income countries or low/middle-income countries inside or outside Sub-Saharan Africa. We also capture the way of their establishment with dummy variables indicating that foreign investment has taken place through greenfield FDI or mergers and acquisitions (M&As). Using dummy variables for the principal motive for foreign investment such as new market access and cost-effective production, we capture their main business purpose, while using dummy variables for the most critical incentive for foreign investment such as capital grants and tax exemption, we capture the main benefit received from the host country as an incentive for the investment to take place. Third, although we cannot address potential endogeneity issues, the information on main characteristics and activities of domestic and foreign-owned firms allows us to incorporate numerous firm-level controls in the regressions for empirical identification purposes.

In order to examine the potential role of country-level institutional factors in the quantity and quality of jobs offered by foreign-owned relative to domestic firms, we combine the firm-level data with relevant country-level data. More specifically, we use measures of firing costs and social inclusion made available in the World Bank's World Development Indicators (WDI), as proxies for the host country's level of employment protection and social policy standards, respectively. We also use the Ibrahim Index of African Governance (IIAG), developed by the Mo Ibrahim Foundation, as an overall measure of institutional quality in the host country.

To empirically identify the quantity and quality of jobs offered by foreign-owned firms relative to domestic firms, we regress different measures of job quantity and job quality on a dummy variable indicating the foreign ownership status of the firm. In all regressions, we control for a variety of firm-level characteristics and for unobserved heterogeneity across countries and industries. We estimate an OLS and a probit model when job quantity and job quality are captured by continuous and dummy variables, respectively. By interacting the dummy for foreign ownership with country-level variables, we identify how institutional factors such as firing costs, governance quality and social inclusion determine the differences in job quantity and job quality between foreign-owned and domestic firms.

The empirical analysis reveals that foreign-owned firms offer more stable and secure jobs, rely less on unpaid work, and offer more training opportunities and better paid jobs than domestic firms. In particular, although foreign-owned firms have lower total employment, they employ a higher share of permanent full-time workers and a lower share of temporary workers. They are also less likely to offer unpaid work and have a lower share of unpaid workers in total salaried and non-salaried employment. In addition, foreign-owned firms have a higher average training intensity and pay an average wage premium, as well as wage premia to production, non-production and managerial workers. These findings suggest that foreign-owned firms have better human resource practices which most likely adopt from the MNE headquarters. Also, the greater investment in training of foreign-owned firms and the wage premia that they pay are in line with previous empirical studies, especially those on developing countries.⁴

data, however, do not allow us to distinguish between unpaid work offered to family and non-family members or to apprentices and non-apprentices.

⁴ For evidence on the greater investment in training of foreign-owned firms, see among others: Gershenberg (1987), Filer et al. (1995), World Bank (1997), and Barthel et al. (2011). For evidence on wage premia of foreign-owned firms, see among others: te Velde and Morrissey (2003), Strobl and Thornton (2004), Lipsey and Sjöholm (2004), Sjöholm and Lipsey (2006), and Coniglio et al. (2015).

Accounting for additional characteristics of foreign-owned firms, we find that these firms offer higher job stability and security and rely less on unpaid work, regardless of whether their parents are located in countries inside or outside Sub-Saharan Africa. Moreover, their higher job stability and security and lower dependence on unpaid work are attributed to those that are created through greenfield FDI, those whose main business purpose is to access new markets, and those which have benefited mostly from capital grants, tax exemption and improved infrastructure in the host country. Their higher average training intensity is attributed to foreign-owned firms whose parents are located in high-income countries, those created through greenfield FDI, those whose main business purpose is to achieve cost-effective production and to access inputs, as well as those which have benefited mostly from tax exemption and from grants for hiring workers. The wage premia of foreign-owned firms are attributed to those whose parents are located inside and outside Sub-Saharan Africa, those created through greenfield FDI and M&As, those whose main business purpose is to access new markets and to join a specific partner in the host country, as well as those which have benefited mostly from capital grants and from tax exemption.

Finally, we find that the differences between foreign-owned and domestic firms in job stability and security are smaller in countries with higher firing costs and higher governance quality, while their wage differences are smaller in countries with higher governance quality and greater social inclusion. This evidence suggests that domestic firms in these countries are likely to offer more stable and secure and better paid jobs than in countries with lower firing costs, lower governance quality and lower social policy standards. The smaller wage differences in such countries are also in line with recent evidence on the lack of wage premia of foreign-owned firms in developed countries, where institutional quality and social policy standards are relatively high (Heyman et al., 2007; Huttunen, 2007; Andrews et al., 2009; Malchow-Møller et al., 2013).

The remainder of this paper is organised as follows. Section 2 describes the data and the construction of variables, while Section 3 describes the econometric model. Section 4 presents the main empirical results. Section 5 concludes and provides suggestions for future research.

2 Data

In this section, we describe the data employed in the empirical analysis and the construction of firm- and country-level variables incorporated in the econometric model. A short description of the variables is included in Table A1.

2.1 Firm-level

Our firm-level data source is the UNIDO Africa Investor Survey 2010. The aim of the survey was the collection of information about firms with operations in Sub-Saharan Africa and their assessment of the local business environment. It was designed to cover a representative sample of “for-profit” public and private firms in all sectors of the economy for the financial year 2009. All firms are registered and are either domestic or foreign-owned. In total, the dataset comprises 6497 firms in 19 Sub-Saharan African countries. For each firm within a country, stratified sampling was implemented by its economic sub-sector, number of employees and ownership. Face-to-face interviews were conducted, in most cases with the most senior decision maker within the firm.⁵ As monetary variables are in national currencies, we convert these into US dollars (US\$). We draw currency exchange rate data from the World Bank’s World Development Indicators (WDI).

⁵ For details concerning the design and implementation of the survey, see UNIDO (2011).

Foreign ownership variables

A firm is defined as foreign-owned if the ownership share held by a foreign investor is at least 10%.⁶ Panel A of Table 1 reveals that there are 4094 domestic and 2403 foreign-owned firms, accounting for 63% and 37% of the total sample, respectively. The share of foreign-owned firms by country varies from 21% in Niger to 53% in Madagascar. Panel B of Table 1 displays the sectors to which domestic and foreign-owned firms belong. The sectors with the highest shares of foreign-owned firms are mining and agriculture, where more than half of the firms are foreign-owned. In manufacturing, services, as well as in electricity, gas and water supply and construction around one third of the firms are foreign-owned.

Table 1: Domestic and foreign-owned firms by country and by sector

Panel A: Domestic and Foreign-Owned Firms by Country						
Country	Domestic		Foreign		Total	
Name	#	%	#	%	#	%
Burkina Faso	94	76.4	29	23.6	123	100
Burundi	131	74	46	26	177	100
Cameroon	137	50.7	133	49.3	270	100
Cape Verde	286	73.3	104	26.7	390	100
Ethiopia	436	76.6	133	23.4	569	100
Ghana	240	56.9	182	43.1	422	100
Kenya	324	52.7	291	47.3	615	100
Lesotho	103	57.5	76	42.5	179	100
Madagascar	109	47	123	53	232	100
Malawi	81	62.8	48	37.2	129	100
Mali	207	69.5	91	30.5	298	100
Mozambique	191	59.5	130	40.5	321	100
Niger	83	79	22	21	105	100
Nigeria	447	75	149	25	596	100
Rwanda	116	61.4	73	38.6	189	100
Senegal	181	62.2	110	37.8	291	100
Tanzania	304	66.2	155	33.8	459	100
Uganda	407	50.1	406	49.9	813	100
Zambia	217	68	102	32	319	100
Total	4094	63	2403	37	6497	100
Panel B: Domestic and Foreign-Owned Firms by Sector						
Sector	Domestic		Foreign		Total	
Name	#	%	#	%	#	%
Agriculture	108	48.6	114	51.4	222	100
Mining	35	40.2	52	59.8	87	100
Manufacturing	2000	63.4	1153	36.6	3153	100
EGW and Construction	304	67.7	145	32.3	449	100
Services	1647	63.7	938	36.3	2585	100
Total	4094	63	2402	37	6496	100

Notes: Authors' calculations. Sectors defined on the basis of the ISIC Rev. 1.1. Agriculture (1–5); Mining (10–14); Manufacturing (15–39); Electricity, Gas and Water Supply and Construction (40 and 45); Services (50–99).

Source: UNIDO Africa Investor Survey 2010.

⁶ This definition is in line with the IMF Balance of Payments and International Investment Position Compilation Guide (BPM6 CG).

The parent companies of foreign-owned firms are located in high-income countries and in low/middle-income countries inside and outside Sub-Saharan Africa. These different parent location types capture the potential heterogeneity in business culture and business practices across foreign-owned firms. We include the country of a parent company in the group of high-income countries (HI), if it is at the top income level of the World Bank Historical Country Classification by Income for the year 2010. Instead, if it is classified as an upper-middle-income, lower-middle-income or low-income country outside Sub-Saharan Africa (SSA), we include it in the group of non-SSA low/middle-income countries (LMI). Table 2 reveals that most of foreign firms are owned by investors located in high-income countries and in low/middle-income countries outside Sub-Saharan Africa.

Table 2: Statistics for dummy variables

Dummy variable	No		Yes		Total	
	#	%	#	%	#	%
foreign ownership	4094	63	2403	37	6497	100
parent in high-income (HI) country	1132	49.9	1136	50.1	2268	100
parent in low/middle-income (LMI) country	1448	63.8	822	36.2	2270	100
parent in Sub-Saharan Africa (SSA)	1961	86.3	312	13.7	2273	100
greenfield FDI	364	15.6	1965	84.4	2329	100
principal motive to invest: market access	587	25.7	1697	74.3	2284	100
principal motive to invest: low cost structure	2135	93.5	149	6.5	2284	100
principal motive to invest: input access	2164	94.7	120	5.3	2284	100
principal motive to invest: join partner	2170	95	114	5	2284	100
principal motive to invest: export back home	2227	97.5	57	2.5	2284	100
principal motive to invest: TA benefits	2233	97.8	51	2.2	2284	100
principal motive to invest: other	2188	95.8	96	4.2	2284	100
most critical incentive to invest: capital grants	1186	93.7	80	6.3	1266	100
most critical incentive to invest: tax exemption	804	63.5	462	36.5	1266	100
most critical incentive to invest: recruitment grants	1256	99.2	10	0.8	1266	100
most critical incentive to invest: staff training	1202	94.9	64	5.1	1266	100
most critical incentive to invest: infrastructure	1162	91.8	104	8.2	1266	100
most critical incentive to invest: other	720	56.9	546	43.1	1266	100
temporary employment	2911	44.8	3586	55.2	6497	100
part-time employment	5460	84	1037	16	6497	100
unpaid work	5470	90.7	558	9.3	6028	100
training	3340	51.5	3148	48.5	6488	100
local backward linkages	1773	27.7	4638	72.3	6411	100
import status	14	0.2	6255	99.8	6269	100
local forward linkages	3113	47.9	3384	52.1	6497	100
export status	4387	74.1	1536	25.9	5923	100
import competition	5055	82.1	1104	17.9	6159	100
local competition (from domestic firms)	2556	41.5	3603	58.5	6159	100
local competition (from foreign-owned firms)	4707	76.4	1452	23.6	6159	100

Notes: Authors' calculations. Each dummy is equal to 1 if the corresponding statement is valid, and 0 otherwise. For the description of the variables, see Table A1.

Source: UNIDO Africa Investor Survey 2010.

