Remittances and firm performance in sub-Saharan Africa : evidence from firm-level data

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Abstract

Sub-Saharan African firms face enormous obstacles to their development. The main constraints to business performance identified are poor access to finance and a weak domestic market. In this paper, we examine how international remittances affect firms' performance. Specifically, we investigate the role of remittances on capital accumulation, sales, and employment in 34,010 firms operating in 42 Sub-Saharan African countries between 2006 and 2020. Using a fixed-effect instrumental variable approach to control for the endogeneity of remittances, we find that international remittances positively affect the share of capital held by nationals in manufacturing firms. Moreover, international remittances positively affect sales in non-manufacturing firms, while a negative effect on the sales of manufacturing firms is observed. Regarding the effect of remittances on employment, we find a positive impact on both manufacturing and non-manufacturing firms. Heterogeneity tests suggest that the effect of remittances on firms' performance is larger in less financially developed and non-resource-rich countries. As for the negative impact of remittances on sales in manufacturing firms, the results show that it is entirely due to small firms. Finally, using remittances per capita instead of remittances relative to GDP, similar result are found.

Keywords: Remittances, Firm Performance, Entrepreneurship, Saving and Capital Investment, Firm Employment, Africa

JEL Classification: F24, L25, L26 M51 O16 O55

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1 Introduction

Firms' growth is a key driver of economic development.[1] Their expansion affects the standard of living by increasing supply, employment, wage and productivity. However, firms in developing countries face several constraints that prevent or slow their growth. The main obstacles reported by firms in these countries are poor access to finance, high tax rates, limited access to electricity, and competition from the informal sector[2] (Figure 1). For instance, in Sub-Saharan Africa (SSA), 21% of firms report that access to finance is the main barrier to their operations, compared to 14.36% of firms in developing countries as a whole and 12.55% in developing countries outside SSA (Figures 2 and 3).

At the same time, remittances from African migrants have continued to increase, making SSA the second-largest recipient of remittances relative to GDP, behind South Asia (Figure 4). From $20 billion in 2005, remittances to Africa more than doubled in 2019 to over $40 billion. (Figure 5). Figures 5 and 6 show that remittances to SSA have not only increased significantly in recent years but, more importantly, have surpassed the other two sources of external financing, namely foreign direct investment (FDI) and Official Development Assistance (ODA). Furthermore, it can be noted that, unlike FDI, for instance, remittance flows are much more stable. Given the magnitude of these amounts, the question arises as to whether remittances can help alleviate some of the constraints discussed above and promote enterprises development. Specifically, how do remittances affect capital accumulation, domestic supply through domestic demand and employment in SSA countries

There are four main channels through which remittances can affect firms performance. First, they can reduce the liquidity constraints of firms (investment effect) so the obstacles related to financing. Indeed, remittances can enable recipients and senders to invest in the home country by buying shares in existing firms (intensive margin) or creating new firms (extensive margin). Second, remittances can affect firms activities through recipients' expenditures, therefore, domestic demand. As additional income, remittances can enable recipients to increase their demand and thus sales in local companies. The third channel, employment, directly results from the previous two. Indeed, the acquisition of capital in existing firms and the entry of new firms into the market could lead to investments in inputs such as labour, which could increase employment in firms. Similarly, the rise in local demand by the recipients would increase firms' supply and thus their demand for labour. Furthermore, remittances can also affect employment through the labour market participation of recipients (Acosta (2006), Amuedo-Dorantes & Pozo (2006) and Hanson (2005)). Finally, remittances can influence firms performance by sustaining recipients' consumption during recessions, thereby reducing volatility and macroeconomic risk.

This paper is close to the literature on remittances and entrepreneurship and remittances and

[1] The terms firms, enterprises and companies have the same sense in this paper, so they are used alternately.
[2] The competition from the informal sector comes in part from products' imports to meet domestic demand.

expenditures. Studies on the effects of remittances on promoting enterprise development in migrants' countries of origin are scarce and mixed. While some papers have found a negative or no effect of remittances on entrepreneurship, others have found a positive impact. In the first set, Amuedo-Dorantes & Pozo (2006), in a study of the Dominican Republic, show that receiving remittances has a negative effect on the probability of owning a business. Similarly, Ang et al. (2009) find no significant impact of remittances on productive investment in the Philippines. Likewise, Vasco (2013) shows that neither migration nor remittances affect the probability of owning a business in rural Ecuador. Conversely, in the case of Mexico, Massey & Parrado (1998) found that remittances from the United States have a significant effect on firm investment. Lopez-Cordova et al. (2006) also found that remittances are an important source of capital for micro-enterprises. Similarly, Woodruff & Zenteno (2007) showed that Mexican small and medium-sized firms benefit financially from their connections to migrant networks in the United States. In the same way, Yang (2008) notes that a positive economic shock in the migrants' destination country leads to higher levels of entrepreneurial investment in origin households in the Philippines. Likewise, Vaaler (2011) finds that international remittances increase venture capital funds and business start-ups in migrants' home countries. More recently, Efobi et al. (2019) assessed the direct and indirect impact of remittances on industrialization using a panel of 49 African countries for the period 1980-2014. They find that remittances can stimulate industrialization through the financial development mechanism.

Regarding the spending effect of remittances, Adams Jr & Cuecuecha (2010*a*) show that remittances have a positive impact on marginal spending on food in Indonesia. Clément (2011) finds similar results in Tajikistan. Using a propensity score technique, he shows that international remittances positively affect household consumption. Likewise, Zhu et al. (2012) conclude that remittances are largely used for consumption purposes by Chinese rural households. Similar results were found by Cattaneo (2012) in Albania. In a similar vein, Zhu et al. (2014) study the impact of migrant remittances on consumption patterns in China. Using a large homogeneous sample of rural households surveyed in 2001 and 2004, they find that remittances are spent on non-housing consumption expenditures at the margin, virtually dollar for dollar. Thapa & Acharya (2017) use data from the 2010/2011 Nepal Living Standards Survey to study the effect of remittances on household spending patterns. Their results show that remittance recipient households tend to spend more on consumption. Abdih et al. (2012) also find that remittances positively affect consumption of imported and locally produced goods in the Middle East, North Africa, and Central Asia (MENA) countries. The elasticity of this impact ranges from 0.06 to 0.12. Farzanegan & Hassan (2020) pointed out that remittances have a boomerang effect on imports, increasing the competitive pressure on domestic firms and thus reducing their domestic sales. Finally, Glytsos (1993) and Steinmann (1991) found a positive effect of remittances on imports in four European countries. Specifically, between 1960 and 1981, remittances increased imports by 1% in Spain and Italy, by 4.9% in Greece, and by 6.2% in Portugal.

Our study differs from the existing literature in several ways and makes three clear contributions. First, to our knowledge, this paper is the first to analyze the effect of remittances on enterprise development in SSA. Secondly, unlike the existing literature on household or macroeconomic data, we focus on firm-level data. The advantage of this approach is that it allows us to directly examine the effect of remittances on several firm outcomes (capital accumulation, sales, employment, etc.). Third, we analyze the impact of remittances on both manufacturing and non-manufacturing sectors. This approach will allow policymakers to clearly understand the impact of remittances on firm activities across sectors and thereby better target economic policies.

Using the fixed effects instrumental variables approach and a large sample of survey data on firms in 42 Sub-Saharan African countries between 2006 and 2020, we examine how international remittances contribute to firms' capital accumulation, sales, and job creation. The results first show that international remittances increase capital acquisition by nationals in manufacturing firms but not in non-manufacturing firms. Second, we find that international remittances negatively affect sales in manufacturing firms and positively impact non-manufacturing firms' sales. Finally, we observe a positive effect of remittances on employment in both manufacturing and non-manufacturing firms.

The remainder of the paper is structured as follows: Section 2 outlines the theoretical framework underpinning the relationship between remittances and firm development. The data used and the identification strategy are described in Sections 3 and 4, respectively. Section 5 presents the main results. In Section 6, we perform some heterogeneity tests. Section 7 presents some robustness checks, and Section 8 concludes.

2 Theoretical framework: remittances and firm performance

There are four main transmission channels through which remittances affect firms performance namely investment effect, spending effect, employment effect and volatility-reducing effect.

2.1 Investment effect of remittances

In countries like SSA, where access to credit is limited, remittances as an additional resource can help overcome some of the liquidity constraints (Mora & Taylor (2006), Kifle (2007), Yang (2008), Adams Jr & Cuecuecha (2010*b*)) and thus facilitate investment (Woodruff & Zenteno (2007)). Therefore, remittances can affect capital accumulation in firms through both the intensive and the extensive margin. From the intensive side, remittances can be used to acquire shares in existing firms, thereby increasing the share of firms owned by nationals. From the extensive perspective, remittances can help finance new enterprises, which will increase the number of companies and thus domestic production.

Furthermore, remittances can positively impact investment through access to loans. The idea

is that remittances can alleviate the collateral constraints faced by borrowers. Some papers have empirically demonstrated the complementarity between remittances and loan. For instance, Ratha et al. (2007) show that remittances indirectly contribute to a recipient household's ability to engage in business activities by facilitating access to loans for micro or small enterprises. Richter (2008), also finds that the amount of remittances received at the household level positively affects the demand for credit. Similarly, Aggarwal et al. (2011) provide evidence of a positive and significant effect of remittances on loans using data from 109 developing countries over 1975-2007. Mbaye (2021) leads to similar findings in rural areas of Senegal.

2.2 Spending effect of remittances

Numerous articles have shown that remittances are primarily used to meet the current consumption needs of recipients (Adams Jr & Cuecuecha (2010*a*), Clément (2011), Zhu et al. (2012), Cattaneo (2012), Zhu et al. (2014),Thapa & Acharya (2017)). As such, remittances can affect business activities through sales. In particular, if recipients prefer local products, remittances will increase the demand for goods produced by local firms. Thus, one can expect an increase in the production and sales of these firms. However, if, on the contrary, remittance recipients prefer imported products, either because they are of better quality or because they are cheaper, there will be competitive pressure on local firms, which will negatively affect their sales (Farzanegan & Hassan (2020), Glytsos (1993), Steinmann (1991)). In addition, when remittances received increase significantly, the marginal propensity to consume could decrease in favour of the marginal propensity to invest, which could also negatively affect firms' sales.

2.3 Employment effect of remittances

The effect of remittances on employment depends on the two previous effects, namely the investment effect and the expenditure effect (Shapiro & Mandelman (2016), Woodruff & Zenteno (2007), Zachariah & Rajan (2007), Chami et al. (2005)). First, acquiring capital in existing firms expands their ability to invest in inputs, including labour. Therefore, this intensive margin could contribute to an increase in the demand for labour by firms. Similarly, the entry of new firms into the market is likely to be accompanied by investments in inputs such as labour and capital, which could also be a source of labour demand. Second, as mentioned above, if remittances are used to purchase local goods, there should be an expansion of business activity through increased sales, ultimately leading to increased labour demand. However, if remittances are spent on foreign goods, the opposite effect will occur. Finally, remittances may also positively affect employment because of their impact on human capital investment.

2.4 Volatility-reducing effect of remittances

Besides the direct effects described above, remittances can affect firm performance by reducing volatility. Indeed, a vast literature has shown that remittances are counter-cyclical for economic activity in the migrants' home country (De et al. (2019), Mondal & Khanam (2018), Jidoud (2015), Combes & Ebeke (2011), Craigwell et al. (2010), Chami et al. (2009)). They tend to increase during recessions or economic downturns to allow recipients to maintain their consumption. In addition, Mohapatra & Ratha (2011) show that when households face high volatility and income shocks, remittances can also help smooth income and make households more attractive as borrowers. Therefore, by reducing volatility and macroeconomic risk, remittances could positively influence the investment decision.

3 Variables and Data Description

This paper combines firm-level data with country-level macroeconomic data. The firm-level data come from the World Bank Enterprise Surveys (WBES) and cover the period 2006-2020. The WBES is a nationally representative enterprise survey that provides a wide range of information on firms' characteristics, performance, and constraints in developing countries. The final database contains 34,645 enterprises in 42 countries, and about 90% of countries have at least two survey waves. Macroeconomic data are from the World Bank's World Development Indicators. Subsection 3.1 describes the main variables, while subsection 3.2 presents some descriptive statistics.

3.1 Variables Description

3.1.1 Firms' Variables

To assess the effect of international remittances on firm performance, we use the following three dependent variables :

- **Capital share owned by Nationals** : This variable is the first dependent variable. It represents the percentage of the firm's capital held by domestic economic agents in the surveyed country. Since our objective is to examine whether remittances affect the performance of firms in recipient countries, the best way to do this is to assess whether recipients invest in firms. From this perspective, domestic economic agents' share of the firm is a good indicator of productive capital accumulation.

- **Firm's sales**: The second dependent variable is the firm's total annual sales. This variable is initially recorded in the country's local currency. However, we convert it to constant 2015 dollars and deflate it for inflation using the GDP deflator to facilitate cross-country comparisons. This variable allows us to understand whether remittances contribute to the growth of local businesses through the demand for local products.

- **Firms' employment**: The final dependent variable is the number of permanent full-time employees. These are all paid employees, hired for one or more fiscal years, guaranteed re-employment, and work up to 8 hours or more per day. The use of employment growth to measure increased business activity is not new. Several papers have previously used this variable as an indicator of firm performance (Coad (2010), Anyadike-Danes et al. (2009)).

The following variables are used as controls to account for some heterogeneity across firms :

- **Female ownership** : This variable provides information on the majority shareholder's gender, and it takes the value 1 if it is a woman and 0 otherwise. We control for this variable because the literature has shown that the probability of receiving remittances is higher for women in Sub-Saharan Africa (Plaza et al. (2011)).

- **Transport obstacle** : Since the poor quality of infrastructure service is a barrier to entrepreneurship and business output, we control transportation infrastructure quality. This variable is obtained by asking the manager to what extent the poor quality of the infrastructure service is an obstacle to the business. It includes the following modalities : (1) No obstacle, (2) Minor obstacle, (3) Moderate obstacle, (4) Major obstacle, and (5) Very severe obstacle. But in this study, we consider only the major and severe barrier dimensions. Thus, the quality of transportation infrastructure service is measured by a dummy variable that takes 1 if the barrier degree is major or very severe and 0 otherwise.

- **Location** : We also add firm location as a control variable to account for the agglomeration effect. Indeed, we can expect that remittances will not impact firms' activities in large cities as in small towns. The variable location is equal to 1 if the firm is located in a large city and 0 otherwise.

- **Size** : The variable size refers to the firm's size. We distinguish three categories of companies: small firms (less than 20 employees), medium firms (between 20 and 99 employees), and large firms (more than 100 employees). Controlling for this variable allows us to consider the effect of firm size.

3.1.2 Macroeconomics Variables

- **Remittances from migrants to SSA countries** : This variable is the explanatory variable of interest. It includes personal transfers (current cash or in-kind transfers) and worker compensation (wages of seasonal and other short-term SSA workers employed abroad). In the regressions, we use remittances to GDP in the baseline models and remittances per capita as robustness tests.

- **Trade** : The trade openness indicator represents the sum of exports and imports of goods and services as a percentage of GDP. This variable is included as a control because trade openness

provides foreign sales opportunities for local firms on the one hand and imposes competitive pressure on them through imported products on the other.

