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The Impact of Foreign Direct Investment on Labor Market Measures: Evidence from Sub-Saharan Africa

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Abstract

There is scant literature examining the relationship between foreign direct investment (FDI) and labor market measures in Sub-Saharan African (SSA) countries. This paper explores the effect of FDI on the labor market measures using panel data of 48 Sub-Saharan African Countries from 1991 to 2009. The result indicates that FDI has a positive and significant effect on employment implying that an increase in the inflow of FDI is associated with higher employment. Thus, Sub-Saharan African governments should strongly consider poverty alleviation and employment policies that encourage and direct FDI to the industries where it can significantly reduce unemployment.

1. Introduction

For the last 50 years of modern African history, the continent has been characterized by what the Zambian economist Dambisa Moyo referred to as four apocalypses: conflict, disease, poverty, and corruption. These characteristics invoke images of a troubled region in the minds of most international investors, thereby, deterring the inflows of FDI to the continent, which in turn reduces the marginal benefits of FDI. However, the speed of economic globalization has rapidly increased both trade liberalization and integration of the African economies with the world economy. This, together with the rapid economic growth in the region over the last two decades, will likely produce unprecedented levels of FDI inflows into Africa in the decades ahead.

The literature on FDI has widely established several important net benefits of FDI on host country's economy: increases in growth, productivity, and employment opportunities. Given these benefits, governments of developing nations, in particular SSA countries, should position their FDI policies in ways that allow them to maximize these benefits. First, these countries must work hard to establish the positive determinants that attract high FDI inflows such as building of adequate infrastructure, educating and equipping the potential labor force with highly marketable skills, encouraging openness to trade, and increasing GDP growth. Second, host countries need to entice transnational corporations (TNCs) with incentives such as import protection, export incentives, tax holidays, and favorable regulation framework. Once the TNC is in the host country, both the TNC and the government would then need to work together with mutual understanding to alleviate unemployment. Lall (1995) admits, "TNC performance requirements set by host countries can raise the quantity and quality of local employment, but could deter TNC entry if imposed rigidly; setting them by negotiation is preferable." This process will be key in attracting the FDI into the African countries and consequently reducing endemic poverty in the region.

This paper advances and contributes to the current literature by examining the impact of FDI on labor measures, namely, employment ratio and unemployment rate, in a comparative way. I use both the employment ratio and unemployment rate because they are measured differently and it is likely that these different measures could yield different results. This study also compares labor measures for the general population versus the youth population. This contrasts with most previous studies on SSA countries and other regions of the world which only look at either the impact of FDI on employment for multinational enterprises (MNEs) affiliates, or on national economic growth and productivity.

Most African countries have high unemployment rate, although the data may not tell the whole story due to the exclusion of many people who live in the rural areas. Thus, the statistical significance of FDI on different labor market measures suggests that policy makers, development agencies, and civil societies should push for measures that increase the inflow of FDI to areas with an endemic unemployment problem.

In this study, I used a panel data set for 48 Sub-Saharan African countries for the period ranging from 1991 - 2011. The employment ratio and the unemployment rate are the dependent variables of interest. Net FDI measured as a percent of GDP is the key explanatory variable. Several macroeconomic variables are also included to control for economic conditions. Lastly, other controls, such as openness, population growth, risk index, education, and others are included to capture various factors.

Using the Ordinary Least Square (OLS) regression estimator, I find that FDI has the expected sign and significance in all specifications for both the general and youth population. This implies increasing inflow of the FDI to Sub-Saharan African countries is associated with increase in employment ratio. While most of the macroeconomic and other controls have the expected signs and significance some have ambiguous results but generally consistent with established literature.

To address any endogeneity concern, I use initial FDI to estimate the effect of FDI on average employment over the next five years. The results are consistent with the OLS benchmark result. I also use the initial FDI to estimate the impact of FDI on average unemployment over the next 5 years. These results reflect the expected signs but are not significant. This is likely due to the mismeasurement embedded in the unemployment rate measure.

2. Literature Review

The expected link between FDI and productivity of local firms is one of the main reasons many countries vie for MNE's investment. An increased productivity can lead to an increase in wages, employment, and growth. Several previous studies have investigated the relationship between FDI and productivity, finding a positive correlation. Blalock and Gertler (2007) find not only an increase in productivity but also a strengthening of efficiency between firms. This in turn leads to a decrease in input prices supplied by local supplier firms. This externality benefits other downstream firms in the supplier chain network, whether they are foreign or not. Similarly, using the former Soviet State of Lithuania, Javorcik (2004) finds more parsimonious results in which productivity is positively associated with FDI only if the firm is a joint venture; wholly-owned foreign enterprises do not enjoy the same productivity boost. However, Harrison (1996) investigates Morocco, Ivory Coast, and Venezuela and finds either no correlation or even a negative effect of FDI on productivity among local firms. Nevertheless, the author acknowledges this is likely to be a short-term effect as foreign firms take away a bulk of the market share from domestic firms.