Information on five different modes of foreign investment allows us to identify greenfield FDI and mergers and acquisitions (M&As). The creation of a new operation as a wholly-owned enterprise and the creation of a new operation as a joint venture capture greenfield FDI. Instead, the purchase of pre-existing assets from local private owners, the purchase of pre-existing assets from foreign private owners and the purchase of pre-existing state-owned assets capture M&As. Based on information on the principal

motive for foreign investment, we also identify the main business purpose of foreign-owned firms and ultimately, different types of FDI or combinations of these. Specifically, access to new markets as the principal motive for foreign investment captures horizontal and export-platform FDI. Lower production costs, access to natural resources and inputs, collaboration with a specific partner, and exporting to the home country capture vertical FDI. In addition to vertical FDI, the benefits from a trade agreement capture export-platform FDI. Information on the most critical incentive for foreign investment allows us to identify foreign-owned firms which have benefited mostly from capital grants, tax exemption, grants for hiring workers, grants for training workers, and improved infrastructure. Table 2 reveals that the group of foreign-owned firms is dominated by those created through greenfield FDI, by those whose main business purpose is to access new markets, and by those which have received tax exemption as the most critical incentive for foreign investment to take place.

Job quantity and job quality variables

With regard to information on labour, we have data on the total number of permanent full-time, temporary and part-time employees, whose summation yields total employment. The average firm has 184 employees, as shown in Table 3. The standard deviation and minimum and maximum values reveal that firms are very heterogeneous in terms of the size of their workforce. The mean shares of permanent full-time, temporary, and part-time employment in total employment indicate that the composition of total employment in the average firm is 80% permanent full-time, 17% temporary, and 3% part-time. In addition, Table 2 reveals that 55% and 16% of the total sample of firms employ temporary and part-time workers, respectively. Although unpaid work is predominantly observed in the informal sector of the economy, it is not uncommon in the formal sector, where it is mostly offered to family members and apprentices (Taylor, 2004). In our sample which includes only firms that are registered and part of the formal economy, we observe that there is a non-negligible fraction of firms, amounting to 9.3% of the total sample, that offer unpaid work (Table 2). The data, however, do not allow us to distinguish between unpaid work offered to family and non-family members or to apprentices and non-apprentices. The share of unpaid work in total salaried and non-salaried employment⁷ in the average firm is 1% (Table 3).

Within the group of permanent full-time employees, we have information on the number of production and manual workers, the number of clerical, administrative and sales workers, as well as the number of technical, supervisory and managerial workers. For simplicity, we label workers in the first group as production workers, those in the second group as non-production workers, and those in the third group as managers. This information is also available for female and foreign workers. According to Table 3, production workers in the average firm account for a higher share in total permanent full-time employment than non-production and managerial workers. Female and foreign workers account for 26% and 5% of total permanent full-time employment. In addition, female workers account for a higher share in the group of non-production workers than in the groups of production and managerial workers, while foreign workers account for a higher share in the group of managerial workers than in the other two groups.

Other aspects of job quality are the training and wages offered to employees. The dataset provides information on whether a firm provides internal and external training to its employees, as well as on total training expenditure and its decomposition by type of worker. According to Table 2, around half of the firms in the sample provide internal or external training to their employees. Table 3 shows that the ratio of total expenditure on training to the total number of permanent full-time employees in the average

⁷ Total salaried and non-salaried employment is the sum of permanent full-time, temporary, part-time and unpaid workers.

firm amounts to US\$6.4. Also, the average expenditure on training of managerial workers to the total number of these workers is greater than the average ratios of expenditure on training of production and non-production workers to the number of workers in the corresponding groups. In addition, the wage per employee of the average firm, computed as the ratio of the total wage bill to the total number of permanent full-time employees,⁸ is roughly US\$1400. Finally, managerial workers in the average firm receive a higher monthly wage than production and non-production workers.

Table 3: Summary statistics for non-dummy variables

	N	Mean	Sd	Min	Max
total employment	6400	184	643	1	17601
permanent full-time employment (share)	6388	0.80	0.25	0	1
temporary employment (share)	6306	0.17	0.23	0	1
part-time employment (share)	6276	0.03	0.09	0	1
unpaid work (share)	6005	0.01	0.05	0	1
permanent full-time production workers (share)	6398	0.49	0.32	0	1
permanent full-time non-production workers (share)	6398	0.25	0.25	0	1
permanent full-time managerial workers (share)	6222	0.23	0.21	0	1
permanent full-time female workers (share)	6186	0.26	0.22	0	1
permanent full-time female production workers (share)	5221	0.19	0.26	0	1
permanent full-time female non-production workers (share)	5750	0.41	0.31	0	1
permanent full-time female managerial workers (share)	5659	0.21	0.25	0	1
permanent full-time foreign workers (share)	5777	0.05	0.10	0	1
permanent full-time foreign production workers (share)	5232	0.02	0.08	0	1
permanent full-time foreign non-production workers (share)	5782	0.05	0.16	0	1
permanent full-time foreign managerial workers (share)	5397	0.15	0.27	0	1
average training intensity (US\$)	5907	6.4	65.5	0	2657
training intensity for production workers (US\$)	5120	3.3	49.2	0	2246
training intensity for non-production workers (US\$)	5644	6.5	88.6	0	4549
training intensity for managerial workers (US\$)	5717	16.3	278.7	0	18954
average wage (annual in thousand US\$)	5830	1.4	74.3	0	5569
wage for production workers (monthly in US\$)	5730	29.6	419.4	0	14992
wage for non-production workers (monthly in US\$)	5822	39.4	383.3	0	18960
wage for managerial workers (monthly in US\$)	5788	57.3	537.7	0	25169
sales (million US\$)	6075	1	35	0	2567
productivity (thousand US\$)	6046	20	985	0	75503
skill intensity	6222	0.23	0.21	0	1
capital intensity (thousand US\$)	5994	11	597	0	45529
firm age (years)	6419	18	15	1	163

Notes: Authors' calculations. For the description of the variables, see Table A1.

Source: UNIDO Africa Investor Survey 2010.

Additional firm-level variables

We measure firm size with the total value of sales and labour productivity with the ratio of total sales to total permanent full-time employment. We also compute skill intensity as the share of managerial workers in total permanent full-time employment and capital intensity as the ratio of total value of fixed assets to

⁸ This ratio is just a proxy for the average wage. While the total wage bill includes supplementary benefits which are given only to permanent full-time workers, it also includes the wages for temporary and part-time workers. However, when temporary and part-time workers are added to the denominator, this ratio is identical to the benchmark for 5621 out of the 6497 observations.

total permanent full-time employment, respectively. The age of the firm is the number of years since its establishment. The summary statistics for these variables in Table 3 point to salient firm heterogeneity along these dimensions.

Based on information on the number of local suppliers that a firm has and the value of work that it contracts out to them, we identify its engagement in local backward linkages. The engagement of a firm in local forward linkages is identified based on information on the number of its local buyers and the value of work sub-contracted to it by other local firms. In addition, using information on whether a firm imports and on the shares of production inputs that it imports directly from abroad, from its parent company, and through a local importer, we identify its import status. The export status of the firm is identified with the use of information on its aggregate exports. As shown in Table 2, the majority of firms in the sample engage in local backward and forward linkages. Also, while the vast majority of the firms in the sample engage in imports, those which engage in exports are relatively few. Finally, information on the main source of competition for the main product that is sold in the domestic market reveals that the majority of firms in the sample face competition mostly from domestic firms, rather than from foreign-owned firms based in the country or from imports.

2.2 Country-level

In order to identify how employment protection, institutional quality and social policy determine the relationship between the quantity and quality of jobs and foreign ownership, we use relevant country-level variables. As a proxy for the level of employment protection, we use firing costs. They are measured as the number of weeks that a worker is paid after being laid off. We draw data on this measure from the World Bank's World Development Indicators (WDI). Column 1 of Table 4 shows that our firing cost measure for the year 2009 ranges between 13 weeks in Uganda and 178 weeks in Ghana and Zambia, with the sample mean being 59.6 weeks.

We also use the Ibrahim Index of African Governance (IIAG), developed by the Mo Ibrahim Foundation, in order to take into account of the quality of institutions within a country. IIAG is an overall index of governance quality which comprises the rule of law, accountability, personal safety, national security, participation, rights, gender, public management, business environment, infrastructure, rural sector, welfare, education, and health. For the construction of this index, data for the 14 sub-categories are collected from 33 separate data providers. The overall index of governance quality ranges between 0 and 100, where 100 is the best possible score within the group of 54 African countries between 2000 and the latest data year. Column 2 of Table 4 shows that the governance quality index in 2009 ranges between 43 in Niger and 75.2 in Cape Verde, with the sample mean being equal to 54.4.

The social inclusion measure, provided by the World Bank's Country Policy and Institutional Assessment (CPIA), proxies for a country's social policy standards. Its construction is based on the assessment of the quality of policies related to gender equality, equity of public resource use, the building up of human resources, social protection and environmental sustainability. It is a rating between 1 and 6, with higher values indicating higher social inclusion. According to column 3 of Table 4, the measure of social inclusion for the year 2009 ranges from 3.1 in Cameroon and Niger to 4.3 in Cape Verde, with the sample mean being equal to 3.5.

Table 4: Firing costs, governance quality and social inclusion in 2009 by country

Country	Firing costs	Governance quality	Social inclusion
Burkina Faso	34	53.3	3.6
Burundi	26	45.8	3.3
Cameroon	33	46.8	3.1
Cape Verde	93	75.2	4.3
Ethiopia	40	44.3	3.6
Ghana	178	67.2	3.9
Kenya	47	53	3.5
Lesotho	44	58.3	3.3
Madagascar	30	50.9	3.6
Malawi	84	56.5	3.5
Mali	31	55.6	3.4
Mozambique	134	54.8	3.3
Niger	35	43	3.1
Nigeria	50	44.7	3.2
Rwanda	26	56.2	3.9
Senegal	38	58	3.4
Tanzania	18	58.8	3.7
Uganda	13	54.3	3.8
Zambia	178	56.7	3.5
Sample mean	59.6	54.4	3.5

Notes: Firing costs are measured as the number of weeks a worker is paid after she is laid off. The overall index of governance quality ranges between 0 and 100, where 100 is the best possible score within the group of 54 African countries between 2000 and the latest data year. The social inclusion measure ranges between 1 and 6, with higher values indicating higher social inclusion. The data correspond to the year 2009.

Sources: World Bank's World Development Indicators (firing costs), Mo Ibrahim Foundation (governance quality), World Bank's Country Policy and Institutional Assessment (social inclusion).

3 Econometric model

Following existing empirical studies on the differences between foreign-owned and domestic firms in several dimensions (e.g. Almeida, 2007), we estimate the following model for firm z in country c and industry j :

$$JQ_{z cj} = \alpha + \beta_1 * foreign_{z cj} + \beta_2 * controls_{z cj} + \beta_c * D_c + \beta_j * D_j + \epsilon_{z cj} \quad (1)$$

The dependent variable, JQ , is one of the measures of job quantity or quality, described in Section 2. When it is a continuous variable corresponding to total employment, the employment share by contract and worker type, the share of unpaid work, and the average training intensity and wage by worker type, equation 1 is a linear model estimated by OLS. When it is a dummy variable indicating that the firm offers temporary, part-time, or unpaid work, equation 1 becomes a probit model. In the OLS model, β 's represent coefficient estimates, while in the probit model, they represent marginal effects. All non-dummy variables for job quantity and quality are in logs except for those which represent non-monetary shares. The key variable of interest is the dummy indicating that the firm is foreign-owned, $foreign_{z cj}$. Hence, β_1 captures the relationship of job quantity and job quality with foreign ownership, or equivalently, the quantity and quality of jobs offered by foreign-owned relative to domestic firms.