- **Unemployment rate** : This variable is used as an independent variable because a high unemployment rate may, on the one hand, encourage individuals to turn to entrepreneurship and, on the other hand, reduce the cost of labor and thus the costs to firms. In addition, high unemployment can lead to a decline in people's income, which reduces their ability to invest.

- **Time required to start a business** : Time required to start a business is the number of calendar days needed to complete the procedures to legally operate a business. This variable aims to capture the cost of starting a business. For example, cumbersome procedures can encourage corruption and undermine entrepreneurship.

- **Real exchange rate** : The real exchange rate is the price level of output-based real gross domestic product per capita (CGDPo) at current purchasing power parity (PPP) rates defined relative to the US in 2017. An increase in the exchange rate reflects the depreciation of the local currency. This variable allows us to control for the effect of Dutch disease in remittances.

- **Domestic credit to private** : It refers to the financial institutions' financial resources provided to the private sector as a percentage of the deposit. These credits include loans, purchases of non-equity securities, trade credits and other accounts receivable, which give rise to a demand for repayment. We welcome this variable as an explanatory variable because it measures the ease of access to credit, impacting our dependent variables.

- **Political stability index** : This variable measures people's perception of political instability and violence. It ranges from -2.5 to 2.5. A score of -2.5 indicates a high level of political instability, while a score of 2.5 indicates a high level of political stability. The addition of this variable among the control variables allows us to consider the quality of the countries' institutions.

- **Control corruption index** : Among the obstacles to entrepreneurship identified in the countries of sub-Saharan Africa, corruption occupies a crucial place. For this reason, we control the level of corruption in the country. The variable used as a corruption index is the percentage of companies identifying corruption as a major constraint.

- **Electricity service quality** : As the quality of transportation infrastructure, power quality can be a critical factor in investing in a business. The quality of electricity access is measured in this paper by the average number of power outages a firm experiences in a typical month in the country.

- **GDP per capita**: is the total gross value added by all resident producers of the country plus taxes on products and less subsidies not included in the value of products relative to the

total population. This variable reflects both the size of the economy and the level of national wealth. A higher GDP per capita means a substantial national market to satisfy and resources to invest in entrepreneurship.

- **Domestic investment** : Gross fixed capital formation (GFCF) includes land improvements (fences, ditches, drains, etc.), purchases of plant, machinery, and equipment, and the construction of roads, railroads, and other facilities, including schools, offices, hospitals, private residential housing, and commercial and industrial buildings. We control for this variable because one firm's investment in input is an opportunity for another firm's sales of final goods. Thus, an increase in GFCF can boost demand for local products and create a dynamic for entrepreneurship.

- **Remittances prices**: is the amount one must pay to send $200, as a percentage of the amount sent. It comes from the Remittance Prices Worldwide database. We use this variable as an instrument for international remittances.

- **Foreign-born employment rates interacted with emigration rates in OECD countries** : This variable serves as a second instrument. It is obtained by interacting two variables : (1) The foreign-born employment rate in OECD countries and (2) the emigration rate from each country to OECD countries. They are collected from the OECD database (DIOC).

3.2 Data Description

As mentioned earlier, this paper combines firm-level and macroeconomic data. Table A.1 shows that about 90% of countries have at least two waves of the enterprise survey. This table also shows the year of the survey, the total number of firms surveyed, and the manufacturing and non-manufacturing firms surveyed in each wave by country. Overall, the number of firms surveyed per wave is higher in Kenya, Nigeria, and South Africa than in other Sub-Saharan African countries.

In Table A.2, we present the number of firms and each industry's share by sector. We can see that non-manufacturing and manufacturing firms represent 55% and 45% of the overall sample, respectively. Wholesale and retail trade (72,61%), hotels and restaurants (12.10%), and construction (6,66%) represent the largest share of industries in the non-manufacturing sector. In the manufacturing sector, the over-represented industries are food (26.39%), clothing (13.33%), and furniture manufacturing (11.50%).

Table 1 presents the summary statistics of the main variables used in our study. First, we find that, on average, the share of capital held by nationals, which is the first dependent variable, is 81.84%. This rate stands at 83% in the manufacturing sector and 81% in the non-manufacturing sector. On average, the surveyed firms employ 55 permanent full-time employees. Manufacturing firms (71) have more employees on average than non-manufacturing firms (42). In terms of sales,

the annual amounts reported by manufacturing firms are on average higher than those of non-manufacturing firms. Concerning the remittance variables, the amount of remittances received represents on average 3.13 percent of total GDP. The annual per capita amount received is $ 43.

4 Empirical Specification

To estimate the effect of international remittances on business activities, the basic econometric model is :

$$Y_{f,i,c,t} = \alpha + \beta R_{c,t-1} + \gamma X_{c,t-1} + \delta F_{f,i,c,t} + \Psi_i + \Theta_c + \Phi_t + \epsilon_{f,i,c,t} \tag{1}$$

Where $Y_{f,i,c,t}$ is one of our three measures of business activity *(Share of the firm owned by nationals, firm sales, and firm employment)* in firm f, industry i, country c at time t. $R_{c,t-1}$ is our variable of interest. It represents the international remittances (expressed as percentage of GDP) received by country c at time t-1. We use lagged remittances because the effect of remittances on business activities may not be instantaneous. One can imagine, for example, that people who receive remittances will first try to satisfy their daily consumption needs. Only later, when they have saved enough, can they invest in business activities. Therefore, remittances received in year t do not necessarily affect the capital held by nationals in the same year. $X_{c,t-1}$ is a vector of country-level control variables that can affect our dependent variables, while F_{fict} represents a vector of firm-level control variables. To deal with the likely endogeneity of these control variables, especially because of possible reverse causality, we consider the lags of these variables. Ψ_i, Θ_c and Φ_t are industry, country and year fixed effects, respectively. ϵ_{ict} is an idiosyncratic error term.

Although adding industry, country, and year fixed effects and using lagged remittances allows us to control for time-invariant heterogeneity and reverse causality, there may still be an unobserved, time-varying omitted variable that affects remittances and business activities. To overcome the remaining endogeneity issue, we use the instrumental variables approach. Specifically, we use the following two instruments : (1) remittance prices and (2) foreign-born employment rates in OECD countries interacted with the emigrant rate from country c in OECD countries.

Regarding the first instrument, we use, more specifically, the average cost of sending $ 200 to country i. The idea behind this choice is that transaction costs, in particular transfer prices, can be a major obstacle to sending money. If it is more expensive to remit to country i, the volume of remittances sent by migrants to that country may decrease. Therefore, a negative relationship between the average cost of remittances and the amount of remittances received is expected. Many articles have already highlighted the role of remittance prices on the volume of remittances. For instance, Freund & Spatafora (2008) find that remittances depend negatively on transfer costs and exchange rates restrictions. Gibson et al. (2019) also show that remittances have negative cost elasticity.

Our second instrument is the foreign-born employment rate in OECD countries interacted with the emigration rate of country c in OECD countries. The use of migrants' economic conditions in destination countries as an instrument for sending remittances is not new (Acosta et al. (2008), Amuedo-Dorantes & Pozo (2011)). The rationale behind this instrument is that if foreign-born employment rates increase in destination countries, migrants' incomes may increase, which means they will have more money to send home. Therefore, one would expect a positive relationship between foreign-born employment rates in destination countries and remittances received in migrants' countries of origin. However, to allow the effect of foreign-born employment rate in OECD countries on remittances to vary across countries, We weight the foreign-born employment rate in OECD countries by the emigration rate from each country c to OECD countries. We focus on migrants' economic conditions in OECD countries, as they are the main remittance-sending countries to Sub-Saharan Africa (Ratha et al. (2020)).

Figure 7 shows the relationship between remittances received relative to GDP and the cost of sending $200 to a specific country and the relationship between the weighted foreign-born employment rate in OECD countries and remittances to GDP received. As expected, we can observe in Figure 7 that the amount of remittances received is lower when the cost of sending remittances is higher (left graph). In contrast, there is a positive relationship between remittances and the weighted foreign-born employment rate in OECD countries (right chart).

Our claim is that, conditional on the set of control variables included in our specification, the unobserved components of the dependent variables are uncorrelated with these two instruments. Based on the above, we use an instrumental variable fixed effects (IVFE) approach where, first, we estimate the amount of international remittances received in t-1 as follows:

$$R_{ct-1} = \alpha + \beta Z_{ct-1} + \gamma X_{t-1} + \delta F_{f,i,c,t} + \Psi_i + \Theta_c + \Phi_t + \nu_{ct} \tag{2}$$

Where R_{ct-1} is the suspected endogenous variable at time t-1 (Amount of international remittances to GDP). Z_{ct-1} is a vector of the instrumental variables described above at time t-1.

The second-stage equation estimating the effect of international remittances on business activities can be estimated as follows:

$$Y_{f,i,c,t} = \alpha + \beta \widehat{R}_{c,t-1} + \gamma X_{c,t-1} + \delta F_{f,i,c,t} + \Psi_i + \Theta_c + \Phi_t + \epsilon_{f,i,c,t} \tag{3}$$

Where $\widehat{R}_{c,t-1}$ is the fitted values of R_{ct-1} from the first stage. Y_{ict}, X_{ct-1}, F_{fict}, Ψ_i, Θ_c and Φ_t are the same variables described in equation (2). Our coefficient of interest is β.

5 Results

In this section, we present the main results of our analysis, starting with the effect of remittances on investment, followed by that on firm sales, and finally, the impact of remittances on employment.

5.1 Effect of remittances on capital owned by nationals

The first way to study the productive use of remittances in SSA is to analyze their effect on the participation of nationals in the capital of firms. The point is that if remittances are used for investment purposes, we could observe a positive impact of remittances on the share of firms owned by nationals. The results of this analysis using ordinary least squares (OLS) and the fixed effect model are presented in Appendix Table B.1. In the first three columns, where we report the results of the OLS model, we find a positive effect of remittances on the share held by nationals. Specifically, on average, a 1 percentage point increase in remittances to GDP leads to a rise in capital held by nationals of about 0.556 percentage points in the total sample (column 1). This positive effect is observed in both the manufacturing (+0.680) and non-manufacturing (+0.538) sectors. Results including year, country and industry fixed effects are shown in columns 4, 5 and 6. Overall, we find that remittances positively affect the share held by nationals only in the manufacturing sector with this model.

However, neither model adequately deals with the endogeneity of remittances raised earlier. We use a fixed-effects instrumental variable approach (IVFE) to address this issue. The first and second stages results are presented in Tables 2 and 3. As expected, Table 2 shows that the instruments used well predict international transfers. Indeed, the weighted foreign-born employment rate in the OECD is positively and significantly associated with remittances received in SSA countries, while the cost of remittances affects negatively international remittances. We can also note at the bottom of Table 3 that the instruments used are relevant. They pass both weak identification and under-identification tests. Indeed, the Kleibergen-Paap Wald F rk statistic for weak identification is well above the critical values of Stock-Yogo. Moreover, the p-value associated with the Kleibergen-Paap LM rk statistic is below 5% which allows to reject the null hypothesis of no correlation between the instruments and the endogenous variable.

The second stage estimation results are presented in Table 3. The first three columns give the results for the entire sample. The following three columns show the manufacturing sector results, and the last three columns report the results of the non-manufacturing sector. First, we find that international remittances have a positive and statistically significant effect on the share of capital held by nationals in the overall sample. More precisely, a 1 percentage point increase in remittances relative to GDP tends to increase the percentage of capital held by citizens by 1.10 percentage points (column 1). We then gradually introduce GDP per capita and domestic investment, as these variables are transmission channels for remittances. The objective is to test the robustness of the

effect to the inclusion of these variables. Columns 2 and 3 show that controlling GDP per capita and domestic investment only slightly reduces the effect size.

As for the sectors in which people invest, the results show that remittances have a positive and statistically significant impact in the manufacturing sector only. In the full model (column 6), the effect of remittances on the share held by nationals in this sector is about 1.40 percentage points.

5.2 Effect of remittances on firm sales

Since a significant portion of remittances is used for consumption purposes (Adams Jr & Cuecuecha (2010*b*), Clément (2011), Zhu et al. (2012), Thapa & Acharya (2017)), we examine how remittances affect business sales in SSA in this subsection.

Table B.2 displays the results using OLS and the fixed effect model. Both models show a negative effect of remittances to GDP on firm sales. However, the results change when we correct for the endogeneity of remittances, as shown in Table 4. Contrary to the previous results, we find a positive effect of remittances on firm sales. In particular, a 1 percentage point increase in remittances to GDP leads to a 0.08% increase in firm sales in the full model (column 3). Looking at the effect by sector, we find that remittances increase sales for non-manufacturing firms, while an adverse effect is observed for manufacturing firms. Note that a 1 percentage point increase in remittances to GDP raises sales of non-manufacturing firms by 0.125% and reduces those of manufacturing firms by 0.129%.

These results are not surprising for at least two reasons. First, a large empirical literature has shown that remittances in developing countries are spent more on health, housing, food and services (Thapa & Acharya (2017), Mohanty et al. (2014), Zhu et al. (2012), Clément (2011), Adams Jr & Cuecuecha (2010*b*), Yang (2008), Kifle (2007), Mora & Taylor (2006), Lucas (2005)). The fact that most of these goods are provided by the non-manufacturing sector could explain the positive effect observed in this sector. Second, the increase in the income of remittance recipients could lead them to prefer foreign products to domestic ones, either because imported products are of better quality or because they are cheaper. This preference for foreign manufactured goods could reduce the domestic manufacturing firms' sales on the one hand and increase the sales of non-manufacturing importing firms, such as wholesale and retail trade, on the other (Farzanegan & Hassan (2020), Glytsos (1993), Steinmann (1991)). This substitution effect is particularly plausible in the case of SSA countries, given their low level of industrial development.

5.3 Effect of remittances on employment

In this subsection, we examine whether international remittances affect business employment. We focus on the permanent full-time employment, which are more stable and decent jobs.

Table B.3 reports the results using the OLS and fixed-effects models. The OLS results show a positive effect of remittances on employment regardless of the sector of activity (columns 1-3).

However, in the fixed-effect models, a positive and significant impact is found only on employment in non-manufacturing firms. The results using the IVFE approach are presented in Table 5. First, we find a positive and statistically significant effect of remittances on the number of permanent full-time employees. For instance, in the full model, a 1 percent point increase in remittances to GDP results in a 0.05% increase in the number of permanent full-time employees. Second, when we examine the effect by sector, we find that the positive effect remains regardless of the sector considered. But the magnitude of the effect is much more prominent in the non-manufacturing sector. Indeed, an increase in remittances to GDP of one percentage point leads to an increase in employment in the non-manufacturing sector of 0.08%, compared to 0.04% in the manufacturing sector.

There are two points to note about these results. First, despite the negative effect of remittances on manufacturing sales observed in the previous subsection, we find a positive impact on manufacturing employment. This could be due to the investment effect of remittances in the manufacturing sector observed in subsection 5.1. Indeed, the purchase of shares in existing firms, for example, could increase their capital and boost their ability to invest in inputs such as labour. Similarly, the entry of new firms into the market may be accompanied by new investments in labour and capital. Second, for the non-manufacturing sector, it appears that the positive effect of remittances on employment is entirely due to the spending effect of remittances. In general, non-manufacturing firms tend to be more labour-intensive than manufacturing firms. They involve a significant degree of customization or interaction with customers, so their operations depend highly on employees. In this context, an increase in remittance driven demand will push these companies to expand their offerings by hiring more staff to meet these new needs.