Many countries, both developed and developing, take extra steps to attract FDI in order to increase the employment opportunities for their local population. In regard to the correlation between employment and FDI, the results of many studies confirm more or less positive relationships. Lall (1995) finds that FDI leads to higher employment level if individual countries, based on their labor needs, direct FDI to certain industries such as

manufacturing and agriculture. In a more focused study, Karlsson et al (2009) use the FDI data on different categories of manufacturing firms in China from 1998 to 2004 to evaluate the effect of FDI on direct and indirect jobs. They authors argue that:

> Foreign and private domestic firms have a comparably high growth in employment. This high growth in foreign firms is caused by favorable firm characteristics, such as high capital intensities and productivity, and by the relatively high survival rate of foreign-owned firms. Regarding the indirect effect, the empirical analysis finds positive effects of FDI on private domestically owned firms, presumably because spillovers and learning or demonstration effects are more important than the competition effect.

Inekwe (2013) takes this further to include the service sector, in addition to manufacturing. Using the Johansen Cointegration Technique and the Vector Error Correction Model, the author analyzes the sectoral data from 1990 to 2009 in Nigeria to determine the effect of FDI on employment and growth. He ascertains that the FDI in the service sector has a positive correlation with growth; however, FDI in manufacturing has a negative link with growth. With regards to employment, these effects were reversed. FDI has a positive correlation with employment in the manufacturing sector and a negative relationship with employment in the service sector. Once again, this correlation asserts the importance of adjusting and directing FDI policies based on where it can have the most significance. Lastly, Waldkirch et al (2009) use disaggregated FDI data in Mexico and reveal a small positive effect on employment for both blue and white-collar jobs. Specifically, the positive effect on employment is more pronounced in export-oriented industries.

Other papers look on the relationship between FDI and the national unemployment rate and/or welfare. Banerjee et al (2010) applying the three sectors General Equilibrium Model to FDI data in labor-surplus countries, find the FDI inflow into agricultural land worsens the unemployment and welfare situation of the urban population. The authors

contend that this is likely explained by the existence of "sticky urban wage and agricultural dualism." Similarly, Dutt et al (2009) employ the Heckscher-Ohlin and Ricardian Model to provide evidence that trade liberalization increases the unemployment rate in the short-run, followed by a reduction of the unemployment rate, and then onto the steady state. These changes depend on whether the host country is labor or capital intensive, in which case the unemployment reduction -effect favors the former.

However, some studies have found a negative and significant relationship between the FDI and the unemployment rate. This implies FDI inflow is associated with a lower unemployment rate. In Romania, FDI inflow lowers the unemployment rate in the aftermath of a financial and economic crisis (Carp, 2012). Chaudhuri and Banjerjee (2010), again using the three-sector General Equilibrium Model in the presence of both unskilled and skilled labor, conclude that FDI in agricultural land is linked with a decrease in the unemployment rate and a rise in welfare. Furthermore, Schmerer (2014) uses panel data of OECD countries and finds a negative correlation between the unemployment rate and net-FDI. This suggests that as net FDI increases, unemployment decreases. Moreover, using panel data comprised of most African countries to estimate the effect of investment liberalization on employment, Asiedu and Gyimah-Brempong (2007) contend that FDI has a significant indirect effect on employment through investment liberalization. In other words, investment liberalization encourages FDI inflow, which in turn leads to higher employment. Utilizing a different perspective, Asiedu (2002) looks at how the determinants of FDI impact employment in SSA countries. The author shows that, "in contrast to natural resource availability – good infrastructure, higher income, openness to trade, and an educated labor force have a significant positive impact on employment." This implies that natural resource-endowed countries on the continent need to attract the FDI into non-natural resource sectors (such as agriculture, construction, ICT and others) in an effort to alleviate the unemployment. However, while investigating if FDI determinants work differently in SSA countries relative to the rest of the world, Asiedu (2002) concludes that SSA countries are indeed

distinct. In particular, Asiedu (2012) suggests that the return on capital and availability of sufficient infrastructure attract FDI to other regions but not to SSA countries. In addition, there is a less marginal benefit from trade openness for a Sub-Saharan African country relative to a non-Sub-Saharan African country. This effect can be attributed to the way SSA countries are perceived as risky destinations for investment due to factors such as political uncertainty, lack of a regulatory framework, corruption, poor governance, and low human capital level (Anyanyu, 2006).

3. Conceptual Framework and Hypothesis

The employment effect by MNEs is through two channels: direct and indirect. As a direct effect, FDI firms create various employment opportunities. The employment opportunities are more pronounced with greenfield FDI firms (with vertical integration) rather than takeover firms. As they set up new operations in the host country, these firms directly hire local workers – both skilled and unskilled.

The indirect MNEs' contribution to employment happens when they share their know-how and technology with domestic supplier network firms. This in turn makes supplier firms more productive and increases competition among these firms. The result is not only lower input prices for the foreign firms but also a positive externality to domestic firms in the form of lower input price as well. Lastly, domestic employment benefits from management staff leaving foreign firms to set up their own firms. These managers leave foreign firms with highly technical skills and human capital that they can use in setting up their own enterprises, which come with an additional increase in labor demand. All these factors can potentially contribute to higher employment or a lower unemployment rate.

However, the FDI's indirect effect can have negative impact on employment. This can happen especially if the competition between foreign and domestic firms results in crowding out of the local firms. Karlsson et al (2009) explains, " the effect of FDI on employment can be both positive and negative, depending on the strength of the spillover

effect and competition, which are simultaneously at work." The authors determine that positive spillover effects are more dominant than the competition effect. I, therefore, hypothesize that FDI has a positive correlation with the employment ratio and a negative correlation with the unemployment rate; that is, an increase in FDI level is associated with an increase in employment and a decrease in the unemployment rate.

