Foreign ownership and performance in sub-Saharan African manufacturing and services

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Abstract

This paper tests for differences in performance between foreign- and domestically-owned firms in a sample of manufacturing and services firms from 19 sub-Saharan African countries. Results indicate that foreign-owned firms perform significantly better than domestically-owned ones in sub-Saharan Africa across several performance measures, with the foreign-ownership premia usually being larger for services firms. The results further indicate that firms owned by a TNC perform better than those owned by individual foreign entrepreneurs, though there is little evidence of differences in performance between joint ventures and wholly owned foreign enterprises.

Keywords: Foreign ownership, firm-level performance, sub-Saharan Africa

JEL Codes: F23, D24

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1. Introduction

Foreign Direct Investment (FDI) into sub-Saharan Africa (SSA) is often associated with large multinationals from the developed world, as well as China and India, entering SSA to extract and exploit natural resources, often using their own imported labour. While such FDI does occur and does make up a relatively large share of total FDI flows[1], FDI in SSA is much broader than this covering a wide variety of sectors in both manufacturing and services, and including a wide variety of investing firms and entrepreneurs.[2] In this paper we examine whether there are significant differences in various performance measures between foreign- and domestically-owned firms in SSA using the recently completed Africa Investor Survey (AIS) from UNIDO. We examine this separately for manufacturing and services sectors and examine whether there are differences in performance by the type of investing firm.

Inward FDI is expected to benefit host countries through a number of channels. In addition to gains from the simple movement of capital, FDI is accompanied by the movement of firm-specific assets such as technology, managerial ability, corporate governance, and access to the network connecting foreign markets. Inward FDI is also expected to bring in more competition and higher efficiency into an industry by spurring improvement in domestic firms. Positive externalities occur if the entry and expansion of relatively efficient foreign affiliates encourages domestically owned firms to achieve higher levels of productivity. A large recent empirical literature examines whether such spillovers to domestically-owned firms from the presence of foreign-owned firms occur, often with mixed results (see Görg and Greenaway, 2004).

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[1] UNCTAD (2005) reports that in sub-Saharan Africa the percentage of foreign investment flows to the primary sector ranged from 55% to 80%.
[2] FDI flows into sub-Saharan Africa are rising. According to the 2009 World Investment Report (UNCTAD, 2009), the value of FDI to the region rose from US$36.7 billion in 1990 to US$108.5 billion in 2000, and stood at US$336.8 billion in 2008.

In this paper we move away from the question of whether there are spillovers from inward FDI to consider whether foreign-owned firms perform better than domestically-owned ones across a number of performance criteria. This is a question that has received much less attention, despite the expectation that affiliates of foreign firms are likely to differ from their domestic counterparts in a number of important ways, which could lead to differences in performance. In particular, they are likely to possess proprietary technology and knowledge that provides them with a firm-specific advantage allowing them to compete with other Transnational Corporations (TNCs) and local firms, the latter of which presumably have superior knowledge of local markets, consumer preferences and business practices (Blomström and Kokko, 1998). These differences may include specialised knowledge about production, superior management and marketing capabilities, export contacts, and relationships with buyers and suppliers. The presence of such differences would suggest that foreign-owned firms are likely to perform better than domestically-owned ones. Moreover, Harris (2009) argues that FDI may reduce the productivity of domestic firms in the short-run through increased competition. In imperfectly competitive markets with increasing returns to scale, increased competition by lowering domestic firms' market share can raise the average costs of domestic firms, thus reducing their productivity levels.

Harris (2009) also discusses reasons why TNCs need not perform better than domestically-owned firms. Foreign owned firms may have lower efficiency levels in the short-run if there are difficulties in assimilating newly acquired plants in to their FDI network. There may also be initial fixed costs in acquiring knowledge of how business is conducted in a country, which can lead to reduced efficiency levels. TNCs may also decide to keep most of their high value-added operations (e.g. R&D and new products) at home, concentrating on lower value-added assembly operations in the host nation (see for example Maskus et al, 2005).

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As discussed by Globerman et al (1994) differences in performance, and productivity in particular, across firms are related to the mix of activities undertaken by the firm, the efficiency in which resources are used, and to firm-specific advantages (e.g. technology and managerial expertise). Testing for differences in performance between foreign- and domestically-owned firms is therefore a test of whether firm-specific advantages exist, whether they favour domestic- or foreign-owned firms, and whether they persist. In addition to productivity we consider in our analysis alternative indicators of performance, including the level of sales, the profit margin, and the level of exports. Differences in the values of these additional variables across foreign- and domestically-owned firms may also arise due to firm-specific advantages. The presence of such differences may also lead to further beneficial effects from inward FDI for an economy. In particular, one may expect that a finding of higher sales is associated with lower prices, while to the extent that foreign-owned firms have a higher propensity to export this may have positive externalities on domestic firms by creating the infrastructure and contacts necessary to export. Such differences may then provide a basis for policies promoting foreign investment.

Early empirical studies on the relationship between foreign ownership and firm-level performance are summarised by Globerman et al (1994). They argue that the early studies addressing this issue tend to find that foreign-owned firms have higher average levels of productivity than domestically-owned firms. Globerman et al (1994) go on to argue that while such results are consistent with the view that foreign-owned firms perform better than domestically-owned ones, observed differences may also reflect the fact that foreign-owned firms tend to cluster in industries enjoying relatively high productivity levels.

Subsequent research using broad samples of firm-level data have been better able to deal with potential bi-directional causality through the use of industry fixed-effects amongst others. The

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majority of such studies tend to support the view that foreign-owned firms have higher productivity levels than domestically-owned firms, examples including Globerman et al (1994) for Canada, Doms and Jensen (1998) for the USA, Aitken and Harisson (1999) for Venezuela, Harris (2002) and Harris and Robinson (2003) for the UK, and Hallward-Driemeier et al (2002) for five East Asian countries and Yasar and Morrison-Paul (2007) for five transition economies. These studies also tend to find that foreign-owned firms perform better along other criteria and, in particular, that they tend to pay higher wages, have a higher capital intensity, have higher levels of employment and engage to a greater extent in international trade (i.e. imports and exports).

A number of studies move beyond the comparison of performance levels to consider the possibility of non-linearities, and in particular whether certain kinds of foreign-owned firms perform better than domestically-owned firms and other foreign-owned firms. Harris and Robinson (2003), for example, include a separate foreign ownership dummy for each nationality of ownership in their study of UK manufacturing industries. Their results indicate that for most industries, US owned plants performed better than domestic ones, while EU owned plants outperformed domestically owned plants in only a small number of cases. Globerman et al (1994) in their study for Canada find few significant differences in performance between foreign-owned firms from Japan, the USA and Europe. Yasar and Morrison-Paul (2007) find that firms with a greater foreign ownership share have higher productivity than those with a lower share, as do Hallward-Driemeier et al (2002). Vahter (2005) examines the productivity of export-oriented versus domestic-oriented foreign firms. Using data for Estonia he finds that export-oriented foreign-owned firms have lower productivity than domestically-oriented foreign-owned firms. Harris and Li (2007) using data from the UK find that the productivity of foreign-owned firms is higher than that of domestically-owned exporters in less than half of the industries, while domestically owned exporters dominated TNCs in 9 of the 30 industries.

The current paper adds to the existing literature by using a recent survey of a large number of firms in 19 SSA countries.[3] The paper thus extends the literature by considering the relationship between foreign ownership and performance in SSA, and by considering a number of countries for which few or no firm-level studies exist. Rather than considering manufacturing firms only, as the studies mentioned above are usually forced to do, the current paper also reports results separately for services firms. The paper is one of the first therefore to consider the relationship between foreign ownership and performance for services firms. Our results indicate that foreign-owned firms perform significantly better than domestically-owned ones in SSA according to most of our performance indicators and in both services and manufacturing sectors, with the foreign-ownership premium tending to be higher for services firms. We further find some evidence to indicate that firms owned by a TNC perform better than those owned by individual foreign entrepreneurs, though there is little evidence of differences in performance between joint ventures and wholly owned foreign enterprises.