6 Heterogeneity Tests

In this section, we perform several heterogeneity tests. Note that in this section, we focus mainly on the results using the instrumental variables approach.

6.1 Does the effect of remittances depend on the level of financial development of countries?

This part examines whether the effect of remittances on capital accumulation depends on the country's financial development. Indeed, since remittances alleviate liquidity constraints, one would expect the impact of remittances on firm ownership to be greater in countries with low financial development.

To perform this heterogeneity test, we consider the share of domestic credit to the private sector relative to GDP as an indicator of financial development. We first exclude the top 25% of financially developed countries. Table 6 summarizes the results of this first analysis. As previously, we find a

positive and statistically significant effect of remittances on capital held by nationals in the manufacturing sector. However, when we compare the impact size, the effect is larger (1.891) than what we found with the entire sample (1.414) in Table 3.

Second, we alternately exclude the 25% least financially developed countries. The idea is that if the effect of remittances is larger in the less financially developed countries, we might have a smaller or no effect when we exclude these countries. The results reported in Table 7 confirm what we found earlier. The effect of remittances on the share held by nationals is smaller and statistically insignificant. Taken together, these results reveal that remittances are mainly used for investment purposes in countries with low levels of financial development.

6.2 Exclusion of major remittance-receiving countries

The second test of heterogeneity that we perform concerns the level of dependence of countries on remittances. According to the "Samaritan's dilemma," people who are highly dependent on remittances may substitute entrepreneurship and labour force participation for leisure. Thus, countries that rely heavily on remittances may have low levels of entrepreneurship.

We test this possibility by excluding the major remittance-receiving countries. We consider countries for which remittances represent at least 10% of GDP as the main beneficiaries. The rationale is that if there is a "Samaritan's dilemma", the effect of remittances on firm performance would be higher without countries that are highly dependent on remittances.

Table 9 displays the results of this heterogeneity test. Overall, we find similar results to the full sample. For instance, the effect of remittances on GDP on the share held by nationals is 1.396 when we exclude versus 1.402 in the whole model (Table 3). As for the effect of remittances on the sales of non-manufacturing firms, the coefficient obtained is 0.098 in the sample excluding top receivers versus 0.125 in the entire sample (Table 4). All of these findings reject the "Samaritan's dilemma" risk.

6.3 Exclusion of resources-dependent countries

According to the Dutch disease phenomenon, in resource-rich countries, resources such as labour and financial flows shift from other sectors to the natural resource sector. This subsection examines whether this is also true for migrant remittances. To do so, we exclude resource-rich countries from the sample and compare the effect of remittances with that found when we include them. Resource-rich countries are countries where rents represent more than 10% of GDP. If the Dutch disease phenomenon also holds for remittances, the effect of remittances on firm performance should be larger when these countries are excluded from the sample.

As expected, Table 10 shows that excluding resource-rich countries increases the size of the investment effect of remittances in the manufacturing sector relative to the overall sample. Specifically, an increase of 1 percentage point in remittances relative to GDP leads to an increase of 2.913

percentage points in the capital held by nationals (column 2). In comparison, the increase in shares held by nationals induced by remittances is 1.402 percentage points for the entire sample. The impact of remittances on manufacturing employment rises from 0.04% in the full model to 0.10% in non-resource-rich countries (column 8). For manufacturing sales, the effect of remittances becomes positive when resource-rich countries are excluded, whereas it was negative in the entire sample. Precisely, a 1 percentage point increase in remittances to GDP increases manufacturing sales by 0.256% (column 5) without resource-rich countries. In contrast, remittances reduce sales of manufactures by 0.129% in the whole model. Moreover, the effect of remittances on non-manufacturing sales (0.752%) is higher in this specification than in the baseline model (0.125%).

6.4 Effect of remittances according to firm size

Finally, we investigate how the effect of remittances on the different outcomes varies according to firm size. We distinguish three categories of firms based on their size: (1) small firms (less than 20 employees), (2) medium firms (between 20 and 99 employees), and (3) large firms (over 100 employees). We report the results of this analysis in the Table 11. Panels A, B, and C show the effect of remittances on the share of domestically owned firms, sales, and employment, respectively.

In panel A, we first find that remittances positively affect the share of capital held by nationals in all small firms (column 1). However, this effect is no longer significant when examining each sector (columns 2 and 3). In columns 4-6, where the impact of remittances on ownership in medium-sized firms is reported, we note a positive effect only in the manufacturing sector. The last three columns in Panel A suggest that remittances do not positively impact the share of capital held by nationals in large firms.

Regarding the effect of remittances on sales by firm size, Panel B highlights two key findings. First, we find that small firms drive the negative effect of remittances on manufacturing firm sales observed above (column 2). This result confirms the hypothesis that when remittances increase, recipients prefer higher quality imported goods to locally produced goods. In general, small manufacturing firms tend to have more constraints to improve the quality of their products, so they are the most affected by this preference for imported goods. Second, we find that remittances positively affect the sales of medium and large non-manufacturing firms.

Finally, the employment results presented in Panel C indicate a positive and statistically significant effect of remittances on employment in small and medium-sized non-manufacturing firms. We also find that remittances positively affect employment in medium-sized manufacturing firms.

7 Robustness Checks

This section tests the robustness of the results to the choice of the variable of interest. Specifically, we use per capita remittances to measure transfers instead of remittances relative to GDP. The

main findings of this estimation are shown in Appendix C.

Table C.1 presents the results of the effect of remittances per capita on the share of firms owned by nationals. In the last three columns, where results using the instrumental variable fixed effects approach are reported, we find that remittances per capita positively affect domestic ownership in manufacturing firms. Specifically, we observe that a 1% increase in remittances per capita increases the share of manufacturing firms owned by nationals by 0.145 percentage points. Estimates of the effect of per capita remittances on business sales are shown in Table C.2. As with remittances to GDP, we find that remittances per capita negatively affect the sales of manufacturing firms. However, the impact of remittances per capita on the sales of non-manufacturing firms is not statistically significant. Finally, Table C.3 shows a positive and statistically significant effect of remittances per capita on full-time employees, regardless of sector.

Overall, the results for remittances per capita are consistent with those for remittances to GDP, confirming the robustness of the results to the choice of the variable of interest.

8 Concluding Remarks

This paper explores the effect of Sub-Saharan Africa's new main source of external finance, remittances, on firm performance. Specifically, we use a fixed-effect instrumental variable approach and a large sample of firms in 42 Sub-Saharan African countries between 2006 and 2020 to examine how remittances contribute to capital accumulation, firm sales, and job creation in this region. The results highlight three key findings.

First, the results show that international remittances increase the acquisition of capital by nationals in manufacturing firms. Specifically, we find that international remittances to GDP increase the share of firms owned by nationals in this sector by 1.40 percentage points. Second, analysis of the effect of international remittances on firm sales reveals a negative impact of remittances to GDP on the sales of manufacturing firms and a positive effect on non-manufacturing firms. A 1 percentage point increase in remittances to GDP increases sales of non-manufacturing firms by 0.125% and reduces sales of manufacturing firms by 0.129%. Finally, we observe a positive effect of remittances on job creation in manufacturing and non-manufacturing firms. Especially, a 1 percentage point increase in the share of remittances in GDP leads to a rise in employment of 0.08% in the non-manufacturing sector and 0.04% in the manufacturing sector.

We also conducted several heterogeneity tests that yielded interesting results. The first heterogeneity test shows that the impact of remittances on capital accumulation is higher in the less financially developed countries. Indeed, we find an increased effect of remittances on the share of firms owned by nationals when we exclude the most financially developed countries compared to the baseline model. Second, our results do not seem to be influenced by the main recipient countries of remittances since the results remain unchanged when we exclude these countries. Third,

the results show that the effect size is very large in non-resource rich countries. Finally, we find that remittances mainly improve the performance of medium-sized firms.

The last section shows the robustness of the results to the choice of the variable of interest. Similar results are found when per capita remittances are used as an indicator instead of remittances relative to GDP.

These results have several policy implications. First, the positive effect of remittances on investment suggests a productive use of remittances. This demonstrates that remittances can be a source of finance for the manufacturing sector, which faces enormous difficulties in accessing finance. However, the lack of impact in the non-manufacturing sector suggests the persistence of other challenges to entrepreneurship, such as business profitability, poor infrastructure (roads, electricity, etc.), bureaucracy and corruption. If these barriers are removed, the investment effect of remittances in this region can be substantial. Second, the negative effect of remittances on manufacturing sales indicates a substitution of foreign industrial products for domestic manufactured goods. This phenomenon mainly affects small manufacturing firms. Therefore, to improve their sales and benefit from the spending effect of remittances, African manufacturing firms need to enhance the competitiveness of their products. Policymakers can also play a key role in improving the quality of local products by ensuring adequate transport and energy infrastructure. Policymakers can also help promote local products, especially those produced by small firms, by subsidizing them.

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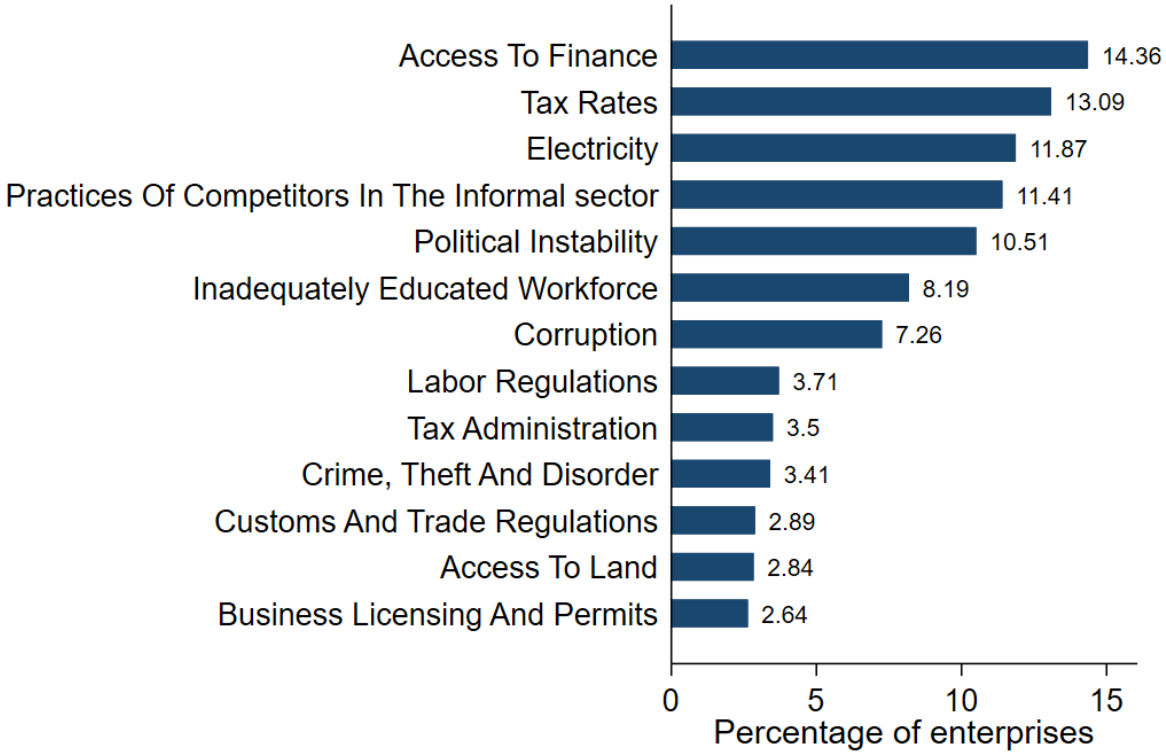
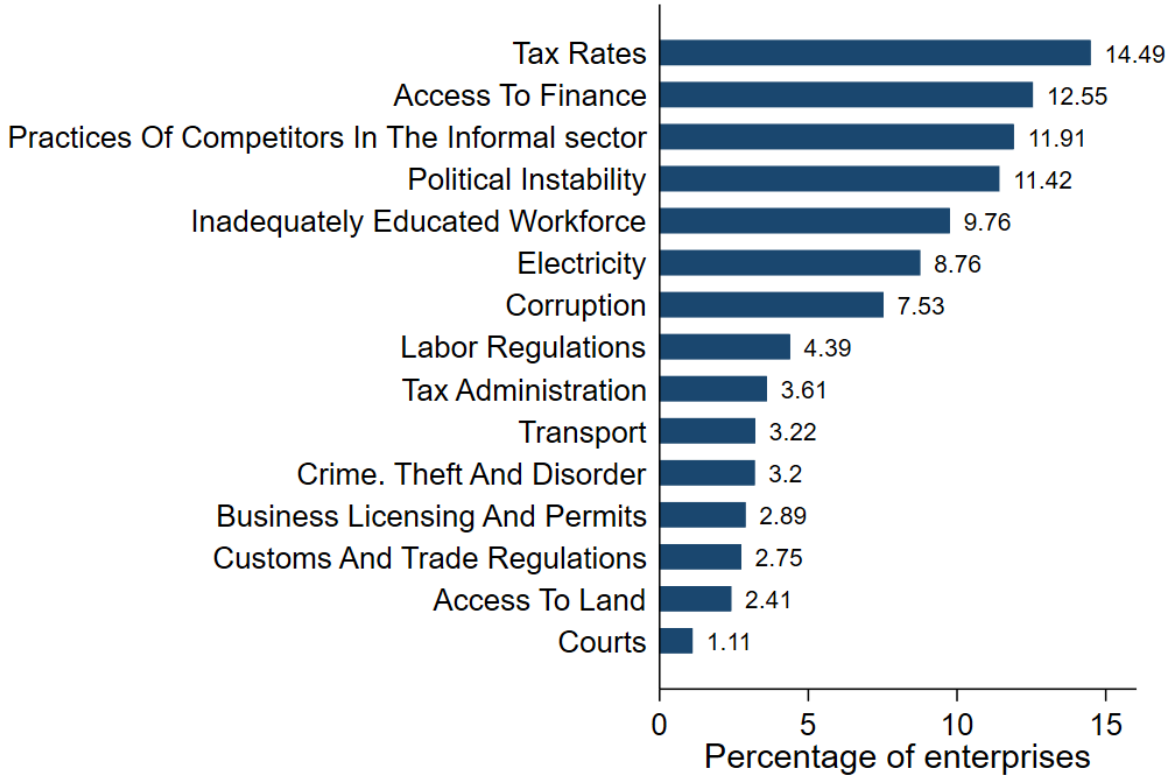
Figure 1: Biggest obstacles affecting the operations of firms in all developing countries



