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Which domestic benefit from FDI? Evidence from selected African countries

Francesco Prota (University of Bari "Aldo Moro")

[with A. Boly (UNIDO), N. Coniglio (UniBari), A. Seric (UNIDO)]

Presentation outline

- **Aim of the paper**:

1) to shed lights on the **characteristics of domestic firms** that either **gain** or **lose** from the presence of MNEs in their home markets;
2) to analyze the **strategic reactions** that domestic firms adopt as consequence of MNEs presence.

- **Motivation and background**

- **Methodology and data description** (*African Investor Survey 2010*)

- **Our results**

- **Some conclusive remarks**

Motivation and background - *FDI in Sub-Saharan Africa*

- In 2009, the global share of FDI stock in Africa was a mere 2 percent.
- A net flow of FDI to the continent amounting to approximately 46 billions of US$ per year over the period 2009-2011.
- Although still of **limited size**, the inflows are becoming **less concentrated** compared to the recent past, both **geographically** and **sectorally** (UNCTAD 2012).

Motivation and background - *FDI in Sub-Saharan Africa*

- Significant expansion of **South-South FDI**.

Table E. Greenfield FDI projects by region/country, 2010–2011
(Millions of dollars)

Partner region/economy	Africa as destination		Africa as investors	
	2010	2011	2010	2011
World	**88 918**	**82 315**	**16 662**	**16 551**
Developed economies	**48 554**	**38 939**	**1 192**	**487**
European Union	32 095	23 633	373	182
United States	5 507	6 627	49	259
Japan	473	1 299	-	-
Other developed countries	10 479	7 380	769	45
Developing economies	**37 752**	**42 649**	**15 462**	**16 064**
Africa	12 226	10 368	12 226	10 368
East and South-East Asia	9 929	12 357	141	400
South Asia	4 890	11 113	75	980
West Asia	9 897	7 038	2 517	150
Latin America and the Caribbean	809	1 774	503	1 167
Transition economies	**2 612**	**727**	**8**	**-**

Motivation and background - *The effects of FDI in developing countries*

- **4 main channels**: (*i*) direct effects on the **endowment** and **productivity of factors of production**; (*ii*) **forward** and **backward linkages**; (*iii*) **competitive** and **demonstration effects**; (*iv*) **knowledge transfer** and **externalities** (spillovers).
- The existing literature has been focussed mainly on "**spillovers and externalities**" (both macro and firm-level approach).

Motivation and background - *The effects of FDI in developing countries*

- **Spillovers are not easy to measure** … there is a strong critique to the econometric approach that is generally employed (production function approach; see Driffield and Jidra 2012).
- **From spillovers to linkages**: linkages facilitate spillovers and provide benefit even without spillovers.

Motivation and background - *The effects of FDI in developing countries*

- **Few linkages**, **fewer spillovers** in Sub-Saharan Africa (Morrissey 2012)

→ **low 'absorptive capacity'** of domestic economies;

→ sectoral composition: '**wrong-type FDI**' (primary sector bias; few FDI in manufacturing);

→ negative '**Africa effect**' due to high corruption and political instability (Asiedu 2002).

