JOBS, FDI AND INSTITUTIONS IN SUB-SAHARAN AFRICA: EVIDENCE FROM FIRM-LEVEL DATA

Jobs, FDI and institutions in sub-Saharan Africa:

Evidence from firm-level data*

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Abstract

Using firm-level data, we study the differences in the quantity and quality of jobs offered by foreign-owned and domestic firms in sub-Saharan Africa, and identify how country-level institutional factors determine these differences. After controlling for numerous firm-level characteristics in regressions, we find that foreign-owned firms, especially those whose main business purpose is to serve the home or foreign markets, offer more stable and secure jobs than domestic firms. Specifically, they have more permanent full-time workers, a lower probability of offering temporary work and employ fewer temporary workers. The job stability and security advantage of foreign-owned firms is smaller in countries with higher firing costs and governance quality, where domestic firms are induced to offer more stable and secure jobs. In addition, foreign-owned firms are less likely to offer unpaid work and have fewer such workers. They also invest more in training, especially of managers, and pay higher wages to non-production and managerial workers, particularly those firms whose main business purpose is to serve the home or foreign markets. A higher wage to production workers is paid only by those firms whose owners are from high-income countries. The wage premia of foreign-owned firms are lower in countries with higher governance and social policy standards, where domestic firms are induced to pay higher wages.

Acknowledgements

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, namely, the location of the parent company, the mode of foreign investment, the majority foreign ownership status, and the principal motive for foreign investment. 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 per cent of GDP to 32.1 per cent 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 per cent 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

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[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).

2010. The dataset comprises 6,497 formally registered firms which are either domestic or foreign-owned, and covers all economic sectors in 19 sub-Saharan African countries.[2] The firm-level information refers to the year 2009. The parent companies of foreign-owned firms are based in countries of all income classes, namely, in high-income countries and low/middle-income countries inside and outside sub-Saharan Africa.

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 employment within firms. In particular, we create variables for total employment and its decomposition into permanent full-time, temporary and part-time employment. Using additional variables, we capture unpaid work and permanent full-time employment by type of worker, namely, production, non-production and managerial worker. Similarly, 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, based on additional information on foreign-owned firms, we identify greenfield FDI and mergers and acquisitions (M&As), majority-owned foreign affiliates (MOFAs), and their main business purpose such as access to new markets, cost-effective production, and access to inputs.[3] Third, information on main characteristics and activities of domestic and foreign-owned firms allows us to incorporate essential firm-level controls in 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 data at the country-level. 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

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[2]Despite the relatively large share of own-account workers under informal employment, 32.9 per cent 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]Greenfield FDI is defined as the creation of a new foreign operation as a wholly-owned enterprise or joint venture. MOFAs are defined as firms whose foreign ownership share is at least 50 per cent.

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 allows us to derive several findings on the association of job quantity and job quality with foreign ownership in sub-Saharan Africa. As a first finding, we document that foreign-owned firms tend to offer more stable and secure jobs than domestic firms. Although foreign-owned firms have lower total employment, they employ a higher share of permanent full-time workers. They are also less likely to offer temporary work and have a lower share of workers under this type of contract than domestic firms. Higher job stability and security in foreign-owned firms may be an indication that MNEs 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 the home and foreign markets according to the headquarters' demands. It may also indicate corporate social responsibility considerations (OECD and ILO, 2008) and adherence to international MNE standards in workplace practices (ILO, 2006), aiming at protecting the MNE's reputation.

By accounting for additional characteristics of foreign-owned firms, we find that higher job stability and security is offered by foreign-owned firms whose parents are located both inside and outside sub-Saharan Africa. Higher job stability and security is also offered by foreign-owned firms whose main business purpose is to serve the home or new foreign markets, and to collaborate with a local firm in the country. The latter evidence suggest that the service of the home and foreign markets by foreign affiliates and the creation of partnerships in the host country are crucial business activities that entail the creation of more stable and secure jobs within these types of firms.

Another finding is that foreign-owned firms are less likely to offer unpaid work and have a lower share of unpaid workers in total salaried and non-salaried employment than domestic firms.[4] The lower dependence of foreign-owned firms on unpaid work is driven by those whose parents are located outside sub-Saharan Africa. There are no statistically significant associations of greenfield FDI, MOFA status, and the main business purpose of the firm with the probability that it offers unpaid work and its share of unpaid workers. In addition, among foreign-owned firms, only those whose main business purpose is to collaborate with a local partner in the host country have a higher probability of offering part-time work and employ a higher share of workers under this type of contract.

Within the group of permanent full-time workers, foreign-owned firms have a higher share of production workers and a lower share of non-production workers. We fail to find statis-

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[4]Although all firms in the sample are formally registered, the share of firms which offer unpaid work is not negligible, as it amounts to 8.6 per cent. Among foreign-owned firms, 6.2 per cent of these offer unpaid work, while the corresponding share among domestic firms is 10 per cent. Unpaid work in the formal sector is usually offered to family members or apprentices. 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.

tically significant differences between foreign-owned and domestic firms in terms of female employment. Instead, foreign-owned firms have higher shares of total foreign employment and of foreign production, non-production, and managerial workers. These higher shares may be deemed as transfer 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).

An additional finding is that the gap in the stability and security of jobs offered by foreign-owned and domestic firms is smaller in countries with higher firing costs and higher governance quality. In particular, the higher share of permanent full-time employment of foreign-owned firms relative to domestic firms decreases with higher firing costs and higher governance quality, while their lower share of temporary employment increases. Also, their lower probability of offering temporary work increases with higher firing costs. Higher firing costs imply higher employment protection and better bargaining terms for workers vis-à-vis their employers, while higher governance quality implies a higher overall institutional quality in the country. Hence, the job stability and security gap is smaller because domestic firms in these countries are likely to be induced to offer more stable and secure jobs than in countries with lower firing costs and lower governance quality. Firing costs and governance quality play no role in the association of foreign ownership with the probability and share of unpaid work. Firing costs also play no role in the association of foreign ownership with the shares of permanent full-time production, non-production, and managerial workers.

Two more findings of this paper are that foreign-owned firms tend to invest more in training of their employees and to pay higher wages than domestic firms. In particular, foreign-owned firms have a higher average training intensity and a higher training intensity for managerial workers. They also pay a wage which is, on average, 31.9 per cent higher than the wage paid by domestic firms. The average wage premium of foreign-owned firms is attributed to higher wages paid by these firms to non-production and managerial workers. The wages for these two types of workers are higher than those in domestic firms by 25.4 per cent and 32 per cent, respectively. The greater investment in training by foreign-owned firms, as well as the wage premium that they pay –especially in developing countries–, are in line with previous findings in the literature.[5]

When we consider additional characteristics of foreign-owned firms, we find that the average wage premium and the wage premium to managerial workers are paid by foreign-owned firms whose parents are located outside sub-Saharan Africa, while the wage premium to non-production workers is paid by foreign-owned firms whose parents are located both inside and outside sub-Saharan Africa. Interestingly, a wage premium to production workers, of 24.2 per

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[5]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).

cent, is paid only by foreign-owned firms whose parents are located in high-income countries. The wage premia to non-production and managerial workers are also paid by foreign-owned firms whose main business purpose is to serve the home or new foreign markets. This suggests that non-production workers and especially managers may undertake administrative, supervisory and managerial tasks which are crucial for the firm in order to serve the home and foreign markets through exports. For example, Antràs et al. (2008) emphasise the essential role of managers in the foreign affiliate when it trades with its parent, as they supervise production workers by dealing with routine problems faced by the latter. The MNE thereby saves on communication costs, since the supervisory role would have otherwise been undertaken by top managers in the parent company.

By contrast, foreign-owned firms which were created as greenfield FDI pay lower wages to managerial workers as compared to previously domestic firms which became foreign-owned through mergers and acquisitions (M&As) and to firms which remain domestic. A possible explanation is the "cherry-picking" argument (Almeida, 2007). That is, the main target of foreign investors for M&As is likely to be domestic firms which have higher productivity and greater human capital than the average domestic firm and thus already pay a wage premium to their managers. In addition, foreign-owned firms whose main business purpose is to join a local partner pay a lower wage to production workers. If this collaboration implies that production-intensive tasks take place within the local partner, then production workers in these firms may add lower value to the production of output and thus receive a lower wage.

As a final finding, we document that country-level institutional factors such as governance quality and social inclusion play an important role in determining the wage differences between foreign-owned and domestic firms. The wage gap for managerial workers is smaller in countries with higher governance quality and greater social inclusion. Greater social inclusion also decreases the average wage gap and the wage gap for production workers. Higher governance quality implies a more solid wage bargaining setting and a better business regulatory environment, while greater social inclusion implies higher social policy standards. One plausible explanation for the lower wage premia in such countries is that domestic firms are induced to pay higher wages than in countries with lower governance quality and social policy standards. This is also in line with recent evidence for 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 Appendix 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 6,497 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.[6] 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).

Foreign ownership variables

A firm is defined as foreign-owned if the ownership share held by a foreign investor is at least 10 per cent.[7] Panel A of Table 1 reveals that there are 4,094 domestic and 2403 foreign-owned firms, accounting for 63 per cent and 37 per cent of the total sample, respectively. The share of foreign-owned firms by country varies from 21 per cent in Niger to 53 per cent 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 roughly one third of the firms are foreign-owned.[8]

The parent companies of foreign-owned firms are located in high-income and low/middle-income countries inside and outside sub-Saharan Africa. These different parent location types capture 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),

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

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

[8]Appendix Table A2 also shows the share of foreign-owned firms for different industries within sectors.

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 the majority of foreign firms are owned by investors located in high-income countries and in low/middle-income countries outside sub-Saharan Africa.

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.