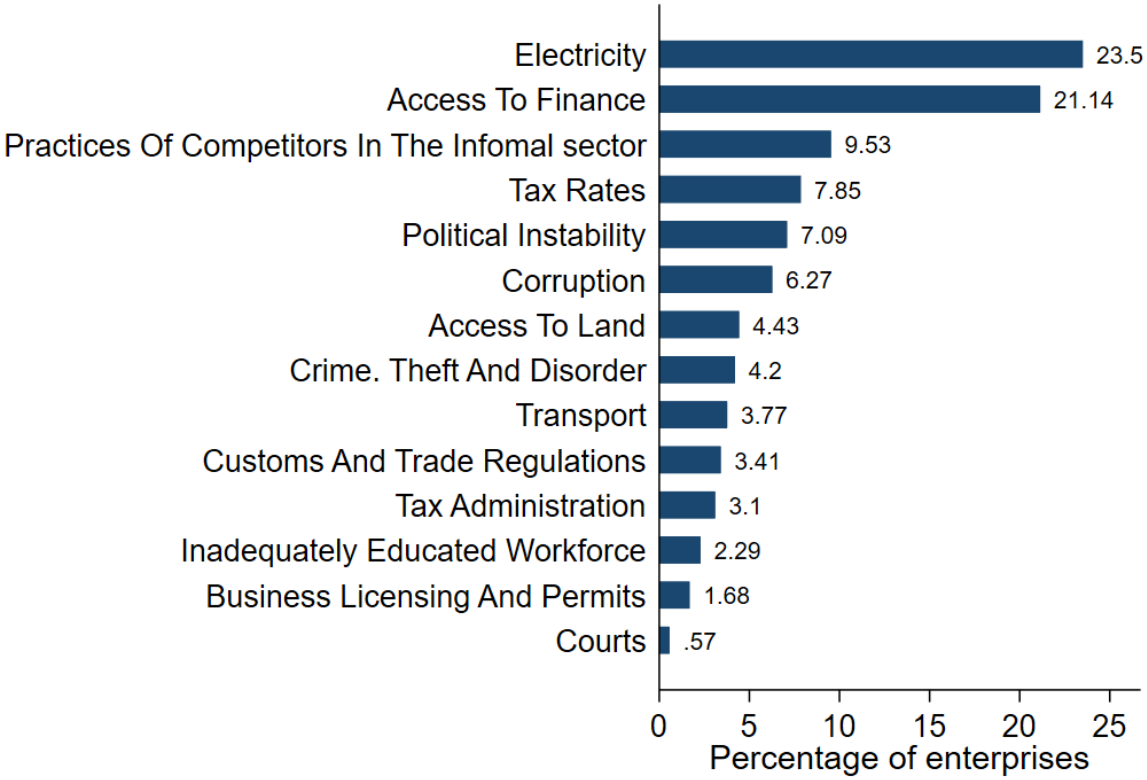
Source: Authors using WBES data

Figure 2: Biggest obstacles affecting the operations of firms in other developing countries



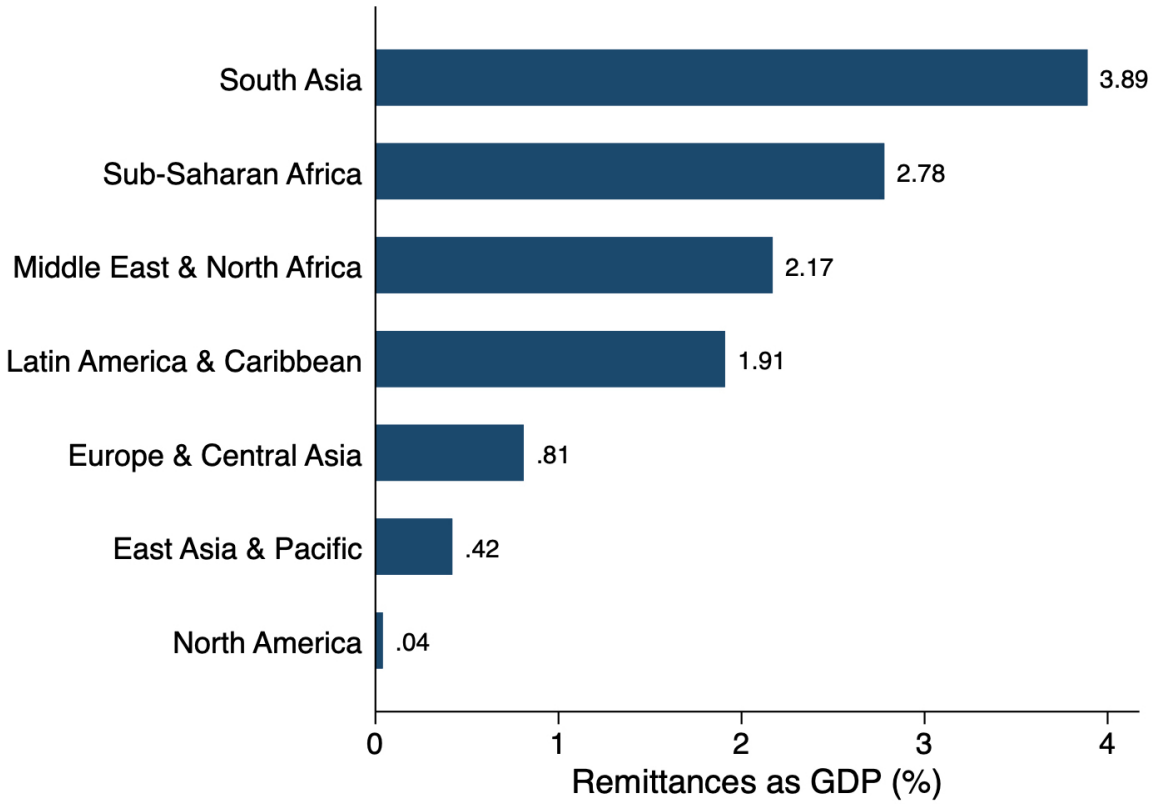
Source: Authors using WBES data

Figure 3: Biggest obstacles affecting the operations of firms in Sub-Saharan African countries



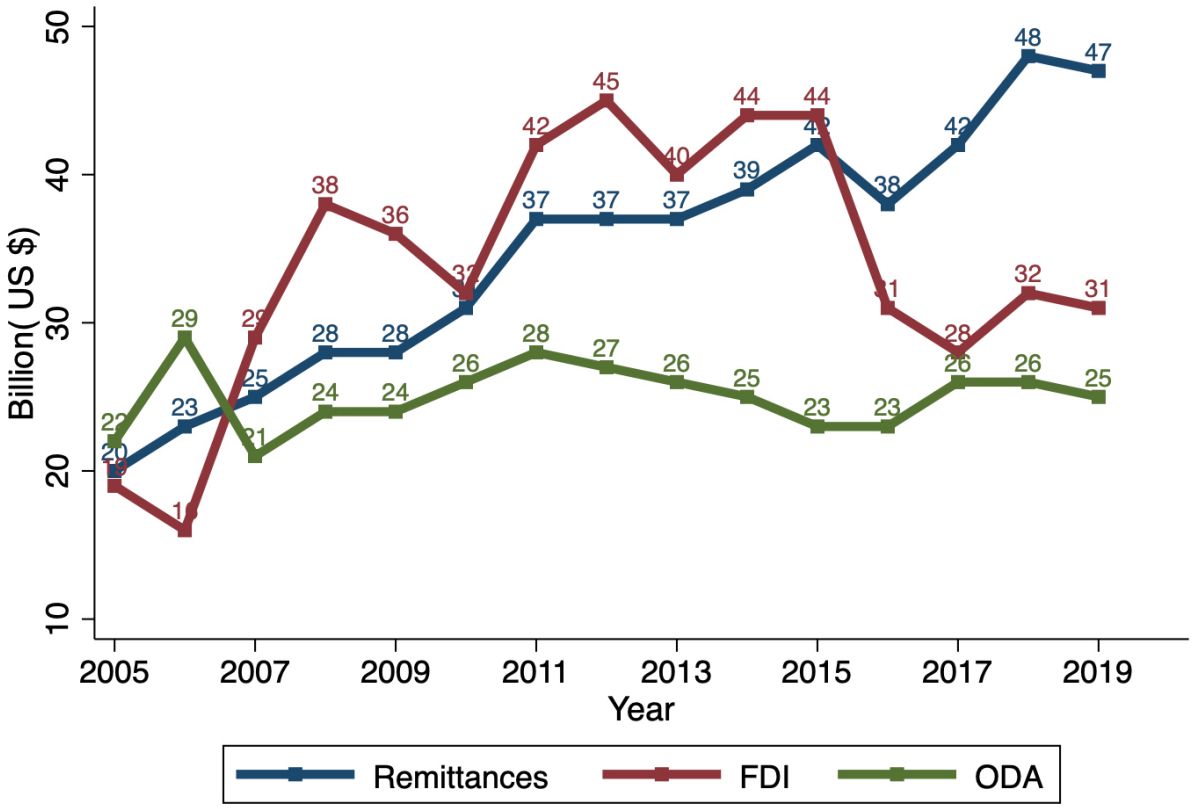
Source: Authors using WBES data

Figure 4: Remittances per GDP by world bank regions classification



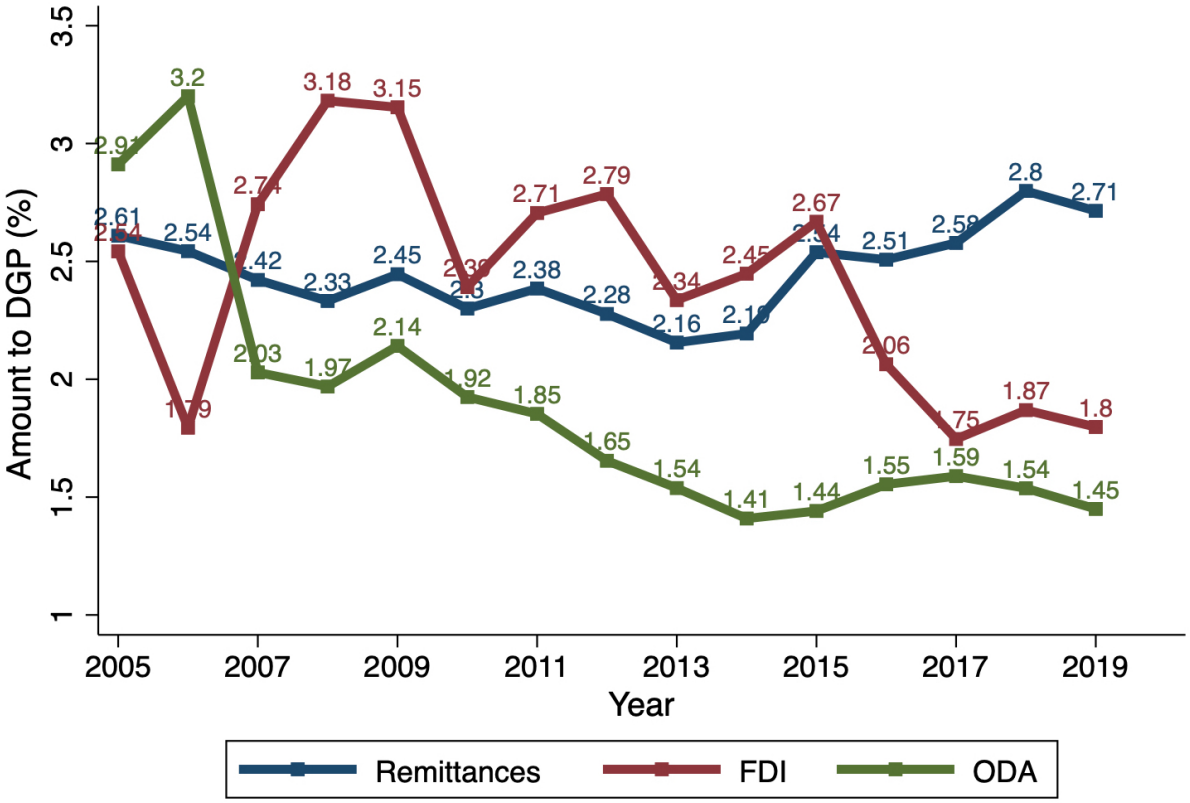
Source : Authors using WDI data

Figure 5: Remittances flows, Foreign Direct Investments and official development assistance to Sub-Saharan Africa



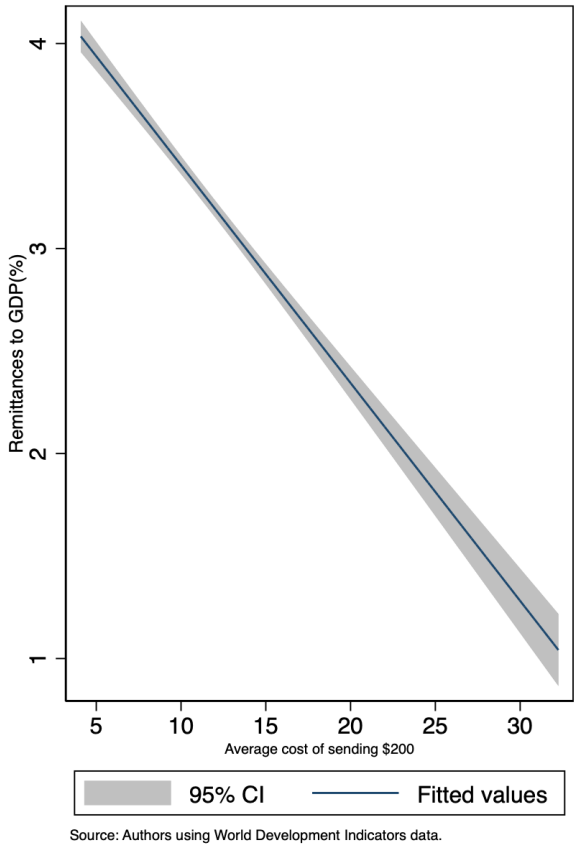
Source : Authors using WDI and OECD data

Figure 6: Remittances, Foreign Direct Investments and Official Development Assistance to GDP in Sub-Saharan Africa



Source : Authors using WDI and OECD data

Figure 7: Remittances flows, remittances prices and Foreign-born employment rate in OECD countries



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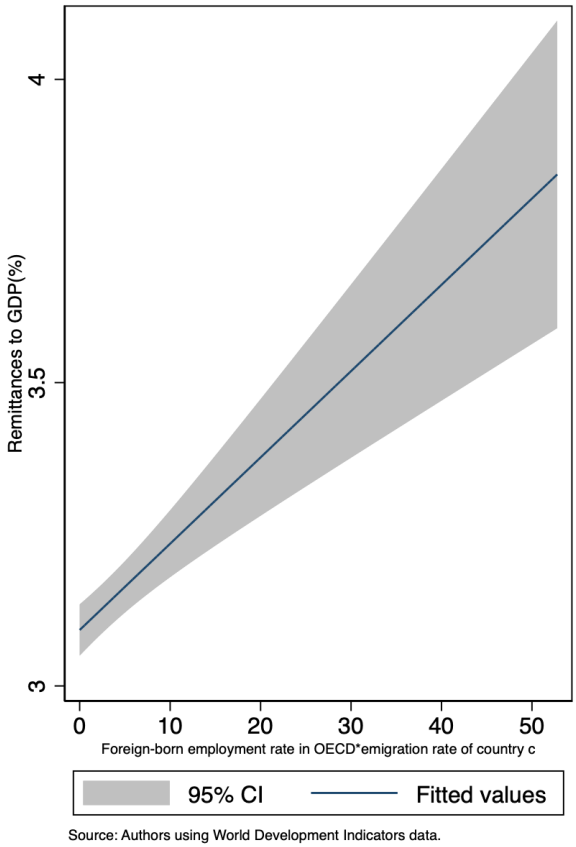

Source: Authors using World Development Indicators data.