The remainder of this paper is set out as follows: Section 2 describes the data used in our analysis and provides descriptive statistics of our main variables of interest; Section 3 discusses the statistical techniques used to search for differences in firm-level performance; Section 4 describes the results; and Section 5 summarises and concludes.

2. Data and Summary Statistics

The data are drawn from the most recent AIS, which was conducted in 2010 and which surveys over 6,000 agricultural, manufacturing and services firms in 19 sub-Saharan African countries.[4]

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[3] The 19 SSA countries considered are: Burkina Faso, Burundi, Cameroon, Cape Verde, Ethiopia, Ghana, Kenya, Lesotho, Madagascar, Malawi, Mali, Mozambique, Niger, Nigeria, Rwanda, Senegal, Tanzania, Uganda and Zambia.
[4] The data used in this paper are confidential, but not exclusive. In order to gain access to the data a confidentiality agreement with UNIDO will need to be signed. Once this agreement has been signed the authors would be happy to share the sample of data used in their analysis. The Stata programmes used to estimate all of the results in the paper are also available from the authors on request.

The UNIDO dataset has the advantage that it covers a relatively large number of SSA countries and a large number of firms. The survey is also recent having been conducted in 2010. In our analysis we consider the sample of manufacturing and services firms, which gives us a maximum number of 5,029 observations. While it is common to assume that services are dominant in developed economies and manufacturing and agriculture dominate the economies of developing countries, it is often the case that services comprise a significant component of developing countries' GDP. Francois and Hoekman (2010), for example, note that services accounted for 66% of value-added in Latin America in 2007 and that there has been a marked shift in value added towards the service sectors in SSA, despite lagging growth rates. Massimiliano et al (2008) note that services constitute over 50% of GDP in low income countries, and that 47% of GDP growth in SSA over the period 2000-2005 was accounted for by services, compared with 37% and 16% for industry and agriculture respectively.

Of the maximum number of 5,029 firms in our dataset, 1,821 are foreign-owned. In terms of the split between manufacturing and services we have 2,816 manufacturing firms and 2,213 services firms, of which 1,016 and 805 are foreign-owned respectively. Tables A1 and A2 in the appendix present a breakdown of these observations by country and industry, as well as reporting the number of firms that are foreign-owned and the number of foreign owned firms that are owned by TNCs and that are joint ventures (JV). Table 1 reports summary statistics for our performance indicators and a selection of other variables that will be used in the analysis below. Our performances indicators include measures of productivity: the logged values of output per worker ($\ln(outputpw)$) and the log of Total Factor Productivity ($\ln(tfp)$)[5]. In addition, we include the log of sales ($\ln(sales)$), the log of the capital-labour ratio ($\ln(K/L)$), the log annual average pre-

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[5] TFP is constructed using the approach of Asker et al (forthcoming). This involves calculating the labour share as $\beta_L = (1 - \frac{1}{\varepsilon}) \frac{wL}{S}$, where wL is the wage bill, S is revenue and ε is fixed at 4 following Bloom (2009). The median of β_L by sector is then used to calculate $\beta_{K_{ij}} = 1 - \beta_{L_{ij}}$, and TFP is constructed as $\ln VA_k = \ln S_k - \beta_{L_{ij}} \ln L_k - \beta_{K_{ij}} \ln K_k$, where subscripts i, j and k denote country, sector and firm, VA is value-added, L is employment and K is total fixed assets. For more information on the construction of this variable see Asker et al (forthcoming).

tax profit margin ($\ln(profit)$)), whether the firm is an exporter or not ($exporter$), and the log of exports ($\ln(exports)$). These latter two variables capture the extensive and intensive margin of exporting respectively, with the former indicating whether a firm exports or not, and the latter indicating export intensity given that the firm is an exporter. Table 1 indicates that foreign-owned firms tend to report higher mean (and median) values of all performance indicators than domestically-owned firms, with the exception of the profit rate. This is true for the full sample of firms as well as the subsamples of manufacturing and services separately. Notably, the mean and median values of output per worker and TFP tend to be higher in services than in manufacturing, while the capital-labour ratio and both the probability and extent of exporting are larger in manufacturing firms. Such differences help justify our decision to look at the subsamples of manufacturing and services separately. A further thing to note from the table is that there are often relatively large differences in the mean and median values of the performance indicators. While the differences in the logs look relatively small, they often translate into differences in the actual values of 10% or more. That the mean and median of the performance variables differ substantially is often found in the literature and suggests the presence of outliers. In the regression analysis below, we will take account of these outliers through the use of robust regression methods.

<<Table 1 here>>

3. Methodology

In order to test for differences in our performance measures between foreign- and domestically-owned firms we employ a number of statistical methods. We begin by reporting results from a simple comparison of means test. We then turn to regression analysis which allows us to condition on other factors affecting performance. The basic model that we estimate is of the following form:

$$\ln Y_{ijk} = \beta_1 \ln EMP_{ijk} + \beta_2 \left(\ln EMP_{ijk}\right)^2 + \beta_3 AGE_{ijk} + +\beta_4 FOREIGN_{ijk} + \theta_{ij} + \varepsilon_{ijk}$$

where Y is our measure of firm performance in firm k in sector j in country i, EMP is the number of employees, AGE is firm age in years, $FOREIGN$ is a dummy taking the value one if the firm is foreign-owned[6], and θ_{ij} are sector-country fixed effects that are included to control for country and sector specific differences in performance. As discussed by Vogel and Wagner (2010), this model is not meant to be an empirical model to explain productivity and performance at the firm level, but rather a means of testing for and estimating the size of the foreign-ownership premia after controlling for other characteristics that are in the dataset. In general, most firm-level datasets are not rich enough to explain firm productivity and performance, while productivity at the firm-level is still generally considered to be "a measure of our ignorance" (Bartelsman and Doms, 2000, p. 586). As such, the set of control variables included in the regression model in existing studies is generally parsimonious and is often limited to industry and region fixed effects, measures of firm size (e.g. employment or sales) and age, and where relevant year fixed effects. This is the approach that we also adopt here including employment, as a measure of firm size, firm age, and sector-country fixed effects alongside our foreign ownership variable.

The inclusion of sector-country fixed effects in our model controls for a potential endogeneity problem related to foreign ownership. In particular, we may expect that foreign owned firms select into high productivity sectors and countries, which could lead to a spurious foreign ownership premium. Including country-sector fixed effects will control for unmodelled differences across sectors and countries, including such differences in sector and country productivity levels, thus removing this potential endogeneity problem.

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[6] A firm is defined a foreign-owned if more than 10% of the firm's equity is held by foreigners.

The above model is estimated using standard Ordinary Least Squares (OLS) methods. One problem with estimating the model using these methods relates to the issue of outliers, which are a frequent occurrence in firm-level datasets. To avoid this problem we further report results from an alternative robust regression method. In particular, we follow an approach suggested by Verardi and Wagner (2012) which proceeds in three steps. The first step is to centre the variables, which involves removing the country-industry specific median from each of our variables. In the second step we regress the centred dependent variable on the centred explanatory variables using a robust MM-estimator. Using the residuals from this regression and the estimated standard error of the residuals, we then identify outlying observations by flagging those firms that have robust standardised residuals that are larger than 2. Finally, we run a standard fixed-effects regression model awarding a weight of zero to the outliers.

A final issue on the estimation of the regression model is whether to use sample weights or not. In the paper we report results without using sample weights, since we believe that the sampling probabilities are exogenous, meaning that the sampling probabilities are independent of the error term in the regression. The survey sample was drawn by stratifying the survey population along the dimensions of country, sector, firm size and ownership (i.e. foreign and domestic). Since our regression specification controls for the variables determining the sampling criteria, weighting is unnecessary and can lead to reduced efficiency (see for example, Winship and Radbill, 1994; Solon et al, 2013).[7]

4. Results

4.1. Do foreign-owned firms perform better than domestically-owned ones?

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[7] Results when using sampling weights are available upon request. The coefficients on the foreign ownership are qualitatively similar to those when not using sampling weights, with the estimated size of the foreign ownership premium tending to be larger when using sampling weights.