Table 2: Statistics for dummy variables

Dummy variable	No		Yes		Total	
	#	%	#	%	#	%
foreign ownership	4094	63.0	2403	37.0	6497	100.0
parent in high-income (HI) country	1132	49.9	1136	50.1	2268	100.0
parent in low/middle-income (LMI) country	1448	63.8	822	36.2	2270	100.0
parent in sub-Saharan Africa (SSA)	1961	86.3	312	13.7	2273	100.0
greenfield FDI	364	15.6	1965	84.4	2329	100.0
majority-owned foreign affiliate (MOFA)	291	12.5	2046	87.5	2337	100.0
principal motive to invest: market access	587	25.7	1697	74.3	2284	100.0
principal motive to invest: low cost structure	2135	93.5	149	6.5	2284	100.0
principal motive to invest: input access	2164	94.7	120	5.3	2284	100.0
principal motive to invest: join partner	2170	95.0	114	5.0	2284	100.0
principal motive to invest: export back home	2227	97.5	57	2.5	2284	100.0
principal motive to invest: TA benefits	2233	97.8	51	2.2	2284	100.0
principal motive to invest: other	2188	95.8	96	4.2	2284	100.0
temporary employment	2911	44.8	3586	55.2	6497	100.0
part-time employment	5460	84.0	1037	16.0	6497	100.0
unpaid work	5470	90.7	558	9.3	6028	100.0
training	3340	51.5	3148	48.5	6488	100.0
local backward linkages	1773	27.7	4638	72.3	6411	100.0
foreign backward linkages	580	13.1	3839	86.9	4419	100.0
local forward linkages	3113	47.9	3384	52.1	6497	100.0
export status	4387	74.1	1536	25.9	5923	100.0
import competition	5055	82.1	1104	17.9	6159	100.0
local competition (from domestic firms)	2556	41.5	3603	58.5	6159	100.0
local competition (from foreign-owned firms)	4707	76.4	1452	23.6	6159	100.0

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 owners*, *the purchase of pre-existing assets from foreign private owners* and *the purchase of pre-existing state-owned assets* capture M&As. We also identify majority-owned foreign affiliates (MOFAs) as firms whose foreign investor holds at least 50 per cent of their ownership share. In addition, based on information on the principal motive for foreign investment, we 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. Finally, the *benefits from a trade agreement* capture vertical and export-platform FDI. Table 2

reveals that the group of foreign-owned firms is dominated by those created as greenfield FDI, by majority-owned foreign affiliates (MOFAs), and by those whose main business purpose is to access new markets.

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 (thousand US$)	5830	1.4	74.3	0	5569
wage for production workers (US$)	5730	29.6	419.4	0	14992
wage for non-production workers (US$)	5822	39.4	383.3	0	18960
wage for managerial workers (US$)	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$)	5994	11	597	0	45529
input intensity (thousand US$)	5665	6	124	0	7131
firm age (years)	6419	18	15	1	163
affiliated parties	4850	9	126	1	6101

Notes: Authors' calculations. For the description of the variables, see Table A1.
Source: UNIDO Africa Investor Survey 2010.

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 per cent permanent full-time, 17 per cent temporary, and 3 per cent part-time. In addition, Table 2 reveals that 55 per cent and 16 per cent 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 only includes firms that are registered and part of the formal economy, we observe that there is a non-negligible fraction of firms, amounting to 8.6 per cent 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 employment[9] in the average firm is 1 per cent (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 per cent and 5 per cent 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 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,[10] is roughly US$1400. Finally, managerial work-

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

[10]This ratio is just a proxy for the average wage. While the total wage bill includes supplementary benefits

ers in the average firm receive a higher monthly wage than production and non-production workers.

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 and input intensity as the ratios of total value of fixed assets and total value of inputs to total permanent full-time employment, respectively. The age of the firm is the number of years since its establishment, while the total number of domestic and foreign affiliated establishments serves as a measure of the size of the whole (multinational) enterprise. 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, as well as on the number of its suppliers abroad, Table 2 shows that the majority of firms in the sample engages in local and foreign backward linkages. The same table shows that the majority of firms also engages in local forward linkages, based on information on the number of local buyers that a firm has and the value of work sub-contracted to it by other local firms. By contrast, there are relatively few firms in the sample that engage in exports, as indicated by information on their aggregate export values. 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. Firing costs proxy for the level of employment protection. 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,

which are given only to permanent full-time workers, the denominator does not include temporary and part-time workers, whose wages are part of the total wage bill. However, when temporary and part-time workers are added to the denominator, this ratio is identical to the benchmark for 5,621 out of the 6,497 observations.

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.

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, social inclusion) and Mo Ibrahim Foundation (governance quality).

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.

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:

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

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. 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, $foreign_{zcj}$. Its coefficient estimate, 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 essential firm-level characteristics in $controls_{zcj}$. 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 the firm provides training to its employees may be associated with higher wages. A larger firm in terms of total sales and number of affiliated establishments 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, input intensity, and the dummies indicating the engagement of the firm in exporting and in backward and forward linkages. However, on condition that sourced material inputs substitute for certain types of workers, input intensity and the dummies for engagement of the firm in local and foreign backward linkages will be associated with a lower quantity and quality of jobs offered to these

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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.[11]

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 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 the 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.

In order to account for additional characteristics of foreign-owned firms, we also estimate equation 1 after replacing the foreign ownership dummy with dummies indicating that the parent companies of foreign-owned firms are located in high-income and low/middle-income countries inside and outside sub-Saharan Africa. In additional estimations of equation 1, we replace the dummy for foreign ownership with a dummy indicating that the firm was created as greenfield FDI, a dummy indicating that the firm is a majority-owned foreign affiliate (MOFA), and dummies indicating the main business purpose of the firm.

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

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[11]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.

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 10 per cent lower than in domestic firms.[12] Its negative and statistically significant coefficient estimate in columns 3 and 4 also indicates that foreign-owned firms have a lower probability of employing temporary workers by 7 per cent and a lower share of these workers in total employment by 4 percentage points. In addition, foreign-owned firms have a 4 percentage points higher share of permanent full-time employment in total employment, as indicated by the relevant positive and significant coefficient estimate in column 2. In short, columns 1–4 reveal that foreign-owned firms tend to offer more stable and secure jobs than domestic firms. The coefficient estimate of the foreign ownership dummy in columns 5 and 6 is positive but statistically insignificant at all conventional levels. Hence, there are no statistically significant differences between foreign-owned and domestic firms in their likelihood of employing part-time workers and in their share of part-time employment in total employment. The negative and significant coefficient estimates in columns 7 and 8 indicate that foreign-owned firms have a 6 per cent lower probability of offering unpaid work and a 0.7 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.

Empirical evidence on the association of foreign ownership with non-wage working conditions is very scarce (OECD and ILO, 2008). Almond and Ferner (2006) find that US MNEs with affiliates in Europe tend to adapt to the conditions and labour practices of the host countries rather than to transplant their own human resource practices into their foreign affiliates. Bloom et al. (2009) use a sample of US MNEs with affiliates in the UK, Germany, and France and show that these firms transplant their management practices into their affiliates, but not their human resource practices. Also, 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.

With respect to the literature, our evidence on the advantage of foreign-owned firms in job stability and security and their lower dependence on unpaid work may suggest that MNEs have better human resource practices which they in turn transplant, at least partially, into their foreign affiliates in sub-Saharan Africa. One possible explanation for doing so is that MNEs 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, according to the headquarters' demands. Another possible explanation is that MNEs place a high value on corporate social responsibility (OECD and ILO, 2008) and on adherence to

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[12]Since the dependent variable is in logs, the 10 per cent 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 10.52 per cent $(100*(exp(0.10)-1) = 10.52\%)$. 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.

international MNE standards in workplace practices such as the MNE Declaration,[13] in order to protect their reputation.

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

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)
foreign	**-0.10***	**0.04**	**-0.07***	**-0.04***	0.003	0.005	**-0.06***	**-0.007***
	[0.04]	**[0.02]**	**[0.04]**	**[0.02]**	[0.03]	[0.006]	**[0.02]**	**[0.004]**
sales	0.9***	0.04***	0.007	-0.03***	0.02**	-0.003	-0.003	-0.004***
	[0.01]	[0.005]	[0.009]	[0.005]	[0.007]	[0.002]	[0.006]	[0.001]
productivity	-0.9***	-0.05***	0.005	0.05***	-0.03***	0.002	0.001	0.004***
	[0.02]	[0.007]	[0.01]	[0.006]	[0.010]	[0.003]	[0.008]	[0.002]
skill intensity	0.3***	-0.1***	0.1*	0.1***	0.07	0.003	-0.04	0.006
	[0.08]	[0.04]	[0.06]	[0.04]	[0.05]	[0.01]	[0.04]	[0.01]
wage	0.04***	-0.005	0.0008	0.007	-0.010	-0.002	-0.007	-0.002*
	[0.01]	[0.005]	[0.009]	[0.005]	[0.007]	[0.002]	[0.006]	[0.001]
training	-0.02	0.01	0.001	-0.02**	0.02	0.004	0.03**	0.003
	[0.02]	[0.010]	[0.02]	[0.009]	[0.02]	[0.004]	[0.01]	[0.002]
capital intensity	0.02***	-0.008**	0.01**	0.008**	0.01***	0.0005	0.002	-0.0009
	[0.008]	[0.003]	[0.007]	[0.003]	[0.005]	[0.001]	[0.005]	[0.0007]
input intensity	0.009	-0.005	-0.00009	0.005	-0.007	0.0009	0.0008	0.00007
	[0.009]	[0.004]	[0.008]	[0.003]	[0.005]	[0.001]	[0.005]	[0.0005]
firm age	0.0002	0.00004	0.0002	-0.00005	0.0002	0.00003	-0.00004	0.00003
	[0.0006]	[0.0003]	[0.0006]	[0.0003]	[0.0005]	[0.0001]	[0.0004]	[0.00005]
affiliated parties	-0.003	-0.007	0.03**	0.009	0.01	-0.002	0.004	0.002
	[0.01]	[0.007]	[0.01]	[0.006]	[0.01]	[0.002]	[0.009]	[0.002]
local backward link	0.03	-0.02*	0.09***	0.03**	-0.005	-0.01	-0.003	0.002
	[0.03]	[0.01]	[0.03]	[0.01]	[0.02]	[0.006]	[0.02]	[0.002]
foreign backward link	0.02	-0.02	0.08***	0.02	0.02	-0.005	-0.009	0.0002
	[0.03]	[0.02]	[0.03]	[0.01]	[0.02]	[0.006]	[0.02]	[0.003]
local forward link	0.03	-0.02	0.02	0.002	0.06***	0.02***	-0.01	-0.00007
	[0.02]	[0.01]	[0.03]	[0.01]	[0.02]	[0.004]	[0.02]	[0.002]
export status	0.1***	-0.06***	0.06***	0.07***	0.006	-0.004	0.008	0.003
	[0.03]	[0.01]	[0.02]	[0.01]	[0.02]	[0.004]	[0.02]	[0.003]
import competition	-0.007	0.008	0.03	-0.01	0.003	0.005	0.01	-0.002
	[0.03]	[0.01]	[0.03]	[0.01]	[0.02]	[0.005]	[0.02]	[0.003]
local competition	0.003	-0.006	0.03	0.0008	0.002	0.003	0.010	0.002
	[0.02]	[0.01]	[0.03]	[0.01]	[0.02]	[0.004]	[0.02]	[0.003]
Obs	2517	2517	2514	2510	2512	2502	2354	2446
R^2	0.88	0.23		0.23		0.040		0.046
$Pseudo-R^2$			0.13		0.092		0.094	
$Log-likelihood$			-1453.6		-1008.9		-678.8	

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.