Moreover, country dummies, D_c , capture various location-specific factors such as investment, trade and industrial policies, institutional quality, human capital of labour force, agglomeration of business activity, and infrastructure. Industry dummies, D_j , capture industry-specific factors such as technology and knowledge intensity.

We include a set of variables capturing firm-level characteristics in $controls_{zsj}$. The skill intensity of the firm's workforce accounts for observable and unobservable worker characteristics. Hence, it may be positively associated with training expenditure and wages (Javorcik, 2015). By the same token, the dummy indicating whether a firm provides training to its employees may be associated with higher wages. A larger firm in terms of total sales is likely to have higher employment levels, training expenditure, and wages. Based on evidence for size, productivity and wage premia of exporters over non-exporters (Bernard et al., 2007), importers over non-importers (Bernard et al., 2007), and MNEs over non-MNEs (Helpman et al., 2004), the levels of employment, training expenditure and wages may also be positively associated with labour productivity and the dummies indicating the engagement of a firm in imports, exports and in local backward and forward linkages. However, on condition that sourced material inputs substitute for tasks of certain types of workers, the dummies for engagement of a firm in local backward linkages will be associated with a lower quantity and quality of jobs offered to these workers. Labour productivity also controls for firms' economic performance, which in turn may be related to the business environment that firms face in the host country.⁹

In addition, the main source of competition that a firm faces can be positively or negatively associated with job quantity and job quality. We therefore include dummy variables indicating whether a firm faces competition for its main product mostly from imports or from domestic firms in the host country. We consider the dummy indicating competition mostly from foreign-owned firms in the host country as the reference variable and exclude it from the regressions. Hence, the coefficient estimates and marginal effects of the two non-excluded dummies capture the job quantity and job quality in firms facing competition mostly from imports and from domestic firms relative to firms facing competition mostly from foreign-owned firms in the country.

Lucas (1978) and Hamermesh (1980) conjecture that physical capital and the skills of workers complement each other (i.e., capital-skill complementarity hypothesis). Capital intensity may hence be associated with higher training expenditure and wages. Firm age – as a proxy for firm growth and survival – may be associated with higher levels of employment. In addition, it may be associated with higher wages, as an indication of good human resource practices of a firm (Brown and Medoff, 1989; Strobl and Thornton, 2004). However, firm age may also be associated with lower employment and wages if firm entry and exit are rare. For instance, Poschke (2013a) and Poschke (2013b) argue that there are firms, mostly in developing countries, which do not grow but nevertheless remain active in the market for years (“entrepreneurs out of necessity”). All non-dummy explanatory variables are in logs except for skill intensity and firm age.

We also estimate equation 1 after replacing the foreign ownership dummy with dummies capturing additional characteristics of foreign-owned firms. Differences in business culture and human resource practices across foreign investors are likely to be associated with the quantity and quality of jobs offered by foreign-owned firms relative to domestic firms. We account for such differences by replacing the foreign ownership dummy with dummies indicating that parent companies of foreign-owned firms are located in high-income countries and in low/middle-income countries inside and outside Sub-Saharan Africa. According to the resource-based view of the firm, M&As allow acquiring firms to combine their own capabilities with those of the acquired firms, while greenfield FDI implies mostly the utilisation of firms'

⁹ Hence, labour productivity may pick up any job quantity and quality effects of favourable business conditions that are granted to foreign-owned firms through investment agreements.

own capabilities (Nocke and Yeaple, 2008). Hence, the way foreign-owned firms are established may also be associated with the quantity and quality of jobs offered by them. For this reason, we estimate the benchmark model after replacing the dummy for foreign ownership with dummies for greenfield FDI and M&As. In addition, job quantity and quality may be associated with the principal motive for foreign investment or equivalently, the main business purpose of foreign-owned firms, as well as with the most critical incentive received by foreign investors so that investment in the host country takes place. To this purpose, in additional regressions, we replace the foreign ownership dummy with dummies capturing the main business purpose of foreign-owned firms and with dummies capturing the main benefit received from the host country as investment incentive.

4 Empirical results

4.1 Employment

We start the econometric analysis by identifying the relationship of foreign ownership with total employment, permanent full-time, temporary, and part-time employment, as well as with unpaid work. The negative and highly significant coefficient estimate of the dummy for foreign ownership in column 1 of Table 5 indicates that total employment in foreign-owned firms is, on average, 7% lower than in domestic firms.¹⁰ Its positive and highly significant coefficient estimate in column 2 indicates that foreign-owned firms have a higher share of permanent full-time workers in total employment by 2 percentage points.¹¹ They also have a 2 percentage points lower share of temporary employment in total employment, as indicated by the relevant negative and highly significant coefficient estimate in column 4. In short, columns 2 and 4 reveal that foreign-owned firms tend to offer more stable and secure jobs than domestic firms.

The marginal effect and coefficient estimate of the foreign ownership dummy in columns 5 and 6, respectively, are negative but statistically insignificant at all conventional levels. This is also true for the marginal effect of the foreign ownership dummy in column 3. Hence, there are no statistically significant differences between foreign-owned and domestic firms in their likelihood of employing temporary and part-time workers and in their share of part-time employment in total employment. With regard to unpaid work, the negative and significant marginal effect and coefficient estimate in columns 7 and 8, respectively, indicate that foreign-owned firms have a 3% lower probability of offering unpaid work and a

¹⁰ Since the dependent variable is in logs, the 7% lower total employment of foreign-owned firms with respect to domestic ones is the log approximation. Taking exponents of the coefficient of the foreign ownership dummy, we find that foreign-owned firms have lower total employment by 7.25% ($100 * (exp(0.07) - 1) = 7.25%$). Also, this result is robust to replacing labour productivity with capital productivity, where the latter variable is computed as the ratio of total sales to the total value of fixed assets.

¹¹ Studying further the relationship between foreign ownership and permanent full-time employment, we consider production, non-production and managerial workers, as well as the same decomposition for female and foreign workers. This analysis reveals that foreign-owned firms have a lower share of managerial workers in total permanent full-time employment and a lower share of female managerial workers in total permanent full-time female employment (Table A2 and columns 1–4 of Table A3). By contrast, foreign-owned firms have a higher share of foreign workers in permanent full-time employment, as well as higher shares of foreign production, non-production and managerial workers (columns 5–8 of Table A3). These higher shares could be explained by transfers of critical human capital to foreign affiliates from other parts of the MNE such as the parent company or a sister affiliate (Moran, 2007; Coniglio et al., 2016).

0.3 percentage points lower share of unpaid work in total salaried and non-salaried employment than domestic firms. Hence, foreign-owned firms rely less on unpaid work than domestic firms.¹²

Table 5: Employment by contract type, unpaid work and foreign ownership

Dep. var:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	total	permanent	temporary	temporary	part-time	part-time	unpaid	unpaid
	employment	employment	employment	employment	employment	employment	work	work
		(share)	(dummy)	(share)	(dummy)	(share)	(dummy)	(share)
foreign	-0.07*** [0.02]	0.02*** [0.007]	-0.02 [0.02]	-0.02*** [0.007]	-0.008 [0.01]	-0.003 [0.003]	-0.03*** [0.010]	-0.003** [0.001]
sales	0.9*** [0.008]	0.04*** [0.003]	0.009 [0.006]	-0.03*** [0.003]	0.005 [0.005]	-0.006*** [0.001]	-0.003 [0.004]	-0.004*** [0.0008]
productivity	-0.9*** [0.01]	-0.05*** [0.004]	-0.004 [0.008]	0.05*** [0.004]	-0.02*** [0.006]	0.007*** [0.002]	-0.005 [0.005]	0.003*** [0.0010]
skill intensity	0.09** [0.04]	-0.04** [0.02]	0.03 [0.04]	0.04** [0.02]	0.03 [0.03]	0.005 [0.007]	-0.02 [0.02]	0.0002 [0.006]
wage	0.04*** [0.009]	-0.007* [0.004]	0.005 [0.006]	0.010*** [0.003]	-0.006 [0.005]	-0.002 [0.001]	-0.003 [0.004]	-0.0010 [0.0008]
training	-0.0009 [0.01]	-0.003 [0.007]	0.02 [0.01]	-0.008 [0.006]	0.05*** [0.01]	0.009*** [0.003]	0.03*** [0.008]	0.003** [0.001]
capital intensity	0.02*** [0.005]	-0.008*** [0.002]	0.02*** [0.005]	0.008*** [0.002]	0.01*** [0.004]	0.0002 [0.0009]	0.002 [0.003]	-0.0006 [0.0005]
firm age	0.0007 [0.0005]	-0.0002 [0.0002]	0.0006 [0.0005]	0.0002 [0.0002]	0.0006 [0.0004]	0.000006 [0.00008]	0.000009 [0.0003]	0.00007* [0.00004]
local backward link	0.02 [0.02]	-0.02** [0.008]	0.05*** [0.02]	0.02** [0.007]	0.01 [0.01]	0.0007 [0.003]	0.01 [0.01]	0.002 [0.002]
import status	0.06 [0.09]	-0.07 [0.09]	-0.1 [0.2]	0.09 [0.08]	-0.01 [0.1]	-0.02 [0.04]	0.06 [0.1]	0.01 [0.01]
local forward link	0.02 [0.02]	-0.01* [0.008]	0.05*** [0.02]	0.006 [0.007]	0.04*** [0.01]	0.009*** [0.003]	0.01 [0.01]	-0.0001 [0.001]
export status	0.09*** [0.02]	-0.05*** [0.009]	0.06*** [0.02]	0.05*** [0.009]	0.03** [0.01]	0.002 [0.003]	-0.003 [0.01]	0.0009 [0.002]
import competition	0.01 [0.02]	-0.007 [0.01]	0.01 [0.02]	-0.0006 [0.01]	0.01 [0.02]	0.006 [0.004]	0.02 [0.01]	-0.002 [0.002]
local competition	0.02 [0.02]	-0.01 [0.008]	0.01 [0.02]	0.004 [0.007]	0.006 [0.01]	0.005 [0.003]	0.008 [0.01]	0.001 [0.002]
Obs	4944	4944	4946	4931	4946	4916	4808	4807
R^2	0.87	0.21		0.21		0.038		0.043
$Pseudo - R^2$			0.11		0.078		0.095	
$Log - likelihood$			-2978.0		-2039.6		-1304.7	

Notes: OLS estimations with country and industry dummies in columns 1, 2, 4, 6 and 8. Probit estimations with country and industry dummies in columns 3, 5 and 7. Dummies take value 1 if the statement holds, and 0 otherwise. All non-dummy explanatory variables are in logs except for skill intensity and firm age. Among non-dummy dependent variables, only total employment is in logs. Marginal effects are displayed in columns 3, 5 and 7. *** significant at 1%, ** significant at 5%, * significant at 10%, based on robust standard errors. For the description of the variables, see Table A1.