In order to assess whether there are differences in performance between foreign- and domestically-owned firms we begin in Table 2 by reporting results from simple mean comparison tests. To account for differences in performance across countries and sectors we demean the data by subtracting from the logged value of the performance measure the mean of the logged value of performance of all firms in the same country and sector. The results in Table 2 indicate that for the majority of performance measures there is a significant difference in the mean value of the performance measures between foreign- and domestically-owned firms. The exception to this is the profit rate, for which no significant differences between the two groups are found. Where significant differences are found, they are always found to be favourable to foreign-owned firms. Results for the sub-samples of manufacturing and services firms are found to be very similar, though the difference in the value of exports and probability of exporting between domestically- and foreign-owned services firms is only marginally significant.

<<Table 2 here>>

Regression analysis has the advantage over the mean comparison test in that it allows us to control for additional firm-level characteristics. In tables 3 and 4 we report regression results using OLS and the robust method of Verardi and Wagner (2012) respectively. The tables report results when considering all firms, manufacturing firms only, and services firms only. Results on many of the explanatory variables are fairly consistent across the different performance measures. In particular, we tend to find a significant positive coefficient on employment and a significantly negative coefficient on employment squared. This is true when considering output per worker, sales, the capital-labour ratio and the value of exports as performance indicators. Such a non-linear relationship between firm size and performance is fairly common in the literature. No significant effect of employment is found in the case of TFP and the profit rate, while the coefficients on employment tend to be positive in the case of the export decision. The coefficient

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on firm age tends to be positive, when significant, suggesting that older firms tend to perform better, but is often negative and significant for the value of exports, suggesting that older firms export less.

Turning to our main variable of interest – the foreign ownership dummy – we find coefficients that are large, positive and significant for all performance variables except the profit rate, for which the coefficient is insignificant. The coefficients imply a foreign-ownership premium of between 36% and 103% when considering output per worker, TFP and sales in the case of OLS (the corresponding figures are 19% to 89% when using robust regression). Foreign-owned firms are found to have exports that are between 55% and 84% (50% to 98% when using robust regression) higher than domestically-owned firms, while foreign-owned firms are between 7% and 12% more likely to export (2% and 18% when using robust regression).[8]

The results further indicate that the foreign ownership premia are often larger for services firms than for manufacturing firms. In the case of output per worker the foreign-ownership premium for services firms is 103% (88% in the case of robust regression) versus 84% (63%) for manufacturing firms, with the figures for TFP being 53% (35%) and 36 (20%), and for sales 103% (89%) and 79% (63%). In the case of the capital-labour ratio, export values and exporter status we find larger premia for manufacturing firms. In particular, the premia for manufacturing firms in the case of the capital-labour ratio being 55% (47%) and in the case of services 33% (32%), with the premia for export values being 84% (98%) and 55% (50%) respectively. Considering the probability of exporting the results in tables 3 and 4 indicate that foreign-owned firms are 11.7% (16.9%) more likely to export in the case of manufacturing firms and 6.8% (1.6%) in the case of services firms.

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[8] The premia are calculated from the estimated coefficients on the trade dummies as $100(e^{\beta} - 1)$, where β is the estimated coefficient.

<<Tables 3 and 4 here>>

4.2. Are there differences in performance between different types of foreign-owned firms?

In addition to considering whether foreign-owned firms perform better than domestically-owned ones, the AIS allows us to search for differences in performance between different types of foreign-owned firms. We begin in Section 4.2.1 by examining whether there are differences in performance for firms that are owned by TNCs and those owned by single foreign entrepreneurs, before considering differences in performance between wholly foreign-owned firms and joint ventures (Section 4.2.2). For reasons of brevity we concentrate our discussion on the regression results only in these final two sections.

4.2.1. Are there differences in performance between Transnational Corporations and Foreign Entrepreneurs?

In this subsection we search for evidence of significant differences in performance between foreign-owned firms that are owned by a TNC and those owned by individual foreign entrepreneurs (FE). As mentioned in the introduction it is often assumed that the majority of FDI in SSA is undertaken by large TNCs from the developed world. In reality however, investors are highly heterogeneous with individual investors and large TNCs investing. From a policy perspective it is interesting to examine whether there are differences between these different types of investor.

Tables 5 and 6 report results from OLS and robust regressions respectively. Concentrating on the coefficients on the two foreign ownership variables, we tend to find positive and significant coefficients on the TNC and FE variables across all performance indicators and when using OLS

and robust, with the exception of the profit rate in all cases and the value of exports for services firms. The results indicate large differences in the coefficients for the two groups, with the estimated premia for TNC ownership tending to be between two and four times larger than that for FE ownership. Such differences are found to arise for the full sample of firms, but also for the two subsamples of manufacturing and services firms, with similar differences in the premia observed. These differences in coefficients on TNC and FE also tend to be statistically significant in all cases except for the profit rate.

<<Tables 5 and 6 here>>

4.2.3. Are there differences in performance between joint ventures and wholly foreign-owned firms?

Finally, we use the AIS data to examine whether there is any evidence of a difference in performance between joint ventures (JV)[9] and firms that are wholly foreign-owned (FO). We may expect differences in performance between these two types of firms for a number of reasons. On the one hand, wholly foreign-owned firms may benefit to a greater extent as owners may be more willing to provide the firms with knowledge, technology and the latest management techniques than would the foreign owners of a joint venture. On the other hand, local members of a joint venture may allow the firm to perform better than a wholly foreign-owned firm through their knowledge of local markets, customs and regulations.

OLS and robust regression results are reported in tables 7 and 8. Here, we tend to find that while both JVs and FOs tend to perform better than domestically-owned firms, there are few differences in performance between the two types of foreign-owned firms. Only in the case of

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[9] A firm is considered a joint venture if between 10 and 90% of the equity is foreign-owned, and a firm is considered wholly foreign-owned if more than 90% of the firm is foreign-owned.

the trade variables (and in the case of robust regression only) do we find evidence of significant differences, with stronger effects of joint ventures found for manufacturing firms when considering both the value of exports and the decision to export, and for wholly foreign-owned firms for services when considering the decision to export. Significant differences are also found in the case of the profit rate when considering all firms and the sample of manufacturing firms, though the coefficients on the profit rate themselves tend to be insignificant.

<<Tables 7 and 8 here>>

5. Conclusions

The question of whether inward FDI benefits the domestic economy is highly policy relevant. Foreign-owned firms can benefit the domestic economy by themselves performing better than their domestic counterparts or by providing spillover benefits to domestic firms. To the best of our knowledge, this paper is the first to consider the first issue for both manufacturing and services sectors in developing countries. We test for differences in the performance of foreign- and domestically-owned firms in a sample of firms from 19 SSA countries. We consider a number of performance measures related to a firm's output, productivity, trading status and profitability, and use both standard OLS and robust regression methods to test for differences in performance between foreign- and domestically-owned firms. The dataset allows us to consider such differences for both manufacturing and services firms separately, and in further analysis we also examine whether there are differences in performance indicators between different types of foreign-owned firms.

Our results indicate that foreign-owned firms perform significantly better than domestically-owned ones in SSA according to most of our performance indicators. We find little evidence

however indicating that the profit rate of foreign-owned firms is greater than that of domestically-owned firms. Interestingly, the premia from foreign-ownership tends to be considerably larger in the case of services firms than in manufacturing firms when considering measures of productivity, with the reverse the case when considering a firm's capital intensity and its export activities. When considering differences in performance between different types of foreign-owned firms we obtain mixed results. We tend to find that TNCs perform significantly better than foreign entrepreneurs across a number of criteria, with the differences in performance being pronounced. There seems to be little evidence of differences in performance between joint ventures and foreign ownership however. Such results suggest that there are potential benefits in SSA from investment promotion activities, and that the returns to such activities may be higher for activities aimed at investment from TNCs.