In Panel A of Table 6, we re-estimate the regressions after replacing the dummy for foreign ownership with dummies corresponding to foreign-owned firms whose parents are located in high-income and low/middle-income countries inside and outside sub-Saharan Africa. Foreign-owned firms whose parents are located in low/middle-income countries inside and outside sub-Saharan Africa have lower total employment and a lower share of temporary employment

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[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, 2006).

(columns 1 and 4, respectively), while they have a higher share of permanent full-time employment (column 2). Also, foreign-owned firms whose parents are located in high-income countries have a lower probability of employing temporary workers (column 3). In addition, foreign-owned firms whose parents are located outside sub-Saharan Africa have a lower probability of offering unpaid work (column 7), while those with parents in high-income countries have a lower share of unpaid work in total salaried and non-salaried employment (column 8).[14]

In Panel B, the dummies for greenfield FDI, MOFA status, and the main business purpose of the firm are the main explanatory variables. Although foreign-owned firms whose main business purpose is to export back to the home country have lower total employment than domestic firms (column 1), they also have a higher share of permanent full-time employment (column 2). In addition, this type of firms and those whose main business purpose is to collaborate with a local partner are less likely to employ temporary workers and have a lower share of these workers (columns 3 and 4, respectively). Foreign-owned firms whose main business purpose is to access new markets also have a lower share of temporary workers (column 4). These findings suggest that the service of the home and foreign markets by foreign affiliates and the creation of partnerships in the host country are crucial business activities which require the creation of more stable and secure jobs within these entities.

By contrast, MOFAs employ a higher share of temporary workers than non-MOFAs and domestic firms (column 4). Moreover, foreign-owned firms whose main business purpose is to collaborate with a local partner are more likely to employ part-time workers and have a higher share of these workers (columns 5 and 6, respectively). Instead, MOFAs are less likely to employ part-time workers (column 5). Finally, from the coefficient estimates of all main regressors in columns 7 and 8 we conclude that there are no statistically significant associations of greenfield FDI, MOFA status, and the main business purpose of the firm with the probability that it offers unpaid work and its share of unpaid work in total salaried and non-salaried employment.

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

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[14]By and large, the results also hold 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 (Appendix Tables A3 and A4).

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

Panel A: Parent location							
	(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)
parent HI	-0.08	0.02	**-0.10****	-0.03	-0.02	0.004	**-0.06***	**-0.009****
	[0.05]	[0.02]	**[0.05]**	[0.02]	[0.04]	[0.007]	**[0.03]**	**[0.004]**
parent LMI	**-0.10****	**0.05****	-0.06	**-0.05*****	0.05	0.008	**-0.06***	-0.005
	[0.04]	**[0.02]**	[0.05]	**[0.02]**	[0.04]	[0.008]	**[0.03]**	[0.004]
parent SSA	**-0.1****	**0.07****	-0.06	**-0.08****	-0.01	0.0007	-0.09	-0.004
	[0.06]	**[0.03]**	[0.07]	**[0.03]**	[0.05]	[0.01]	[0.06]	[0.004]
Obs	2513	2513	2510	2506	2508	2498	2350	2442
R^2	0.88	0.23		0.23		0.040		0.046
$Pseudo-R^2$			0.13		0.093		0.094	
$Log-likelihood$			-1451.0		-1006.3		-678.3	
F-test H_0:								
$\beta_{parentHI}=\beta_{parentLMI}$								
(P-value)	0.71	0.28	0.50	0.23	0.098	0.67	0.95	0.20
F-test H_0:								
$\beta_{parentLMI}=\beta_{parentSSA}$								
(P-value)	0.32	0.14	0.66	0.13	0.87	0.79	0.61	0.17
F-test H_0:								
$\beta_{parentHI}=\beta_{parentSSA}$								
(P-value)	0.47	0.50	0.93	0.54	0.24	0.58	0.65	0.72

Panel B: greenfield FDI, MOFA status, principal motive for foreign investment							
	(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)
greenfield FDI	-0.09	0.04	-0.04	-0.02	0.005	-0.01	-0.05	-0.003
	[0.05]	[0.03]	[0.07]	[0.03]	[0.05]	[0.01]	[0.04]	[0.003]
MOFA	0.06	-0.04	0.1	**0.07***	**-0.1***	-0.03	-0.05	-0.006
	[0.09]	[0.05]	[0.1]	**[0.04]**	**[0.07]**	[0.02]	[0.06]	[0.004]
market access	-0.08	0.05	-0.1	**-0.09****	0.08	0.03	0.010	0.002
	[0.09]	[0.05]	[0.1]	**[0.04]**	[0.08]	[0.03]	[0.07]	[0.006]
low cost	0.04	0.008	-0.1	-0.03	0.1	0.02	0.03	0.003
	[0.1]	[0.07]	[0.2]	[0.06]	[0.1]	[0.03]	[0.1]	[0.008]
input access	0.2	-0.07	0.1	-0.005	0.1	0.07	0.08	0.005
	[0.2]	[0.08]	[0.1]	[0.06]	[0.10]	[0.05]	[0.08]	[0.006]
join partner	-0.1	0.05	**-0.3***	**-0.1***	**0.3****	**0.06****	0.09	0.003
	[0.2]	[0.08]	**[0.2]**	**[0.06]**	**[0.1]**	**[0.03]**	[0.10]	[0.007]
export back home	**-0.2***	**0.2****	**-0.5*****	**-0.2*****	0.10	0.07	0.1	-0.01
	[0.1]	**[0.07]**	**[0.2]**	**[0.06]**	[0.2]	[0.06]	[0.1]	[0.009]
TA benefits	0.1	-0.010	-0.03	-0.03	0.2	0.04	0.1	-0.008
	[0.1]	[0.07]	[0.2]	[0.05]	[0.2]	[0.03]	[0.1]	[0.01]
other motive	-0.05	0.09	**-0.3***	**-0.1***		0.03	0.1	0.004
	[0.1]	[0.07]	[0.2]	[0.07]		[0.03]	[0.10]	[0.009]
Obs	2619	2619	2616	2612	2589	2604	2442	2545
R^2	0.88	0.22		0.22		0.041		0.051
$Pseudo-R^2$			0.13		0.096		0.097	
$Log-likelihood$			-1513.1		-1037.9		-718.4	

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.

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. According to columns 2 and 4 of

Panel B, the higher share of permanent full-time employment decreases and the lower share of temporary employment increases with higher governance quality as well.

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	-0.2***	0.09***	-0.2***	-0.09***	-0.010	-0.002	-0.05	-0.006
	[0.05]	[0.02]	[0.05]	[0.02]	[0.04]	[0.008]	[0.03]	[0.004]
foreign * firing cost	0.002***	-0.0010***	0.001***	0.0008***	0.0002	0.0001*	-0.0003	-0.00002
	[0.0005]	[0.0003]	[0.0005]	[0.0002]	[0.0004]	[0.00007]	[0.0005]	[0.00003]
Obs	2517	2517	2514	2510	2512	2502	2354	2446
R^2	0.88	0.23		0.23		0.041		0.046
$Pseudo - R^2$			0.13		0.092		0.094	
$Log - likelihood$			-1450.3		-1008.8		-678.7	
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	-0.4**	0.2**	-0.4*	-0.3***	0.2	0.04	0.09	0.003
	[0.2]	[0.1]	[0.2]	[0.1]	[0.2]	[0.03]	[0.2]	[0.01]
foreign * governance	0.006	-0.004*	0.005	0.004**	-0.003	-0.0006	-0.003	-0.0002
	[0.004]	[0.002]	[0.004]	[0.002]	[0.003]	[0.0006]	[0.003]	[0.0002]
Obs	2517	2517	2514	2510	2512	2502	2354	2446
R^2	0.88	0.23		0.23		0.040		0.046
$Pseudo - R^2$			0.13		0.093		0.094	
$Log - likelihood$			-1452.5		-1008.3		-678.2	

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. 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.

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. Therefore, the gap in the stability and security of jobs between foreign-owned and domestic firms in these countries is smaller because domestic firms are likely to be induced to offer more stable and secure jobs than in countries with lower firing costs and lower governance quality. The insignificant 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.

In Table 8, we study the association of foreign ownership with the shares of permanent full-time production, non-production, and managerial workers in total permanent full-time employment.[15] Foreign-owned firms have a higher share of production workers (column 1) and a lower share of non-production workers (column 2). By contrast, there are no statistically significant differences between foreign-owned and domestic firms in their share of managerial

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[15]In column 3, we drop skill intensity from the regression since it is defined as the share of managers in total permanent full-time employment, which in this case, happens to be the dependent variable.

workers (column 3).[16]

Table 8: Permanent full-time employment and foreign ownership

	(1)	(2)	(3)
Dep. var:	permanent full-time workers (share)		
	production	non-production	managerial
foreign	**0.03****	**-0.03****	-0.01
	[0.01]	**[0.01]**	[0.01]
sales	0.02***	-0.02***	-0.03***
	[0.004]	[0.004]	[0.003]
productivity	-0.03***	0.03***	0.04***
	[0.005]	[0.005]	[0.005]
skill intensity	-0.8***	-0.1***	
	[0.03]	[0.03]	
wage	-0.01***	0.01***	0.01***
	[0.004]	[0.003]	[0.003]
training	-0.02***	0.02**	0.02***
	[0.007]	[0.007]	[0.006]
capital intensity	-0.001	0.002	-0.002
	[0.003]	[0.003]	[0.002]
input intensity	-0.002	0.002	0.0003
	[0.003]	[0.003]	[0.003]
firm age	-0.0007***	0.0006**	0.0002
	[0.0002]	[0.0002]	[0.0002]
affiliated parties	-0.01**	0.01*	0.005
	[0.006]	[0.006]	[0.006]
local backward link	0.02	-0.02	-0.005
	[0.01]	[0.01]	[0.010]
foreign backward link	-0.03***	0.02**	0.002
	[0.01]	[0.01]	[0.010]
local forward link	0.01	-0.01	-0.002
	[0.01]	[0.01]	[0.009]
export status	0.005	-0.01	-0.003
	[0.010]	[0.009]	[0.008]
import competition	-0.02	0.01	0.01
	[0.01]	[0.01]	[0.010]
local competition	-0.01	0.01	0.004
	[0.01]	[0.01]	[0.008]
Obs	2517	2517	2517
R^2	0.59	0.37	0.16

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.