4. Theoretical Background

The effect of FDI on labor market measures in SSA countries is based on the theoretical framework of labor demand functions (Waldkirch et al, 2009). It is derived from the Cobb-Douglas Production Function as follows:

$$Y_{it} = A K_{it}^{\alpha_1} L_{it}^{\alpha_2}$$

Where Y is the level of real output for industry i at time t, K is the quantity of the capital, L is the labor, and A is a parameter. Here, a firm's objective is profit maximization that indicates optimal capital is selected "such that the cost of capital R equals capital's marginal revenue product (MRP) and wage equals labor's MRP" (Waldkirch et al, 2009). The solution to the optimization problem results in the following:

$$Y_{it} = A \left(\frac{\alpha_1 L_{it} W_{it}}{\alpha_2 R_t} \right)^{\alpha_1} L_{it}^{\alpha_2}$$

The parameter A in the above equation is assumed to vary with an industry's interaction with FDI as follows:

$$A = B.FDI_{it}^{\rho}$$

To show the relationship between the employment (labor) and FDI, I have substituted the parameter A into the second equation leading to the following:

$$L_{it} = \beta_0 + \beta_1 (W_{it} - r_t) + \beta_2 Y_{it} + \beta_3 FDI_{it}$$

5. Empirical Method

Essentially, this paper is testing the impact of FDI on measures of the labor market. Therefore, FDI is the explanatory variable of interest. I expect a positive correlation between the employment ratio and FDI and a negative relationship between the unemployment rate and FDI. The first set of controls are macroeconomic variables which include domestic investment, government expenditure, inflation, GDP per capita, GDP per capita squared, and GDP growth. The second set of controls includes openness, education, infrastructure (phone), population growth, and the International Country Risk Guide (ICRG) index.

To address any endogeneity concern, I use the initial FDI inflow to estimate the effect of FDI on average employment ratio and unemployment rate over the next 5 years. I did the same estimation on the next 10-year average employment ratio and unemployment rate. All the other controls are used as 5-year and 10-year averages rather than as initial measures as this is a common practice in the literature.

5.1 Data and Empirical Strategy

5.2 Data

This paper investigates the impact of FDI on labor market measures using a panel data of 48 Sub-Saharan African countries from 1991 to 2009. Notwithstanding the differences between these countries, they have many similar characteristics such as demographic features, stages of growth, and geographic location. Further, these countries were selected based on the availability of the data on variables. All the data is originally from the World Bank, but specifically sourced from Anyanyu (2013).

5.3 Dependent Variables

The two dependent variables are the employment ratio and the unemployment rate. Using two measures of the labor market allows for comparisons of differential impacts of the FDI on employment ratio and the unemployment rate. Employment is measured relative to the total population, whereas unemployment rate is measured as a percent of

the labor force. As the FDI inflow increases, there should be an associated increase in the employment ratio and a decrease in the unemployment rate.

5.4 Explanatory variables

FDI

The variable of interest is the net FDI inflow measured as a share of the GDP. That is the net FDI inflow from all other countries to country (i) at time (t). If the host country has the right economic fundamentals in place, FDI can significantly benefit the domestic economy in the form of increased growth, productivity, and employment opportunities. Given all the potential FDI determinants possessed by the African countries, I hypothesize that FDI is associated with positive impact on the labor market

Macroeconomic variables

To measure the impact of macroeconomic factors on the labor market, the following controls are used: domestic investment, government expenditure, inflation, real GDP per capita, real GDP per capita squared, and Real GDP growth.

Domestic investment is measured as a percentage of the GDP. Domestic investment is critical for infrastructure and human capital development, which in turn can enhance the employment opportunities both for the general population as well as the youth population.

However, increases in government expenditure (measured as a percent of the GDP) reduce employment since it pulls resources away for consumption purposes. This may also reduce growth, which is a critical determinant of FDI inflow.

With respect to inflation, as an economy grows it implies that more firms are becoming productive and there is an increase in a labor demand and a decrease in the unemployment rate. This can lead to a higher inflation level as money demand increases along with growth.

On GDP, different variants are used to capture their potential differential impact on the labor market. It is expected that they will have a general similar trend, but may deviate from one another, since each is measured and/or expressed differently. GDP per capita is measured in 2,000 dollars. GDP per capita squared is added to capture any non-monotonic relationship between development and employment as in Anyanyu (2009). Lastly, real GDP growth controls for hosts of labor market characteristics.

Other Controls

Other controls are included to quantify their role in the labor market. Their importance ranges from being determinant of the FDI inflow to controlling for the size of growth. These controls are openness, education, infrastructure, population growth, and risks index.

Trade openness is net exports as a percentage of the GDP. Openness to trade is seen as crucial to employment opportunities. Net exports can increase as a result increased productivity of existing firms and/or new firms entering the market, which leads to an increase in labor demand. In addition, openness is an important positive determinant of FDI inflow to African countries (Asiedu, 2002).

To control for human capital and skills, I include education measured by years of education. Overall, higher education levels are associated with better chances of employment and higher wages. An educated labor force, especially in the technical fields, can encourage the investment of the MNEs, which tend to seek specialized skills such as ICT and engineering skills.