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Appendix

Table A1: Breakdown of Observations by Country

Country	No. of firms (% of Total)	Foreign Owned	TNC	JV
Burkina Faso	88 (1.75)	20 (22.73)	8 (40.0)	5 (5.68)
Burundi	137 (2.72)	37 (72.99)	12 (35.29)	9 (6.57)
Cameroon	200 (3.98)	101 (49.5)	48 (47.52)	38 (19.0)
Cape Verde	320 (6.36)	84 (73.75)	29 (34.52)	17 (5.31)
Ethiopia	459 (9.13)	98 (78.65)	28 (28.87)	29 (6.32)
Ghana	339 (6.74)	144 (57.52)	31 (21.68)	28 (8.26)
Kenya	502 (9.98)	239 (47.61)	78 (32.64)	120 (23.9)
Lesotho	139 (2.76)	61 (56.12)	25 (40.98)	6 (4.32)
Madagascar	139 (3.94)	104 (52.53)	57 (55.34)	29 (14.65)
Malawi	101 (2.01)	33 (32.67)	15 (45.45)	12 (11.88)
Mali	239 (4.75)	70 (29.29)	39 (56.52)	23 (9.62)
Mozambique	220 (4.37)	95 (43.18)	31 (32.63)	29 (13.18)
Niger	68 (1.35)	16 (23.53)	9 (64.28)	8 (11.76)
Nigeria	452 (8.99)	95 (21.02)	20 (21.05)	54 (11.94)
Rwanda	134 (2.66)	55 (41.04)	20 (37.04)	12 (8.96)
Senegal	211 (4.2)	77 (36.49)	36 (46.75)	17 (8.06)
Tanzania	359 (7.14)	123 (34.26)	46 (37.40)	40 (11.14)
Uganda	624 (12.41)	304 (48.72)	84 (27.63)	32 (5.13)
Zambia	239 (4.75)	65 (27.20)	21 (32.81)	13 (5.44)
Total	5,029	1,821 (36.2)	637 (35.0)	521 (28.6)

Notes: Column (1) reports the total number of firms included in the sample by country along with the percentage of the total number. Column (2) reports the number of foreign-owned firms in the sample by country along with the percentage of foreign-owned firms in total firms of that country. The final three columns report the number of firms owned by Transnational Corporations (TNCs), the number of foreign-owned joint ventures (JV) and the number of foreign-owned firms owned by SSA residents, along with the percentages of these types in the total number of foreign-owned firms by country.

Table A2: Breakdown of Observations by Industry

Industry	No. of Firms (% of Total)	Foreign owned	TNC	JV
Manufacture of food products and beverages	594 (11.81)	185 (31.14)	52 (28.11)	67 (11.28)
Manufacture of tobacco products	19 (0.38)	15 (78.95)	9 (60)	6 (31.58)
Manufacture of textiles	110 (2.19)	38 (34.55)	11 (28.95)	9 (8.18)
Manufacture of wearing apparel; dressing and dyeing of fur	176 (3.5)	79 (44.89)	36 (45.57)	14 (7.95)
Tanning and dressing of leather; manufacture of luggage, handbags, saddlery, harness and footwear	81 (1.61)	25 (30.86)	9 (36)	3 (3.70)
Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	120 (2.39)	31 (25.83)	3 (10)	7 (5.83)
Manufacture of paper and paper products	85 (1.69)	31 (36.47)	8 (25.81)	12 (14.12)
Publishing, printing and reproduction of recorded media	237 (4.71)	37 (15.61)	5 (13.89)	17 (7.17)
Manufacture of coke, refined petroleum products and nuclear fuel	10 (0.2)	7 (70)	3 (42.86)	2 (20)
Manufacture of chemicals and chemical products	267 (5.31)	127 (47.57)	44 (34.65)	46 (17.23)
Manufacture of rubber and plastics products	250 (4.97)	123 (49.2)	27 (21.95)	32 (12.8)
Manufacture of other non-metallic mineral products	149 (2.96)	48 (32.21)	14 (29.17)	22 (14.77)
Manufacture of basic metals	73 (1.45)	37 (50.68)	7 (19.44)	13 (17.81)
Manufacture of fabricated metal products, except machinery and equipment	297 (5.91)	100 (33.67)	20 (20)	35 (11.78)
Manufacture of machinery and equipment not elsewhere classified (n.e.c.)	77 (1.53)	26 (33.77)	7 (26.92)	6 (7.79)
Manufacture of Office, accounting and computing machinery	1 (0.04)	2 (100)	1 (50)	0 (0)
Manufacture of electrical machinery and apparatus n.e.c.	44 (0.87)	24 (54.55)	9 (39.13)	9 (20.45)
Manufacture of radio, television and communication equipment and apparatus	7 (0.14)	6 (85.71)	2 (33.33)	2 (28.57)
Manufacture of medical, precision and optical instruments, watches and clocks	13 (0.26)	4 (30.77)	0 (0)	1 (7.69)
Manufacture of motor vehicles, trailers and semi-trailers	25 (0.5)	12 (48)	1 (8.33)	8 (32)
Manufacture of other transport equipment	12 (0.24)	5 (41.67)	2 (40)	1 (8.33)
Manufacture of furniture; manufacturing n.e.c.	158 (3.14)	48 (30.38)	9 (18.75)	11 (6.96)
Recycling	10 (0.2)	6 (60)	2 (33.33)	0 (0)
Sale, maintenance and repair of motor vehicles and motorcycles; retail sale of automotive fuel	198 (3.94)	66 (33.33)	29 (43.94)	9 (4.54)
Wholesale trade and commission trade, except of motor vehicles and motorcycles	350 (6.96)	148 (42.29)	63 (43.15)	23 (6.57)
Retail trade, except of motor vehicles and motorcycles; repair of personal and household goods	323 (6.42)	108 (33.44)	27 (25)	20 (6.19)
Hotels and restaurants	273 (5.43)	85 (31.14)	24 (28.57)	9 (3.30)
Land transport; transport via pipelines	134 (2.66)	39 (29.10)	21 (53.85)	12 (8.96)
Water transport	19 (0.38)	12 (63.16)	9 (81.82)	4 (21.05)
Air transport	20 (0.4)	12 (60)	10 (83.33)	8 (5)
Supporting and auxiliary transport activities; activities of travel agencies	84 (1.67)	24 (28.57)	8 (33.33)	5 (5.95)
Post and telecommunications	79 (1.57)	43 (54.43)	22 (51.16)	17 (21.52)
Financial intermediation, except insurance and pension funding	168 (3.34)	85 (50.60)	53 (63.86)	45 (26.79)
Insurance and pension funding, except compulsory social security	84 (1.67)	37 (44.05)	27 (75)	16 (19.05)
Activities auxiliary to financial intermediation	21 (0.42)	5 (23.81)	3 (60)	2 (9.52)
Real estate activities	62 (1.23)	21 (33.87)	5 (23.81)	1 (1.61)
Renting of machinery and equipment without operator and of personal and household goods	14 (0.28)	5 (35.71)	2 (40)	0 (0)

Computer and related activities	35 (0.7)	12 (34.29)	7 (58.33)	3 (8.57)
Research and development	1 (0.02)	0 (0)	0 (0)	0 (0)
Other business activities	258 (5.13)	87 (33.72)	40 (45.98)	27 (10.47)
Public administration and defence; compulsory social security	5 (0.1)	0 (0)	0 (0)	0 (0)
Education	18 (0.36)	6 (33.33)	3 (50)	2 (11.11)
Heath and social work	10 (0.2)	1 (10)	0 (0)	0 (0)
Sewage and refuse disposal, sanitation and similar activities	31 (0.62)	2 (6.45)	2 (100)	0 (0)
Recreational, cultural and sporting activities	18 (0.36)	6 (33.33)	1 (16.67)	2 (11.11)
Other service activities	7 (0.14)	1 (14.29)	0 (0)	0 (0)
Activities of private households as employers of domestic staff	1 (0.02)	0 (0)	0 (0)	0 (0)
Total	5,029	1,821 (36.2)	637 (35.0)	521 (28.6)

Notes: Column (1) reports the total number of firms included in the sample by sector along with the percentage of the total number. Column (2) reports the number of foreign-owned firms in the sample by sector along with the percentage of foreign-owned firms in total firms of that sector. The final three columns report the number of firms owned by Transnational Corporations (TNCs), the number of foreign-owned joint ventures (JV) and the number of foreign-owned firms owned by SSA residents, along with the percentages of these types in the total number of foreign-owned firms by sector.