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[16]We re-estimate these regressions after incorporating the interaction term between the dummy for foreign ownership and the country-level measure of firing costs. We do not include the country-level variable in the regressions individually as it is captured by the country dummies. The statistically insignificant coefficient estimate of the interaction term in all columns suggests that firing costs do not play a role in the association of foreign ownership with the shares of permanent full-time production, non-production, and managerial workers (Appendix Table A5).

Table 9: Permanent full-time female and foreign employment and foreign ownership

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dep. var:	permanent full-time female workers (share)				permanent full-time foreign workers (share)			
	all	production	non-production	managerial	all	production	non-production	managerial
foreign	-0.02	-0.01	-0.009	-0.03	**0.07***	**0.03***	**0.08***	**0.2***
	[0.02]	[0.02]	[0.02]	[0.02]	**[0.009]**	**[0.009]**	**[0.02]**	**[0.02]**
sales	-0.003	0.010**	-0.02***	0.007	-0.003**	0.001	0.004	-0.002
	[0.004]	[0.005]	[0.006]	[0.005]	[0.001]	[0.001]	[0.003]	[0.004]
productivity	-0.002	-0.02***	0.02**	-0.006	0.005*	-0.001	0.0003	0.01*
	[0.006]	[0.007]	[0.009]	[0.007]	[0.003]	[0.002]	[0.004]	[0.006]
skill intensity	0.03	0.05	0.05	0.01	0.02	-0.0003	-0.02	-0.2***
	[0.03]	[0.04]	[0.05]	[0.03]	[0.01]	[0.010]	[0.02]	[0.03]
wage	0.003	0.003	0.004	-0.0006	0.001	-0.0001	0.002	-0.000002
	[0.004]	[0.005]	[0.007]	[0.005]	[0.001]	[0.002]	[0.003]	[0.004]
training	0.02***	0.02**	0.02	0.004	-0.003	-0.004	-0.008	-0.006
	[0.008]	[0.009]	[0.01]	[0.01]	[0.003]	[0.003]	[0.005]	[0.009]
capital intensity	-0.004	-0.003	0.0008	-0.002	0.0008	0.00006	0.001	0.007**
	[0.003]	[0.003]	[0.005]	[0.004]	[0.001]	[0.001]	[0.002]	[0.003]
input intensity	-0.002	-0.004	-0.003	-0.002	0.002	0.002*	-0.001	0.003
	[0.003]	[0.004]	[0.005]	[0.004]	[0.001]	[0.001]	[0.003]	[0.004]
firm age	-0.0006***	-0.0005*	-0.0007*	-0.00010	-0.0003***	-0.0001	-0.0005***	-0.0007**
	[0.0002]	[0.0003]	[0.0004]	[0.0003]	[0.00009]	[0.0001]	[0.0001]	[0.0003]
affiliated parties	0.01**	0.005	0.001	0.01*	-0.002	-0.005*	-0.006	-0.02**
	[0.005]	[0.007]	[0.009]	[0.007]	[0.004]	[0.003]	[0.004]	[0.007]
local backward link	-0.003	-0.02	0.01	0.01	-0.009	-0.004	-0.002	-0.02
	[0.01]	[0.02]	[0.02]	[0.02]	[0.006]	[0.006]	[0.007]	[0.01]
foreign backward link	0.02**	0.02*	0.008	0.009	0.01***	0.007**	0.02***	0.03***
	[0.01]	[0.01]	[0.02]	[0.02]	[0.003]	[0.003]	[0.005]	[0.009]
local forward link	-0.02	-0.009	-0.01	0.006	0.01***	0.001	0.01**	0.03***
	[0.01]	[0.01]	[0.02]	[0.01]	[0.004]	[0.005]	[0.007]	[0.01]
export status	0.03***	0.04***	-0.007	0.008	0.006	0.0003	0.01	0.02
	[0.01]	[0.01]	[0.02]	[0.01]	[0.004]	[0.004]	[0.008]	[0.01]
import competition	-0.01	-0.01	-0.05**	0.009	-0.01**	-0.009*	-0.002	-0.01
	[0.01]	[0.02]	[0.02]	[0.02]	[0.005]	[0.005]	[0.010]	[0.01]
local competition	-0.02**	-0.02*	-0.03	-0.009	-0.01***	-0.007	-0.006	-0.03**
	[0.01]	[0.01]	[0.02]	[0.01]	[0.005]	[0.005]	[0.008]	[0.01]
Obs	2502	2310	2287	2349	2367	2316	2296	2239
R^2	0.29	0.29	0.089	0.070	0.17	0.083	0.097	0.25

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.

We also study the association of foreign ownership with permanent full-time female and foreign employment. As shown in columns 1–4 of Table 9, there are no statistically significant differences between foreign-owned and domestic firms in the shares of total female employment and of female production, non-production, and managerial workers. Columns 5–8 indicate that foreign-owned firms have higher shares of total foreign employment and of foreign production, non-production, and managerial workers. These higher shares could be viewed as a transfer 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).[17]

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[17]Coniglio et al. (2016) show that the share of foreign workers in foreign-owned firms is negatively associated with the economic and institutional distance between the home and host countries, while it is positively associated with their geographical distance. It is also positively associated with foreign-owned firms' knowledge intensity and negatively associated with their engagement in local linkages and their local market orientation.

Table 10: Provision of training and foreign ownership

Dep. var:	(1)	(2)	(3)	(4)
		training	intensity	
	average	production workers	non-production workers	managerial workers
foreign	**0.529***	0.222	0.536	**0.568***
	[0.273]	[0.349]	[0.371]	**[0.335]**
sales	-0.314***	-0.447***	-0.277***	-0.192***
	[0.055]	[0.073]	[0.075]	[0.068]
productivity	0.467***	0.715***	0.300***	0.275***
	[0.083]	[0.115]	[0.112]	[0.093]
skill intensity	0.791**	2.002***	0.406	-2.358***
	[0.373]	[0.633]	[0.550]	[0.441]
wage	0.118*	0.089	0.095	0.172**
	[0.062]	[0.071]	[0.081]	[0.070]
capital intensity	0.214***	0.166***	0.190***	0.163***
	[0.042]	[0.053]	[0.060]	[0.053]
input intensity	-0.005	-0.038	0.048	-0.001
	[0.046]	[0.074]	[0.057]	[0.051]
firm age	0.002	0.010*	-0.004	-0.003
	[0.004]	[0.006]	[0.005]	[0.005]
affiliated parties	-0.028	0.098	0.088	-0.021
	[0.116]	[0.131]	[0.137]	[0.138]
local backward link	0.299	0.109	0.152	0.038
	[0.216]	[0.384]	[0.288]	[0.290]
foreign backward link	0.190	-0.213	0.125	0.182
	[0.188]	[0.220]	[0.291]	[0.203]
local forward link	0.255	-0.038	0.317	0.439
	[0.207]	[0.318]	[0.276]	[0.271]
export status	0.078	-0.011	-0.041	-0.247
	[0.162]	[0.214]	[0.249]	[0.214]
import competition	-0.066	0.154	-0.352	0.023
	[0.194]	[0.251]	[0.308]	[0.257]
local competition	-0.016	0.093	-0.178	-0.105
	[0.154]	[0.218]	[0.232]	[0.181]
Obs	854	564	455	589
R^2	0.64	0.65	0.59	0.63

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.

4.2 Training

As shown in Table 10, foreign-owned firms invest more in training of their employees. In particular, they have a ratio of total expenditure on training to total permanent full-time employment that is higher by 52.9 per cent (column 1). By accounting for worker heterogeneity, we document that they also have a ratio of expenditure on training of managerial workers to

the total number of these workers that is higher by 56.8 per cent (column 4).[18] According to columns 2 and 3, there are no statistically significant differences between foreign-owned and domestic firms in terms of training intensity for production and non-production workers.

The findings in Table 10 are 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).

4.3 Wages

Table 11 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 31.9 per cent higher than the average wage paid by domestic firms (column 1), as well as wages to non-production and managerial workers that are higher by 25.4 per cent and 32 per cent, respectively (columns 3 and 4).[19,20]

These findings are in line with several studies which report wage premia of foreign-owned firms (te Velde and Morrissey, 2003; Strobl and Thornton, 2004; Lipsey and Sjöholm, 2004; Sjöholm and Lipsey, 2006; Coniglio et al., 2015). The extant literature has also provided

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[18]Taking exponents of the coefficient of the foreign ownership dummy, we find that foreign-owned firms have a higher average training intensity by 69.72 per cent ($100 * (exp(0.529) - 1) = 69.72\%$) and a higher training intensity for managerial workers by 76.47 per cent ($100 * (exp(0.568) - 1) = 76.47\%$).

[19]Taking exponents of the coefficient of the foreign ownership dummy, we find that foreign-owned firms pay an average wage premium of 37.58 per cent ($100 * (exp(0.319) - 1) = 37.58\%$), a wage premium to non-production workers of 28.92 per cent ($100 * (exp(0.254) - 1) = 28.92\%$), and a wage premium to managerial workers of 37.71 per cent ($100 * (exp(0.320) - 1) = 37.71\%$).

[20]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 (Appendix Table A6). We only find that non-production workers are paid a wage premium by foreign MNEs.

several possible explanations for their existence (Javorcik, 2015).