Empirical evidence on the association of foreign ownership with non-wage working conditions is very scarce and relies mostly on data on US MNEs with foreign affiliates in other developed countries (OECD and ILO, 2008). Although the definition of non-wage working conditions varies across these studies, their main conclusion is that MNEs have a greater tendency to adapt to labour practices of the host countries than to export their own practices to these countries (Almond and Ferner, 2006). Specifically, Freeman et al. (2008) examine a single US MNE with domestic and foreign affiliates and find that its foreign affiliates adopt human resource practices which are closer to those in the host countries where they are located. Also, Bloom et al. (2009) use a sample of US MNEs with affiliates in the UK, Germany, and

¹² In additional regressions, we use dummies for majority-owned foreign affiliates (MOFAs) and non-MOFAs as the key explanatory variables. We identify MOFAs as firms whose foreign investor holds at least 50% of their ownership share, and non-MOFAs as firms whose foreign investor holds at least 10% and below 50% of their ownership share. The regressions show that both MOFAs and non-MOFAs offer more stable and secure jobs and rely less on unpaid work than domestic firms. The results are available upon request.

France and show that these firms transplant their management practices into their affiliates, but not their work-life balance practices. This evidence may be explained by national rules and social norms of the host country such as trade unionism (Bloom et al., 2009), the domestic or export market orientation of foreign affiliates, or the management style of US MNEs which may, though, not be representative for all MNEs (OECD and ILO, 2008).

An advantage of our study over the existing literature is that it relies on a sample comprising foreign-owned firms whose parents originate from many countries around the world, both developed and developing ones. Also, all foreign-owned firms of our sample are located in Sub-Saharan Africa, a developing region. The latter is particularly relevant as similar studies to the aforementioned ones on MNEs with foreign affiliates in developing countries hardly exist. Our evidence on the higher job stability and security offered by foreign-owned firms and their lower dependence on unpaid work suggests that parent companies of foreign MNEs transplant, at least partially, their human resource practices into their affiliates in Sub-Saharan Africa. One possible explanation for doing so is that they want to ensure that their foreign affiliates are able to run critical operations, such as the production of intermediate and final output and the service of local and foreign markets, in line with their standards. Another possible explanation is that MNEs place a high value on corporate social responsibility (OECD and ILO, 2008) and on adherence to international MNE standards in workplace practices such as the MNE Declaration, in order to protect their reputation.¹³

In Table 6, we re-estimate the regressions of the previous table after replacing the dummy for foreign ownership with dummies capturing additional characteristics of foreign-owned firms. The key explanatory variables in the regressions of Panel A are the dummies corresponding to foreign-owned firms whose parents are located in high-income countries and in low/middle-income countries inside and outside Sub-Saharan Africa. Their coefficient estimates and marginal effects indicate that foreign-owned firms whose parents are located inside and outside Sub-Saharan Africa offer more stable and secure jobs and rely less on unpaid work than domestic firms. In particular, they have a higher share of permanent full-time employment (column 2), a lower share of temporary employment (column 4) and are less likely to offer unpaid work (column 7). With respect to our discussion of the existing literature above, these findings suggest that, regardless of the development level of the countries where they are based, parent companies transplant, at least partially, their human resource practices into their foreign affiliates in Sub-Saharan Africa. Moreover, foreign-owned firms whose parents are located outside Sub-Saharan Africa have a lower share of unpaid work in total salaried and non-salaried employment (column 8).¹⁴

In the regressions of Panel B, the key explanatory variables are the dummies for greenfield FDI and M&As. The panel reveals that foreign-owned firms which have been created through greenfield FDI offer more stable and secure jobs and rely less on unpaid work than domestic firms. Specifically, firms of this type have a higher share of permanent full-time employment (column 2) and lower shares of temporary and part-time employment than domestic firms (columns 4 and 6, respectively). They are also less likely to offer unpaid work and have a lower share of unpaid workers (columns 7 and 8, respectively). By contrast, the statistically insignificant coefficient estimates and marginal effects of the dummy for M&As indicate that there are no statistically significant differences in all these dimensions between foreign-owned firms created through M&As and domestic firms.

¹³ The MNE Declaration refers to the *Tripartite Declaration of Principles Concerning Multinational Enterprises and Social Policy* and was adopted by the constituents of the International Labour Organization in 2006. It provides guidance to enterprises on social policy and inclusive, responsible and sustainable workplace practices (ILO, 2017).

¹⁴ In tables that are available upon request, we show that these results remain largely unchanged when solely China, as well as when both China and India are excluded from the group of low/middle-income countries outside Sub-Saharan Africa.

Table 6: Employment by contract type, unpaid work and additional characteristics of foreign-owned firms

Panel A: Parent location								
Dep. var:	(1) total employment	(2) permanent employment (share)	(3) temporary employment (dummy)	(4) temporary employment (share)	(5) part-time employment (dummy)	(6) part-time employment (share)	(7) unpaid work (dummy)	(8) unpaid work (share)
parent HI	-0.06*** [0.02]	0.02** [0.009]	-0.03 [0.02]	-0.02** [0.009]	-0.03* [0.02]	-0.004 [0.004]	-0.03** [0.01]	-0.003** [0.002]
parent LMI	-0.06*** [0.02]	0.02** [0.010]	-0.01 [0.02]	-0.02** [0.009]	0.02 [0.02]	-0.0008 [0.004]	-0.04*** [0.01]	-0.005*** [0.001]
parent SSA	-0.1*** [0.03]	0.04*** [0.02]	-0.002 [0.03]	-0.03** [0.02]	-0.04 [0.03]	-0.007 [0.006]	-0.05** [0.02]	-0.000007 [0.004]
Obs	4880	4880	4882	4867	4882	4854	4750	4749
R^2	0.87	0.21		0.21		0.037		0.042
$Pseudo - R^2$			0.12		0.078		0.094	
$Log - likelihood$			-2934.2		-2007.4		-1281.3	
Panel B: mode of foreign investment								
Dep. var:	(1) total employment	(2) permanent employment (share)	(3) temporary employment (dummy)	(4) temporary employment (share)	(5) part-time employment (dummy)	(6) part-time employment (share)	(7) unpaid work (dummy)	(8) unpaid work (share)
Greenfield FDI	-0.08*** [0.02]	0.03*** [0.008]	-0.02 [0.02]	-0.02*** [0.007]	-0.02 [0.01]	-0.005* [0.003]	-0.04*** [0.01]	-0.004** [0.01]
M&As	-0.03 [0.03]	-0.0004 [0.02]	0.04 [0.03]	-0.008 [0.01]	0.04 [0.02]	0.01 [0.007]	0.02 [0.02]	0.001 [0.003]
Obs	4924	4924	4926	4911	4926	4897	4792	4791
R^2	0.87	0.21		0.21		0.039		0.044
$Pseudo - R^2$			0.11		0.080		0.099	
$Log - likelihood$			-2964.2		-2028.2		-1297.9	
Panel C: principal motive for foreign investment								
Dep. var:	(1) total employment	(2) permanent employment (share)	(3) temporary employment (dummy)	(4) temporary employment (share)	(5) part-time employment (dummy)	(6) part-time employment (share)	(7) unpaid work (share)	(8) unpaid work (share)
market access	-0.08*** [0.02]	0.03*** [0.008]	-0.02 [0.02]	-0.02*** [0.007]	-0.01 [0.01]	-0.007** [0.003]	-0.04*** [0.01]	-0.004** [0.001]
low cost	-0.03 [0.05]	0.008 [0.02]	-0.006 [0.05]	-0.009 [0.02]	0.02 [0.04]	0.0008 [0.010]	-0.08* [0.04]	-0.006*** [0.002]
input access	0.03 [0.05]	-0.04 [0.03]	0.2*** [0.06]	0.02 [0.02]	0.010 [0.03]	0.009 [0.01]	-0.02 [0.03]	-0.003 [0.003]
join partner	-0.08* [0.04]	0.02 [0.02]	-0.01 [0.05]	-0.02 [0.02]	0.006 [0.04]	0.005 [0.01]	-0.007 [0.03]	-0.001 [0.004]
export back home	-0.09 [0.07]	0.04 [0.04]	-0.1* [0.08]	-0.06* [0.03]	0.02 [0.05]	0.02 [0.02]	0.07** [0.03]	0.01 [0.01]
TA benefits	-0.04 [0.04]	-0.02 [0.02]	0.2** [0.09]	0.02 [0.02]	0.05 [0.08]	-0.004 [0.006]	-0.05 [0.07]	-0.009*** [0.003]
other motive	-0.001 [0.06]	0.002 [0.03]	-0.02 [0.06]	-0.006 [0.03]	-0.04 [0.05]	0.005 [0.01]	0.04 [0.03]	0.006 [0.006]
Obs	4895	4895	4897	4883	4897	4869	4768	4767
R^2	0.87	0.21		0.20		0.038		0.044
$Pseudo - R^2$			0.12		0.078		0.10	
$Log - likelihood$			-2936.9		-2025.5		-1290.7	
Panel D: most critical incentive for foreign investment								
Dep. var:	(1) total employment	(2) permanent employment (share)	(3) temporary employment (dummy)	(4) temporary employment (share)	(5) part-time employment (dummy)	(6) part-time employment (share)	(7) unpaid work (dummy)	(8) unpaid work (share)
capital grants	-0.1** [0.05]	0.05* [0.03]	-0.08 [0.06]	-0.06** [0.03]	0.009 [0.04]	0.004 [0.01]	-0.04 [0.04]	-0.006** [0.002]
tax exemption	-0.07*** [0.03]	0.02 [0.01]	0.01 [0.03]	-0.02* [0.01]	0.02 [0.02]	0.002 [0.006]	-0.02 [0.02]	-0.003* [0.002]
recruitment grants	0.1 [0.2]	-0.10 [0.08]	0.2 [0.2]	0.09 [0.07]	0.06 [0.1]	0.007 [0.02]	0.1 [0.08]	-0.004 [0.008]
staff training	0.006 [0.07]	-0.003 [0.03]	0.01 [0.06]	-0.007 [0.03]	0.1*** [0.05]	0.01 [0.02]	0.06* [0.03]	0.002 [0.007]
infrastructure	-0.1** [0.04]	0.05** [0.02]	-0.02 [0.05]	-0.05** [0.02]	0.04 [0.04]	-0.004 [0.006]	-0.04 [0.04]	-0.002 [0.003]
other incentive	-0.04 [0.03]	0.002 [0.01]	0.02 [0.03]	0.0002 [0.01]	0.003 [0.02]	-0.002 [0.004]	-0.05*** [0.02]	-0.005** [0.002]
Obs	4164	4164	4164	4151	4164	4140	4058	4058
R^2	0.87	0.21		0.21		0.042		0.043
$Pseudo - R^2$			0.12		0.091		0.097	
$Log - likelihood$			-2477.4		-1737.8		-1139.6	

Notes: OLS estimations with country and industry dummies in columns 1, 2, 4, 6 and 8 of all panels. Probit estimations with country and industry dummies in columns 3, 5 and 7 of all panels. Dummies take value 1 if the statement holds, and 0 otherwise. All non-dummy explanatory variables are in logs except for skill intensity and firm age. Among non-dummy dependent variables, only total employment is in logs. Marginal effects are displayed in columns 3, 5 and 7. The regressions include all the control variables listed in Table 5 but their coefficient estimates or marginal effects are not reported for the sake of brevity. ***, ** significant at 1%, ** significant at 5%, * significant at 10%, based on robust standard errors. For the description of the variables, see Table A1.