Table 1: Descriptive statistics of the main variables

	All				Manufacture				Non-manufacture			
	Mean.	Sd	Min	Max	Mean.	Sd	Min	Max	Mean.	Sd	Min	Max
Firms variables												
Share owned by nationals	81.84	36.16	0.00	100.00	82.91	34.96	0.00	100.00	81.00	37.04	0.00	100.00
Number of permanent full-time employees	54.85	438.71	0.00	64000	70.88	265.52	0.00	8000	42.22	536.82	0.00	64000
Firm sales(log)	6.42	3.93	0.00	23.72	6.74	4.11	0.00	23.72	6.16	3.76	0.00	21.87
Firm sales $(\log)_{t-3}$	5.20	4.30	0.00	26.27	5.62	4.48	0.00	26.27	4.88	4.11	0.00	22.45
Female Ownership	0.08	0.27	0.00	1.00	0.06	0.24	0.00	1.00	0.09	0.29	0.00	1.00
Location (= large city)	0.44	0.50	0.00	1.00	0.42	0.49	0.00	1.00	0.46	0.50	0.00	1.00
Transport obstacle	0.23	0.42	0.00	1.00	0.24	0.42	0.00	1.00	0.22	0.42	0.00	1.00
Small-sized firms	0.60	0.49	0.00	1.00	0.53	0.50	0.00	1.00	0.66	0.47	0.00	1.00
Medium-sized firm	0.28	0.45	0.00	1.00	0.32	0.46	0.00	1.00	0.26	0.44	0.00	1.00
Large size firm	0.11	0.32	0.00	1.00	0.16	0.36	0.00	1.00	0.08	0.27	0.00	1.00
Macroeconomic variables												
Remittances to GDP_{t-1}	3.13	3.78	0.00	32.59	3.19	3.35	0.00	17.70	3.08	4.09	0.00	32.59
Remittances per capita_{t-1}	42.73	52.86	0.01	322.42	44.92	52.01	0.01	322.42	41.01	53.46	0.01	322.42
Trade (% of $\text{GDP})_{t-1}$	61.31	25.89	27.74	179.12	59.51	22.51	27.74	129.72	62.72	28.18	27.74	179.12
Unemployment rate_{t-1}	7.42	7.52	0.51	28.47	7.08	7.25	0.51	28.47	7.69	7.71	0.51	28.47
Time to start business_{t-1}	40.13	32.66	4.00	259.50	40.42	30.73	4.00	259.50	39.91	34.09	4.00	259.50
Real exchange rate_{t-1}	0.41	0.09	0.19	0.63	0.41	0.09	0.19	0.62	0.41	0.09	0.19	0.63
Domestic credit to private_{t-1}	24.72	32.15	1.20	156.98	26.17	35.10	1.20	156.98	23.59	29.58	1.20	156.98
Political stability index_{t-1}	-0.74	0.92	-2.19	1.06	-0.75	0.93	-2.19	1.06	-0.73	0.91	-2.19	1.06
Corruption index_{t-1}	34.15	17.87	0.00	83.70	32.56	16.66	0.00	83.70	35.39	18.66	0.00	83.70
Number of power outages $(\log)_{t-1}$	2.29	0.64	0.71	3.49	2.30	0.67	0.71	3.49	2.29	0.63	0.71	3.49
Remittances prices_{t-1}	11.81	4.93	4.09	32.26	11.82	4.49	4.09	32.26	11.81	5.25	4.09	32.26
Foreign-born employment rate*migration rate_{t-1}	2.45	8.01	0.01	52.79	2.27	7.63	0.01	52.79	2.60	8.30	0.01	52.79
N	34645				15223				19422			

Table 2: First stage results

	Dependent variable : International remittances to GDP (%)								
	Instrumental variable approach with fixed effects								
	All			Manufacture			Non-manufacture		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Trade (% of GDP)$_{t-1}$	-0.039***	-0.029***	-0.048***	0.045***	0.055***	0.043***	-0.052***	-0.041***	-0.064***
	(0.003)	(0.003)	(0.003)	(0.004)	(0.003)	(0.003)	(0.003)	(0.004)	(0.004)
Unemployment rate$_{t-1}$	0.677***	0.545***	0.607***	0.574***	0.405***	0.755***	0.716***	0.581***	0.651***
	(0.027)	(0.028)	(0.027)	(0.017)	(0.017)	(0.025)	(0.039)	(0.042)	(0.039)
Time to start business$_{t-1}$	-0.040***	-0.036***	-0.033***	-0.038***	-0.028***	-0.036***	-0.038***	-0.035***	-0.031***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)
Real exchange rate$_{t-1}$	-19.810***	-16.415***	-18.587***	-14.586***	-10.179***	-16.041***	-18.860***	-15.665***	-18.370***
	(1.088)	(1.104)	(1.026)	(0.874)	(0.641)	(0.563)	(1.546)	(1.591)	(1.440)
Domestic credit to private$_{t-1}$	-0.058***	-0.157***	-0.153***	-0.146***	-0.295***	-0.301***	-0.039***	-0.123***	-0.114***
	(0.008)	(0.011)	(0.011)	(0.011)	(0.010)	(0.010)	(0.010)	(0.013)	(0.013)
Political stability index$_{t-1}$	0.114***	0.802***	0.383***	0.702***	1.327***	1.271***	-0.001	0.618***	0.079
	(0.035)	(0.043)	(0.056)	(0.052)	(0.057)	(0.056)	(0.051)	(0.062)	(0.085)
Corruption index$_{t-1}$	0.047***	0.049***	0.057***	0.035***	0.038***	0.048***	0.039***	0.040***	0.049***
	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)
Transport obstacle$_{t-1}$	0.067***	0.062***	0.055***	0.045***	0.015*	0.011	0.076***	0.085***	0.071***
	(0.014)	(0.013)	(0.013)	(0.009)	(0.008)	(0.007)	(0.020)	(0.020)	(0.020)
Number of power outages (log)$_{t-1}$	-0.714***	-0.855***	-0.853***	-1.000***	-1.430***	0.183	-0.673***	-0.782***	-0.814***
	(0.060)	(0.062)	(0.062)	(0.093)	(0.089)	(0.161)	(0.075)	(0.075)	(0.074)
Female Ownership	-0.043**	-0.026	-0.011	0.004	0.039***	0.055***	-0.023	-0.011	0.003
	(0.022)	(0.021)	(0.022)	(0.016)	(0.013)	(0.014)	(0.029)	(0.029)	(0.029)
Location (= large city)	0.106***	0.110***	0.096***	0.033***	0.015*	0.009	0.102***	0.109***	0.092***
	(0.013)	(0.013)	(0.013)	(0.010)	(0.008)	(0.007)	(0.019)	(0.018)	(0.018)
Large size firm	-0.027	-0.019	-0.018	-0.038***	-0.022***	-0.026***	0.013	0.015	0.023
	(0.017)	(0.017)	(0.017)	(0.010)	(0.008)	(0.008)	(0.031)	(0.030)	(0.030)
GDP per capita$_{t-1}$		-0.002***	-0.002***		-0.003***	-0.003***		-0.002***	-0.002***
		(0.000)	(0.000)		(0.000)	(0.000)		(0.000)	(0.000)
Domestic investment$_{t-1}$			0.058***			0.132***			0.066***
			(0.004)			(0.005)			(0.006)
Instruments									
Remittances prices$_{t-1}$	-0.384***	-0.340***	-0.322***	-0.268***	-0.223***	-0.091***	-0.412***	-0.370***	-0.349***
	(0.005)	(0.007)	(0.007)	(0.008)	(0.009)	(0.014)	(0.008)	(0.010)	(0.009)
Foreign-born employment rate*migration rate$_{t-1}$	0.139***	0.138***	0.149***	0.193***	0.192***	0.269***	0.127***	0.124***	0.136***
	(0.004)	(0.004)	(0.004)	(0.005)	(0.004)	(0.007)	(0.005)	(0.005)	(0.004)
Observation	31203	31203	31203	14128	14128	14128	17075	17075	17075
Industry fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Standard errors in parentheses are clustered at the country level. *** p $<$ 0.01, ** p $<$ 0.05, * p $<$ 0.1.

Table 3: Effect of international remittances on the share of the business owned by nationals

	Dependent variable : Share of the business owned by nationals (%)								
	Instrumental variable approach with fixed effects								
	All			Manufacture			Non-manufacture		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Remittances to GDP$_{t-1}$	1.103***	0.944**	0.938**	1.414**	1.297**	1.402**	0.427	0.279	0.146
	(0.377)	(0.394)	(0.396)	(0.569)	(0.592)	(0.586)	(0.527)	(0.557)	(0.567)
Trade (% of GDP)$_{t-1}$	-0.101**	-0.057	-0.047	-0.311***	-0.255**	-0.314***	-0.047	-0.009	-0.054
	(0.048)	(0.049)	(0.068)	(0.094)	(0.099)	(0.119)	(0.063)	(0.064)	(0.094)
Unemployment rate$_{t-1}$	-0.955**	-1.392***	-1.414***	-0.432	-0.852	-0.619	-1.028*	-1.427**	-1.290**
	(0.408)	(0.406)	(0.432)	(0.631)	(0.647)	(0.718)	(0.574)	(0.574)	(0.626)
Time to start business$_{t-1}$	0.118***	0.137***	0.135***	-0.025	0.006	0.015	0.143***	0.155***	0.161***
	(0.027)	(0.027)	(0.029)	(0.042)	(0.043)	(0.044)	(0.038)	(0.038)	(0.039)
Real exchange rate$_{t-1}$	-34.006**	-16.029	-14.702	-36.581	-15.570	-22.346	-33.275	-18.817	-25.624
	(16.856)	(17.114)	(18.611)	(26.423)	(28.128)	(29.579)	(22.688)	(23.020)	(25.870)
Domestic credit to private$_{t-1}$	0.607***	0.238	0.233	0.493*	0.067	0.121	0.760***	0.477**	0.482**
	(0.158)	(0.181)	(0.181)	(0.283)	(0.335)	(0.333)	(0.199)	(0.227)	(0.226)
Political stability index$_{t-1}$	0.343	3.861***	4.069**	4.607*	7.859***	7.239**	-2.666	0.257	-0.560
	(1.286)	(1.493)	(1.741)	(2.479)	(2.771)	(2.878)	(1.732)	(2.017)	(2.440)
Corruption index$_{t-1}$	-0.202***	-0.196***	-0.200***	-0.054	-0.054	-0.033	-0.251***	-0.248***	-0.227***
	(0.035)	(0.035)	(0.043)	(0.058)	(0.058)	(0.066)	(0.045)	(0.045)	(0.058)
Transport obstacle$_{t-1}$	-0.419	-0.432	-0.428	0.048	-0.051	-0.053	-0.739	-0.694	-0.716
	(0.479)	(0.478)	(0.479)	(0.689)	(0.689)	(0.689)	(0.667)	(0.667)	(0.669)
Number of power outages (log)$_{t-1}$	-0.595	-1.130	-1.027	0.573	-0.116	0.133	1.372	0.976	0.656
	(1.658)	(1.629)	(1.694)	(3.262)	(3.262)	(3.262)	(2.235)	(2.196)	(2.290)
Female Ownership	7.638***	7.723***	7.718***	6.619***	6.732***	6.765***	7.804***	7.870***	7.875***
	(0.698)	(0.698)	(0.698)	(1.186)	(1.183)	(1.184)	(0.861)	(0.862)	(0.863)
Location (= large city)	-2.193***	-2.200***	-2.199***	-0.772	-0.855	-0.841	-3.321***	-3.298***	-3.292***
	(0.517)	(0.516)	(0.516)	(0.809)	(0.810)	(0.810)	(0.677)	(0.677)	(0.677)
Large size firm	-16.489***	-16.452***	-16.451***	-16.956***	-16.901***	-16.915***	-15.624***	-15.604***	-15.593***
	(0.744)	(0.744)	(0.744)	(0.952)	(0.951)	(0.951)	(1.197)	(1.198)	(1.198)
GDP per capita$_{t-1}$		-0.009***	-0.009***		-0.009***	-0.009**		-0.007***	-0.007***
		(0.002)	(0.002)		(0.003)	(0.003)		(0.002)	(0.002)
Domestic investment$_{t-1}$			-0.027			0.182			0.116
			(0.132)			(0.220)			(0.180)
Observation	31203	31203	31203	14128	14128	14128	17075	17075	17075
F-stats	62.352	62.390	58.381	33.492	33.841	31.989	30.847	29.523	28.012
R^2	0.032	0.033	0.033	0.040	0.041	0.041	0.027	0.028	0.028
Kleibergen-Paap rk Wald F statistic	5026	2830	2559	6818	4516	7029	2021	1342	1194
Kleibergen-Paap rk LM statistic	6021	6021	5283	3223	3948	3876	2836	2549	2000
Chi-sq(2) P-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Industry fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Standard errors in parentheses are clustered at the country level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 4: Effect of international remittances on firm sales

	Dependent variable : Total annual firm sales (log)								
	Instrumental variable approach with fixed effects								
	All			Manufacture			Non-manufacture		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Remittances to GDP$_{t-1}$	0.086***	0.081***	0.083***	-0.102***	-0.120***	-0.129***	0.121***	0.115***	0.125***
	(0.023)	(0.024)	(0.024)	(0.037)	(0.038)	(0.038)	(0.032)	(0.034)	(0.035)
Trade (% of GDP)$_{t-1}$	0.016***	0.016***	-0.002	-0.006	0.000	-0.015*	0.018***	0.018***	0.009
	(0.003)	(0.003)	(0.004)	(0.007)	(0.007)	(0.008)	(0.004)	(0.004)	(0.006)
Unemployment rate$_{t-1}$	-0.448***	-0.456***	-0.416***	-0.627***	-0.673***	-0.613***	-0.455***	-0.458***	-0.440***
	(0.028)	(0.029)	(0.029)	(0.050)	(0.052)	(0.054)	(0.039)	(0.039)	(0.041)
Time to start business$_{t-1}$	-0.001	-0.001	0.003**	0.000	0.003	0.006**	0.002	0.002	0.004*
	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)
Real exchange rate$_{t-1}$	15.214***	15.546***	13.198***	15.662***	17.916***	16.373***	14.755***	14.888***	13.734***
	(1.121)	(1.132)	(1.169)	(2.095)	(2.195)	(2.193)	(1.497)	(1.495)	(1.592)
Domestic credit to private$_{t-1}$	-0.007	-0.014	-0.007	-0.017	-0.062***	-0.053***	-0.012	-0.015	-0.010
	(0.010)	(0.011)	(0.011)	(0.018)	(0.020)	(0.020)	(0.013)	(0.014)	(0.014)
Political stability index$_{t-1}$	-0.748***	-0.682***	-1.044***	-1.770***	-1.434***	-1.570***	-0.685***	-0.647***	-0.852***
	(0.078)	(0.093)	(0.109)	(0.160)	(0.168)	(0.175)	(0.106)	(0.128)	(0.156)
Corruption index$_{t-1}$	-0.032***	-0.032***	-0.025***	-0.027***	-0.027***	-0.020***	-0.024***	-0.024***	-0.021***
	(0.002)	(0.002)	(0.003)	(0.003)	(0.003)	(0.004)	(0.003)	(0.003)	(0.004)
Transport obstacle$_{t-1}$	-0.005	-0.005	-0.013	-0.002	-0.012	-0.014	0.005	0.005	-0.001
	(0.032)	(0.032)	(0.032)	(0.044)	(0.044)	(0.044)	(0.045)	(0.045)	(0.045)
Number of power outages (log)$_{t-1}$	-0.886***	-0.895***	-1.070***	-1.970***	-2.047***	-2.001***	-0.928***	-0.928***	-1.032***
	(0.105)	(0.104)	(0.107)	(0.196)	(0.197)	(0.196)	(0.136)	(0.134)	(0.142)
Female Ownership	-0.178***	-0.177***	-0.170***	-0.154*	-0.144*	-0.134	-0.178***	-0.177***	-0.175***
	(0.049)	(0.049)	(0.049)	(0.083)	(0.083)	(0.083)	(0.062)	(0.061)	(0.061)
Location (= large city)	0.160***	0.160***	0.159***	0.073	0.065	0.065	0.204***	0.205***	0.204***
	(0.034)	(0.034)	(0.034)	(0.052)	(0.052)	(0.052)	(0.046)	(0.046)	(0.046)
Large size firm	1.244***	1.246***	1.248***	1.272***	1.282***	1.280***	1.235***	1.236***	1.239***
	(0.052)	(0.052)	(0.052)	(0.068)	(0.068)	(0.068)	(0.083)	(0.083)	(0.084)
Firm sales$_{t-3}$	0.506***	0.506***	0.505***	0.486***	0.485***	0.484***	0.515***	0.514***	0.514***
	(0.006)	(0.006)	(0.006)	(0.009)	(0.009)	(0.009)	(0.007)	(0.008)	(0.008)
GDP per capita$_{t-1}$		-0.000	-0.000		-0.001***	-0.001***		-0.000	-0.000
		(0.000)	(0.000)		(0.000)	(0.000)		(0.000)	(0.000)
Domestic investment$_{t-1}$			0.049***			0.054***			0.023**
			(0.008)			(0.013)			(0.012)
Observation	31804	31804	31804	14422	14422	14422	17382	17382	17382
F-stats	1320.605	1249.179	1200.001	678.130	636.748	609.873	688.693	652.252	617.881
R^2	0.463	0.463	0.464	0.491	0.492	0.493	0.440	0.440	0.440
Kleibergen-Paap rk Wald F statistic	5030	2854	2563	6967	4555	7115	2105	1452	1338
Kleibergen-Paap rk LM statistic	5962	5968	5246	3153	3909	3832	2876	2547	2112
Chi-sq(2) P-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Industry fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Standard errors in parentheses are clustered at the country level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 5: Effect of international remittances on the number of permanent and full-time employees