Table 11: Average wage and foreign ownership

Dep. var:	(1) average wage	(2) wage for production workers	(3) wage for non-production workers	(4) wage for managerial workers
foreign	**0.319*****	0.113	**0.254*****	**0.320*****
	[0.081]	[0.074]	**[0.073]**	**[0.078]**
sales	-0.036	0.040***	0.107***	0.104***
	[0.022]	[0.015]	[0.016]	[0.016]
productivity	0.317***	0.039	0.010	0.019
	[0.048]	[0.024]	[0.029]	[0.027]
skill intensity	0.464***	0.263*	0.141	-0.129
	[0.151]	[0.153]	[0.129]	[0.136]
training	0.088**	0.044	0.115***	0.109***
	[0.041]	[0.035]	[0.035]	[0.034]
capital intensity	0.077***	0.009	-0.012	0.007
	[0.019]	[0.011]	[0.013]	[0.013]
input intensity	0.064**	0.007	-0.003	0.017
	[0.029]	[0.015]	[0.018]	[0.017]
firm age	0.005***	0.003***	0.003**	0.003***
	[0.001]	[0.001]	[0.001]	[0.001]
affiliated parties	-0.015	0.051*	-0.015	0.020
	[0.034]	[0.029]	[0.025]	[0.025]
local backward link	0.102*	0.076	-0.075	-0.000
	[0.056]	[0.049]	[0.051]	[0.049]
foreign backward link	0.112*	0.068	0.095**	0.044
	[0.064]	[0.046]	[0.047]	[0.045]
local forward link	0.037	0.020	0.069	0.045
	[0.054]	[0.051]	[0.054]	[0.050]
export status	0.034	0.105**	0.116**	0.021
	[0.055]	[0.049]	[0.049]	[0.048]
import competition	-0.044	-0.050	-0.023	-0.082
	[0.067]	[0.053]	[0.056]	[0.055]
local competition	-0.096*	0.050	-0.041	-0.034
	[0.054]	[0.049]	[0.050]	[0.048]
Obs	2517	2387	2364	2442
R^2	0.83	0.89	0.89	0.90

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.

One explanation is related to labour mobility across firms which involves the spread of information (Arrow, 1962).[21] The wage premium acts as a disincentive for cross-firm labour mobility and ultimately prevents the ensuing knowledge diffusion from happening (Fosfuri

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

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 and Kokko, 1998)[23] and the significant R&D efforts made by foreign affiliates (Fairchild and Sosin, 1986). Through these processes, their workers acquire critical knowledge that can later spill over 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.

The wage premium may also be explained by rent-sharing across international borders (Budd and Slaughter, 2004) and rent-sharing arrangements between MNEs – as highly productive and profitable firms – and their employees (Budd et al., 2005). In addition, it may be a form of compensation for the higher labour demand volatility in foreign plants (Fabbri et al., 2003; Javorcik, 2015) or 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 their lack of knowledge of the local labour market in order to succeed in identifying and attracting the good 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), as well as because foreign-owned firms tend to operate in high-wage sectors and locations (Moran, 2007). Finally, according to the labour market literature, the wage premium may result from the more sophisticated human resource practices adopted by MNEs (Javorcik, 2015).

In Panel A of Table 12, we re-estimate the benchmark wage regressions with dummies for the parent location as the main explanatory variables. In Panel B, the main explanatory variables are the dummies for greenfield FDI, MOFA status and the main business purpose of the firm. According to Panel A, the wage premium to non-production workers is paid by foreign-owned firms whose parents are located inside and outside sub-Saharan Africa (column 3), while the average wage premium and the wage premium to managerial workers are paid only by those firms whose parents are located in countries outside sub-Saharan Africa (columns 1 and 4, respectively). Interestingly, a wage premium to production workers, of 24.2 per cent, is

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[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).

[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.

paid only by foreign-owned firms whose parents are located in high-income countries (column 2).[24]

According to Panel B, foreign-owned firms whose main business purpose is to benefit from a free trade agreement pay a higher average wage than domestic firms (column 1). Also, those created as greenfield FDI pay a lower wage to managerial workers than domestic firms and those which became foreign-owned through M&As (column 4). This may be explained by the "cherry-picking" argument put forward by Almeida (2007). That is, the main target of foreign investors for M&As is likely to be domestic firms which have higher productivity and greater human capital than the average domestic firm and thus already pay a wage premium to their managers.[25]

By contrast, foreign-owned firms whose main business purpose is to access new markets or to export back to the home country pay higher wages to non-production and managerial workers. These wage premia suggest that the role of these types of workers is crucial in foreign-owned firms that aim at serving the home and new foreign markets through exports. In particular, managers are likely to have an important supervisory role in the local production of output and a key role in the communication between the parent company and the foreign affiliate. For instance, Antràs et al. (2008) show that the role of managers in foreign affiliates which trade with their parent is crucial because it allows them to save on communication costs. That is, managers deal with routine problems faced by local production workers that top managers in the parent company should have otherwise addressed themselves. Foreign-owned firms whose main business purpose is to join a specific partner in the host country pay a lower wage to production workers. If this collaboration involves production-intensive tasks being mostly undertaken by their local partner, then production workers may add lower value to the production of output in these firms and thus receive a lower wage.

In Panel A of Table 13, we study the role of institutional quality in the association between foreign ownership and the wage premium. 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 column 4 indicates that the wage gap for 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.[26] As higher governance quality may imply a more solid wage bargaining setting

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[24]The results also hold when solely China, as well as when both China and India are excluded from the group of low/middle countries outside sub-Saharan Africa. The only exception is that a wage premium to non-production workers is not paid by foreign-owned firms whose parents are located in low/middle-income countries outside Sub-Saharan and other than China and India (Appendix Tables A7 and A8).

[25]See also Girma and Görg (2007) and Heyman et al. (2007).

[26]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

Table 12: 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	**0.396*****	**0.242****	**0.314*****	**0.370*****
	[0.097]	**[0.107]**	**[0.102]**	**[0.105]**
parent LMI	**0.373*****	0.050	**0.196****	**0.385*****
	[0.143]	[0.079]	**[0.084]**	**[0.101]**
parent SSA	0.075	-0.051	**0.219****	0.127
	[0.115]	[0.084]	**[0.090]**	[0.090]
Obs	2513	2384	2361	2439
R^2	0.83	0.90	0.89	0.90
F-test H_0:				
$\beta_{parentHI} = \beta_{parentLMI}$				
(P-value)	0.88	0.048	0.23	0.89
F-test H_0:				
$\beta_{parentHI} = \beta_{parentSSA}$				
(P-value)	0.015	0.0066	0.41	0.034
F-test H_0:				
$\beta_{parentLMI} = \beta_{parentSSA}$				
(P-value)	0.081	0.30	0.82	0.027
Panel B: greenfield FDI, MOFA status, 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
greenfield FDI	-0.039	-0.080	-0.119	**-0.264****
	[0.137]	[0.096]	[0.130]	**[0.128]**
MOFA	0.004	0.048	0.014	0.086
	[0.299]	[0.135]	[0.135]	[0.158]
market access	0.330	0.130	**0.364****	**0.504*****
	[0.307]	[0.153]	**[0.166]**	**[0.180]**
low cost	0.440	0.440	0.285	0.307
	[0.542]	[0.344]	[0.277]	[0.259]
input access	-0.018	0.215	0.048	0.405
	[0.348]	[0.194]	[0.204]	[0.262]
join partner	0.783	**-0.338***	0.116	0.269
	[0.605]	**[0.178]**	[0.305]	[0.337]
export back home	0.243	0.151	**0.565****	**0.642****
	[0.644]	[0.215]	**[0.260]**	**[0.288]**
TA benefits	**0.992***	-0.196	0.196	0.205
	[0.538]	[0.198]	[0.309]	[0.320]
other motive	0.470	-0.113	0.314	0.084
	[0.365]	[0.260]	[0.282]	[0.267]
Obs	2506	2378	2356	2434
R^2	0.83	0.90	0.89	0.90

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 11 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.

provided by the Mo Ibrahim Foundation (Appendix Table A9). Same as the governance quality measure, it ranges between 0 and 100, with higher values indicating stronger rule of law in the host country.

and a better business regulatory environment, the wage premia for managers are lower in these countries because domestic firms are likely to be induced to pay higher wages to them than in countries with lower governance quality.

Table 13: 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	0.696	0.646*	0.569*	1.124***
	[0.569]	[0.371]	[0.342]	[0.383]
foreign * governance	-0.007	-0.010	-0.006	**-0.015****
	[0.010]	[0.006]	[0.006]	**[0.007]**
Obs	2517	2387	2364	2442
R^2	0.83	0.90	0.89	0.90
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	2.366***	1.203**	0.665	2.468***
	[0.842]	[0.574]	[0.533]	[0.638]
foreign * social inclusion	**-0.571****	**-0.304***	-0.115	**-0.599*****
	[0.232]	**[0.156]**	[0.145]	**[0.172]**
Obs	2517	2387	2364	2442
R^2	0.83	0.90	0.89	0.90

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 11 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.

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 and managerial workers between foreign-owned and domestic firms are smaller in countries with greater social inclusion.[27] As greater social inclusion implies higher social policy standards, one plausible explanation for the lower wage premia is that domestic firms are induced to pay higher wages in these countries than in countries with lower social policy standards.

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[27]The social protection measure serves as an alternative proxy for social policy standards in the host country. Same as the social inclusion measure, it ranges between 1 and 6 and is provided by the World Bank's WDI. 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 (Appendix Table A10).

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 document that foreign-owned firms tend to create jobs which offer higher stability and security, more training opportunities and higher wages than domestic firms. Higher job stability and security and higher wages are offered particularly by foreign-owned firms whose main business purpose is to serve the home or foreign markets. Foreign-owned firms are also less dependent on unpaid work. These findings may suggest that MNEs have better human resource practices which they in turn transplant, at least partially, into their foreign affiliates. Hence, their presence in sub-Saharan Africa is likely to be beneficial for local workers.

We also provide robust 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. The most 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 human resource practices, we still have limited evidence on whether parent companies of foreign MNEs transplant their better human resource practices into their foreign affiliates and the extent to which this happens. 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. In addition, the possible reasons for which foreign-owned firms adopt better human resource practices need to be examined in more depth. One reason could be that foreign-owned firms have a relatively large stock of knowledge and workers who have access to it are incentivised to be loyal to their employers. Another reason could be that foreign-owned firms have a greater tendency to invest in education and skill development of their employees and want to benefit from returns on their investment.

In this paper, we show that firing costs are an important policy tool inducing domestic firms to reduce the gap in job stability and security relative to foreign-owned firms. Future research could study whether other labour market policies (e.g. introduction of minimum wage) can be as effective as firing costs or whether such labour market policies can act as deterrent factors for foreign investment. In addition, future research could look into whether and how incentives for foreign investment (e.g. provided through investment agreements between countries) are associated with the quantity and quality of jobs.