With respect to the availability of adequate information and communication Technology (ICT), I use the number of mobile phones available per 1000 persons as an instrument for the ICT. Sufficient ICT infrastructure can have a significant impact on the labor market in developing countries. For example, a woman in a rural village may seek information on prices of her produce through a mobile phone or she can use mobile banking to remotely carry out her transactions.

To capture the effect of demographic changes, the population growth rate is used. It is established in literature and theories that lower population growth is linked with lower unemployment rate. However, SSA countries have this peculiar case of "demographic dividend" due to high birth rates from the last decades. Presently, although population growth is still relatively high, it is tapering off. This leaves a huge segment of the youthful and working-age population in the middle to support decreasing births and the non-working older population.

Lastly, to control for stability, law and order, I use the international Country Risk Guide (ICRG) index. The components of the index are political, economic, and financial risk factors. Therefore, the index captures factors such as enforcement of contracts and regulation, incidence of civil strife and so forth. As expected, the more stable the country, the higher the employment opportunities generated by domestic and foreign investment.

5.4 Empirical strategy

The empirical strategy and identification of this paper closely follows the work of Anyanyu (2013), which estimates the relationship between youth employment and its determinants. In comparison, my study looks at the correlation between the employment ratio (general and youth population employment) and FDI inflow. I also estimate the same equation using the unemployment rate as the dependent variable. The model is estimated as follows:

Employment

$$E_{it} = \alpha_i + \beta_1 FDI_{it} + \beta_2 Dom\ inv_{it} + \beta_3\ Gov\ Exp + \beta_4 Infl_{it} + \beta_5 RGDPpc_{it} +$$

$$\beta_6 RGDPpc^2_{it} + \beta_7 RGDPg_{it} + \beta_8 X_{it} + \beta_9 Trend + \varepsilon_{it} \qquad \textbf{(1)}$$

Unemployment

$$U_{it} = \alpha_i + \beta_1 FDI_{it} + \beta_2 Dom\ inv_{it} + \beta_3\ Gov\ Exp + \beta_4 Infl_{it} + \beta_5 RGDPpc_{it} +$$

$$\beta_6 RGDPpc^2_{it} + \beta_7 RGDPg_{it} + \beta_8 X_{it} + \beta_9 Trend + \varepsilon_{it} \qquad (2)$$

Where

E_{it} is employment relative to population (number employed/population x 100%) in country *i* at time *t*. U_{it} is the unemployment rate (number unemployed/Labor Force x 100%) in country *i* at time *t*. FDI is net Foreign Direct investment inflow as a share of GDP (FDI/GDP x 100%). Dom inv is domestic investment as a percent of the GDP. Gov Exp is Government expenditure as a percent of the GDP. Infl is a rate of inflation measured by the CPI. RGDPpc is the real GDP per capita (in log). RGDP pc^2 is real GDP per capita squared (in log). RGDPg is the real GDP growth. X is the vector of other controls, such as trade openness, measured as net exports as a percent of the GDP, schooling (in log) is measured by number of years of education, phone (in log) is measured as per 1000 persons, population growth, and risk index (in log). Trend accounts for time shocks and ε is the stochastic error term.

Using the OLS estimator, the expected significance and sign for the variable of interest, is positive and negative for employment and unemployment, respectively. However, to check for consistency of the results, I need an alternative technique. "In panel estimation, neither the Generalized Least Squares (GLS) estimator nor Fixed Effect (FE) estimator produces consistent estimates in the presence of dynamics and endogenous regressors" (Asiedu and Gyimah-Brempong, 2007). On the other hand, in order to use the General Methods of Moment (GMM), one needs to have good instrumental variables (IVs) which I don't have for this type of study. Therefore to address the endogeneity concern, I use the initial FDI to estimate the impact of FDI on the next 5-year average employment ratio and unemployment rate. I repeat this exercise for the next 10 - year average employment ratio and unemployment rate.

5.5 Results

I expect a positive correlation between FDI and employment ratio and a negative correlation between FDI and the unemployment rate. This indicates that an increase in FDI inflow is linked with a lower unemployment rate and higher employment level. All other control variables are expected to behave consistently with economic theories and existing literature.

Table 2: Employment estimation (OLS)

Table 2 in the appendix presents the benchmark results of the employment estimation using the OLS estimator. As expected, the variable of interest, FDI, is positive and significant in both the specifications for the general population as well as for the youth. This implies that an increase in FDI is associated with a higher employment level. Specifically, standard deviation (found in descriptive statistics in the appendix) is used in the interpretation of the result. For example, in first column, one standard deviation increases in the net inflow of the FDI is associated with 0.171 percent (0.019 x 9.01) increases in employment level.

On the macroeconomic controls, all the variables generally have the expected signs and significance except for inflation and GDP growth, which have shown some ambiguities. The lack of significance on inflation and GDP growth can be likely explained by a natural resource boom that increases the revenues (from exports) flowing into the government coffers but don't necessarily raise employment if the revenues are mismanaged or don't go to the productive sectors.