	Dependent variable : Number of full-time employees(log)								
	Instrumental variable approach with fixed effects								
	All			Manufacture			Non-manufacture		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Remittances to GDP$_{t-1}$	0.051***	0.055***	0.053***	0.040***	0.041***	0.037***	0.079***	0.083***	0.084***
	(0.008)	(0.009)	(0.009)	(0.013)	(0.013)	(0.013)	(0.011)	(0.012)	(0.012)
Trade (% of GDP)$_{t-1}$	0.001	0.000	0.001	0.002	0.001	0.002	0.003**	0.001	0.002
	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)	(0.002)
Unemployment rate$_{t-1}$	-0.038***	-0.030***	-0.031***	0.004	0.012	0.010	-0.056***	-0.046***	-0.048***
	(0.008)	(0.008)	(0.009)	(0.013)	(0.014)	(0.015)	(0.012)	(0.012)	(0.013)
Time to start business$_{t-1}$	-0.001	-0.001**	-0.001**	-0.002***	-0.003***	-0.003***	0.001	0.001	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Real exchange rate$_{t-1}$	1.048***	0.701**	0.788**	-0.042	-0.415	-0.348	1.848***	1.480***	1.610***
	(0.345)	(0.350)	(0.375)	(0.554)	(0.585)	(0.599)	(0.465)	(0.472)	(0.518)
Domestic credit to private$_{t-1}$	0.007**	0.014***	0.014***	0.007	0.015**	0.014**	0.010**	0.018***	0.017***
	(0.003)	(0.004)	(0.004)	(0.006)	(0.007)	(0.007)	(0.004)	(0.005)	(0.005)
Political stability index$_{t-1}$	0.101***	0.031	0.046	0.140**	0.082	0.089	0.194***	0.115***	0.133***
	(0.026)	(0.031)	(0.036)	(0.056)	(0.062)	(0.063)	(0.034)	(0.041)	(0.049)
Corruption index$_{t-1}$	0.001	0.001	0.000	-0.000	-0.000	-0.000	0.000	0.000	-0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Transport obstacle$_{t-1}$	0.006	0.006	0.006	0.003	0.005	0.005	0.005	0.004	0.004
	(0.010)	(0.010)	(0.010)	(0.016)	(0.016)	(0.016)	(0.014)	(0.014)	(0.014)
Number of power outages (log)$_{t-1}$	-0.001	0.009	0.017	0.143**	0.155**	0.151**	-0.002	0.008	0.017
	(0.035)	(0.034)	(0.035)	(0.072)	(0.073)	(0.073)	(0.046)	(0.045)	(0.047)
Female Ownership	-0.221***	-0.223***	-0.223***	-0.215***	-0.217***	-0.217***	-0.230***	-0.232***	-0.232***
	(0.016)	(0.016)	(0.016)	(0.027)	(0.027)	(0.027)	(0.020)	(0.020)	(0.020)
Location (= large city)	0.130***	0.130***	0.131***	0.178***	0.179***	0.179***	0.105***	0.104***	0.104***
	(0.011)	(0.011)	(0.011)	(0.018)	(0.018)	(0.018)	(0.015)	(0.015)	(0.015)
Large size firm	2.454***	2.454***	2.454***	2.417***	2.416***	2.416***	2.471***	2.471***	2.471***
	(0.016)	(0.016)	(0.016)	(0.020)	(0.020)	(0.020)	(0.025)	(0.025)	(0.025)
GDP per capita$_{t-1}$		0.000***	0.000***		0.000**	0.000**		0.000***	0.000***
		(0.000)	(0.000)		(0.000)	(0.000)		(0.000)	(0.000)
Domestic investment$_{t-1}$			-0.002			-0.000			-0.002
			(0.003)			(0.005)			(0.004)
Observation	31404	31404	31404	14279	14279	14279	17125	17125	17125
F-stats	2020.902	1876.447	1751.489	1157.237	1074.934	1003.384	838.806	778.919	726.810
R^2	0.511	0.511	0.511	0.562	0.563	0.563	0.443	0.443	0.443
Kleibergen-Paap rk Wald F statistic	4930	2781	2485	6827	4490	6971	2060	1410	1280
Kleibergen-Paap rk LM statistic	5969	5906	5213	3235	3922	3856	2888	2535	2101
Chi-sq(2) P-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Industry fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Standard errors in parentheses are clustered at the country level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 6: Effect of international remittances on the share of the firm owned by nationals, excluding the most financially developed countries

	Dependent variable : Share of the business owned by nationals (%)		
	Instrumental variable approach with fixed effects		
	(1)	(2)	(3)
	All	Manufacture	Non-Manufacture
Remittances to GDP$_{t-1}$	0.571	1.891**	-0.012
	(0.350)	(0.888)	(0.467)
Controls	Yes	Yes	Yes
Observation	23281	10580	12701
F-stats	49.760	27.574	23.006
R^2	0.034	0.044	0.028
Kleibergen-Paap rk Wald F statistic	18449	41935	9216
Kleibergen-Paap rk LM statistic	4554	1550	2729
Chi-sq(2) P-value	0.000	0.000	0.000
Industry fixed effect	Yes	Yes	Yes
Country fixed effect	Yes	Yes	Yes
Year fixed effect	Yes	Yes	Yes

Notes: Standard errors in parentheses are clustered at the country level. The 25% of countries with the highest domestic credit to the private sector relative to GDP are excluded. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 7: Effect of international remittances on the share of the firm owned by nationals, excluding the least financially developed countries

	Dependent variable : Share of the business owned by nationals (%)		
	Instrumental variable approach with fixed effects		
	(1)	(2)	(3)
	All	Manufacture	Non-Manufacture
Remittances to GDP$_{t-1}$	-0.280	0.800	-0.795
	(0.521)	(1.420)	(0.658)
Controls	Yes	Yes	Yes
Observation	23634	10714	12920
F-stats	48.951	28.619	20.259
R^2	0.032	0.043	0.023
Kleibergen-Paap rk Wald F statistic	3153	17892	1824
Kleibergen-Paap rk LM statistic	1794	1646	1077
Chi-sq(2) P-value	0.000	0.000	0.000
Industry fixed effect	Yes	Yes	Yes
Country fixed effect	Yes	Yes	Yes
Year fixed effect	Yes	Yes	Yes

Notes: Standard errors in parentheses are clustered at the country level. The 25% of countries with the lowest domestic credit to the private sector relative to GDP are excluded. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 8: Effect of international remittances on the share of the firm owned by nationals, sales and employment, excluding the most financially developed countries

	Instrumental variable approach with fixed effects								
	Share			Sales			Employment		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	All	Manufacture	Non-manufacture	All	Manufacture	Non-manufacture	All	Manufacture	Non-manufacture
Remittances to GDP$_{t-1}$	0.209	0.185	-0.096	0.075***	-0.012	0.086***	0.066***	0.071***	0.088***
	(0.354)	(0.729)	(0.474)	(0.021)	(0.044)	(0.029)	(0.008)	(0.016)	(0.010)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observation	25124	11303	13821	25654	11578	14076	25286	11447	13839
F-stats	55.862	30.018	25.840	1005.565	462.750	539.640	1329.577	733.605	593.068
R^2	0.040	0.050	0.033	0.459	0.478	0.441	0.501	0.551	0.444
Kleibergen-Paap rk Wald F statistic	6483	11117	2918	6235	11152	2774	6254	10973	2807
Kleibergen-Paap rk LM statistic	5210	2783	2415	5121	2773	2319	5121	2778	2355
Chi-sq(2) P-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Industry fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Standard errors in parentheses are clustered at the country level. Financially developed countries are countries whose domestic credit to the private sector is greater than or equal to 30% of GDP. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 9: Effect of international remittances on the share of the firm owned by nationals, sales and employment, excluding top receivers

	Instrumental variable approach with fixed effects								
	Share			Sales			Employment		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	All	Manufacture	Non-manufacture	All	Manufacture	Non-manufacture	All	Manufacture	Non-manufacture
Remittances to GDP$_{t-1}$	0.925**	1.396**	0.036	0.068**	0.005	0.098**	0.061***	0.068***	0.095***
	(0.438)	(0.674)	(0.639)	(0.027)	(0.041)	(0.040)	(0.010)	(0.015)	(0.014)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observation	29492	13402	16090	30075	13695	16380	29686	13555	16131
F-stats	51.657	27.579	25.468	1211.573	585.554	622.992	1682.556	963.204	695.981
R^2	0.032	0.038	0.027	0.471	0.494	0.449	0.511	0.562	0.448
Kleibergen-Paap rk Wald F statistic	15088	7214	5714	15299	7333	5769	15048	7248	5716
Kleibergen-Paap rk LM statistic	7865	2224	2817	7835	2225	2806	7859	2228	2823
Chi-sq(2) P-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Industry fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Standard errors in parentheses are clustered at the country level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. We consider as top receivers those countries for which remittances represent at least 10% of GDP.

Table 10: Effect of international remittances on the share of the firm owned by nationals, sales and employment, excluding natural resource-rich countries

	Instrumental variable approach with fixed effects								
	Share			Sales			Employment		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	All	Manufacture	Non-manufacture	All	Manufacture	Non-manufacture	All	Manufacture	Non-manufacture
Remittances to GDP$_{t-1}$	1.124	2.913***	-0.724	0.647***	0.256***	0.752***	0.152***	0.098***	0.190***
	(0.831)	(1.122)	(1.167)	(0.050)	(0.065)	(0.072)	(0.018)	(0.025)	(0.025)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observation	28836	13061	15775	29422	13351	16071	29041	13208	15833
F-stats	47.465	27.126	23.953	1163.689	593.475	597.790	1580.192	928.333	635.632
R^2	0.031	0.038	0.025	0.452	0.490	0.427	0.507	0.564	0.434
Kleibergen-Paap rk Wald F statistic	1809	1979	754	2131	2149	925	2103	2080	920
Kleibergen-Paap rk LM statistic	1925	1724	843	2182	1809	990	2166	1763	987
Chi-sq(2) P-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Industry fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Standard errors in parentheses are clustered at the country level Natural resource-rich countries are : Mozambique, Liberia, Mauritania, Sierra Leone, Gabon, Chad, Angola, Equatorial Guinea, Congo *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 11: Effect of international remittances on the share of the firm owned by nationals,sales and employement, by firm size

	Instrumental variable approach with fixed effects								
	Small (<20)			Medium (20-99)			Large (100 And Over)		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	All	Manufacture	Non-Manufacture	All	Manufacture	Non-Manufacture	All	Manufacture	Non-Manufacture
	Panel A : Share of firms owned by nationals								
Remittances to GDP$_{t-1}$	1.308***	0.788	0.963	0.981	2.547**	-1.154	1.617	0.528	5.127
	(0.463)	(0.701)	(0.662)	(0.786)	(1.138)	(1.314)	(1.782)	(2.465)	(4.787)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Panel B : Total annual firm sales (log)								
Remittances to GDP$_{t-1}$	-0.045	-0.317***	0.042	0.209***	-0.057	0.193***	0.206**	-0.094	0.727**
	(0.029)	(0.047)	(0.041)	(0.045)	(0.072)	(0.071)	(0.099)	(0.133)	(0.306)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Panel C: Number of full-time employees(log)								
Remittances to GDP$_{t-1}$	0.029***	0.004	0.056***	0.038***	0.030*	0.056***	-0.049	-0.078*	-0.061
	(0.006)	(0.009)	(0.009)	(0.011)	(0.015)	(0.016)	(0.032)	(0.044)	(0.086)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observation	18889	7553	11336	8947	4466	4481	3561	2259	1301
Industry fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Standard errors in parentheses are clustered at the country level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Small size firms are those that employ fewer than 20 people. Medium-sized firms use between 20 and 99 people, and large firms employ more than 100 people.