The positive association between foreign ownership and foreign employment shares generates a cascade of important questions that need to be thoroughly investigated. To what extent do foreign workers interact with domestic ones and exchange knowledge with them within foreign-owned firms? Are foreign workers gradually replaced by local workers after the latter receive proper training and develop certain skills? Does knowledge exchange between foreign and domestic workers produce positive local externalities, for instance, through cross-firm labour mobility? These questions are of particular interest to policy makers because the presence of foreign workers and the subsequent externalities may imply the creation of jobs whose productivity is above the country average and the generation of significant productivity, knowledge, and wage spillovers to domestic firms.

Moreover, 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 and for foreign firm characteristics and activities. The precise identification of these reasons is expected to be of high policy relevance. Also, the precise identification of the mechanisms which explain the lower job stability and security gap between foreign-owned and domestic firms in countries with higher firing costs and institutional quality, as well as their lower wage gap in countries with higher institutional quality and social policy standards is essential.

Finally, the causal relationship of foreign ownership with the quantity and quality of jobs is a critical issue which cannot be addressed with the dataset used in this paper. Does foreign ownership lead to more stable and secure employment, more training opportunities and higher wages? Or domestic firms are taken over by foreign MNEs because they already offer more stable and secure jobs, invest more in training and pay higher wages (i.e., cherry-picking)? The answer to this question is important for the design of appropriate policies (Almeida, 2007). Hopefully, the increasing availability of matched employer-employee data will allow us to properly address this question in the future.

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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 as greenfield FDI (dummy)
MOFA	the firm is owned by a foreign investor by at least 50 per cent (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)
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
input intensity	ratio of total value of inputs to total number of permanent full-time employees
firm age	years since the foundation of the firm
affiliated parties	total number of affiliated establishments 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)
foreign backward link	the firm has a non-zero number of suppliers abroad (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)
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)

Description of variables (continued)

Variable	Description
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 workers (share)	share of permanent full-time female 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 workers (share)	share of permanent full-time foreign workers in total number of permanent full-time 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
firing 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 World Development Indicators)
social protection	social protection index (1–6) (source: World Bank's World Development Indicators)

Notes: Authors' notation.

Table A2: Domestic and foreign-owned firms by industry

ISIC Rev. 1.1	Name	No #	No %	Yes #	Yes %	Total #	Total %
1	Agriculture, hunting and related service activities	100	49.8	101	50.2	201	100
2	Forestry, logging and related service activities	6	54.5	5	45.5	11	100
5	Fishing, operation of fish hatcheries and fish farms	2	20	8	80	10	100
10	Mining of coal and lignite; extraction of peat	8	42.1	11	57.9	19	100
11	Extraction of crude petroleum and natural gas	6	40	9	60	15	100
12	Mining of uranium and thorium ores	1	50	1	50	2	100
13	Mining of metal ores	2	11.8	15	88.2	17	100
14	Other mining and quarrying	18	52.9	16	47.1	34	100
15	Manufacture of food products and beverages	465	68	219	32	684	100
16	Manufacture of tobacco products	4	20	16	80	20	100
17	Manufacture of textiles	74	62.7	44	37.3	118	100
18	Manufacture of wearing apparel; dressing and dyeing of fur	111	57.5	82	42.5	193	100
19	Tanning and dressing of leather; manufacture of luggage, handbags, saddlery, harness and footwear	66	70.2	28	29.8	94	100
20	Manufacture of wood and of products of wood and cork	102	75.6	33	24.4	135	100
21	Manufacture of paper and paper products	61	61.6	38	38.4	99	100
22	Publishing, printing and reproduction of recorded media	208	83.5	41	16.5	249	100
23	Manufacture of coke, refined petroleum products and nuclear fuel	4	33.3	8	66.7	12	100
24	Manufacture of chemicals and chemical products	152	53	135	47	287	100
25	Manufacture of rubber and plastics products	140	49.5	143	50.5	283	100
26	Manufacture of other non-metallic mineral products	109	67.3	53	32.7	162	100
27	Manufacture of basic metals	37	46.8	42	53.2	79	100
28	Manufacture of fabricated metal products, except machinery and equipment	208	65	112	35	320	100
29	Manufacture of machinery and equipment n.e.c.	57	64	32	36	89	100
30	Manufacture of office, accounting and computing machinery	0	0	3	100	3	100
31	Manufacture of electrical machinery and apparatus n.e.c.	24	50	24	50	48	100
32	Manufacture of radio, television and communication equipment and apparatus	1	11.1	8	88.9	9	100
33	Manufacture of medical, precision and optical instruments, watches and clocks	9	52.9	8	47.1	17	100
34	Manufacture of motor vehicles, trailers and semi-trailers	17	54.8	14	45.2	31	100
35	Manufacture of other transport equipment	9	64.3	5	35.7	14	100
36	Manufacture of furniture; manufacturing n.e.c.	126	70.8	52	29.2	178	100
37	Recycling	4	40	6	60	10	100
38	Other manufacturing	10	58.8	7	41.2	17	100
40	Electricity, gas, steam and hot water supply	27	64.3	15	35.7	42	100
41	Collection, purification and distribution of water	1	50	1	50	2	100
45	Construction	276	68.1	129	31.9	405	100
50	Sale, maintenance and repair of motor vehicles and motorcycles; retail sale of automotive fuel	158	68.1	74	31.9	232	100
51	Wholesale trade and commission trade, except of motor vehicles and motorcycles	231	57.9	168	42.1	399	100
52	Retail trade, except of motor vehicles and motorcycles; repair of personal and household goods	259	67.4	125	32.6	384	100
55	Hotels and restaurants	223	69.5	98	30.5	321	100
60	Land transport; transport via pipelines	115	72.3	44	27.7	159	100
61	Water transport	9	37.5	15	62.5	24	100
62	Air transport	8	34.8	15	65.2	23	100
63	Supporting and auxiliary transport activities; activities of travel agencies	66	69.5	29	30.5	95	100
64	Post and telecommunications	39	43.3	51	56.7	90	100
65	Financial intermediation, except insurance and pension funding	91	48.7	96	51.3	187	100
66	Insurance and pension funding, except compulsory social security	53	57.6	39	42.4	92	100
67	Activities auxiliary to financial intermediation	17	73.9	6	26.1	23	100
70	Real estate activities	51	67.1	25	32.9	76	100
71	Renting of machinery and equipment without operator and of personal and household goods	11	61.1	7	38.9	18	100
72	Computer and related activities	25	61	16	39	41	100
73	Research and development	1	50	1	50	2	100
74	Other business activities	201	65.5	106	34.5	307	100
75	Public administration and defence	5	100	0	0	5	100
80	Education	19	65.5	10	34.5	29	100
85	Health and social work	11	84.6	2	15.4	13	100
90	Sewage and refuse disposal, sanitation and similar activities	32	91.4	3	8.6	35	100
91	Activities of membership organizations n.e.c.	1	100	0	0	1	100
92	Recreational, cultural and sporting activities	13	68.4	6	31.6	19	100
93	Other service activities	6	85.7	1	14.3	7	100
95	Private households with employed persons	1	100	0	0	1	100
	Total	4091	63	2401	37	6492	100

Notes: Authors' calculations.
Source: UNIDO Africa Investor Survey 2010.

Table A3: Employment by contract type, unpaid work and parent location of foreign-owned firms (China excluded from LMI group)

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	-0.08	0.02	**-0.09****	-0.03	-0.02	0.004	**-0.06***	**-0.009****
	[0.05]	[0.02]	**[0.05]**	[0.02]	[0.04]	[0.007]	**[0.03]**	**[0.004]**
parent LMI (excl. China)	**-0.1****	**0.06****	-0.06	**-0.06*****	0.05	0.007	**-0.07****	-0.005
	[0.04]	**[0.02]**	[0.06]	**[0.02]**	[0.04]	[0.009]	**[0.04]**	[0.004]
parent SSA	**-0.1****	**0.07****	-0.06	**-0.08****	-0.02	0.0004	-0.09	-0.004
	[0.06]	**[0.03]**	[0.07]	**[0.03]**	[0.05]	[0.01]	[0.06]	[0.004]
sales	0.9***	0.04***	0.006	-0.04***	0.02**	-0.003	-0.004	-0.004***
	[0.01]	[0.005]	[0.009]	[0.005]	[0.007]	[0.002]	[0.006]	[0.001]
productivity	-0.9***	-0.05***	0.005	0.05***	-0.03***	0.002	0.002	0.004**
	[0.02]	[0.007]	[0.01]	[0.007]	[0.010]	[0.003]	[0.008]	[0.002]
skill intensity	0.3***	-0.1***	0.1*	0.1***	0.07	0.003	-0.04	0.006
	[0.08]	[0.04]	[0.06]	[0.04]	[0.05]	[0.01]	[0.04]	[0.01]
wage	0.04***	-0.005	0.001	0.007	-0.010	-0.002	-0.006	-0.002
	[0.01]	[0.005]	[0.009]	[0.005]	[0.007]	[0.002]	[0.006]	[0.001]
training	-0.02	0.01	0.0007	-0.02**	0.02	0.004	0.03**	0.003
	[0.02]	[0.010]	[0.02]	[0.009]	[0.02]	[0.004]	[0.01]	[0.002]
capital intensity	0.02***	-0.008**	0.01**	0.008**	0.01***	0.0006	0.002	-0.0009
	[0.008]	[0.004]	[0.007]	[0.003]	[0.005]	[0.001]	[0.005]	[0.0007]
input intensity	0.009	-0.005	-0.0002	0.005	-0.007	0.0009	0.0009	0.00007
	[0.009]	[0.004]	[0.008]	[0.003]	[0.005]	[0.001]	[0.005]	[0.0005]
firm age	0.0002	0.00008	0.0002	-0.00009	0.0003	0.00003	-0.00002	0.00004
	[0.0006]	[0.0003]	[0.0006]	[0.0003]	[0.0005]	[0.0001]	[0.0004]	[0.00005]
affiliated parties	-0.005	-0.006	0.03**	0.008	0.01	-0.002	0.004	0.002
	[0.01]	[0.007]	[0.01]	[0.006]	[0.01]	[0.002]	[0.009]	[0.002]
local backward link	0.03	-0.02*	0.09***	0.03**	-0.005	-0.01	-0.002	0.002
	[0.03]	[0.01]	[0.03]	[0.01]	[0.02]	[0.006]	[0.02]	[0.002]
foreign backward link	0.02	-0.02	0.08***	0.02*	0.02	-0.005	-0.010	0.00006
	[0.03]	[0.02]	[0.03]	[0.01]	[0.02]	[0.006]	[0.02]	[0.003]
local forward link	0.03	-0.02	0.02	0.003	0.06***	0.02***	-0.01	-0.00010
	[0.02]	[0.01]	[0.02]	[0.01]	[0.02]	[0.004]	[0.02]	[0.002]
export status	0.1***	-0.06***	0.07***	0.07***	0.007	-0.004	0.009	0.003
	[0.03]	[0.01]	[0.02]	[0.01]	[0.02]	[0.004]	[0.02]	[0.003]
import competition	-0.006	0.007	0.03	-0.01	0.005	0.005	0.02	-0.002
	[0.03]	[0.02]	[0.03]	[0.01]	[0.02]	[0.005]	[0.02]	[0.003]
local competition	0.002	-0.006	0.03	0.0008	0.004	0.003	0.01	0.002
	[0.03]	[0.01]	[0.03]	[0.01]	[0.02]	[0.004]	[0.02]	[0.003]
Obs	2513	2513	2510	2506	2508	2498	2350	2442
R^2	0.88	0.23		0.23		0.040		0.046
$Pseudo-R^2$			0.13		0.092		0.094	
$Log-likelihood$			-1451.1		-1006.3		-678.0	
F-test H_0: $\beta_{parentHI}=\beta_{parentLMI}$ (P-value)	0.57	0.20	0.52	0.16	0.10	0.70	0.75	0.22
F-test H_0: $\beta_{parentLMI}=\beta_{parentSSA}$ (P-value)	0.32	0.15	0.67	0.13	0.87	0.80	0.62	0.17
F-test H_0: $\beta_{parentHI}=\beta_{parentSSA}$ (P-value)	0.56	0.63	0.94	0.67	0.24	0.61	0.79	0.73