Table 1: Summary Statistics

	Observations	Full Sample	Foreign-Owned	Domestically-Owned
ALL FIRMS				
ln(*outputpw*)	5028	9.99 (10.02)	10.49 (10.58)	9.70 (9.75)
ln(*tfp*)	3572	1.19 (1.00)	1.48 (1.26)	1.02 (0.87)
ln(*sales*)	4988	13.78 (13.84)	14.63 (14.68)	13.29 (13.31)
ln(*K/L*)	4866	9.15 (9.26)	9.39 (9.50)	9.01 (9.13)
ln(*profit*)	4076	2.62 (2.71)	2.62 (2.71)	2.62 (2.71)
ln(*exports*)	1121	13.37 (13.38)	13.76 (13.78)	12.86 (12.87)
exporter	5029	0.30 (0.00)	0.40 (0.00)	0.24 (0.00)
MANUFACTURING FIRMS				
ln(*outputpw*)	2815	9.78 (9.81)	10.33 (10.43)	9.47 (9.52)
ln(*tfp*)	2359	0.69 (0.60)	0.90 (0.77)	0.57 (0.48)
ln(*sales*)	2776	13.79 (13.84)	14.82 (14.80)	13.20 (13.19)
ln(*K/L*)	2720	9.19 (9.31)	9.52 (9.70)	9.01 (9.12)
ln(*profit*)	2290	2.61 (2.71)	2.63 (2.77)	2.60 (2.71)
ln(*exports*)	880	13.42 (13.45)	13.87 (14.03)	12.83 (12.84)
exporter	2816	0.38 (0.00)	0.53 (1.00)	0.30 (0.00)
SERVICES FIRMS				
ln(*outputpw*)	2213	10.25 (10.33)	10.68 (10.74)	10.00 (10.06)
ln(*tfp*)	1213	2.17 (2.05)	2.62 (2.37)	1.91 (1.87)
ln(*sales*)	2212	13.76 (13.84)	14.40 (14.51)	13.40 (13.43)
ln(*K/L*)	2146	9.09 (9.20)	9.23 (9.32)	9.01 (9.14)
ln(*profit*)	1786	2.64 (2.71)	2.62 (2.71)	2.65 (2.71)
ln(*exports*)	241	13.17 (13.17)	13.33 (13.25)	12.97 (13.15)
exporter	2213	0.20 (0.00)	0.24 (0.00)	0.17 (0.00)

Notes: This table reports the mean values of the performance measures in the sample with median values reported in parentheses.

Table 2: Comparison of Means

	Mean Values		Alternative Hypothesis		
	Domestically Owned	Foreign Owned	Unequal Means	Difference favourable to foreign owned	Difference favourable to domestically owned
ALL FIRMS					
ln(*outputpw*)	-0.1878	0.3310	0.000***	0.000***	1.000
ln(*tfp*)	-0.0893	0.1560	0.000***	0.000***	1.000
ln(*sales*)	-0.3139	0.5492	0.000***	0.000***	1.000
ln(*K/L*)	-0.1073	0.1860	0.000***	0.000***	1.000
ln(*profit*)	0.0098	-0.0167	0.411	0.795	0.205
ln(*exports*)	-0.3231	0.2491	0.000***	0.000***	1.000
exporter	-0.0342	0.0602	0.000***	0.000***	1.000
MANUFACTURING FIRMS					
ln(*outputpw*)	-0.1858	0.3294	0.000***	0.000***	1.000
ln(*tfp*)	-0.0825	0.1431	0.000***	0.000***	1.000
ln(*sales*)	-0.3523	0.6169	0.000***	0.000***	1.000
ln(*K/L*)	-0.1277	0.2235	0.000***	0.000***	1.000
ln(*profit*)	0.0112	-0.0186	0.468	0.766	0.234
ln(*exports*)	-0.3578	0.2719	0.000***	0.000***	1.000
exporter	-0.0447	0.0792	0.000***	0.000***	1.000
SERVICES FIRMS					
ln(*outputpw*)	-0.1904	0.2457	0.000***	0.000***	1.000
ln(*tfp*)	-0.1022	0.1816	0.0031***	0.0016***	0.9984
ln(*sales*)	-0.2656	0.4643	0.000***	0.000***	1.000
ln(*K/L*)	-0.0812	0.1392	0.0024***	0.0012***	0.9988
ln(*profit*)	0.0081	-0.0141	0.6654	0.6673	0.3327
ln(*exports*)	-0.2012	0.1634	0.0943*	0.0472**	0.9528
exporter	-0.0207	0.0363	0.0003*	0.0001***	0.9999

Notes: The table reports the mean values of the demeaned performance indicators for domestically- and foreign-owned firms, along with the p-values from the one- and two-sided tests of equality of the means. ***, ** and * indicate significance at the 1, 5, and 10 per cent levels.

Table 3: OLS Regression Results when including the Foreign Ownership Dummy

	(1) ln(*outputpw*)	(2) ln(*tfp*)	(3) ln(*sales*)	(4) ln(*K/L*)	(5) ln(*profit*)	(6) ln(*exports*)	(7) *exporter*
ALL FIRMS							
ln *EMP*	0.357***	-0.0569	1.393***	0.345***	-0.0246	1.063***	0.0176
	(0.0911)	(0.100)	(0.0901)	(0.109)	(0.0554)	(0.253)	(0.0203)
ln *EMP*^{2}	-0.0412***	0.00269	-0.0451***	-0.0386***	0.00112	-0.0124	0.00456*
	(0.0112)	(0.0115)	(0.0111)	(0.0134)	(0.00659)	(0.0261)	(0.00249)
AGE	0.00550***	0.000239	0.00574***	0.00743***	8.73e-05	-0.00723*	0.000925**
	(0.00180)	(0.00211)	(0.00179)	(0.00187)	(0.00126)	(0.00437)	(0.000452)
FOREIGN	0.678***	0.358***	0.663***	0.379***	-0.0189	0.589***	0.101***
	(0.0532)	(0.0709)	(0.0526)	(0.0580)	(0.0417)	(0.161)	(0.0145)
R^2	0.982	0.694	0.991	0.973	0.886	0.988	0.537
Observations	4,993	3,552	4,956	4,836	4,055	1,113	4,994
MANUFACTURING FIRMS							
ln *EMP*	0.430***	0.00569	1.507***	0.342**	-0.0739	1.132***	0.0571*
	(0.125)	(0.122)	(0.121)	(0.160)	(0.0739)	(0.264)	(0.0321)
ln *EMP*^{2}	-0.0376**	-0.000620	-0.0455***	-0.0334*	0.00448	-0.0174	0.00329
	(0.0147)	(0.0139)	(0.0143)	(0.0191)	(0.00863)	(0.0268)	(0.00377)
AGE	0.00315	0.00170	0.00341	0.00354	-0.000230	-0.00998**	0.00114*
	(0.00213)	(0.00243)	(0.00211)	(0.00221)	(0.00167)	(0.00483)	(0.000585)
FOREIGN	0.612***	0.307***	0.581***	0.440***	-0.00868	0.609***	0.117***
	(0.0719)	(0.0858)	(0.0699)	(0.0750)	(0.0526)	(0.170)	(0.0210)
R^2	0.982	0.375	0.991	0.976	0.892	0.988	0.596
Observations	2,796	2,348	2,760	2,705	2,281	874	2,797
SERVICES FIRMS							
ln *EMP*	0.383***	-0.111	1.383***	0.359**	-0.00709	0.833	0.0118
	(0.140)	(0.173)	(0.140)	(0.154)	(0.0854)	(0.740)	(0.0250)
ln *EMP*^{2}	-0.0602***	0.00247	-0.0601***	-0.0474**	0.00186	0.00478	0.000543
	(0.0181)	(0.0205)	(0.0181)	(0.0197)	(0.0106)	(0.0848)	(0.00313)
AGE	0.00808**	-0.00482	0.00819**	0.0132***	0.000824	0.00412	0.000445
	(0.00318)	(0.00426)	(0.00318)	(0.00335)	(0.00192)	(0.00889)	(0.000701)
FOREIGN	0.707***	0.429***	0.708***	0.285***	-0.0204	0.436	0.0684***
	(0.0794)	(0.131)	(0.0793)	(0.0903)	(0.0659)	(0.455)	(0.0194)
R^2	0.982	0.841	0.990	0.970	0.880	0.988	0.410
Observations	2,197	1,204	2,196	2,131	1,774	239	2,197