The key explanatory variables in the regressions of Panel C are the dummies capturing the main business purpose of the firm. According to this panel, foreign-owned firms whose main business purpose is to access new markets offer more stable and secure jobs and rely less on unpaid work than domestic firms. In particular, this type of firms have a higher share of permanent full-time employment (column 2) and lower shares of temporary and part-time employment (columns 4 and 6, respectively). They are also less likely to offer unpaid work and have a lower share of unpaid workers (columns 7 and 8, respectively). Moreover, foreign-owned firms whose main business purpose is to export back to the home country are less likely to offer temporary work and have a lower share of temporary workers, while those whose main business purpose is to access inputs and to benefit from a trade agreement are more likely to offer temporary work. Foreign-owned firms whose main business purpose is to achieve cost-effective production are less likely to offer unpaid work and have a lower share of unpaid workers. Those whose main business purpose is to benefit from a trade agreement also have a lower share of unpaid workers. By contrast, foreign-owned firms whose main business purpose is to export back to the home country are more likely to offer unpaid work.

In the regressions of Panel D, the key explanatory variables are the dummies for the most critical incentive for foreign investment. Foreign-owned firms which have benefited mostly from capital grants and from tax exemption offer more stable and secure jobs and rely less on unpaid work. Specifically, they have lower shares of temporary and unpaid workers (columns 4 and 8, respectively). Those which have benefited mostly from capital grants also have a higher share of permanent full-time workers (column 2). Higher job stability and security is also offered by foreign-owned firms which have benefited mostly from improved infrastructure in the host country, as indicated by their higher share of permanent full-time workers (column 2) and their lower share of temporary workers (column 4). In addition, foreign-owned firms which have benefited mostly from grants for training workers are more likely to offer part-time and unpaid work (columns 5 and 7, respectively).

In Table 7, we study the potential role of firing costs and governance quality in the association of foreign ownership with employment by contract type and unpaid work. To this purpose, in Panel A and Panel B we re-estimate the regressions of Table 5 after incorporating an interaction term between the dummy for foreign ownership and the country-level measure of firing costs and of governance quality, respectively. We do not incorporate the corresponding country-level variable individually in any of the regressions in the two panels as it is captured by the country dummies. The coefficient estimate of the interaction term in column 1 of Panel A indicates that the lower total employment of foreign-owned firms relative to domestic firms increases with higher firing costs. Columns 2–4 reveal that their higher share of permanent full-time employment decreases with higher firing costs, while their lower probability and share of temporary employment increase. The lower probability of part-time work also increases with higher firing costs (column 5). According to columns 1, 2 and 4 of Panel B, the higher share of permanent full-time employment decreases and the lower total employment and share of temporary employment increase with higher governance quality.

Higher firing costs imply higher employment protection and better bargaining terms of workers vis-à-vis their employers, while higher governance quality implies a higher overall institutional quality in the country. Hence, a plausible explanation for the smaller gap in the stability and security of jobs between foreign-owned and domestic firms in these countries is that domestic firms offer more stable and secure jobs than in countries with lower firing costs and lower governance quality. The insignificant marginal effect and coefficient estimate of the interaction term in columns 7 and 8 of both panels indicates that

firings costs and governance quality do not play a role in the association of a firm's foreign ownership status with unpaid work.¹⁵

Table 7: Employment by contract type, unpaid work and foreign ownership (firing costs and governance quality)

Panel A: Firing costs								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dep. var:	total employment	permanent employment (share)	temporary employment (dummy)	temporary employment (share)	part-time employment (dummy)	part-time employment (share)	unpaid work (dummy)	unpaid work (share)
foreign	-0.1*** [0.02]	0.06*** [0.01]	-0.05** [0.02]	-0.05*** [0.01]	-0.03* [0.02]	-0.007 [0.004]	-0.03* [0.01]	-0.002 [0.002]
foreign * firing cost	0.0009*** [0.0002]	-0.0005*** [0.0001]	0.0006** [0.0003]	0.0005*** [0.0001]	0.0004* [0.0002]	0.00006 [0.00004]	-0.00008 [0.0002]	-0.00003 [0.00003]
Obs	4944	4944	4946	4931	4946	4916	4808	4807
R ²	0.87	0.21		0.21		0.038		0.043
Pseudo - R ²			0.11		0.079		0.095	
Log - likelihood			-2975.2		-2038.1		-1304.6	
Panel B: Governance quality								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dep. var:	total employment	permanent employment (share)	temporary employment (dummy)	temporary employment (share)	part-time employment (dummy)	part-time employment (share)	unpaid work (dummy)	unpaid work (share)
foreign	-0.3*** [0.10]	0.1*** [0.05]	-0.03 [0.1]	-0.1*** [0.04]	-0.002 [0.08]	-0.002 [0.02]	0.05 [0.06]	0.003 [0.01]
foreign * governance	0.004** [0.002]	-0.002** [0.0009]	0.0002 [0.002]	0.002*** [0.0008]	-0.0001 [0.001]	-0.00003 [0.0003]	-0.002 [0.001]	-0.0001 [0.0002]
Obs	4944	4944	4946	4931	4946	4916	4808	4807
R ²	0.87	0.21		0.21		0.038		0.043
Pseudo - R ²			0.11		0.078		0.095	
Log - likelihood			-2978.0		-2039.6		-1303.7	

Notes: OLS estimations with country and industry dummies in columns 1, 2, 4, 6 and 8 of both panels. Probit estimations with country and industry dummies in columns 3, 5 and 7 of both panels. Dummies take value 1 if the statement holds, and 0 otherwise. All non-dummy explanatory variables are in logs except for skill intensity and firm age. Among non-dummy dependent variables, only total employment is in logs. Marginal effects are displayed in columns 3, 5 and 7. The regressions include all the control variables listed in Table 5 but their coefficient estimates or marginal effects are not reported for the sake of brevity. *** significant at 1%, ** significant at 5%, * significant at 10%, based on robust standard errors. For the description of the variables, see Table A1.

4.2 Training

In Table 8, we study the relationship of foreign ownership with average training intensity and training intensity for production, non-production and managerial workers. According to column 1, foreign-owned firms invest more in training of their employees than domestic firms, as their ratio of total expenditure on training to total permanent full-time employment is higher by 10.9% (column 1).¹⁶ The statistically insignificant coefficient estimates of the dummy for foreign ownership in the rest of the columns indicate that there are no statistically significant differences between foreign-owned and domestic firms in terms of training intensity for production, non-production and managerial workers.¹⁷

¹⁵ In addition to the OLS estimations, we estimate all employment share and unpaid work share regressions of this part of the empirical analysis by tobit in order to ensure that the relevant results are not biased by the presence of zeros in the dependent variables. These additional results tables are available upon request.

¹⁶ Taking exponents of the coefficient of the foreign ownership dummy, we find that foreign-owned firms have a higher average training intensity by 11.52% ($100 * (\exp(0.109) - 1) = 11.52\%$).

¹⁷ In additional regressions with dummies for majority and minority foreign ownership of the firm as the key explanatory variables, we show that only non-MOFAs offer more training opportunities to their employees than domestic firms by having a higher average training intensity and higher training intensity for production workers. The results are available upon request.

Table 8: Training intensity and foreign ownership

Dep. var:	(1)	(2)	(3)	(4)
	average	production workers	non-production workers	managerial workers
foreign	0.109* [0.062]	0.008 [0.027]	0.036 [0.030]	0.043 [0.038]
sales	-0.246*** [0.025]	0.005 [0.010]	0.033*** [0.011]	0.066*** [0.014]
productivity	0.262*** [0.033]	0.005 [0.014]	0.001 [0.015]	-0.049*** [0.019]
skill intensity	0.038 [0.129]	-0.006 [0.058]	0.134** [0.063]	-0.065 [0.073]
wage	0.074*** [0.026]	0.039*** [0.012]	0.037** [0.015]	0.071*** [0.017]
capital intensity	0.057*** [0.018]	0.018** [0.007]	0.012 [0.009]	0.020** [0.010]
firm age	0.002 [0.002]	0.000 [0.001]	0.000 [0.001]	0.000 [0.001]
local backward link	0.007 [0.064]	0.013 [0.028]	0.066** [0.030]	0.078** [0.038]
import status	0.240 [0.604]	0.213 [0.167]	-0.226** [0.101]	0.388 [0.352]
local forward link	-0.039 [0.062]	0.016 [0.026]	0.079*** [0.029]	0.086** [0.036]
export status	0.077 [0.073]	0.066** [0.030]	0.096*** [0.034]	0.123*** [0.042]
import competition	0.052 [0.080]	0.003 [0.035]	0.010 [0.041]	0.039 [0.051]
local competition	0.017 [0.063]	0.026 [0.029]	0.023 [0.033]	0.013 [0.039]
Obs	4430	4225	4612	4705
R^2	0.29	0.16	0.18	0.21

Notes: OLS estimations with country and industry dummies in all columns. Dummies take value 1 if the statement holds, and 0 otherwise. All non-dummy explanatory variables are in logs except for skill intensity and firm age. The dependent variables are in logs. *** significant at 1%, ** significant at 5%, * significant at 10%, based on robust standard errors. For the description of the variables, see Table A1.

Same as in the previous sub-section, the results of Table 8 point to better human resource practices of foreign-owned firms. They are also in line with many studies which report that foreign-owned firms provide more training to their employees as compared to domestic firms. ILO (1981) and Lindsey (1994) emphasise the substantial efforts undertaken by MNEs in the education of local workers. Chen (1983) argues that the main benefit of Hong Kong manufacturing from the presence of foreign-owned firms is mostly the training of workers at various levels, rather than the production of new techniques and products. Similarly, Gershenberg (1987) argues that MNEs offer more training to technical workers and managers than local firms do. Also, Filer et al. (1995), World Bank (1997), and Barthel et al. (2011) show that foreign-owned firms in Czech Republic, Malaysia, and Ghana, respectively, provide more training to their workers. According to Blomström and Kokko (1998), provision of training to the foreign affiliate's employees –from on-the-job training, seminars and more formal schooling to overseas education– is a form of technology and knowledge transfer from the parent which may be crucial for the business operations of the MNE as a whole. As foreign-owned firms tend to offer more opportunities for training and personal development of their staff than domestic firms, workers themselves may find it more attractive and rewarding to be employed by the first type of firms (Javorcik, 2015).