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.

Table A4: Employment by contract type, unpaid work and parent location of foreign-owned firms (China and India excluded from LMI group)

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	-0.07	0.02	**-0.09**	-0.02	-0.03	0.001	**-0.05***	**-0.009**
	[0.05]	[0.02]	**[0.04]**	[0.02]	[0.04]	[0.008]	**[0.03]**	**[0.004]**
parent LMI (excl. China/India)	**-0.1***	**0.06***	-0.06	**-0.06***	0.02	-0.003	**-0.07***	**-0.006***
	[0.05]	**[0.02]**	[0.06]	**[0.02]**	[0.05]	[0.005]	**[0.04]**	**[0.004]**
parent SSA	**-0.1****	**0.07****	-0.06	**-0.07****	-0.02	-0.001	-0.09	-0.004
	[0.06]	**[0.03]**	[0.07]	**[0.03]**	[0.05]	[0.01]	[0.06]	[0.003]
sales	0.9***	0.04***	0.007	-0.04***	0.02**	-0.003	-0.004	-0.004***
	[0.01]	[0.005]	[0.009]	[0.005]	[0.007]	[0.002]	[0.006]	[0.001]
productivity	-0.9***	-0.05***	0.005	0.05***	-0.03***	0.001	0.002	0.004**
	[0.02]	[0.007]	[0.01]	[0.007]	[0.010]	[0.003]	[0.008]	[0.002]
skill intensity	0.3***	-0.1***	0.1*	0.1***	0.07	0.003	-0.04	0.006
	[0.08]	[0.04]	[0.06]	[0.04]	[0.05]	[0.01]	[0.04]	[0.01]
wage	0.04***	-0.005	0.0010	0.007	-0.009	-0.002	-0.006	-0.002
	[0.01]	[0.005]	[0.009]	[0.005]	[0.007]	[0.002]	[0.006]	[0.001]
training	-0.02	0.01	0.0010	-0.02**	0.02	0.004	0.03**	0.003
	[0.02]	[0.010]	[0.02]	[0.009]	[0.02]	[0.004]	[0.01]	[0.002]
capital intensity	0.02***	-0.008**	0.01**	0.008**	0.01***	0.0005	0.002	-0.0009
	[0.008]	[0.003]	[0.007]	[0.003]	[0.005]	[0.001]	[0.005]	[0.0007]
input intensity	0.009	-0.005	-0.0002	0.005	-0.007	0.0009	0.0007	0.00007
	[0.009]	[0.004]	[0.008]	[0.003]	[0.005]	[0.001]	[0.005]	[0.0005]
firm age	0.0002	0.00007	0.0002	-0.00007	0.0003	0.00002	0.000003	0.00004
	[0.0006]	[0.0003]	[0.0006]	[0.0003]	[0.0005]	[0.0001]	[0.0004]	[0.00005]
affiliated parties	-0.006	-0.006	0.03**	0.007	0.02	-0.001	0.003	0.002
	[0.01]	[0.007]	[0.01]	[0.006]	[0.01]	[0.002]	[0.009]	[0.001]
local backward link	0.03	-0.02*	0.09***	0.03**	-0.004	-0.01	-0.002	0.002
	[0.03]	[0.01]	[0.03]	[0.01]	[0.02]	[0.006]	[0.02]	[0.002]
foreign backward link	0.02	-0.02	0.08***	0.02	0.02	-0.005	-0.01	0.00001
	[0.03]	[0.02]	[0.03]	[0.01]	[0.02]	[0.006]	[0.02]	[0.003]
local forward link	0.03	-0.02	0.02	0.004	0.06***	0.02***	-0.01	-0.00008
	[0.02]	[0.01]	[0.02]	[0.01]	[0.02]	[0.004]	[0.02]	[0.002]
export status	0.1***	-0.06***	0.07***	0.07***	0.007	-0.003	0.009	0.003
	[0.03]	[0.01]	[0.02]	[0.01]	[0.02]	[0.004]	[0.02]	[0.003]
import competition	-0.005	0.007	0.03	-0.01	0.003	0.005	0.02	-0.002
	[0.03]	[0.01]	[0.03]	[0.01]	[0.02]	[0.005]	[0.02]	[0.003]
local competition	0.004	-0.007	0.03	0.002	0.002	0.003	0.01	0.002
	[0.02]	[0.01]	[0.03]	[0.01]	[0.02]	[0.004]	[0.02]	[0.002]
Obs	2513	2513	2510	2506	2508	2498	2350	2442
R^2	0.88	0.23		0.23		0.039		0.046
$Pseudo-R^2$			0.13		0.092		0.094	
$Log-likelihood$			-1451.0		-1007.0		-678.3	
F-test H_0: $\beta_{parentHI}=\beta_{parentLMI}$ (P-value)	0.40	0.12	0.65	0.16	0.35	0.49	0.71	0.46
F-test H_0: $\beta_{parentLMI}=\beta_{parentSSA}$ (P-value)	0.32	0.14	0.67	0.12	0.82	0.84	0.60	0.17
F-test H_0: $\beta_{parentHI}=\beta_{parentSSA}$ (P-value)	0.74	0.81	0.97	0.68	0.55	0.87	0.83	0.50

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.

Table A5: Permanent full-time employment and foreign ownership (firing costs)

Dep. var:	(1)	(2)	(3)
	permanent full-time workers (share)		
	production	non-production	managerial
foreign	0.05**	-0.04*	-0.005
	[0.02]	[0.02]	[0.02]
foreign * firing cost	-0.0003	0.0001	-0.0001
	[0.0002]	[0.0002]	[0.0001]
sales	0.02***	-0.02***	-0.03***
	[0.004]	[0.004]	[0.003]
productivity	-0.03***	0.03***	0.04***
	[0.005]	[0.005]	[0.005]
skill intensity	-0.8***	-0.1***	
	[0.03]	[0.03]	
wage	-0.01***	0.01***	0.01***
	[0.004]	[0.003]	[0.003]
training	-0.02***	0.02**	0.02***
	[0.007]	[0.007]	[0.006]
capital intensity	-0.001	0.002	-0.002
	[0.003]	[0.003]	[0.002]
input intensity	-0.002	0.002	0.0003
	[0.003]	[0.003]	[0.003]
firm age	-0.0007***	0.0006**	0.0001
	[0.0002]	[0.0002]	[0.0002]
affiliated parties	-0.01**	0.01*	0.005
	[0.006]	[0.006]	[0.006]
local backward link	0.02	-0.02	-0.005
	[0.01]	[0.01]	[0.010]
foreign backward link	-0.03***	0.02**	0.002
	[0.01]	[0.01]	[0.010]
local forward link	0.02	-0.01	-0.002
	[0.01]	[0.01]	[0.009]
export status	0.005	-0.01	-0.003
	[0.010]	[0.009]	[0.008]
import competition	-0.02	0.01	0.01
	[0.01]	[0.01]	[0.010]
local competition	-0.01	0.01	0.004
	[0.01]	[0.01]	[0.008]
Obs	2517	2517	2517
R^2	0.59	0.37	0.16

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 A6: Average wage in foreign and domestic MNEs

Dep. var:	(1) average wage	(2) wage for production workers	(3) wage for non-production workers	(4) wage for managerial workers
foreign	0.047	0.059	**0.218****	0.162
	[0.128]	[0.113]	**[0.110]**	[0.127]
sales	0.045	0.110***	0.085**	0.095**
	[0.039]	[0.031]	[0.034]	[0.038]
productivity	0.203**	-0.034	0.031	0.058
	[0.087]	[0.044]	[0.048]	[0.053]
skill intensity	0.982***	0.709*	0.268	-0.000468
	[0.328]	[0.383]	[0.249]	[0.260]
training	0.211**	0.111	0.237***	0.137*
	[0.089]	[0.083]	[0.072]	[0.082]
capital intensity	0.035	0.019	-0.001	0.004
	[0.045]	[0.022]	[0.023]	[0.029]
input intensity	0.009	-0.004	-0.011	-0.004
	[0.067]	[0.031]	[0.029]	[0.038]
firm age	0.003	0.004**	0.001	0.002
	[0.002]	[0.002]	[0.002]	[0.002]
affiliated parties	0.003	0.030	-0.028	0.015
	[0.048]	[0.045]	[0.035]	[0.039]
local backward link	0.024	0.167	-0.136	0.016
	[0.136]	[0.107]	[0.126]	[0.123]
foreign backward link	0.052	0.285**	0.152	-0.020
	[0.175]	[0.131]	[0.133]	[0.159]
local forward link	-0.120	-0.110	0.046	-0.035
	[0.108]	[0.085]	[0.079]	[0.089]
export status	-0.112	0.011	0.011	-0.088
	[0.103]	[0.080]	[0.084]	[0.105]
import competition	0.012	-0.171*	0.007	-0.102
	[0.138]	[0.094]	[0.109]	[0.111]
local competition	-0.003	-0.115	-0.055	-0.087
	[0.121]	[0.085]	[0.083]	[0.093]
Obs	501	471	492	493
R^2	0.84	0.89	0.89	0.87

Notes: OLS estimations with country and industry dummies in all columns. The sample does not include domestic non-MNEs. 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.