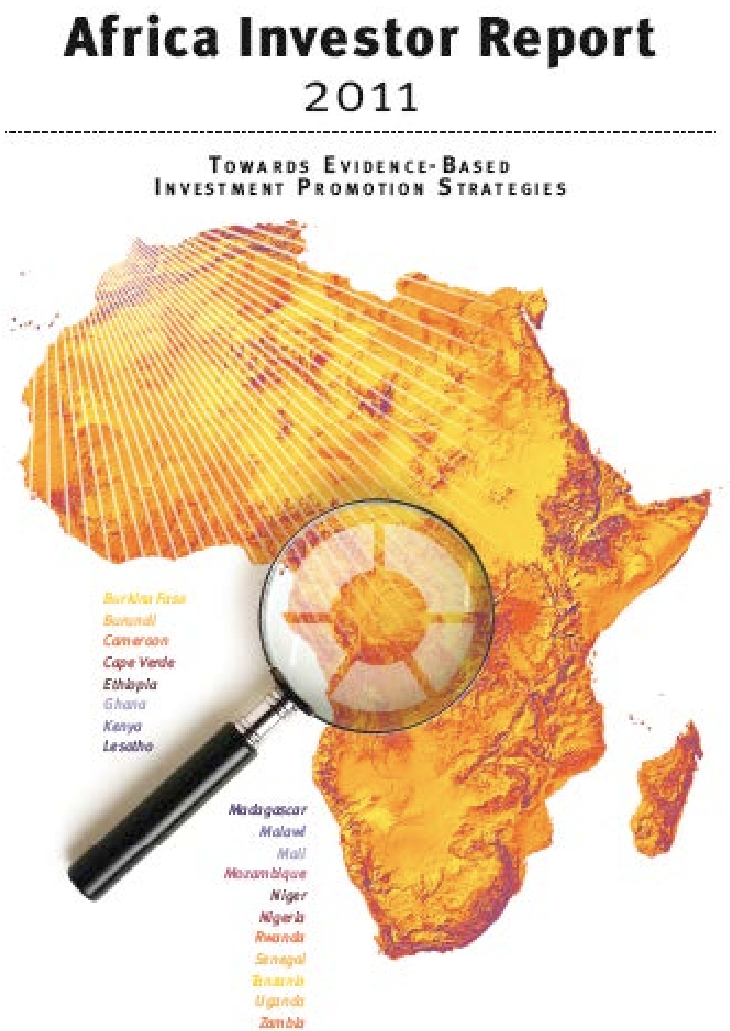
"… *FDI in Sub-Saharan Africa has not in general been associated with significant linkages or spillovers*". "… *China has become a major investor in SSA but its FDI delivers few linkages and almost no spillovers*" (Morrissey 2012).

Methodology and data description

Africa Investor Survey: approx. 7,000 domestic and foreign firms active in 19 Sub-Saharan Africa.
A representative sample of public and private for profit firms (> 10 employees); slight oversampling of larger firms (> 100 employees).

Key aim: generate a comprehensive and detailed database on foreign investors in Africa.

Sectors covered: agriculture, mining, manufacturing, utilities, construction, services.



Research Question 1: **what are the characteristics which increase the probability for a domestic firm to be a 'net winner' ('loser')?**

- Theory (and few empirical studies) predicts that FDI inflows might have **highly heterogeneous effects** on domestic firms;
- on the basis of firms' characteristics, sectors, market orientation, macro-economic environment **firms might be net winners** or **net losers** from interaction with foreign affiliates.

Research Question 1: **what are the characteristics which increase the probability for a firm to be a net winner (loser)?**

Dependent variable (dummy): **Net loser = 0 / Net winner = 1**

30 How do you rate the effect of the presence of foreign investors in this country on this company?

Strongly negative	Slightly negative	No effect	Slightly positive	Strongly positive
1	2	3	4	5

30.1 Overall ability to compete in the market ____

30.3 Demand for the company's products ____

30.4 Cost of skilled labour ____

30.5 Availability of raw materials and other inputs ____

30.6 Access to finance ____

30.7 Access to export markets ____

Specific channels

Probit model: $\Pr(y=1\,|\,x)=\Pr(y^*>0\,|\,x)$ where $y_i=\begin{cases}1 & \text{if} \quad y_i^*=x_i\beta+\varepsilon_i>0\\ 0 & \text{if} \quad y_i^*=x_i\beta+\varepsilon_i\le 0\end{cases}$

Table 1. The net effects of inward FDI on domestic firm by country of origin in Sub-Saharan Africa.

Country	*Positive*	*Negative*	*No effects*	*N. obs.*
Burkina Faso	41,1	26,0	32,9	*73*
Burundi	35,5	27,3	37,2	*121*
Cameroon	37,6	27,8	34,6	*133*
Cape Verde	33,1	31,6	35,3	*272*
Ethiopia	27,4	20,2	52,4	*431*
Ghana	27,7	31,9	40,4	*235*
Kenya	25,9	19,3	54,7	*316*
Lesotho	**7,8**	**39,2**	52,9	*102*
Madagascar	50,0	20,6	29,4	*102*
Malawi	44,0	25,3	30,7	*75*
Mali	25,6	25,1	49,2	*195*
Mozambique	**82,5**	**6,3**	11,1	*189*
Niger	24,6	29,2	46,2	*65*
Nigeria	37,7	23,0	39,3	*387*
Rwanda	27,8	24,1	48,1	*108*
Senegal	42,8	23,0	34,2	*152*
Tanzania	32,4	24,7	42,8	*299*
Uganda	25,8	27,3	46,9	*403*
Zambia	47,3	33,5	19,2	*203*
Sub-Saharan Africa	**34,4**	**24,9**	**40,7**	**3861**