Table 9: Training intensity and additional characteristics of foreign-owned firms

Panel A: Parent location				
	(1)	(2)	(3)	(4)
Dep. var:	training intensity			
	average	production	non-production	managerial
		workers	workers	workers
parent HI	0.150** [0.076]	0.041 [0.035]	0.067* [0.040]	0.076 [0.049]
parent LMI	0.069 [0.084]	-0.029 [0.038]	0.001 [0.043]	-0.008 [0.052]
parent SSA	0.030 [0.124]	-0.045 [0.032]	0.008 [0.045]	-0.029 [0.055]
Obs	4372	4168	4549	4643
R ²	0.29	0.16	0.18	0.21
Panel B: mode of foreign investment				
	(1)	(2)	(3)	(4)
Dep. var:	training intensity			
	average	production	non-production	managerial
		workers	workers	workers
greenfield FDI	0.124* [0.064]	0.017 [0.029]	0.042 [0.032]	0.061 [0.040]
M&As	-0.032 [0.128]	-0.041 [0.040]	-0.030 [0.051]	-0.090 [0.059]
Obs	4412	4213	4593	4686
R ²	0.29	0.16	0.18	0.21
Panel C: principal motive for foreign investment				
	(1)	(2)	(3)	(4)
Dep. var:	training intensity			
	average	production	non-production	managerial
		workers	workers	workers
market access	0.062 [0.065]	0.017 [0.031]	0.045 [0.034]	0.033 [0.042]
low cost	0.454** [0.183]	-0.074 [0.056]	0.000 [0.084]	0.224** [0.114]
input access	0.402** [0.174]	-0.052 [0.056]	0.024 [0.095]	0.082 [0.139]
join partner	0.117 [0.252]	0.087 [0.096]	0.092 [0.097]	0.133 [0.113]
export back home	-0.326 [0.249]	-0.020 [0.042]	0.048 [0.077]	-0.029 [0.072]
TA benefits	0.106 [0.320]	-0.097 [0.068]	0.156 [0.150]	0.049 [0.159]
other motive	0.325 [0.255]	0.093 [0.109]	0.058 [0.129]	-0.048 [0.126]
Obs	4390	4192	4566	4662
R ²	0.29	0.16	0.18	0.21
Panel D: most critical incentive for foreign investment				
	(1)	(2)	(3)	(4)
Dep. var:	training intensity			
	average	production	non-production	managerial
		workers	workers	workers
capital grants	0.281 [0.191]	-0.019 [0.098]	0.120 [0.164]	0.062 [0.178]
tax exemption	0.312*** [0.101]	0.054 [0.049]	0.070 [0.053]	0.145** [0.071]
recruitment grants	1.055** [0.417]	-0.107 [0.084]	0.354 [0.275]	0.294 [0.319]
staff training	-0.460 [0.360]	0.125 [0.130]	0.116 [0.167]	0.361* [0.216]
infrastructure	-0.260 [0.161]	-0.062 [0.058]	-0.035 [0.075]	-0.017 [0.101]
other incentive	0.270*** [0.095]	0.004 [0.058]	0.080 [0.065]	0.034 [0.077]
Obs	3753	3591	3866	3959
R ²	0.30	0.16	0.19	0.21

Notes: OLS estimations with country and industry dummies in all columns of all panels. Dummies take value 1 if the statement holds, and 0 otherwise. All non-dummy explanatory variables are in logs except for skill intensity and firm age. The dependent variables are in logs. The regressions include all the control variables listed in Table 8 but their coefficient estimates are not reported for the sake of brevity. *** significant at 1%, ** significant at 5%, * significant at 10%, based on robust standard errors. For the description of the variables, see Table A1.

By accounting for additional characteristics of foreign-owned firms in Table 9, we show that foreign-owned firms whose parents are located in high-income countries, that have been created through greenfield FDI, whose main business purpose is to achieve cost-effective production and to join a specific partner in the host country, as well as those which have benefited mostly from tax exemption and from grants for hiring workers have a higher average training intensity than domestic firms.¹⁸ Foreign-owned firms whose parents are located in high-income countries also have a higher training intensity for non-production workers. In addition, foreign-owned firms whose main business purpose is to achieve cost-effective production and those which have benefited mostly from tax exemption and from grants for training workers have a higher training intensity for managerial workers.

4.3 Wages

Table 10 shows the relationship of foreign ownership with the average wage, as well as with the wage paid to permanent full-time production, non-production, and managerial workers. Foreign-owned firms pay an average wage that is 20.8% higher than the average wage paid by domestic firms (column 1), as well as wages to production, non-production and managerial workers that are higher by 12%, 16.2% and 22.9%, respectively (columns 2, 3 and 4).^{19,20}

The findings of this table are in line with several studies which find that foreign-owned firms pay higher wages than domestic firms (te Velde and Morrissey, 2003; Strobl and Thornton, 2004; Lipsey and Sjöholm, 2004; Sjöholm and Lipsey, 2006; Coniglio et al., 2015; Orefice et al., 2015). Also, the magnitudes of the wage premia that we report lie within the range of 10% and 70% that has been documented in the extant literature (Heyman et al., 2007; Javorcik, 2015). Same as in sub-sections 4.1 and 4.2, these wage premia point to better human resource practices of foreign-owned firms as compared to domestic firms (Javorcik, 2015). The literature has provided several other possible explanations for their existence. One explanation is related to labour mobility across firms which involves the spread of information (Arrow, 1962).²¹ The wage premium increases worker retention by acting as a disincentive for cross-firm labour mobility, and ultimately, prevents the ensuing knowledge diffusion from happening (Fosfuri et al., 2001; Glass and Saggi, 2002; Balsvik, 2011; Poole, 2013).²² The risk of knowledge diffusion through labour mobility is particularly high for MNEs because of their investment in personnel training (Blomström

¹⁸ In tables that are available upon request, we show that the findings on the higher average training intensity of foreign-owned firms with parents in high-income countries and on the statistically insignificant differences in average training intensity of foreign-owned firms with parents in low/middle-income countries inside and outside Sub-Saharan Africa from domestic firms hold also when solely China and when both China and India are excluded from the group of non-SSA low/middle-income countries.

¹⁹ Taking exponents of the coefficient of the foreign ownership dummy, we find that foreign-owned firms pay an average wage premium of 23.1% ($100 * (\exp(0.208) - 1) = 23.1\%$), a wage premium to production workers of 12.8% ($100 * (\exp(0.12) - 1) = 12.8\%$), a wage premium to non-production workers of 17.6% ($100 * (\exp(0.162) - 1) = 17.6\%$), and a wage premium to managerial workers of 25.7% ($100 * (\exp(0.229) - 1) = 25.7\%$).

²⁰ In additional regressions with dummies for majority and minority foreign ownership of the firm as the key explanatory variables, we show that both MOFAs and non-MOFAs pay a higher average wage and higher wages to production, non-production and managerial workers than domestic firms. Also, when we drop from the sample all domestic firms which are not multinationals and therefore, compare the wages paid by foreign and domestic MNEs, we find no statistically significant differences in the average wage and in the wages paid to production and managerial workers. We find that only production workers are paid a wage premium by foreign MNEs. Both sets of results are available upon request.

²¹ For a survey of the empirical literature on labour mobility across firms and knowledge spillovers, see Görg and Greenaway (2004).

²² If patents or other intellectual property rights could perfectly protect knowledge and ideas from being expropriated, labour mobility would not be a concern for entrepreneurs. Except for the wage premium as a disincentive for labour mobility across firms, firm owners design special labour contracts and incentive pay programmes for their employees such as profit-sharing agreements and long-term stock options (Balkin and Gomez-Mejia, 1985; Møen, 2005).

and Kokko, 1998)²³ and the significant R&D efforts made by their foreign affiliates (Fairchild and Sosin, 1986). Through these processes, their workers acquire critical knowledge that can later be diffused if they decide to work for a domestic employer or set up their own rival firm, without compensating their former employers for the full inventory of ideas that travels with them.

Table 10: Average wage and foreign ownership

Dep. var:	(1)	(2)	(3)	(4)
	average wage	wage for production workers	wage for non-production workers	wage for managerial workers
foreign	0.208*** [0.035]	0.120*** [0.029]	0.162*** [0.028]	0.229*** [0.029]
sales	-0.020 [0.015]	0.059*** [0.012]	0.124*** [0.011]	0.110*** [0.012]
productivity	0.333*** [0.025]	0.031** [0.015]	0.000 [0.015]	0.019 [0.016]
skill intensity	0.457*** [0.085]	0.176* [0.093]	0.067 [0.071]	-0.116 [0.084]
training	0.102*** [0.032]	0.051** [0.025]	0.142*** [0.025]	0.101*** [0.025]
capital intensity	0.096*** [0.013]	0.018** [0.008]	0.001 [0.009]	0.019** [0.009]
firm age	0.006*** [0.001]	0.002*** [0.001]	0.002** [0.001]	0.003*** [0.001]
local backward link	0.093** [0.037]	0.072** [0.032]	-0.016 [0.031]	-0.013 [0.032]
import status	-0.908 [0.643]	-0.480* [0.253]	-0.366 [0.384]	-0.309 [0.283]
local forward link	0.029 [0.035]	0.056** [0.028]	0.007 [0.029]	0.051* [0.030]
export status	0.001 [0.042]	0.042 [0.034]	0.057* [0.034]	0.020 [0.035]
import competition	0.014 [0.048]	-0.006 [0.035]	0.005 [0.037]	-0.063* [0.038]
local competition	-0.014 [0.037]	0.052* [0.031]	-0.030 [0.031]	-0.012 [0.032]
Obs	4947	4332	4674	4756
R^2	0.83	0.91	0.89	0.89

Notes: OLS estimations with country and industry dummies in all columns. Dummies take value 1 if the statement holds, and 0 otherwise. All non-dummy explanatory variables are in logs except for skill intensity and firm age. The dependent variables are in logs. *** significant at 1%, ** significant at 5%, * significant at 10%, based on robust standard errors. For the description of the variables, see Table A1.

The wage premium may also be explained by rent-sharing across international borders (Budd and Slaughter, 2004) and rent-sharing arrangements between MNEs and their employees (Budd et al., 2005). In addition, it may be a form of compensation for the higher foreign plant closure rate (Javorcik, 2015). Lipsey and Sjöholm (2004) rationalise the wage premium as a way for foreign-owned firms to offset

²³ UNLTC (1993) reports that knowledgeable foreign workers employed by foreign-owned firms are gradually replaced by local workers who have been trained by them in the meanwhile. In addition, Møen (2005) finds that technical employees in R&D-intensive firms pay for the human capital that they develop by accepting lower wages early in their career. They are later paid higher wages as a compensation for their investment in human capital at earlier stages.

their lack of knowledge of the local labour market in order to succeed in identifying and attracting the most knowledgeable workers of the country. It may also be attributed to “cherry-picking”, that is, to domestic firms with above-average human capital and wages, which are taken over by foreign investors through mergers and acquisitions (Almeida, 2007). Furthermore, the wage premium may arise because of unobservable worker characteristics such as higher ability or greater motivation (Javorcik, 2015).

In Table 11, we re-estimate the benchmark wage regressions with dummies capturing additional characteristics of foreign-owned firms. Panel A reveals that foreign-owned firms whose parents are located in countries outside Sub-Saharan Africa pay a higher average wage than domestic firms, as well as higher wages to production, non-production and managerial workers. Foreign-owned firms whose parents are located in Sub-Saharan Africa pay higher wages than domestic firms only to non-production and managerial workers.²⁴ According to the other panels, a higher average wage and higher wages to all three types of workers are also paid by foreign-owned firms which have been created through greenfield FDI and M&As, those whose main business purpose is to access new markets, as well as those which have benefited mostly from tax exemption. In addition, a higher average wage is paid by foreign-owned firms whose main business purpose is to join a specific partner in the host country and to benefit from a trade agreement, as well as by those which have benefited mostly from grants for hiring workers. Higher wages to production, non-production and managerial workers are also paid by foreign-owned firms that have benefited mostly from capital grants, while higher wages to the second and third types of workers are also paid by those whose main business purpose is to join a specific partner in the host country. Finally, a higher wage to managerial workers is also paid by foreign-owned firms whose main business purpose is to achieve cost-effective production, to access inputs, and to export back to the home country.

In Table 12, we study the role of institutional quality and of social policy standards in the association between foreign ownership and the wage premium. To this purpose, in Panel A, we re-estimate the benchmark wage regressions after incorporating the interaction term between the dummy for foreign ownership and the overall index of governance quality (IIAG). The negative and significant coefficient estimate of the interaction term in columns 2 and 4 indicates that the wage gap for production and managerial workers between foreign-owned and domestic firms is smaller in countries with higher governance quality. The relevant coefficient estimate in the remaining columns is also negative, albeit statistically insignificant.²⁵ As higher governance quality may imply a more solid wage bargaining setting and a better business regulatory environment, the wage premia for managers are lower in these countries because domestic firms are likely to pay higher wages to them than in countries with lower governance quality.