Table A7: Average wage and parent location of foreign-owned firms (China excluded from LMI group)

Dep. var:	(1) average wage	(2) wage for production workers	(3) wage for non-production workers	(4) wage for managerial workers
parent HI	**0.416***	**0.235**	**0.310***	**0.355***
	[0.096]	**[0.107]**	**[0.101]**	**[0.105]**
parent LMI (excl. China)	**0.496***	0.030	**0.203**	**0.375***
	[0.147]	[0.081]	**[0.085]**	**[0.103]**
parent SSA	0.089	-0.056	**0.216**	0.117
	[0.115]	[0.085]	**[0.090]**	[0.090]
sales	-0.040*	0.040***	0.108***	0.103***
	[0.022]	[0.015]	[0.016]	[0.016]
productivity	0.321***	0.040*	0.011	0.021
	[0.048]	[0.024]	[0.029]	[0.027]
skill intensity	0.449***	0.254*	0.138	-0.140
	[0.151]	[0.154]	[0.129]	[0.136]
training	0.084**	0.045	0.115***	0.106***
	[0.041]	[0.035]	[0.035]	[0.034]
capital intensity	0.076***	0.007	-0.013	0.006
	[0.019]	[0.011]	[0.013]	[0.013]
input intensity	0.063**	0.008	-0.003	0.016
	[0.029]	[0.015]	[0.018]	[0.017]
firm age	0.005***	0.003***	0.002**	0.003***
	[0.001]	[0.001]	[0.001]	[0.001]
affiliated parties	-0.027	0.042	-0.017	0.022
	[0.033]	[0.031]	[0.026]	[0.026]
local backward link	0.096*	0.071	-0.078	-0.006
	[0.055]	[0.049]	[0.052]	[0.049]
foreign backward link	0.112*	0.072	0.095**	0.048
	[0.064]	[0.046]	[0.047]	[0.045]
local forward link	0.048	0.021	0.070	0.047
	[0.054]	[0.051]	[0.054]	[0.050]
export status	0.035	0.102**	0.112**	0.023
	[0.055]	[0.049]	[0.049]	[0.048]
import competition	-0.030	-0.043	-0.020	-0.074
	[0.067]	[0.053]	[0.057]	[0.055]
local competition	-0.089*	0.051	-0.041	-0.031
	[0.054]	[0.049]	[0.050]	[0.048]
Obs	2513	2384	2361	2439
R^2	0.83	0.90	0.89	0.90
F-test H_0: $\beta_{parentHI} = \beta_{parentLMI}$ (P-value)	0.61	0.027	0.29	0.86
F-test H_0: $\beta_{parentHI} = \beta_{parentSSA}$ (P-value)	0.013	0.0070	0.41	0.037
F-test H_0: $\beta_{parentLMI} = \beta_{parentSSA}$ (P-value)	0.020	0.36	0.90	0.030

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.

Table A8: Average wage and parent location of foreign-owned firms (China and India excluded from LMI group)

Dep. var:	(1) average wage	(2) wage for production workers	(3) wage for non-production workers	(4) wage for managerial workers
parent HI	**0.401*****	**0.231****	**0.288*****	**0.351*****
	[0.096]	**[0.105]**	**[0.099]**	**[0.103]**
parent LMI (excl. China/India)	**0.549*****	0.017	0.149	**0.444*****
	[0.165]	[0.084]	[0.093]	**[0.114]**
parent SSA	0.077	-0.059	**0.201****	0.113
	[0.115]	[0.084]	**[0.089]**	[0.089]
sales	-0.039*	0.040***	0.109***	0.103***
	[0.022]	[0.015]	[0.016]	[0.016]
productivity	0.321***	0.040*	0.010	0.021
	[0.048]	[0.024]	[0.029]	[0.027]
skill intensity	0.445***	0.254*	0.138	-0.139
	[0.151]	[0.154]	[0.129]	[0.136]
training	0.081**	0.045	0.115***	0.104***
	[0.041]	[0.035]	[0.035]	[0.034]
capital intensity	0.076***	0.007	-0.013	0.006
	[0.019]	[0.011]	[0.013]	[0.013]
input intensity	0.063**	0.008	-0.002	0.016
	[0.029]	[0.015]	[0.018]	[0.017]
firm age	0.005***	0.003**	0.002**	0.003***
	[0.001]	[0.001]	[0.001]	[0.001]
affiliated parties	-0.023	0.044	-0.011	0.023
	[0.033]	[0.030]	[0.025]	[0.025]
local backward link	0.098*	0.072	-0.077	-0.006
	[0.055]	[0.049]	[0.052]	[0.049]
foreign backward link	0.116*	0.072	0.098**	0.051
	[0.064]	[0.046]	[0.047]	[0.044]
local forward link	0.043	0.019	0.063	0.044
	[0.053]	[0.050]	[0.054]	[0.049]
export status	0.036	0.102**	0.114**	0.025
	[0.055]	[0.049]	[0.049]	[0.048]
import competition	-0.035	-0.044	-0.024	-0.074
	[0.067]	[0.053]	[0.057]	[0.055]
local competition	-0.097*	0.050	-0.047	-0.036
	[0.054]	[0.049]	[0.050]	[0.047]
Obs	2513	2384	2361	2439
R^2	0.83	0.90	0.89	0.90
F-test H_0: $\beta_{parentHI} = \beta_{parentLMI}$ (P-value)	0.38	0.028	0.20	0.45
F-test H_0: $\beta_{parentHI} = \beta_{parentSSA}$ (P-value)	0.014	0.0070	0.44	0.037
F-test H_0: $\beta_{parentLMI} = \beta_{parentSSA}$ (P-value)	0.013	0.44	0.65	0.010

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.

Table A9: Average wage and foreign ownership (rule of law)

Dep. var:	(1) average wage	(2) wage for production workers	(3) wage for non-production workers	(4) wage for managerial workers
foreign	0.307	0.315	0.186	0.884***
	[0.345]	[0.243]	[0.244]	[0.276]
foreign * rule of law	0.0002	-0.003	0.001	**-0.009**
	[0.006]	[0.004]	[0.004]	**[0.004]**
sales	-0.036	0.041***	0.107***	0.105***
	[0.022]	[0.015]	[0.016]	[0.016]
productivity	0.317***	0.039	0.011	0.018
	[0.048]	[0.024]	[0.029]	[0.027]
skill intensity	0.464***	0.264*	0.141	-0.127
	[0.150]	[0.153]	[0.129]	[0.136]
training	0.088**	0.044	0.115***	0.111***
	[0.041]	[0.035]	[0.035]	[0.034]
capital intensity	0.077***	0.008	-0.012	0.007
	[0.019]	[0.011]	[0.013]	[0.013]
input intensity	0.064**	0.008	-0.003	0.018
	[0.029]	[0.015]	[0.018]	[0.016]
firm age	0.005***	0.003***	0.003**	0.003***
	[0.001]	[0.001]	[0.001]	[0.001]
affiliated parties	-0.015	0.050*	-0.015	0.019
	[0.034]	[0.029]	[0.025]	[0.025]
local backward link	0.102*	0.077	-0.075	-0.002
	[0.056]	[0.049]	[0.051]	[0.049]
foreign backward link	0.112*	0.070	0.095**	0.048
	[0.064]	[0.046]	[0.047]	[0.044]
local forward link	0.037	0.019	0.070	0.045
	[0.054]	[0.050]	[0.054]	[0.049]
export status	0.034	0.106**	0.115**	0.024
	[0.055]	[0.049]	[0.049]	[0.048]
import competition	-0.044	-0.049	-0.023	-0.080
	[0.067]	[0.053]	[0.056]	[0.054]
local competition	-0.096*	0.051	-0.041	-0.031
	[0.054]	[0.049]	[0.050]	[0.047]
Obs	2517	2387	2364	2442
R^2	0.83	0.89	0.89	0.90

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.

Table A10: Average wage and foreign ownership (social protection)

Dep. var:	(1) average wage	(2) wage for production workers	(3) wage for non-production workers	(4) wage for managerial workers
foreign	1.133**	0.406	0.988**	2.315***
	[0.503]	[0.401]	[0.480]	[0.532]
foreign * social protection	-0.236	-0.085	-0.214	**-0.580***
	[0.145]	[0.112]	[0.132]	**[0.149]**
sales	-0.036	0.041***	0.108***	0.107***
	[0.022]	[0.015]	[0.016]	[0.016]
productivity	0.316***	0.039	0.009	0.014
	[0.048]	[0.024]	[0.029]	[0.027]
skill intensity	0.466***	0.264*	0.144	-0.116
	[0.151]	[0.153]	[0.129]	[0.135]
training	0.090**	0.044	0.116***	0.112***
	[0.041]	[0.035]	[0.035]	[0.034]
capital intensity	0.076***	0.009	-0.012	0.007
	[0.019]	[0.011]	[0.013]	[0.013]
input intensity	0.065**	0.007	-0.002	0.019
	[0.029]	[0.015]	[0.018]	[0.017]
firm age	0.005***	0.003***	0.002**	0.003***
	[0.001]	[0.001]	[0.001]	[0.001]
affiliated parties	-0.016	0.050*	-0.016	0.017
	[0.034]	[0.029]	[0.025]	[0.025]
local backward link	0.100*	0.075	-0.077	-0.006
	[0.056]	[0.049]	[0.051]	[0.049]
foreign backward link	0.114*	0.069	0.096**	0.048
	[0.064]	[0.046]	[0.047]	[0.044]
local forward link	0.036	0.019	0.068	0.042
	[0.054]	[0.051]	[0.054]	[0.049]
export status	0.033	0.105**	0.116**	0.020
	[0.055]	[0.049]	[0.049]	[0.048]
import competition	-0.043	-0.049	-0.022	-0.080
	[0.067]	[0.053]	[0.056]	[0.054]
local competition	-0.095*	0.051	-0.040	-0.033
	[0.054]	[0.049]	[0.050]	[0.047]
Obs	2517	2387	2364	2442
R^2	0.83	0.89	0.89	0.90

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.