With respect to the additional controls, all of them, except openness, have expected signs and significance. The plausible explanation for the lack of significance in trade openness is likely because of a perceived risk of the region by international investors. Asiedu (2002) asserts that openness is a positive determinant of FDI in Africa

but the marginal benefits are less for the Sub-Saharan African region than in other parts of the world. This also means the net exports component of the openness can be affected by this perception.

Table 3: Unemployment estimation (OLS)

Here, I present the estimates of the unemployment rate using the OLS Estimator. The results for the FDI show expected signs but are not significant for both specification of the general population as well as for the youth population. The lack of significance here can likely be explained by the mismeasurement built into the unemployment rate measure. Many labor economists contend that the unemployment rate is a poor measure of the labor market participation because it excludes discouraged and marginally - attached workers from the labor force several weeks after they stopped looking for work. This is certainly a large number of people to be excluded from the workforce especially in the developing countries of Africa. Following this view, I argue that the results for unemployment estimation are may be noisy to the mismeasurement error. Take for example, when the growth is strong, the FDI inflow is likely to increase, while the discouraged and marginally-attached workers are joining the labor force at the same time. This can cause the lack of significance and consistency with the unemployment results. For these reasons, many labor economists actually think employment ratio and U5 (which includes the discouraged and marginally-attached workers) are better measures of labor force participation. Therefore, due to the likely measurement error in the unemployment estimation, the conclusion of this study is based on the estimates of the employment equation.

Table 4: Employment Estimates of the 5-year Averages.

To address the endogeneity concern, I use initial FDI to estimate the effect of FDI on the next 5-year average employment in Table 4. Again, the results are positive and significant as expected, implying that an increase in FDI is associated with a higher employment level. The results for the control variables are generally consistent with the

benchmark results in Table 2. This indicates that endogeneity is less of a problem in the employment equation.

Table 5: Unemployment Estimates of the 5-year Averages

In Table 5, I use initial FDI to estimate the effect of FDI on the next 5-year average unemployment rate. Here, the results are more ambiguous and inconsistent with table 3 benchmark results of the unemployment equation. Once again, this is likely due to the mismeasurement of the unemployment rate.

6. Contribution to the Literature

My paper adds two essential contributions to the FDI and labor market literature. First, I look at two labor measures of labor market, namely, employment ratio and unemployment rate, in a comparative way. In other words, I estimate the impact of FDI on the employment ratio and unemployment rate differently and compare the significance or the lack thereof. By doing two estimations, one can assess if the estimations measure the impact of FDI in a consistent manner, that is, as FDI inflow increases there is an expected increase in the employment ratio and a corresponding decrease in the unemployment rate. When there is a deviation or inconsistency in the expected results, this paper explores the possible explanations.

Secondly, I estimate the impact of FDI on the employment ratio of the general population as well as the youth population. Likewise, I gauge the effect of FDI on the unemployment rate for the general population versus the youth population. This is to test if FDI inflows affect the youth population differently from the general population.

7. Conclusion and Policy Recommendation

The paper investigates the impact of FDI on the labor market measures in 48 Sub-Saharan African countries using panel data from 1991 to 2009. The variable of interest, foreign direct investment, shows the expected signs and significance in the employment estimation. Therefore, it is recommended that Sub-Saharan African governments' policies to alleviate poverty and increase employment opportunities, should encourage the inflow of FDI to industries that can generate employment opportunities. Finally, I would like to acknowledge two limitations of this study. First, the panel data may be missing observations in some variables, making it an unbalanced panel data set. Second, the paper uses aggregate FDI but FDI's employment effect is better analyzed with sectoral data.

8. Regression and Descriptive Statistics Tables

Table 1 : Descriptive Statistics

Variable	Observations	Mean	Std. deviation	Min	Max
Employment	1035	64.55	12.84	32.5	88.1
Unemployment	1035	9.33	7.49	0.6	39.3
FDI	1732	3.38	9.01	-82.892	161.82
Domestic Investment	2057	9.05	20.82	-241.86	88.11
Govt Expenditure	2045	15.68	7.86	2.04712	84.508
Inflation	1642	38.75	613.44	-17.64	23773.1
GDP Per Capita	2220	923.4	1909.46	35.3677	23463.8
GDP growth	2125	1.36	7.49	-50.235	142.07
Openness	2144	70.24	44.63	6.32	531.74
Phone	1837	11.18	2.59	0	18.66
Education	1760	0.75	0.84	-2.045	2.34
Population growth	2537	2.51	1.12	-7.597	10.98
ICRG	877	3.93	0.29	2.277	4.39

Table 2: Employment Estimation (OLS)