Appendix A : Descriptive statistics

Table A.1: Total firms, manufacturing firms and non-manufacturing firms by country and year

Country	Year	Firms		
		Total	Manufacture	Non-manufacture
Angola	2006	425	213	212
Angola	2010	360	78	282
Benin	2009	150	72	78
Benin	2016	150	70	80
Botswana	2006	342	114	228
Botswana	2010	268	85	183
Burkina Faso	2009	394	95	299
Burundi	2006	270	102	168
Burundi	2014	157	60	97
Cameroon	2009	363	106	257
Cameroon	2016	361	192	169
Cape Verde	2009	156	68	88
Central african republic	2011	150	37	113
Chad	2009	150	60	90
Chad	2018	153	74	79
Congo	2009	151	0	151
Democratic Republic of the Congo	2006	340	149	191
Democratic Republic of the Congo	2010	359	124	235
Democratic Republic of the Congo	2013	529	241	288
Eritrea	2009	179	93	86
Eswatini	2006	307	70	237
Eswatini	2016	150	75	75
Ethiopia	2011	644	321	323
Ethiopia	2015	848	383	465
Gabon	2009	179	0	179
Gambia	2006	174	33	141
Gambia	2018	151	76	75
Ghana	2007	494	292	202
Ghana	2013	720	377	343
Guinea	2006	223	135	88
Guinea	2016	150	27	123
Guinea-Bissau	2006	159	50	109
Ivory Coast	2009	526	204	322
Ivory Coast	2016	361	106	255
Kenya	2007	657	396	261
Kenya	2013	781	414	367
Kenya	2018	1001	455	546
Lesotho	2009	151	0	151
Lesotho	2016	150	76	74
Liberia	2009	150	0	150
Liberia	2017	151	75	76
Madagascar	2009	445	204	241
Madagascar	2013	532	0	532
Malawi	2009	150	71	79
Malawi	2014	523	197	326
Mali	2007	490	301	189
Mali	2010	360	160	200
Mali	2016	185	99	86
Mauritania	2006	237	80	157
Mauritania	2014	150	52	98
Mauritius	2009	398	216	182
Mozambique	2007	479	341	138
Mozambique	2018	601	287	314
Namibia	2006	329	106	223
Namibia	2014	580	181	399
Niger	2009	150	62	88
Niger	2017	151	41	110
Nigeria	2007	1891	948	943
Nigeria	2014	2676	1427	1249
Rwanda	2006	212	59	153
Rwanda	2011	241	81	160
Rwanda	2019	360	120	240
Senegal	2007	506	259	247
Senegal	2014	601	249	352
Sierra Leone	2009	150	0	150
Sierra Leone	2017	152	77	75
South Africa	2007	937	680	257
South Africa	2020	1097	680	417
Sudan	2014	662	82	580
Tanzania	2006	419	273	146
Tanzania	2013	813	440	373
Togo	2009	155	35	120
Togo	2016	150	45	105
Uganda	2006	563	307	256
Uganda	2013	762	378	384
Zambia	2007	484	304	180
Zambia	2013	720	364	356
Zambia	2019	601	180	421
Zimbabwe	2011	599	378	221
Zimbabwe	2016	600	289	311

Table A.2: Number of firms and share of each industry in the total sample by sector

Industries	Code	Number of firms	Percent
Manufacturing sector		15,223	100.00
Manufacture of food products and beverages	15	4,017	26.39
Manufacture of tobacco products	16	33	0.22
Manufacture of textiles	17	543	3.57
Manufacture of wearing apparel; dressing and dyeing of fur	18	2,029	13.33
Tanning and dressing of leather; manufacture of luggage, handbags, saddlery, harness and footwear	19	292	1.92
Manufacture of wood and of products of wood and cork, except furniture	20	694	4.56
Manufacture of paper and paper products	21	187	1.23
Publishing, printing and reproduction of recorded media	22	1,030	6.77
Manufacture of coke, refined petroleum products and nuclear fuel	23	58	0.38
Manufacture of chemicals and chemical products	24	858	5.64
Manufacture of rubber and plastics products	25	543	3.57
Manufacture of basic metals	26	774	5.08
Manufacture of other non-metallic mineral products	27	318	2.09
Manufacture of fabricated metal products, except machinery and equipment	28	1,335	8.77
Manufacture of machinery and equipment n.e.c.	29	322	2.12
Manufacture of office, accounting and computing machinery	30	5	0.03
Manufacture of electrical machinery and apparatus n.e.c.	31	199	1.31
Manufacture of radio, television and communication equipment and apparatus	32	30	0.20
Manufacture of medical, precision and optical instruments, watches and clocks	33	24	0.16
Manufacture of motor vehicles, trailers and semi-trailers	34	111	0.73
Manufacture of other transport equipment	35	44	0.29
Manufacture of furniture; manufacturing n.e.c	36	1,750	11.50
Recycling	37	27	0.18
Non-manufacturing sector		18,787	100.00
Other Industries	4	3	0.02
Mining and quarrying	10	2	0.01
Collection, purification and distribution of water	40	2	0.01
Construction	45	1,252	6.66
Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	50	13,641	72.61
Hotels and restaurants	55	2,274	12.10
Transport, storage and communications	60	1,197	6.37
Financial intermediation	65	2	0.01
Real estate, renting and business activities	70	410	2.18
Other community, social and personal service activities	90	4	0.02

Appendix B : OLS and fixed effects model results

Table B.1: Effect of international remittances on the share of the business owned by nationals

	Dependent variable : Share of the business owned by nationals (%)					
	Ordinary least squares model			Fixed-effects model		
	(1)	(2)	(3)	(4)	(5)	(6)
	All	Manufacture	Non-Manufacture	All	Manufacture	Non-Manufacture
Remittances to GDP$_{t-1}$	0.556***	0.680***	0.538***	-0.012	0.885*	0.146
	(0.060)	(0.094)	(0.076)	(0.196)	(0.456)	(0.249)
Trade (% of GDP)$_{t-1}$	0.015	-0.027	0.031**	-0.115**	-0.310***	-0.098
	(0.011)	(0.019)	(0.013)	(0.054)	(0.093)	(0.073)
Unemployment rate$_{t-1}$	-0.841***	-0.437***	-0.979***	-0.934**	-0.475	-1.000*
	(0.051)	(0.085)	(0.064)	(0.387)	(0.662)	(0.541)
Time to start business$_{t-1}$	0.050***	0.030***	0.063***	0.116***	0.012	0.154***
	(0.006)	(0.011)	(0.008)	(0.028)	(0.044)	(0.037)
Real exchange rate$_{t-1}$	-5.661*	-21.150***	-1.430	-34.571**	-26.336	-37.627*
	(3.190)	(4.973)	(4.262)	(15.701)	(25.359)	(21.061)
Domestic credit to private$_{t-1}$	0.335***	0.211***	0.388***	0.066	-0.052	0.439**
	(0.011)	(0.021)	(0.014)	(0.170)	(0.321)	(0.214)
Political stability index$_{t-1}$	2.285***	1.721***	2.082***	3.091**	7.254***	-1.205
	(0.318)	(0.521)	(0.407)	(1.455)	(2.533)	(1.973)
Corruption index$_{t-1}$	-0.266***	-0.189***	-0.290***	-0.140***	-0.009	-0.195***
	(0.014)	(0.023)	(0.018)	(0.033)	(0.057)	(0.043)
Transport obstacle$_{t-1}$	0.532	0.492	0.508	-0.340	-0.053	-0.576
	(0.473)	(0.687)	(0.651)	(0.470)	(0.678)	(0.652)
Number of power outages (log)$_{t-1}$	8.474***	6.255***	8.912***	-0.220	-0.023	0.344
	(0.483)	(0.809)	(0.617)	(1.649)	(3.260)	(2.200)
Female Ownership	6.518***	4.764***	7.192***	7.429***	6.393***	7.742***
	(0.670)	(1.158)	(0.823)	(0.696)	(1.178)	(0.861)
Location (= large city)	-0.972**	-0.728	-0.889	-1.890***	-0.755	-2.919***
	(0.424)	(0.658)	(0.560)	(0.507)	(0.794)	(0.667)
Large size firm	-18.540***	-18.494***	-19.009***	-16.427***	-16.839***	-15.609***
	(0.727)	(0.946)	(1.149)	(0.732)	(0.941)	(1.172)
GDP per capita$_{t-1}$	-0.002***	-0.001**	-0.002***	-0.011***	-0.010***	-0.007***
	(0.000)	(0.000)	(0.000)	(0.002)	(0.003)	(0.002)
Domestic investment$_{t-1}$	-0.118***	0.015	-0.194***	0.129	0.252	0.189
	(0.026)	(0.041)	(0.034)	(0.110)	(0.193)	(0.144)
Observation	32998	14524	18474	32375	14524	17851
F-stats	192.952	60.868	151.509	58.036	31.597	27.971
R^2	0.098	0.070	0.122	0.148	0.134	0.167
Industry fixed effect				Yes	Yes	Yes
Country fixed effect				Yes	Yes	Yes
Year fixed effect				Yes	Yes	Yes

Notes : Standard errors in parentheses are clustered at the country level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table B.2: Effect of international remittances on firm sales

	Dependent variable : Total annual firm sales (log)					
	Ordinary least squares model			Fixed-effects model		
	(1)	(2)	(3)	(4)	(5)	(6)
	All	Manufacture	Non-Manufacture	All	Manufacture	Non-Manufacture
Remittances to GDP$_{t-1}$	-0.140***	-0.210***	-0.104***	-0.092***	-0.338***	-0.078***
	(0.005)	(0.007)	(0.005)	(0.013)	(0.032)	(0.015)
Trade (% of GDP)$_{t-1}$	0.013***	0.007***	0.015***	0.002	-0.007	0.013***
	(0.001)	(0.001)	(0.001)	(0.004)	(0.006)	(0.005)
Unemployment rate$_{t-1}$	0.027***	0.040***	0.012***	-0.414***	-0.662***	-0.426***
	(0.003)	(0.005)	(0.004)	(0.027)	(0.050)	(0.037)
Time to start business$_{t-1}$	-0.003***	-0.010***	-0.000	-0.000	0.006**	-0.000
	(0.000)	(0.001)	(0.001)	(0.002)	(0.003)	(0.002)
Real exchange rate$_{t-1}$	1.706***	3.367***	0.836***	13.910***	18.045***	13.910***
	(0.232)	(0.355)	(0.303)	(1.046)	(1.827)	(1.364)
Domestic credit to private$_{t-1}$	-0.005***	-0.004***	-0.007***	-0.004	-0.079***	-0.006
	(0.001)	(0.001)	(0.001)	(0.010)	(0.019)	(0.013)
Political stability index$_{t-1}$	0.199***	0.145***	0.239***	-0.597***	-1.469***	-0.284**
	(0.022)	(0.034)	(0.028)	(0.094)	(0.154)	(0.130)
Corruption index$_{t-1}$	-0.015***	-0.021***	-0.011***	-0.015***	-0.011***	-0.011***
	(0.001)	(0.002)	(0.001)	(0.002)	(0.003)	(0.003)
Transport obstacle$_{t-1}$	0.115***	0.160***	0.062	0.009	-0.019	0.044
	(0.033)	(0.047)	(0.047)	(0.031)	(0.043)	(0.044)
Number of power outages (log)$_{t-1}$	0.190***	-0.032	0.310***	-0.882***	-2.153***	-0.788***
	(0.031)	(0.051)	(0.039)	(0.104)	(0.195)	(0.138)
Female Ownership	-0.469***	-0.467***	-0.453***	-0.187***	-0.133	-0.192***
	(0.051)	(0.088)	(0.063)	(0.049)	(0.082)	(0.062)
Location (= large city)	-0.326***	-0.601***	-0.178***	0.133***	0.028	0.192***
	(0.031)	(0.047)	(0.041)	(0.034)	(0.051)	(0.046)
Large size firm	0.967***	0.996***	0.894***	1.267***	1.315***	1.263***
	(0.052)	(0.068)	(0.082)	(0.051)	(0.067)	(0.082)
Firm sales$_{t-3}$	0.627***	0.613***	0.623***	0.502***	0.475***	0.513***
	(0.005)	(0.008)	(0.006)	(0.006)	(0.009)	(0.007)
Domestic investment$_{t-1}$	0.021***	0.019***	0.019***	0.046***	0.058***	0.018*
	(0.002)	(0.003)	(0.003)	(0.007)	(0.012)	(0.010)
GDP per capita$_{t-1}$	-0.000***	-0.000***	-0.000	-0.001***	-0.001***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Observation	33626	14827	18799	33000	14827	18173
F-stats	3444.505	2485.274	1425.421	1275.050	657.237	684.665
R^2	0.607	0.667	0.558	0.691	0.742	0.645
Industry fixed effect				Yes	Yes	Yes
Country fixed effect				Yes	Yes	Yes
Year fixed effect				Yes	Yes	Yes

Notes: Standard errors in parentheses are clustered at the country level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table B.3: Effect of international remittances on the number of permanent and full-time employees

	Dependent variable : Number of full-time employees(log)					
	Ordinary least squares model			Fixed-effects model		
	(1)	(2)	(3)	(4)	(5)	(6)
	All	Manufacture	Non-Manufacture	All	Manufacture	Non-Manufacture
Remittances to GDP$_{t-1}$	0.007***	0.004*	0.007***	0.006	-0.001	0.011**
	(0.001)	(0.002)	(0.002)	(0.004)	(0.010)	(0.005)
Trade (% of GDP)$_{t-1}$	-0.001***	-0.001*	-0.001***	-0.000	0.002	-0.001
	(0.000)	(0.000)	(0.000)	(0.001)	(0.002)	(0.002)
Unemployment rate$_{t-1}$	-0.000	0.006***	0.001	-0.016**	0.013	-0.015
	(0.001)	(0.002)	(0.001)	(0.008)	(0.014)	(0.010)
Time to start business$_{t-1}$	-0.000	0.000	-0.001***	-0.002***	-0.003***	-0.001
	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)
Real exchange rate$_{t-1}$	-0.374***	-0.710***	-0.333***	0.257	-0.408	0.445
	(0.064)	(0.102)	(0.084)	(0.320)	(0.533)	(0.421)
Domestic credit to private$_{t-1}$	0.002***	0.001**	0.002***	0.007**	0.006	0.008*
	(0.000)	(0.000)	(0.000)	(0.003)	(0.007)	(0.004)
Political stability index$_{t-1}$	-0.038***	-0.081***	-0.019**	0.039	0.098*	0.104***
	(0.007)	(0.011)	(0.008)	(0.030)	(0.057)	(0.039)
Corruption index$_{t-1}$	-0.001*	-0.001	0.001	0.002***	0.001	0.003***
	(0.000)	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)
Transport obstacle$_{t-1}$	0.010	0.011	-0.006	0.010	0.004	0.012
	(0.010)	(0.016)	(0.014)	(0.010)	(0.015)	(0.014)
Number of power outages (log)$_{t-1}$	-0.077***	-0.124***	-0.048***	0.059*	0.134*	0.085*
	(0.010)	(0.017)	(0.012)	(0.034)	(0.072)	(0.045)
Female Ownership	-0.219***	-0.208***	-0.201***	-0.225***	-0.210***	-0.237***
	(0.016)	(0.027)	(0.019)	(0.016)	(0.027)	(0.019)
Location (= large city)	0.143***	0.150***	0.150***	0.134***	0.176***	0.110***
	(0.010)	(0.015)	(0.012)	(0.011)	(0.017)	(0.015)
Large size firm	2.629***	2.557***	2.625***	2.457***	2.417***	2.483***
	(0.015)	(0.019)	(0.023)	(0.015)	(0.020)	(0.024)
GDP per capita$_{t-1}$	0.000***	0.000***	0.000***	0.000*	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Domestic investment$_{t-1}$	0.004***	0.004***	0.004***	0.003	0.003	0.006**
	(0.001)	(0.001)	(0.001)	(0.002)	(0.004)	(0.003)
Observation	33206	14683	18523	32593	14683	17910
F-stats	2403.944	1365.958	964.030	1829.838	1028.942	774.076
R^2	0.556	0.600	0.496	0.588	0.636	0.507
Industry fixed effect				Yes	Yes	Yes
Country fixed effect				Yes	Yes	Yes
Year fixed effect				Yes	Yes	Yes

Notes: Standard errors in parentheses are clustered at the country level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Appendix C : Remittances per capita results

Table C.1: Effect of international remittances per capita on the share of the business owned by nationals