In additional regressions, we incorporate an interaction term between the dummy for foreign ownership and the social inclusion index. The estimation results in Panel B indicate that the average wage premium, and the wage premia for production, non-production and managerial workers between foreign-owned and domestic firms are smaller in countries with greater social inclusion.²⁶ As greater social inclusion implies higher social policy standards, one plausible explanation for the lower wage premia is that domestic firms pay higher wages in these countries than in countries with lower social policy standards.

²⁴ In tables that are available upon request, we show that these results remain largely unchanged when solely China, as well as when both China and India are excluded from the group of low/middle-income countries outside Sub-Saharan Africa.

²⁵ We obtain very similar results when we interact the dummy for foreign ownership with a variable capturing the rule of law, which is one of the 14 sub-categories of the overall index of governance quality and is also provided by the Mo Ibrahim Foundation (Panel A of Table A4). Same as the governance quality measure, it ranges between 0 and 100, with higher values indicating stronger rule of law in the host country.

²⁶ The social protection measure serves as an alternative proxy for social policy standards in the host country. It is developed by the World Bank's WDI and ranges between 1 and 6. Its higher values indicate higher social protection. From estimations where we interact the dummy for foreign ownership with the social protection index, we find that the wage premium for managerial workers is lower in countries with higher social protection (Panel B of Table A4).

Table 11: Average wage and additional characteristics of foreign-owned firms

Panel A: Parent location				
	(1)	(2)	(3)	(4)
Dep. var:	average wage	wage for production workers	wage for non-production workers	wage for managerial workers
parent HI	0.288*** [0.043]	0.190*** [0.038]	0.228*** [0.037]	0.278*** [0.038]
parent LMI	0.152*** [0.051]	0.067* [0.038]	0.086** [0.038]	0.196*** [0.041]
parent SSA	0.098 [0.062]	0.014 [0.049]	0.119** [0.049]	0.132** [0.055]
Obs	4883	4281	4620	4700
R ²	0.83	0.91	0.89	0.89
Panel B: mode of foreign investment				
	(1)	(2)	(3)	(4)
Dep. var:	average wage	wage for production workers	wage for non-production workers	wage for managerial workers
Greenfield FDI	0.195*** [0.035]	0.107*** [0.030]	0.149*** [0.029]	0.210*** [0.030]
M&As	0.232*** [0.073]	0.176*** [0.055]	0.256*** [0.066]	0.350*** [0.070]
Obs	4927	4322	4659	4742
R ²	0.83	0.91	0.89	0.89
Panel C: principal motive for foreign investment				
	(1)	(2)	(3)	(4)
Dep. var:	average wage	wage for production workers	wage for non-production workers	wage for managerial workers
market access	0.199*** [0.037]	0.142*** [0.031]	0.180*** [0.031]	0.251*** [0.032]
low cost	0.188 [0.131]	0.096 [0.097]	0.112 [0.087]	0.152* [0.078]
input access	0.070 [0.095]	0.045 [0.073]	0.021 [0.086]	0.157* [0.088]
join partner	0.287** [0.143]	0.031 [0.067]	0.235*** [0.087]	0.208** [0.081]
export back home	0.096 [0.183]	0.082 [0.090]	0.175 [0.118]	0.303** [0.150]
TA benefits	0.544** [0.229]	0.073 [0.169]	0.128 [0.131]	0.068 [0.149]
other motive	0.183 [0.157]	-0.029 [0.089]	0.063 [0.114]	-0.042 [0.112]
Obs	4898	4301	4631	4717
R ²	0.83	0.91	0.89	0.89
Panel D: most critical incentive for foreign investment				
	(1)	(2)	(3)	(4)
Dep. var:	average wage	wage for production workers	wage for non-production workers	wage for managerial workers
capital grants	0.171 [0.155]	0.171** [0.086]	0.216** [0.094]	0.198** [0.095]
tax exemption	0.183*** [0.059]	0.132*** [0.050]	0.213*** [0.048]	0.220*** [0.049]
recruitment grants	0.529** [0.233]	-0.064 [0.139]	0.056 [0.183]	0.162 [0.239]
staff training	0.247 [0.184]	0.118 [0.141]	0.106 [0.111]	0.150 [0.114]
infrastructure	0.161 [0.102]	0.028 [0.059]	0.102 [0.073]	0.091 [0.074]
other incentive	0.173*** [0.059]	0.184*** [0.049]	0.125*** [0.046]	0.284*** [0.048]
Obs	4165	3698	3945	4030
R ²	0.83	0.90	0.89	0.90

Notes: OLS estimations with country and industry dummies in all columns of all panels. Dummies take value 1 if the statement holds, and 0 otherwise. All non-dummy explanatory variables are in logs except for skill intensity and firm age. The dependent variables are in logs. The regressions include all the control variables listed in Table 10 but their coefficient estimates are not reported for the sake of brevity. *** significant at 1%, ** significant at 5%, * significant at 10%, based on robust standard errors. For the description of the variables, see Table A1.

Table 12: Average wage and foreign ownership (governance quality and social inclusion)

Panel A: Governance quality				
	(1)	(2)	(3)	(4)
Dep. var:	average wage	wage for production workers	wage for non-production workers	wage for managerial workers
foreign	0.604** [0.269]	0.408** [0.180]	0.402** [0.173]	0.830*** [0.179]
foreign * governance	-0.007 [0.005]	-0.005* [0.003]	-0.004 [0.003]	-0.011*** [0.003]
Obs	4947	4332	4674	4756
R^2	0.83	0.91	0.89	0.89
Panel B: Social inclusion				
	(1)	(2)	(3)	(4)
Dep. var:	average wage	wage for production workers	wage for non-production workers	wage for managerial workers
foreign	1.399*** [0.432]	0.870*** [0.298]	0.705** [0.298]	1.687*** [0.322]
foreign * social inclusion	-0.332*** [0.120]	-0.209** [0.082]	-0.151* [0.082]	-0.406*** [0.088]
Obs	4947	4332	4674	4756
R^2	0.83	0.91	0.89	0.89

Notes: OLS estimations with country and industry dummies in all columns of both panels. Dummies take value 1 if the statement holds, and 0 otherwise. All non-dummy explanatory variables are in logs except for skill intensity and firm age. The dependent variables are in logs. The regressions include all the control variables listed in Table 10 but their coefficient estimates are not reported for the sake of brevity. *** significant at 1%, ** significant at 5%, * significant at 10%, based on robust standard errors. For the description of the variables, see Table A1.

5 Conclusion and policy implications

In this paper, we provide empirical evidence on the quantity and quality of jobs offered by foreign-owned firms relative to domestic ones. We also show how these differences are determined by country-level institutional factors such as firing costs, governance quality, and social inclusion. To this purpose, we use a sample of foreign-owned and domestic firms in 19 Sub-Saharan African countries for the year 2009.

We find that foreign-owned firms tend to create jobs which offer higher stability and security, more training opportunities and higher wages than domestic firms. Foreign-owned firms are also less dependent on unpaid work. The job quality advantage of foreign-owned firms is dependent on the location of their parents, the mode of their establishment, their main business purpose and the most critical investment incentive that they have received from the host country. These findings suggest that foreign-owned firms have better human resource practices which most likely adopt from the MNE headquarters. Hence, their presence in Sub-Saharan Africa is likely to be beneficial for local workers.

We also provide evidence for country-level institutional factors to play an essential role in these differences between foreign-owned and domestic firms. In particular, the differences in job stability and security are smaller in countries with higher firing costs and higher governance quality, while the wage differences are smaller in countries with higher governance quality and higher social policy standards. A plausible explanation for these findings is that domestic firms in these countries offer more stable and secure

and better paid jobs than in countries with lower firings costs, governance quality and social policy standards. In turn, the smaller job quality gap between foreign-owned and domestic firms in countries with institutions of relatively high quality suggests that their local workers may benefit less from the presence of foreign-owned firms as compared to workers in countries with institutions of relatively low quality.

The main findings of this paper lead to new avenues for further research which may generate new policy recommendations. Despite the advantage of foreign-owned firms relative to domestic ones in terms of job quality and subsequently, of human resource practices, we still have limited evidence on whether and to which extent the parent companies of foreign MNEs transplant their human resource practices into their foreign affiliates. Identifying the degree of transplantation could shed more light on whether local workers fully reap the benefits of being employed by foreign MNEs located in their countries. Very little is also known about whether such practices spill over from foreign-owned to domestic firms and the channels through which these spillovers can occur.

The increasing availability of time-varying matched employer-employee data could allow for the identification of the causal relationship of foreign ownership with the quantity and quality of jobs. Does foreign ownership lead to more stable and secure jobs, more training opportunities and higher wages, or domestic firms that already offer more stable and secure jobs, invest more in training and pay higher wages are taken over by foreign MNEs (i.e., cherry-picking)? The answer to this question could provide insights for the design of appropriate policies (Almeida, 2007).

Motivated by our evidence on the role of higher firing costs in narrowing the gap in job stability and security of foreign-owned relative to domestic firms, future research could also study the role in this respect of other labour market policies, such as the introduction of a minimum wage. Finally, our evidence on the relationship of foreign ownership with wage premia for different types of workers calls for further research on the reasons for their existence which will adequately account for worker heterogeneity.

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Appendix

Table A1: Description of variables

Variable	Description
foreign	the firm is foreign-owned (dummy)
parent HI	the parent of the foreign-owned firm is located in a high-income country (dummy)
parent LMI	the parent of the foreign-owned firm is located in a low/middle-income country outside Sub-Saharan Africa (dummy)
parent LMI (excl. China)	the parent of the foreign-owned firm is located in a low/middle-income country outside Sub-Saharan Africa and other than China (dummy)
parent LMI (excl. China/India)	the parent of the foreign-owned firm is located in a low/middle-income country outside Sub-Saharan Africa and other than China and India (dummy)
parent SSA	the parent of the foreign-owned firm is located in a (low/middle-income) country in Sub-Saharan Africa (dummy)
greenfield FDI	the foreign-owned firm has been created through greenfield FDI (dummy)
M&As	the foreign-owned firm has been created through mergers and acquisitions (dummy)
MOFA	the ownership share of a foreign investor in the firm is at least 50% (dummy)
non-MOFA	the ownership share of a foreign investor in the firm is at least 10% and below 50% (dummy)
market access	principal motive of foreign investor to invest in the host country: access new markets (dummy)
low cost	principal motive of foreign investor to invest in the host country: lower production cost (dummy)
input access	principal motive of foreign investor to invest in the host country: access to natural resources/inputs (dummy)
join partner	principal motive of foreign investor to invest in the host country: collaboration with a specific partner (dummy)
export back home	principal motive of foreign investor to invest in the host country: export back to home country (dummy)
TA benefits	principal motive of foreign investor to invest in the host country: benefits from a trade agreement (dummy)
other motive	principal motive of foreign investor to invest in the host country: a motive that is not specified in the questionnaire (dummy)
capital grants	critical investment incentive received by foreign investor: capital grants (dummy)
tax exemption	critical investment incentive received by foreign investor: tax exemption (dummy)
recruitment grants	critical investment incentive received by foreign investor: grants for hiring (dummy)
staff training	critical investment incentive received by foreign investor: grants for training (dummy)
infrastructure	critical investment incentive received by foreign investor: improved infrastructure (dummy)
other incentive	critical investment incentive received by foreign investor: an incentive that is not specified in the questionnaire (dummy)
sales	total value of sales
productivity	labour productivity: total sales to total permanent full-time employment
skill intensity	share of the number of permanent full-time technical, supervisory and managerial employees in total number of permanent full-time employees
average wage	ratio of total wage bill to total number of permanent full-time employees
training	the firm provides formal internal/external training to its employees (dummy)
capital intensity	ratio of total value of fixed assets to total number of permanent full-time employees
firm age	years since the establishment of the firm
local backward link	the firm has a non-zero number of local suppliers or a non-zero value of work contracted out to them (dummy)
import status	the firm is an importer (dummy)
local forward link	the firm has a non-zero number of local buyers or a non-zero value of work sub-contracted to it by local firms (dummy)
export status	the firm has a non-zero value of aggregate exports (dummy)