Variables	(1) Employ	(2) Employ	(3) Employ	(4) Employ Y	(5) Employ Y	(6) Employ Y
FDI	0.01911**	0.03902***	0.01978*	0.02216**	0.04806**	0.02936*
	[0.008]	[0.015]	[0.011]	[0.011]	[0.021]	[0.018]
Domestic Investment	0.00332	0.01985	0.03278**	0.01145	0.02677	0.07015***
	[0.005]	[0.012]	[0.016]	[0.008]	[0.019]	[0.022]
Govt Expenditure	-0.00733	-0.06950***	-0.01876	0.07258***	0.13827***	-0.01833
	[0.019]	[0.026]	[0.036]	[0.027]	[0.043]	[0.052]
Inflation	0.00001	-0.00008	0.00078	-0.00006**	-0.00014	0.00033
	[0.000]	[0.001]	[0.001]	[0.000]	[0.001]	[0.001]
Ln GDP per capita	6.04895***	-6.09395	-21.78287***	3.91717	-4.99908	-40.51503***
	[2.070]	[3.784]	[5.353]	[2.940]	[6.463]	[7.951]
Ln GDP Per capita sq	-0.41147***	0.61230**	1.74859***	-0.30690	0.22810	2.97998***
	[0.132]	[0.264]	[0.406]	[0.190]	[0.478]	[0.638]
GDP growth	-0.00719	-0.01931	-0.00395	0.01154	-0.03549	-0.02361
	[0.008]	[0.023]	[0.024]	[0.010]	[0.034]	[0.032]
Openness		0.00231	-0.00231		0.01405*	0.00574
		[0.005]	[0.008]		[0.007]	[0.011]
Ln Phone		0.75809***	0.50737**		1.05361***	0.45644
		[0.168]	[0.215]		[0.248]	[0.293]
Ln Education		1.32614	5.61494***		0.45158	7.30305***
		[0.966]	[1.505]		[1.338]	[2.046]
Population		0.01301	1.09921***		0.18869	2.70012***
		[0.096]	[0.208]		[0.172]	[0.324]
Ln ICRG			1.76423**			-0.50957
			[0.825]			[0.970]
Trend	0.04167***	-0.23512***	-0.19798**	0.11432***	0.45849***	-0.32935***
	[0.014]	[0.063]	[0.087]	[0.020]	[0.092]	[0.117]
Country fixed effects	Y	Y	Y	Y	Y	Y
Constant	18.03794**	44.15615***	78.60405***	11.14533	44.53637**	132.09436***
	[7.741]	[13.588]	[17.049]	[10.910]	[20.993]	[22.388]
Observations	819	618	406	819	618	406
R-squared	0.9863	0.9849	0.9803	0.9803	0.9759	0.9749

Robust standard errors in brackets

*** p<0.01, ** p<0.05, * p<0.1

Table 3: Unemployment Estimation (OLS)

Variables	(1) Unemploy	(2) Unemploy	(3) Unemploy	(4) Unemploy Y	(5) Unemploy Y	(6) Unemploy Y
FDI	-0.00714	-0.01472	-0.00203	-0.01209*	-0.02153	-0.01505
	[0.005]	[0.011]	[0.010]	[0.006]	[0.017]	[0.023]
Domestic Investment	-0.00169	-0.01870*	0.01555	-0.01598***	-0.03054**	-0.00450
	[0.004]	[0.011]	[0.011]	[0.006]	[0.013]	[0.016]
Govt Expenditure	-0.01710	-0.02301	0.03547	-0.01389	-0.02318	0.04618
	[0.013]	[0.019]	[0.026]	[0.021]	[0.035]	[0.060]
Inflation	-0.00001**	0.00008	0.00010	0.00002	0.00010	0.00002
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.001]
Ln GDP per capita	-1.94080**	4.92387**	1.87623	-5.76619***	-4.69660	-11.34173
	[0.933]	[2.457]	[4.503]	[1.929]	[6.402]	[11.307]
Ln GDP per capita sq	0.10930	-0.53072***	-0.28737	0.39446***	0.33620	0.92611
	[0.067]	[0.197]	[0.378]	[0.136]	[0.531]	[0.953]
GDP growth	-0.01107***	-0.02908**	-0.03513**	-0.03211***	-0.04872**	-0.05426*
	[0.004]	[0.013]	[0.016]	[0.006]	[0.021]	[0.030]
Openness		0.01833***	0.02284***		0.01608**	0.02004*
		[0.006]	[0.008]		[0.007]	[0.012]
Ln Phone		-0.14121	0.35184***		-0.34518**	-0.63235**
		[0.092]	[0.116]		[0.173]	[0.251]
Ln Education		2.36554**	-0.01945		3.33473***	0.09102
		[0.920]	[0.856]		[1.226]	[1.626]
Pop growth		-0.00095	0.19308		-0.07016	-0.16103
		[0.035]	[0.174]		[0.061]	[0.300]
Ln ICRG			-0.25933			-0.78074
			[0.469]			[0.771]
Trend	-0.02810***	-0.03598	0.08039	-0.01121	-0.00421	0.15146
	[0.007]	[0.045]	[0.052]	[0.013]	[0.072]	[0.107]
Country fixed effects	Y	Y	Y	Y	Y	Y
Constant	34.14219***	19.55840***	29.95745**	69.04941***	62.40364***	82.01876***
	[3.159]	[6.760]	[11.736]	[6.336]	[15.783]	[27.580]
Observations	819	618	406	819	618	406
R-squared	0.9725	0.9735	0.9580	0.9732	0.9718	0.9567