Source: authors' elaboration on UNIDO Africa Investor Survey 2010

Table 3. **Net effect of FDI presence on domestic firms: Winner or losers? A probit model**

Dependent variable: Net effects from FDI in the country (1 = positive; 0 = negative)

	(1)	(2)	(4)	(5)	(6)
Firm size (employees)	0.0277***	0.0201**	0.0233*	0.0227	0.0366**
	(0.00887)	(0.00943)	(0.0140)	(0.0139)	(0.0152)
Family business	-0.0937***	-0.0626***	-0.122***	-0.115***	-0.122***
	(0.0217)	(0.0218)	(0.0298)	(0.0295)	(0.0321)
Company age	-0.00768**	-0.00987***	-0.00726*	-0.0082**	-0.0095**
	(0.00302)	(0.00300)	(0.00424)	(0.00417)	(0.00458)
Company age (squared)	0.000133**	0.000180***	0.000129	0.000141*	0.000156*
	(5.96e-05)	(5.89e-05)	(8.08e-05)	(7.96e-05)	(8.72e-05)
Productivity (sales per employee, log)	0.00629***	0.00350*	0.00164	-0.000781	0.00103
	(0.00187)	(0.00194)	(0.00329)	(0.00356)	(0.00367)
Exporter	-0.0192	0.0600**	0.0953***	0.0873***	0.0976***
	(0.0281)	(0.0295)	(0.0340)	(0.0337)	(0.0363)
Multiproduct firm	0.0266	0.0431*	0.0760**	0.0695**	0.0730**
	(0.0234)	(0.0234)	(0.0335)	(0.0330)	(0.0361)
Main competitors: FDI	-0.0574**	-0.0680**	-0.0532	-0.0507	-0.0632
	(0.0260)	(0.0267)	(0.0401)	(0.0396)	(0.0428)
Downstream market orientation	-0.0730***	-0.0480*	-0.0319	-0.0330	-0.0424
	(0.0259)	(0.0262)	(0.0335)	(0.0331)	(0.0365)
Long-term foreign suppliers in the country (% share)			0.00165**		
			(0.000780)		
Foreign suppliers within the country (nr)				0.000422	
				(0.00395)	
Foreign suppliers * productivity				0.00283*	
				(0.00166)	
Sector dummy	*no*	*yes*	*yes*	*yes*	*yes*
Country dummy	*no*	*yes*	*yes*	*yes*	*yes*
Manufacturing only	no	no	yes	yes	yes

The probability of experiencing positive net effects from FDI in the country increases for:

- **larger** and **more productive** firms;

- **newly established** firms;

- firms with an **upstream market orientation**;

- (manufacturing) firms which have **long-term foreign suppliers**.

Research Question 1: **what are the characteristics which increase the probability for a firm to be a net winner (loser)?**

- The impact of FDI on domestic firms depends not only on firm-level 'absorptive capacity', but, as existing literature suggests, on the **macroeconomic environment** within which the **domestic** and **foreign firms operate**.
- These characteristics of the 'market environment' affects firms opportunity **directly** but also **indirectly via the selection effect induced on FDI** (quantity, type and behaviors of foreign firms that operate in the country).

Table 4. **Net effect of FDI presence on domestic firms: the role of host-country characteristics**

Dependent variable: Net effects from FDI in the country (1 = positive; 0 = negative)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
				Firm level covariates			
				Omitted			
				Destination country covariates			
GNI	0.00205***	0.00195***	0.00161***	0.00227***	0.00195***	0.00272***	0.00255***
	(0.000300)	(0.000299)	(0.000323)	(0.000468)	(0.000520)	(0.000493)	(0.000485)
GNI per capita (PPP)	-0.455***	-0.450***	-0.409***	-0.581***	-1.213***	-0.481***	-0.587***
	(0.0875)	(0.0885)	(0.0884)	(0.125)	(0.320)	(0.130)	(0.125)
GNI per capita (PPP) squared	0.0868***	0.0886***	0.0661***	0.108***	0.352***	0.0777**	0.112***
	(0.0219)	(0.0217)	(0.0225)	(0.0310)	(0.117)	(0.0328)	(0.0309)
Manufacturing base	0.0205***	0.0187***	0.0154***	0.0205***	0.0109*	0.0215***	0.0231***
	(0.00353)	(0.00362)	(0.00381)	(0.00461)	(0.00625)	(0.00462)	(0.00476)
FDI inflows (last 5 years; % of GDP)	0.0110**		0.0167***	0.0147**	0.0352***	0.0193***	0.00775
	(0.00546)		(0.00562)	(0.00571)	(0.0117)	(0.00593)	(0.00664)
FDI stock (% of GDP)		0.00143*					
		(0.000765)					
Export costs			-0.0676***				
			(0.0179)				
Business environment quality				0.0826*	0.155***	0.113**	0.108**
				(0.0427)	(0.0582)	(0.0441)	(0.0444)
Time to resolve insolvency (years)					0.0689***		
					(0.0227)		
Strength of legal rights index						-0.0161***	
						(0.00587)	
Corruption							-0.00146**
							(0.00071)