Notes: Robust standard errors in parentheses; *** $p<0.01$, ** $p<0.05$, * $p<0.1$; All regressions include unreported country-sector fixed effects

Table 4: Robust Regression Results when including the Foreign Ownership Dummy

	(1) ln(outputpw)	(2) ln(tfp)	(3) ln(sales)	(4) ln(K/L)	(5) ln(profit)	(6) ln(exports)	(7) exporter
ALL FIRMS							
ln EMP	0.335***	-0.0805	1.384***	0.371***	0.000995	0.934***	0.0103
	(0.0874)	(0.0846)	(0.0861)	(0.105)	(0.0513)	(0.254)	(0.0201)
ln EMP²	-0.0385***	0.00483	-0.0441***	-0.0423***	-0.00112	-0.00226	0.00500**
	(0.0108)	(0.00988)	(0.0107)	(0.0129)	(0.00626)	(0.0262)	(0.00246)
AGE	0.00523***	0.000121	0.00554***	0.00842***	-0.000910	-0.00646	0.000885**
	(0.00172)	(0.00182)	(0.00170)	(0.00181)	(0.00110)	(0.00431)	(0.000450)
FOREIGN	0.581***	0.225***	0.585***	0.347***	-0.0279	0.652***	0.135***
	(0.0486)	(0.0589)	(0.0479)	(0.0560)	(0.0353)	(0.153)	(0.0141)
R^2	0.400	0.709	0.685	0.303	0.209	0.638	0.355
Observations	4,889	3,433	4,852	4,756	4,021	1,091	4,939
MANUFACTURING FIRMS							
ln EMP	0.423***	-0.0286	1.524***	0.379**	-0.0771	0.971***	0.0858***
	(0.118)	(0.105)	(0.115)	(0.156)	(0.0703)	(0.262)	(0.0296)
ln EMP²	-0.0365***	0.00327	-0.0470***	-0.0373**	0.00411	-0.00266	0.00233
	(0.0140)	(0.0122)	(0.0137)	(0.0187)	(0.00814)	(0.0265)	(0.00357)
AGE	0.00366*	0.00110	0.00366*	0.00428**	-0.00121	-0.0104**	0.00165***
	(0.00203)	(0.00213)	(0.00199)	(0.00215)	(0.00141)	(0.00479)	(0.000561)
FOREIGN	0.493***	0.179**	0.486***	0.384***	-0.00942	0.682***	0.168***
	(0.0653)	(0.0721)	(0.0625)	(0.0711)	(0.0458)	(0.161)	(0.0201)
R^2	0.376	0.365	0.720	0.317	0.214	0.643	0.469
Observations	2,738	2,274	2,695	2,659	2,257	859	2,636
SERVICES FIRMS							
ln EMP	0.374***	-0.0886	1.365***	0.390***	0.0194	1.129	-0.0125
	(0.132)	(0.142)	(0.132)	(0.144)	(0.0794)	(0.717)	(0.0113)
ln EMP²	-0.0594***	-0.00187	-0.0599***	-0.0520***	0.00102	-0.0442	0.00154
	(0.0171)	(0.0171)	(0.0170)	(0.0182)	(0.0103)	(0.0814)	(0.00145)
AGE	0.00722**	-0.00507	0.00708**	0.0145***	0.000223	0.00924	0.000179
	(0.00304)	(0.00345)	(0.00302)	(0.00323)	(0.00177)	(0.00815)	(0.000387)
FOREIGN	0.633***	0.304***	0.635***	0.276***	-0.0393	0.404	0.0164*
	(0.0723)	(0.105)	(0.0727)	(0.0885)	(0.0550)	(0.425)	(0.00879)
R^2	0.415	0.837	0.645	0.291	0.210	0.620	0.673
Observations	2,151	1,163	2,153	2,097	1,760	232	1,903

Notes: Robust standard errors in parentheses; *** $p<0.01$, ** $p<0.05$, * $p<0.1$; All regressions include unreported country-sector fixed effects

Table 5: OLS Regression Results for TNC and FE foreign-owned firms

	(1) ln(*outputpw*)	(2) ln(*tfp*)	(3) ln(*sales*)	(4) ln(*K/L*)	(5) ln(*profit*)	(6) ln(*exports*)	(7) *exporter*
ALL FIRMS							
ln *EMP*	0.376***	-0.0463	1.414***	0.353***	-0.0211	1.147***	0.0194
	(0.0902)	(0.101)	(0.0891)	(0.109)	(0.0551)	(0.254)	(0.0203)
ln *EMP*²	-0.0454***	0.000307	-0.0495***	-0.0408***	0.000564	-0.0237	0.00410
	(0.0111)	(0.0116)	(0.0110)	(0.0133)	(0.00657)	(0.0264)	(0.00249)
AGE	0.00525***	0.000102	0.00549***	0.00731***	3.85e-05	-0.00800*	0.000903**
	(0.00175)	(0.00210)	(0.00175)	(0.00186)	(0.00126)	(0.00428)	(0.000451)
FE	0.474***	0.220***	0.454***	0.291***	-0.0442	0.273	0.0818***
	(0.0571)	(0.0765)	(0.0560)	(0.0624)	(0.0449)	(0.171)	(0.0160)
TNC	1.114***	0.661***	1.101***	0.638***	0.0288	0.997***	0.153***
	(0.0809)	(0.107)	(0.0825)	(0.0909)	(0.0708)	(0.222)	(0.0217)
FE = TNC	56.09***	15.26***	55.32***	13.11***	0.95	11.62***	9.36***
R^2	0.982	0.696	0.991	0.973	0.887	0.988	0.538
Observations	4,993	3,552	4,956	4,836	4,055	1,113	4,994
MANUFACTURING FIRMS							
ln *EMP*	0.457***	0.0173	1.538***	0.355**	-0.0711	1.212***	0.0607*
	(0.123)	(0.124)	(0.119)	(0.159)	(0.0742)	(0.268)	(0.0321)
ln *EMP*²	-0.0434***	-0.00355	-0.0518***	-0.0366*	0.00433	-0.0278	0.00255
	(0.0144)	(0.0140)	(0.0141)	(0.0189)	(0.00866)	(0.0274)	(0.00378)
AGE	0.00309	0.00161	0.00334	0.00346	-0.000267	-0.0109**	0.00112*
	(0.00208)	(0.00241)	(0.00207)	(0.00219)	(0.00167)	(0.00467)	(0.000583)
FE	0.453***	0.196**	0.415***	0.347***	-0.0231	0.322*	0.0938***
	(0.0741)	(0.0892)	(0.0714)	(0.0773)	(0.0577)	(0.177)	(0.0222)
TNC	1.162***	0.713***	1.132***	0.782***	-0.0231	1.061***	0.186***
	(0.116)	(0.136)	(0.121)	(0.134)	(0.0883)	(0.246)	(0.0324)
FE = TNC	36.74***	14.16***	33.94***	10.06***	0.00	9.91***	7.86***
R^2	0.982	0.380	0.992	0.976	0.892	0.988	0.597
Observations	2,796	2,348	2,760	2,705	2,281	874	2,797
SERVICES FIRMS							
ln *EMP*	0.393***	-0.110	1.394***	0.362**	-0.00333	1.088	0.0126
	(0.139)	(0.173)	(0.139)	(0.153)	(0.0851)	(0.725)	(0.0250)
ln *EMP*²	-0.0632***	0.00147	-0.0632***	-0.0488**	0.000934	-0.0316	0.000193
	(0.0181)	(0.0205)	(0.0181)	(0.0196)	(0.0106)	(0.0848)	(0.00313)
AGE	0.00779**	-0.00492	0.00790**	0.0130***	0.000737	0.00398	0.000420
	(0.00311)	(0.00430)	(0.00311)	(0.00333)	(0.00193)	(0.00905)	(0.000698)
FE	0.446***	0.246	0.445***	0.193*	-0.0681	-0.135	0.0457**
	(0.0896)	(0.154)	(0.0895)	(0.103)	(0.0709)	(0.538)	(0.0222)
TNC	1.046***	0.590***	1.047***	0.501***	0.0755	0.717	0.118***
	(0.113)	(0.174)	(0.113)	(0.124)	(0.107)	(0.545)	(0.0289)
FE = TNC	22.63***	2.96*	22.81***	5.04***	1.54	2.32	4.72**
R^2	0.982	0.841	0.990	0.970	0.880	0.988	0.413
Observations	2,197	1,204	2,196	2,131	1,774	239	2,197