Robust standard errors in brackets

*** p<0.01, ** p<0.05, * p<0.1

Table 4: Employment Estimates of 5-Year Averages

Variables	(1) Employ	(2) Employ	(3) Employ	(4) Employ Y	(5) Employ Y	(6) Employ Y
Initial FDI	0.05191***	0.06038*	0.07314	0.08777***	0.10359**	0.15202**
	[0.020]	[0.031]	[0.053]	[0.032]	[0.051]	[0.070]
Domestic Investment	-0.00256	0.02660	0.04758*	0.01389	0.02715	0.06890**
	[0.017]	[0.023]	[0.028]	[0.024]	[0.033]	[0.034]
Govt Expenditure	-0.05904	0.13408**	-0.07077	0.15519**	0.24067**	-0.10743
	[0.048]	[0.064]	[0.093]	[0.064]	[0.092]	[0.100]
Inflation	-0.00002	0.00001	0.00018	-0.00018	0.00026	-0.00021
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Ln GDP pc	5.54985	10.58049	36.77304***	4.36724	7.09578	50.31373***
	[6.125]	[8.979]	[12.869]	[7.749]	[12.341]	[12.769]
Ln GDP pc sq	-0.39419	0.97448	2.89232***	-0.36710	0.44304	3.73954***
	[0.392]	[0.633]	[0.915]	[0.495]	[0.900]	[0.948]
GDP growth	0.06488*	0.05828	-0.07146	-0.06699	0.18160	-0.18236
	[0.039]	[0.086]	[0.091]	[0.052]	[0.124]	[0.122]
Openness		0.01012	0.00758		0.02660	0.00370
		[0.012]	[0.018]		[0.019]	[0.026]
Ln Phone		0.87939**	0.83354		1.05760*	0.89354
		[0.424]	[0.556]		[0.594]	[0.645]
Ln School		1.46665	6.28615*		0.98588	8.76472*
		[2.161]	[3.375]		[2.890]	[4.505]
Population growth		0.12921	1.91939***		0.62822	3.82986***
		[0.315]	[0.593]		[0.492]	[0.857]
Ln ICRG			3.17641*			2.19996
			[1.809]			[2.162]
Trend	0.04776	0.27274*	-0.31630	0.11122**	0.46128**	-0.48382*
	[0.031]	[0.146]	[0.209]	[0.044]	[0.207]	[0.247]
Country Fixed Effects	Y	Y	Y	Y	Y	Y
Constant	21.92172	55.78400*	113.79583**	13.21126	46.46187	144.81480***
	[22.908]	[31.405]	[43.018]	[29.037]	[40.577]	[39.403]
Observations	186	144	104	186	144	104
R-squared	0.9875	0.9868	0.9833	0.9835	0.9811	0.9842

Robust standard errors in brackets

*** p<0.01, ** p<0.05, * p<0.1

Table 5: Unemployment Estimates of the 5 - Year Averages

Variables	(1) Unemploy	(2) Unemploy	(3) Unemploy	(4) Unemploy Y	(5) Unemploy Y	(6) Unemploy Y
Initial FDI	0.00255	-0.00414	0.01329	-0.00540	-0.00456	0.03915
	[0.015]	[0.020]	[0.029]	[0.015]	[0.025]	[0.044]
Domestic Investment	-0.00276	-0.02270	0.00664	-0.02389	-0.03352	-0.01162
	[0.014]	[0.017]	[0.013]	[0.015]	[0.021]	[0.019]
Govt Expenditure	-0.02171	-0.02862	0.04336	-0.02341	-0.03384	0.03734
	[0.042]	[0.051]	[0.060]	[0.047]	[0.062]	[0.101]
Inflation	-0.00005	-0.00007	0.00002	0.00008	-0.00003	0.00003
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Ln GDP per capita	-1.96057	3.86799	5.59817	-6.42447**	-5.61206	-6.37547
	[2.276]	[4.619]	[7.093]	[3.222]	[5.493]	[10.946]
Ln GDP per capita sq	0.11068	-0.46784	-0.70262	0.44999**	0.40822	0.41123
	[0.165]	[0.371]	[0.551]	[0.219]	[0.428]	[0.841]
GDP growth	-0.02710	0.10741***	-0.14127***	-0.05010**	-0.10785*	-0.15665*
	[0.020]	[0.039]	[0.051]	[0.023]	[0.055]	[0.086]
Openness		0.02494*	0.02289*		0.02561*	0.02589
		[0.013]	[0.012]		[0.014]	[0.018]
Ln Phone		-0.17826	-0.27352		-0.39816	-0.65484
		[0.250]	[0.243]		[0.352]	[0.456]
Ln Education		3.30712	0.29582		4.50322**	1.59212
		[2.066]	[1.280]		[2.012]	[2.196]
Population growth		0.22600*	-0.01778		0.15457	-0.37609
		[0.121]	[0.367]		[0.177]	[0.586]
Ln ICRG			1.20237			0.48990
			[0.988]			[1.768]
Trend	-0.03264**	-0.04492	0.06690	-0.01692	-0.02950	0.11243
	[0.015]	[0.101]	[0.085]	[0.019]	[0.124]	[0.164]
Country Fixed effects	Y	Y	Y	Y	Y	Y
Constant	34.56026***	22.66032*	21.75019	71.32594***	64.05202***	71.80597**
	[7.994]	[12.482]	[20.351]	[11.649]	[15.906]	[33.048]
Observations	186	144	104	186	144	104
R-squared	0.9828	0.9859	0.9811	0.9895	0.9901	0.9867