	Dependent variable : Share of the business owned by nationals (%)								
	Ordinary least squares model			Fixed-effects model			Instrumental variable approach with fixed effects		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	All	Manufacture	Non-Manufacture	All	Manufacture	Non-Manufacture	All	Manufacture	Non-Manufacture
Remittances per capita$_{t-1}$	0.047***	0.048***	0.047***	0.031	0.059	0.057**	0.114**	0.145**	0.080
	(0.005)	(0.007)	(0.006)	(0.021)	(0.041)	(0.028)	(0.047)	(0.060)	(0.070)
Trade (% of GDP)$_{t-1}$	0.029***	-0.004	0.043***	-0.114**	-0.291***	-0.088	-0.038	-0.315***	-0.033
	(0.011)	(0.019)	(0.013)	(0.054)	(0.091)	(0.073)	(0.068)	(0.120)	(0.094)
Unemployment rate$_{t-1}$	-0.838***	-0.439***	-0.978***	-1.086***	-0.857	-1.256**	-1.825***	-1.484**	-1.703**
	(0.050)	(0.085)	(0.064)	(0.398)	(0.690)	(0.555)	(0.480)	(0.752)	(0.709)
Time to start business$_{t-1}$	0.052***	0.031***	0.065***	0.116***	0.004	0.149***	0.115***	-0.004	0.156***
	(0.006)	(0.011)	(0.008)	(0.027)	(0.044)	(0.036)	(0.028)	(0.045)	(0.037)
Real exchange rate$_{t-1}$	-12.922***	-26.495***	-9.316**	-32.316**	-19.501	-33.010	-8.735	-12.024	-17.029
	(3.359)	(5.194)	(4.484)	(15.756)	(25.079)	(21.193)	(18.742)	(28.862)	(26.438)
Domestic credit to private$_{t-1}$	0.352***	0.234***	0.405***	0.103	-0.125	0.475**	0.264	0.116	0.552**
	(0.012)	(0.022)	(0.015)	(0.170)	(0.313)	(0.215)	(0.184)	(0.332)	(0.230)
Political stability index$_{t-1}$	2.530***	1.877***	2.363***	2.517*	6.613**	-1.914	3.091	4.808	-1.355
	(0.321)	(0.525)	(0.411)	(1.506)	(2.749)	(2.025)	(1.898)	(3.338)	(2.573)
Corruption index$_{t-1}$	-0.253***	-0.184***	-0.273***	-0.153***	-0.001	-0.214***	-0.212***	-0.035	-0.257***
	(0.014)	(0.023)	(0.018)	(0.033)	(0.057)	(0.044)	(0.044)	(0.066)	(0.060)
Transport obstacle$_{t-1}$	0.564	0.487	0.557	-0.353	-0.074	-0.608	-0.470	-0.082	-0.762
	(0.473)	(0.687)	(0.651)	(0.470)	(0.678)	(0.652)	(0.480)	(0.689)	(0.670)
Number of power outages (log)$_{t-1}$	8.501***	6.415***	8.985***	-0.013	-0.087	0.892	0.565	0.466	1.405
	(0.483)	(0.806)	(0.617)	(1.636)	(3.266)	(2.177)	(1.644)	(3.280)	(2.173)
Female Ownership	6.479***	4.715***	7.167***	7.426***	6.389***	7.725***	7.654***	6.735***	7.858***
	(0.670)	(1.157)	(0.824)	(0.696)	(1.178)	(0.861)	(0.698)	(1.184)	(0.863)
Location (= large city)	-0.715*	-0.554	-0.612	-1.881***	-0.773	-2.897***	-2.135***	-0.848	-3.279***
	(0.425)	(0.657)	(0.561)	(0.507)	(0.794)	(0.667)	(0.516)	(0.810)	(0.677)
Large size firm	-18.557***	-18.494***	-19.020***	-16.417***	-16.835***	-15.608***	-16.433***	-16.890***	-15.592***
	(0.727)	(0.947)	(1.150)	(0.732)	(0.941)	(1.173)	(0.744)	(0.952)	(1.198)
GDP per capita$_{t-1}$	-0.003***	-0.002***	-0.003***	-0.010***	-0.011***	-0.007***	-0.009***	-0.009***	-0.006***
	(0.000)	(0.000)	(0.000)	(0.002)	(0.003)	(0.002)	(0.002)	(0.003)	(0.002)
Domestic investment$_{t-1}$	-0.114***	0.010	-0.187***	0.114	0.239	0.158	-0.047	0.128	0.056
	(0.026)	(0.041)	(0.034)	(0.110)	(0.194)	(0.144)	(0.132)	(0.220)	(0.183)
Observation	32998	14524	18474	32375	14524	17851	31203	14128	17075
F-stats	192.820	59.901	151.300	58.476	31.582	28.390	58.507	31.970	28.376
R^2	0.098	0.070	0.122	0.148	0.134	0.167	0.033	0.041	0.028
Kleibergen-Paap rk Wald F statistic							1432	2593	597
Kleibergen-Paap rk LM statistic							4102	2907	1462
Chi-sq(2) P-value							0.000	0.000	0.000
Industry fixed effect				Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effect				Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effect				Yes	Yes	Yes	Yes	Yes	Yes

Notes: Standard errors in parentheses are clustered at the country level. *** p < 0.01, ** p < 0.05, * p < 0.1.

Table C.2: Effect of international remittances per capita on on firm sales

	Dependent variable : Total annual firm sales (log)								
	Ordinary least squares model			Fixed-effects model			Instrumental variable approach with fixed effects		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	All	Manufacture	Non-Manufacture	All	Manufacture	Non-Manufacture	All	Manufacture	Non-Manufacture
Remittances per capita$_{t-1}$	-0.009***	-0.013***	-0.007***	-0.021***	-0.035***	-0.020***	0.004	-0.013***	0.004
	(0.000)	(0.001)	(0.000)	(0.001)	(0.003)	(0.002)	(0.003)	(0.004)	(0.005)
Trade (% of GDP)$_{t-1}$	0.008***	-0.001	0.012***	-0.000	-0.010	0.009*	-0.002	-0.014*	0.007
	(0.001)	(0.001)	(0.001)	(0.004)	(0.006)	(0.005)	(0.004)	(0.008)	(0.006)
Unemployment rate$_{t-1}$	0.022***	0.038***	0.008**	-0.329***	-0.458***	-0.342***	-0.421***	-0.533***	-0.424***
	(0.003)	(0.005)	(0.004)	(0.027)	(0.046)	(0.037)	(0.031)	(0.050)	(0.046)
Time to start business$_{t-1}$	-0.003***	-0.010***	-0.000	0.002	0.011***	0.002	0.002	0.008***	0.001
	(0.000)	(0.001)	(0.001)	(0.002)	(0.003)	(0.002)	(0.002)	(0.003)	(0.002)
Real exchange rate$_{t-1}$	3.060***	4.605***	2.020***	12.561***	15.295***	12.398***	13.176***	15.450***	13.041***
	(0.246)	(0.385)	(0.317)	(1.034)	(1.769)	(1.349)	(1.170)	(2.092)	(1.639)
Domestic credit to private$_{t-1}$	-0.008***	-0.010***	-0.009***	-0.017	-0.071***	-0.016	-0.013	-0.053***	-0.019
	(0.001)	(0.001)	(0.001)	(0.010)	(0.019)	(0.013)	(0.011)	(0.020)	(0.014)
Political stability index$_{t-1}$	0.162***	0.112***	0.201***	-0.352***	-0.938***	-0.073	-1.037***	-1.344***	-0.826***
	(0.022)	(0.035)	(0.028)	(0.096)	(0.168)	(0.133)	(0.117)	(0.202)	(0.162)
Corruption index$_{t-1}$	-0.017***	-0.021***	-0.014***	-0.010***	-0.009***	-0.006*	-0.024***	-0.020***	-0.018***
	(0.001)	(0.002)	(0.001)	(0.002)	(0.003)	(0.003)	(0.003)	(0.004)	(0.004)
Transport obstacle$_{t-1}$	0.108***	0.155***	0.056	0.018	-0.011	0.054	-0.014	-0.011	0.001
	(0.033)	(0.047)	(0.047)	(0.031)	(0.043)	(0.044)	(0.031)	(0.044)	(0.045)
Number of power outages (log)$_{t-1}$	0.134***	-0.115**	0.258***	-1.094***	-2.232***	-0.994***	-0.972***	-2.030***	-0.885***
	(0.031)	(0.051)	(0.038)	(0.104)	(0.194)	(0.138)	(0.105)	(0.196)	(0.140)
Female Ownership	-0.460***	-0.446***	-0.450***	-0.181***	-0.125	-0.187***	-0.174***	-0.132	-0.180***
	(0.051)	(0.088)	(0.063)	(0.049)	(0.082)	(0.062)	(0.049)	(0.083)	(0.061)
Location (= large city)	-0.374***	-0.635***	-0.220***	0.123***	0.022	0.184***	0.165***	0.066	0.214***
	(0.031)	(0.048)	(0.041)	(0.034)	(0.051)	(0.046)	(0.034)	(0.052)	(0.046)
Large size firm	0.956***	0.966***	0.886***	1.271***	1.314***	1.268***	1.247***	1.280***	1.243***
	(0.052)	(0.069)	(0.082)	(0.051)	(0.067)	(0.082)	(0.052)	(0.068)	(0.083)
Firm sales$_{t-3}$	0.630***	0.622***	0.624***	0.499***	0.473***	0.510***	0.505***	0.483***	0.514***
	(0.005)	(0.008)	(0.006)	(0.006)	(0.009)	(0.007)	(0.006)	(0.009)	(0.008)
GDP per capita$_{t-1}$	0.000	-0.000	0.000**	-0.001***	-0.001***	-0.001***	-0.000**	-0.001***	-0.000*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Domestic investment$_{t-1}$	0.021***	0.021***	0.018***	0.054***	0.072***	0.028***	0.050***	0.059***	0.028**
	(0.002)	(0.003)	(0.003)	(0.007)	(0.012)	(0.010)	(0.008)	(0.013)	(0.012)
Observation	33626	14827	18799	33000	14827	18173	31804	14422	17382
F-stats	3307.523	2068.271	1400.387	1291.059	665.072	693.594	1197.051	611.067	615.337
R^2	0.604	0.661	0.556	0.692	0.743	0.647	0.465	0.494	0.443
Kleibergen-Paap rk Wald F statistic							1462	2579	672
Kleibergen-Paap rk LM statistic							4197	2946	1544
Chi-sq(2) P-value							0.000	0.000	0.000
Industry fixed effect				Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effect				Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effect				Yes	Yes	Yes	Yes	Yes	Yes

Notes: Standard errors in parentheses are clustered at the country level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table C.3: Effect of international remittances per capita on the number of permanent and full-time employees

	Dependent variable : Number of full-time employees(log)								
	Ordinary least squares model			Fixed-effects model			Instrumental variable approach with fixed effects		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	All	Manufacture	Non-Manufacture	All	Manufacture	Non-Manufacture	All	Manufacture	Non-Manufacture
Remittances per capita$_{t-1}$	0.000***	0.000	0.000***	0.000	-0.002*	0.001	0.007***	0.004***	0.010***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)
Trade (% of GDP)$_{t-1}$	-0.001***	-0.001	-0.000*	-0.000	0.003	-0.001	0.002	0.002	0.004*
	(0.000)	(0.000)	(0.000)	(0.001)	(0.002)	(0.002)	(0.001)	(0.002)	(0.002)
Unemployment rate$_{t-1}$	-0.000	0.006***	0.001	-0.016**	0.021	-0.016	-0.059***	-0.012	-0.082***
	(0.001)	(0.002)	(0.001)	(0.008)	(0.015)	(0.011)	(0.010)	(0.016)	(0.015)
Time to start business$_{t-1}$	-0.000	0.000	-0.001***	-0.002***	-0.003***	-0.001	-0.003***	-0.003***	-0.001*
	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Real exchange rate$_{t-1}$	-0.434***	-0.700***	-0.404***	0.263	-0.440	0.457	1.210***	-0.077	2.137***
	(0.068)	(0.108)	(0.088)	(0.322)	(0.529)	(0.425)	(0.384)	(0.587)	(0.540)
Domestic credit to private$_{t-1}$	0.002***	0.001**	0.002***	0.006*	0.003	0.007	0.017***	0.014*	0.019***
	(0.000)	(0.000)	(0.000)	(0.003)	(0.006)	(0.004)	(0.004)	(0.007)	(0.005)
Political stability index$_{t-1}$	-0.037***	-0.083***	-0.016**	0.044	0.136**	0.109***	-0.024	0.027	0.068
	(0.007)	(0.011)	(0.008)	(0.030)	(0.060)	(0.040)	(0.039)	(0.072)	(0.052)
Corruption index$_{t-1}$	-0.000	-0.001	0.001*	0.003***	0.002*	0.003***	-0.001	-0.000	-0.001
	(0.000)	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Transport obstacle$_{t-1}$	0.010	0.011	-0.006	0.010	0.004	0.012	0.003	0.004	0.001
	(0.010)	(0.016)	(0.014)	(0.010)	(0.015)	(0.014)	(0.011)	(0.016)	(0.014)
Number of power outages (log)$_{t-1}$	-0.073***	-0.119***	-0.044***	0.066*	0.120*	0.099**	0.114***	0.159**	0.169***
	(0.010)	(0.017)	(0.012)	(0.034)	(0.072)	(0.045)	(0.035)	(0.074)	(0.047)
Female Ownership	-0.220***	-0.208***	-0.202***	-0.225***	-0.209***	-0.237***	-0.226***	-0.217***	-0.236***
	(0.016)	(0.027)	(0.019)	(0.016)	(0.027)	(0.019)	(0.016)	(0.027)	(0.020)
Location (= large city)	0.145***	0.151***	0.152***	0.134***	0.174***	0.111***	0.134***	0.178***	0.111***
	(0.010)	(0.015)	(0.012)	(0.011)	(0.017)	(0.015)	(0.011)	(0.018)	(0.015)
Large size firm	2.630***	2.557***	2.625***	2.457***	2.416***	2.484***	2.455***	2.417***	2.473***
	(0.015)	(0.019)	(0.023)	(0.015)	(0.020)	(0.024)	(0.016)	(0.020)	(0.025)
GDP per capita$_{t-1}$	0.000***	0.000***	0.000***	0.000	0.000	0.000	0.000***	0.000*	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Domestic investment$_{t-1}$	0.004***	0.004***	0.004***	0.003	0.004	0.006**	-0.003	-0.002	-0.005
	(0.001)	(0.001)	(0.001)	(0.002)	(0.004)	(0.003)	(0.003)	(0.005)	(0.004)
Observation	33206	14683	18523	32593	14683	17910	31404	14279	17125
F-stats	2402.462	1366.332	961.341	1827.833	1029.396	773.112	1751.925	1002.710	729.457
R^2	0.556	0.600	0.496	0.588	0.636	0.507	0.509	0.562	0.441
Kleibergen-Paap rk Wald F statistic							1407	2572	630
Kleibergen-Paap rk LM statistic							4051	2869	1503
Chi-sq(2) P-value							0.000	0.000	0.000
Industry fixed effect				Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effect				Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effect				Yes	Yes	Yes	Yes	Yes	Yes

Notes: Standard errors in parentheses are clustered at the country level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.