Notes: Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1; All regressions include unreported country-sector fixed effects

Table 6: Robust Regression Results for TNC and FE foreign-owned firms

	(1) ln(outputpw)	(2) ln(tfp)	(3) ln(sales)	(4) ln(K/L)	(5) ln(profit)	(6) ln(exports)	(7) exporter
ALL FIRMS							
ln EMP	0.376***	-0.0667	1.392***	0.377***	0.00350	1.033***	0.00967
	(0.0853)	(0.0853)	(0.0849)	(0.105)	(0.0514)	(0.252)	(0.0207)
ln EMP^2	-0.0439***	0.00203	-0.0460***	-0.0441***	-0.00154	-0.0134	0.00543**
	(0.0106)	(0.00999)	(0.0106)	(0.0129)	(0.00629)	(0.0261)	(0.00261)
AGE	0.00501***	0.000157	0.00498***	0.00799***	-0.000941	-0.00722*	0.000511
	(0.00168)	(0.00183)	(0.00167)	(0.00179)	(0.00110)	(0.00423)	(0.000474)
FE	0.412***	0.140**	0.398***	0.289***	-0.0459	0.336**	-0.0617***
	(0.0526)	(0.0651)	(0.0511)	(0.0600)	(0.0386)	(0.166)	(0.0139)
TNC	0.975***	0.467***	0.971***	0.542***	0.0102	0.928***	-0.129***
	(0.0724)	(0.0859)	(0.0734)	(0.0856)	(0.0550)	(0.210)	(0.0436)
$FE = TNC$	54.21***	12.68***	55.16***	8.03***	0.94	8.46***	2.35
R^2	0.412	0.709	0.689	0.307	0.209	0.640	0.373
Observations	4,885	3,438	4,853	4,753	4,021	1,092	4,375
MANUFACTURING FIRMS							
ln EMP	0.528***	-0.0179	1.594***	0.440***	-0.0729	1.090***	0.129***
	(0.114)	(0.106)	(0.111)	(0.148)	(0.0706)	(0.260)	(0.0294)
ln EMP^2	-0.0500***	0.000424	-0.0566***	-0.0457**	0.00365	-0.0155	-0.00218
	(0.0136)	(0.0123)	(0.0133)	(0.0178)	(0.00819)	(0.0266)	(0.00355)
AGE	0.00323	0.00142	0.00317	0.00414*	-0.00126	-0.0114**	0.00142**
	(0.00197)	(0.00215)	(0.00194)	(0.00213)	(0.00140)	(0.00464)	(0.000560)
FE	0.347***	0.128*	0.316***	0.312***	-0.0281	0.393**	0.112***
	(0.0674)	(0.0764)	(0.0636)	(0.0728)	(0.0482)	(0.173)	(0.0211)
TNC	1.009***	0.460***	0.963***	0.675***	0.0115	1.007***	0.183***
	(0.103)	(0.110)	(0.105)	(0.122)	(0.0804)	(0.232)	(0.0314)
$FE = TNC$	40.11***	8.78***	37.23***	8.71***	0.24	7.38***	4.88**
R^2	0.392	0.365	0.728	0.326	0.214	0.644	0.446
Observations	2,735	2,278	2,686	2,654	2,257	861	2,675
SERVICES FIRMS							
ln EMP	0.394***	-0.103	1.374***	0.392***	0.0182	1.259*	-0.0257*
	(0.132)	(0.142)	(0.131)	(0.144)	(0.0794)	(0.697)	(0.0148)
ln EMP^2	-0.0621***	-0.000624	-0.0617***	-0.0534***	0.000818	-0.0652	0.00440**
	(0.0171)	(0.0171)	(0.0169)	(0.0182)	(0.0104)	(0.0803)	(0.00211)
AGE	0.00659**	-0.00534	0.00691**	0.0145***	0.000165	0.0102	0.000698
	(0.00299)	(0.00345)	(0.00298)	(0.00322)	(0.00177)	(0.00809)	(0.000512)
FE	0.452***	0.148	0.440***	0.221**	-0.0436	-0.116	0.0149
	(0.0839)	(0.129)	(0.0833)	(0.101)	(0.0642)	(0.487)	(0.00990)
TNC	0.896***	0.438***	0.906***	0.396***	0.00991	0.520	0.0756***
	(0.100)	(0.135)	(0.101)	(0.120)	(0.0761)	(0.512)	(0.0196)
$FE = TNC$	15.49***	3.25*	17.05***	1.76	0.40	1.52	8.54***
R^2	0.422	0.838	0.650	0.293	0.209	0.630	0.608
Observations	2,151	1,162	2,151	2,097	1,761	231	1,920

Notes: Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1; All regressions include unreported country-sector fixed effects