Robust standard errors in brackets

*** p<0.01, ** p<0.05, * p<0.1

Table 6: Employment estimates of the 10 - Year Averages

Variables	(1) Employ	(2) Employ	(3) Employ	(4) Employ Y	(5) Employ Y	(6) Employ Y
Initial FDI	0.08220**	0.04166	0.02941	0.11507**	0.11654	0.10318
	[0.035]	[0.058]	[0.075]	[0.052]	[0.082]	[0.098]
Domestic Investment	-0.00877	-0.00868	0.01513	0.01581	0.00968	0.08293
	[0.031]	[0.061]	[0.076]	[0.040]	[0.079]	[0.089]
Govt Expenditure	-0.04729	-0.08849	0.04124	0.16440**	0.21715	0.05610
	[0.059]	[0.093]	[0.149]	[0.078]	[0.130]	[0.171]
Inflation	0.00047	0.00098	0.00187*	-0.00010	0.00031	0.00140
	[0.000]	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]
Ln GDP pc	0.87682	24.78885	58.99310**	1.90399	21.43164	78.32280***
	[8.620]	[18.203]	[27.889]	[10.448]	[23.441]	[27.319]
Ln GDP pc sq	-0.14481	1.99161	4.50482**	-0.35743	1.42561	5.66461***
	[0.574]	[1.283]	[1.933]	[0.699]	[1.710]	[2.009]
GDP growth	-0.06268	-0.08483	-0.11432	-0.11738	0.24818	-0.32900
	[0.084]	[0.155]	[0.161]	[0.109]	[0.240]	[0.239]
Openness		0.01114	0.02373		0.03249	-0.00237
		[0.027]	[0.046]		[0.042]	[0.068]
Ln Phone		2.11057**	2.95601**		1.96725	3.53831**
		[1.031]	[1.427]		[1.504]	[1.704]
Ln Education		0.13155	4.35501		1.05278	5.77761
		[2.519]	[3.856]		[3.510]	[5.045]
Population growth		0.30057	2.11796**		1.17953	3.82293**
		[0.827]	[1.019]		[1.343]	[1.556]
Ln ICRG			2.47371			0.42744
			[3.296]			[3.565]
Trend	0.06459	0.56390*	-0.83369*	-0.07958	0.68866	-1.08398**
	[0.043]	[0.302]	[0.412]	[0.060]	[0.442]	[0.491]
Constant	42.38106	97.09863	177.00840*	32.23696	90.90829	236.37268***
	[31.472]	[60.072]	[95.808]	[39.039]	[72.449]	[84.107]
Observations	115	88	64	115	88	64
R-squared	0.9886	0.9885	0.9874	0.9851	0.9838	0.9880

Robust standard errors in brackets

*** p<0.01, ** p<0.05, * p<0.1

Table 7: Unemployment Estimates of the 10-Year Averages

Variables	(1) Unemploy	(2) Unemploy	(3) Unemploy	(4) Unemploy Y	(5) Unemploy Y	(6) Unemploy Y
Initial FDI	-0.01481	0.01749	0.02336	-0.01757	0.03621	0.08219
	[0.016]	[0.033]	[0.035]	[0.021]	[0.043]	[0.062]
Domestic Investment	0.00655	-0.04187	0.01073	-0.03025	-0.04891	-0.02826
	[0.023]	[0.043]	[0.028]	[0.022]	[0.044]	[0.051]
Govt Expenditure	-0.02626	-0.06118	-0.01932	-0.04385	-0.09839	-0.14160
	[0.047]	[0.063]	[0.071]	[0.048]	[0.069]	[0.130]
Inflation	-0.00048*	-0.00068**	-0.00058	-0.00015	-0.00088*	-0.00128*
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.001]
Ln GDP pc	2.22155	12.79107**	16.84770*	-3.17182	6.45197	14.23750
	[3.242]	[5.461]	[9.750]	[5.267]	[8.097]	[18.629]
Ln GDP pc sq	-0.23623	-1.13512**	1.56525**	0.21770	-0.49783	-1.09553
	[0.242]	[0.439]	[0.725]	[0.374]	[0.654]	[1.450]
GDP growth	0.11228***	-0.12547**	0.16273**	-0.11079**	-0.14042	-0.18733
	[0.042]	[0.058]	[0.070]	[0.053]	[0.086]	[0.135]
Openness		0.02789	0.00570		0.03011	0.01833
		[0.021]	[0.016]		[0.023]	[0.031]
Ln Phone		-0.72656*	-0.92358		-1.32318	-2.35818*
		[0.423]	[0.584]		[0.902]	[1.212]
Ln Education		4.52708	0.75510		6.30577**	4.26966
		[2.773]	[1.725]		[2.854]	[3.613]
Population		0.18556	-0.03795		0.04497	-0.31159
		[0.339]	[0.441]		[0.521]	[0.835]
Ln ICRG			1.64397			2.47758
			[1.398]			[2.423]
Trend	-0.01876	0.08167	0.24874	0.00196	0.19513	0.51640
	[0.017]	[0.140]	[0.176]	[0.027]	[0.256]	[0.364]
Constant	23.93695**	-2.57646	-8.88345	60.99318***	31.16159	7.17947
	[10.893]	[16.242]	[31.188]	[17.534]	[22.920]	[55.944]
Observations	115	88	64	115	88	64
R-squared	0.9885	0.9923	0.9924	0.9929	0.9942	0.9927

Robust standard errors in brackets
*** p<0.01, ** p<0.05, * p<0.1

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