Description of variables (continued)

Variable	Description
import competition	main source of competition faced by the firm for its main product sold in the domestic market: imports (dummy)
local competition (domestic firms)	main source of competition faced by the firm for its main product sold in the domestic market: domestic firms (dummy)
local competition (foreign-owned firms)	main source of competition faced by the firm for its main product sold in the domestic market: foreign-owned firms based in the country (dummy)
total employment	total number of employees (permanent full-time, temporary, part-time)
permanent employment (share)	share of permanent full-time employees in total number of employees
temporary employment (dummy)	the firm has a non-zero number of temporary employees (dummy)
temporary employment (share)	share of temporary employees in total number of employees
part-time employment (dummy)	the firm has a non-zero number of part-time employees (dummy)
part-time employment (share)	share of part-time employees in total number of employees
permanent full-time production workers (share)	share of permanent full-time production/manual workers in total number of permanent full-time workers
permanent full-time non-production workers (share)	share of permanent full-time clerical/administrative and sales workers in total number of permanent full-time workers
permanent full-time managerial workers (share)	share of permanent full-time technical, managerial, and supervisory workers in total number of permanent full-time workers
permanent full-time female production workers (share)	share of permanent full-time female production/manual workers in total number of permanent full-time production/manual workers
permanent full-time female non-production workers (share)	share of permanent full-time female clerical/administrative and sales workers in total number of permanent full-time clerical/administrative and sales workers
permanent full-time female managerial workers (share)	share of permanent full-time female technical, managerial, and supervisory workers in total number of permanent full-time technical, managerial, and supervisory workers
permanent full-time foreign production workers (share)	share of permanent full-time foreign production/manual workers in total number of permanent full-time production/manual workers
permanent full-time foreign non-production workers (share)	share of permanent full-time foreign clerical/administrative and sales workers in total number of permanent full-time clerical/administrative and sales workers
permanent full-time foreign managerial workers (share)	share of permanent full-time foreign technical, managerial, and supervisory workers in total number of permanent full-time technical, managerial, and supervisory workers
unpaid work (dummy)	the firm has a non-zero number of unpaid workers (dummy)
unpaid work (share)	share of the number of unpaid workers in the total number of permanent full-time, temporary, part-time and unpaid workers
average training intensity	ratio of total expenditure on training of workers to total number of permanent full-time workers
training intensity for production workers	ratio of total expenditure on training of production workers to total number of permanent full-time production/manual workers
training intensity for non-production workers	ratio of total expenditure on training of clerical/administrative and sales workers to total number of permanent full-time clerical/administrative and sales workers
training intensity for managerial workers	ratio of total expenditure on training of technical, managerial, and supervisory workers to total number of permanent full-time technical, managerial, and supervisory workers
wage for production workers	monthly wage for production/manual workers
wage for non-production workers	monthly wage for clerical/administrative and sales workers
wage for managerial workers	monthly wage for technical, managerial, and supervisory workers
fining cost	the number of weeks a worker is paid after she is laid off (source: World Bank's World Development Indicators)
governance	Ibrahim Index of African Governance (0–100) (source: Mo Ibrahim Foundation)
rule of law	rule of law index (0–100) (source: Mo Ibrahim Foundation)
social inclusion	social inclusion index (1–6) (source: World Bank's Country Policy and Institutional Assessment)
social protection	social protection index (1–6) (source: World Bank's World Development Indicators)

Notes: Authors' notation.

Table A2: Permanent full-time employment and foreign ownership

Dep. var:	(1)	(2)	(3)
	production	non-production	managerial
foreign	0.001 [0.007]	-0.008 [0.007]	-0.01* [0.006]
sales	0.03*** [0.003]	-0.03*** [0.003]	-0.03*** [0.003]
productivity	-0.05*** [0.004]	0.05*** [0.004]	0.04*** [0.004]
skill intensity	-0.7*** [0.02]	-0.3*** [0.02]	
wage	-0.008*** [0.003]	0.008*** [0.003]	0.01*** [0.003]
training	-0.02*** [0.006]	0.02*** [0.006]	0.02*** [0.005]
capital intensity	-0.0003 [0.002]	0.0008 [0.002]	0.002 [0.002]
firm age	-0.0003* [0.0002]	0.0003 [0.0002]	0.0004** [0.0002]
local backward link	0.008 [0.008]	-0.007 [0.008]	0.005 [0.008]
import status	0.07 [0.09]	-0.07 [0.09]	0.09 [0.06]
local forward link	0.02** [0.007]	-0.02** [0.007]	-0.02*** [0.006]
export status	-0.0001 [0.007]	-0.006 [0.007]	0.003 [0.007]
import competition	-0.02* [0.008]	0.01 [0.008]	0.01 [0.008]
local competition	-0.008 [0.007]	0.002 [0.007]	0.002 [0.007]
Obs	4947	4947	4947
R^2	0.60	0.35	0.22

Notes: OLS estimations with country and industry dummies in all columns. Dummies take value 1 if the statement holds, and 0 otherwise. All non-dummy explanatory variables are in logs except for skill intensity and firm age. The dependent variables are not in logs. Skill intensity is dropped from the regression in column 3. *** significant at 1%, ** significant at 5%, * significant at 10%, based on robust standard errors. For the description of the variables, see Table A1.

Table A3: Permanent full-time female and foreign employment and foreign ownership

Dep. var:	permanent full-time female workers (share)				permanent full-time foreign workers (share)			
	(1) all	(2) production	(3) non-production	(4) managerial	(5) all	(6) production	(7) non-production	(8) managerial
foreign	-0.003 [0.006]	0.005 [0.008]	-0.005 [0.010]	-0.02** [0.008]	0.08*** [0.003]	0.03*** [0.004]	0.09*** [0.006]	0.3*** [0.009]
sales	-0.008*** [0.003]	0.006* [0.004]	-0.02*** [0.004]	0.009*** [0.003]	-0.010*** [0.001]	-0.003** [0.001]	-0.001 [0.002]	-0.01*** [0.003]
productivity	0.009** [0.004]	-0.01** [0.005]	0.02*** [0.005]	-0.009** [0.004]	0.01*** [0.002]	0.005** [0.002]	0.004 [0.003]	0.02*** [0.004]
skill intensity	-0.002 [0.02]	0.009 [0.02]	0.05** [0.03]	0.03 [0.02]	0.01* [0.007]	0.003 [0.008]	-0.004 [0.01]	-0.2*** [0.02]
wage	0.005* [0.003]	0.0009 [0.004]	0.004 [0.004]	0.006* [0.004]	-0.00004 [0.001]	-0.002 [0.001]	-0.001 [0.002]	0.001 [0.003]
training	0.02*** [0.005]	0.01** [0.007]	0.02* [0.009]	0.010 [0.007]	0.001 [0.003]	-0.0005 [0.003]	-0.010* [0.005]	-0.01* [0.007]
capital intensity	-0.006*** [0.002]	-0.009*** [0.002]	0.001 [0.003]	-0.002 [0.003]	0.001 [0.001]	0.0004 [0.001]	-0.001 [0.001]	0.004 [0.002]
firm age	-0.0005*** [0.0002]	-0.0006*** [0.0002]	-0.0003 [0.0003]	-0.00004 [0.0002]	-0.0003*** [0.00008]	-0.0002*** [0.00008]	-0.0004*** [0.0001]	-0.0008*** [0.0002]
local backward link	0.005 [0.007]	0.002 [0.009]	0.003 [0.01]	0.01 [0.009]	-0.006* [0.003]	0.00008 [0.004]	-0.002 [0.006]	-0.02** [0.009]
import status	0.08* [0.05]	0.07 [0.08]	-0.03 [0.1]	0.2*** [0.04]	-0.004 [0.01]	-0.004 [0.008]	0.03 [0.02]	0.03 [0.02]
local forward link	-0.009 [0.006]	-0.010 [0.008]	0.009 [0.01]	-0.0004 [0.008]	0.01*** [0.003]	0.005 [0.003]	0.007 [0.006]	0.03*** [0.009]
export status	0.03*** [0.007]	0.04*** [0.009]	0.008 [0.01]	0.006 [0.009]	0.004 [0.004]	0.002 [0.003]	0.01 [0.007]	0.01 [0.010]
import competition	-0.01 [0.009]	-0.01 [0.01]	-0.03** [0.01]	0.004 [0.01]	-0.006 [0.005]	-0.003 [0.005]	-0.009 [0.008]	-0.02* [0.01]
local competition	-0.02*** [0.006]	-0.04*** [0.009]	-0.02 [0.01]	-0.0001 [0.009]	-0.01*** [0.003]	-0.008** [0.003]	-0.007 [0.006]	-0.03*** [0.009]
Obs	4906	4217	4584	4631	4709	4225	4606	4467
R ²	0.28	0.27	0.098	0.084	0.26	0.071	0.13	0.32

Notes: OLS estimations with country and industry dummies in all columns. Dummies take value 1 if the statement holds, and 0 otherwise. All non-dummy explanatory variables are in logs except for skill intensity and firm age. The dependent variables are not in logs. *** significant at 1%, ** significant at 5%, * significant at 10%, based on robust standard errors. For the description of the variables, see Table A1.

Table A4: Average wage and foreign ownership (rule of law and social protection)

Panel A: Rule of law				
	(1)	(2)	(3)	(4)
Dep. var:	average wage	wage for production workers	wage for non-production workers	wage for managerial workers
foreign	0.418** [0.172]	0.311** [0.122]	0.253** [0.124]	0.683*** [0.137]
foreign * rule of law	-0.003 [0.003]	-0.003 [0.002]	-0.001 [0.002]	-0.007*** [0.002]
Obs	4947	4332	4674	4756
R^2	0.83	0.91	0.89	0.89
Panel B: Social protection				
	(1)	(2)	(3)	(4)
Dep. var:	average wage	wage for production workers	wage for non-production workers	wage for managerial workers
foreign	0.597* [0.323]	0.059 [0.196]	0.497** [0.227]	1.104*** [0.241]
foreign * social protection	-0.113 [0.095]	0.018 [0.057]	-0.097 [0.065]	-0.254*** [0.069]
Obs	4947	4332	4674	4756
R^2	0.83	0.91	0.89	0.89

Notes: OLS estimations with country and industry dummies in all columns of both panels. Dummies take value 1 if the statement holds, and 0 otherwise. All non-dummy explanatory variables are in logs except for skill intensity and firm age. The dependent variables are in logs. The regressions include all the control variables listed in Table 10 but their coefficient estimates are not reported for the sake of brevity. *** significant at 1%, ** significant at 5%, * significant at 10%, based on robust standard errors. For the description of the variables, see Table A1.