Table 7: OLS Regression Results for JV and FO foreign-owned firms

	(1) ln($outputpw$)	(2) ln(tfp)	(3) ln($sales$)	(4) ln(K/L)	(5) ln($profit$)	(6) ln($exports$)	(7) $exporter$
ALL FIRMS							
ln EMP	0.355***	-0.0587	1.392***	0.346***	-0.0183	1.045***	0.0176
	(0.0912)	(0.100)	(0.0902)	(0.109)	(0.0549)	(0.250)	(0.0203)
ln EMP^2	-0.0408***	0.00305	-0.0448***	-0.0390***	0.000364	-0.0104	0.00460*
	(0.0112)	(0.0115)	(0.0111)	(0.0134)	(0.00654)	(0.0257)	(0.00249)
AGE	0.00540***	0.000216	0.00563***	0.00724***	-0.000103	-0.00693	0.000903**
	(0.00180)	(0.00212)	(0.00179)	(0.00188)	(0.00124)	(0.00433)	(0.000453)
FO	0.656***	0.350***	0.637***	0.341***	-0.0769*	0.678***	0.0955***
	(0.0585)	(0.0782)	(0.0582)	(0.0642)	(0.0434)	(0.174)	(0.0160)
JV	0.676***	0.320***	0.667***	0.509***	0.0632	0.456**	0.101***
	(0.0846)	(0.114)	(0.0844)	(0.0955)	(0.0690)	(0.216)	(0.0234)
$FO = JV$	0.05	0.06	0.11	2.66	3.76*	1.10	0.04
R^2	0.982	0.694	0.991	0.973	0.887	0.988	0.536
Observations	4,993	3,552	4,956	4,836	4,055	1,113	4,994
MANUFACTURING FIRMS							
ln EMP	0.425***	0.0115	1.503***	0.342**	-0.0645	1.133***	0.0561*
	(0.125)	(0.123)	(0.121)	(0.160)	(0.0739)	(0.261)	(0.0322)
ln EMP^2	-0.0369**	-0.00104	-0.0449***	-0.0337*	0.00351	-0.0172	0.00349
	(0.0146)	(0.0139)	(0.0143)	(0.0191)	(0.00859)	(0.0264)	(0.00379)
AGE	0.00326	0.00153	0.00348*	0.00339	-0.000477	-0.00944**	0.00117**
	(0.00212)	(0.00245)	(0.00210)	(0.00222)	(0.00164)	(0.00479)	(0.000587)
FO	0.629***	0.260***	0.592***	0.409***	-0.0716	0.702***	0.122***
	(0.0817)	(0.0966)	(0.0806)	(0.0834)	(0.0578)	(0.187)	(0.0236)
JV	0.565***	0.324**	0.542***	0.561***	0.0529	0.484**	0.0951***
	(0.104)	(0.128)	(0.103)	(0.119)	(0.0678)	(0.218)	(0.0311)
$FO = JV$	0.33	0.21	0.18	1.37	2.66	1.00	0.63
R^2	0.982	0.374	0.991	0.976	0.892	0.988	0.596
Observations	2,796	2,348	2,760	2,705	2,281	874	2,797
SERVICES FIRMS							
ln EMP	0.384***	-0.128	1.385***	0.361**	-0.00323	0.761	0.0125
	(0.140)	(0.173)	(0.140)	(0.154)	(0.0849)	(0.742)	(0.0250)
ln EMP^2	-0.0604***	0.00454	-0.0604***	-0.0478**	0.00132	0.0124	0.000445
	(0.0181)	(0.0204)	(0.0181)	(0.0196)	(0.0106)	(0.0853)	(0.00313)
AGE	0.00780**	-0.00475	0.00790**	0.0130***	0.000706	0.00364	0.000400
	(0.00319)	(0.00425)	(0.00319)	(0.00335)	(0.00191)	(0.00879)	(0.000703)
FO	0.643***	0.490***	0.643***	0.243**	-0.0750	0.503	0.0555***
	(0.0840)	(0.137)	(0.0840)	(0.0984)	(0.0654)	(0.460)	(0.0212)
JV	0.793***	0.269	0.796***	0.412***	0.0988	0.281	0.0940***
	(0.144)	(0.239)	(0.144)	(0.159)	(0.146)	(0.728)	(0.0344)
$FO = JV$	1.03	0.82	1.08	1.00	1.35	0.11	1.09
R^2	0.982	0.841	0.990	0.970	0.880	0.988	0.410
Observations	2,197	1,204	2,196	2,131	1,774	239	2,197

Notes: Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1; All regressions include unreported country-sector fixed effects

Table 8: Robust Regression Results for JV and FO foreign-owned firms

	(1) ln(outputpw)	(2) ln(tfp)	(3) ln(sales)	(4) ln(K/L)	(5) ln(profit)	(6) ln(exports)	(7) exporter
ALL FIRMS							
ln EMP	0.347***	-0.0812	1.380***	0.372***	0.00422	0.939***	0.0157
	(0.0867)	(0.0846)	(0.0859)	(0.105)	(0.0511)	(0.249)	(0.0202)
ln EMP²	-0.0395***	0.00490	-0.0440***	-0.0423***	-0.00164	-0.00154	0.00472*
	(0.0108)	(0.00987)	(0.0107)	(0.0129)	(0.00623)	(0.0256)	(0.00248)
AGE	0.00516***	7.35e-05	0.00526***	0.00786***	-0.00103	-0.00617	0.000968**
	(0.00172)	(0.00182)	(0.00170)	(0.00181)	(0.00110)	(0.00425)	(0.000452)
FO	0.556***	0.141	0.588***	0.423***	0.0515	0.406**	0.111***
	(0.0765)	(0.0935)	(0.0757)	(0.0880)	(0.0536)	(0.202)	(0.0234)
JV	0.581***	0.248***	0.565***	0.328***	-0.0575	0.717***	0.113***
	(0.0533)	(0.0651)	(0.0525)	(0.0619)	(0.0397)	(0.168)	(0.0158)
FO = JV	0.09	1.14	0.09	1.02	3.43*	2.41	0.01
R²	0.401	0.710	0.684	0.306	0.210	0.637	0.345
Observations	4,890	3,433	4,849	4,752	4,021	1,092	4,969
MANUFACTURING FIRMS							
ln EMP	0.425***	-0.0212	1.547***	0.377**	-0.0742	0.981***	0.0565*
	(0.118)	(0.106)	(0.114)	(0.155)	(0.0698)	(0.255)	(0.0318)
ln EMP²	-0.0364***	0.00247	-0.0498***	-0.0374**	0.00346	-0.00273	0.00276
	(0.0140)	(0.0123)	(0.0136)	(0.0186)	(0.00806)	(0.0257)	(0.00375)
AGE	0.00369*	0.000948	0.00343*	0.00425**	-0.00136	-0.0101**	0.00125**
	(0.00202)	(0.00215)	(0.00198)	(0.00215)	(0.00141)	(0.00471)	(0.000581)
FO	0.421***	0.218*	0.444***	0.456***	0.0947	0.430**	-0.0539*
	(0.0953)	(0.114)	(0.0925)	(0.107)	(0.0647)	(0.201)	(0.0290)
JV	0.535***	0.128	0.476***	0.377***	-0.0410	0.767***	0.130***
	(0.0732)	(0.0784)	(0.0695)	(0.0790)	(0.0534)	(0.181)	(0.0235)
FO = JV	1.27	0.55	0.10	0.46	3.42*	2.73*	33.19***
R²	0.375	0.363	0.720	0.320	0.215	0.643	0.367
Observations	2,742	2,275	2,692	2,658	2,257	858	2,728
SERVICES FIRMS							
ln EMP	0.367***	-0.109	1.356***	0.385***	0.0192	1.012	-0.0132
	(0.132)	(0.142)	(0.132)	(0.144)	(0.0793)	(0.724)	(0.0114)
ln EMP²	-0.0584***	0.00144	-0.0585***	-0.0522***	0.000937	-0.0323	0.00175
	(0.0171)	(0.0171)	(0.0170)	(0.0182)	(0.0103)	(0.0829)	(0.00148)
AGE	0.00681**	-0.00497	0.00688**	0.0146***	0.000137	0.0101	0.000375
	(0.00304)	(0.00346)	(0.00303)	(0.00323)	(0.00177)	(0.00789)	(0.000409)
FO	0.698***	-0.0351	0.730***	0.337**	0.00939	0.229	0.0625***
	(0.126)	(0.162)	(0.127)	(0.151)	(0.0934)	(0.720)	(0.0188)
JV	0.596***	0.450***	0.593***	0.252***	-0.0623	0.376	0.00598
	(0.0781)	(0.117)	(0.0782)	(0.0965)	(0.0596)	(0.420)	(0.00960)
FO = JV	0.62	7.90***	1.10	0.28	0.53	0.05	8.14***
R²	0.415	0.838	0.648	0.293	0.209	0.625	0.662
Observations	2,149	1,163	2,149	2,096	1,761	231	1,906

Notes: Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1; All regressions include unreported country-sector fixed effects