- Firms are more likely to be ‘winners’ from FDI interactions in **relatively less developed countries** (although a larger manufacturing base helps);
- a **good business environment** is also important (apparently **counterintuitive results on rule of law and corruption**);
- the **larger** is **the FDI base** and the more likely is that firms benefits from interaction with foreign firms;
- a **better access to foreign market** is associated with a net gain.

Research Question 2: a look into specific channels of interactions

Channels of interactions between foreign and domestic firms through which domestic firms might be 'winners' or 'losers':

- **market demand**;
- **cost and availability of factors of production** (skilled labour; intermediate inputs and raw materials; access to finance);
- **access to foreign market** (foreign firms might be a 'bridge' to foreign markets but might also 'squeeze' firms out of foreign market due to better access to distribution channels or logistic infrastructures).

Table 5. Net effect of FDI presence on domestic firms: the role of host-country characteristics

	Market demand (1)	Availability of inputs and raw materials (2)	Access to finance (3)	Access to export markets (4)	(5)
			Firm level covariates		
Firm size (employees)	0.0296**	0.0140	0.0429***	0.0332***	0.0258*
	(0.0140)	(0.0157)	(0.0117)	(0.0116)	(0.0154)
Family business	-0.0490	-0.0909***	0.0222	-0.00140	0.0133
	(0.0303)	(0.0345)	(0.0277)	(0.0279)	(0.0358)
Company age	-0.0129***	-0.00113	-0.0105***	-0.0102***	-0.00588
	(0.00418)	(0.00486)	(0.00378)	(0.00372)	(0.00485)
Company age (squared)	0.000236***	7.24e-05	0.000201***	0.000186***	0.000101
	(7.95e-05)	(9.36e-05)	(7.44e-05)	(7.22e-05)	(9.25e-05)
Productivity	0.00923**	0.00756*	0.00474**	0.00665***	0.00853**
	(0.00374)	(0.00413)	(0.00215)	(0.00232)	(0.00355)
Exporter	0.00151	0.0127	-0.00366		
	(0.0342)	(0.0393)	(0.0366)		
Multiproduct firm	0.0870***	0.0397	-0.0258	0.0389	0.0496
	(0.0328)	(0.0384)	(0.0286)	(0.0285)	(0.0378)
Main competitors: FDI	-0.0393	-0.0482	-0.0415	0.0309	0.0463
	(0.0414)	(0.0470)	(0.0336)	(0.0345)	(0.0482)
Downstream market orientation	0.0196	0.00824	-0.0385	-0.0843**	-0.0862**
	(0.0328)	(0.0387)	(0.0331)	(0.0337)	(0.0395)
Long-Term Foreign buyers (% share)	0.00190**				
	(0.000786)				
Foreign Suppliers within the country (% share)		0.0020**			
		(0.00091)			
Self-financed firm (financial source for initial investment)			-0.0495*	-0.0644**	
			(0.0278)	(0.0274)	
Long-Term Foreign suppliers in the country (% share)					0.00159*
					(0.000864)

	Market demand (1)	Availability of inputs and raw materials (2)	Access to finance (3)	Access to export markets (4)	(5)
		Destination country covariates			
GNI	0.00274***	-0.000205	0.000372	-0.000115	-4.34e-05
	(0.000710)	(0.000790)	(0.000617)	(0.000615)	(0.000795)
GNI per capita (PPP)	-0.938***	-0.0445	0.0168	-0.0890	-0.0732
	(0.233)	(0.264)	(0.180)	(0.195)	(0.288)
GNI per capita (PPP) squared	0.237***	0.0272	-0.0424	0.0244	0.0104
	(0.0655)	(0.0751)	(0.0515)	(0.0565)	(0.0831)
Export costs	9.02e-06	2.05e-05	-3.86e-05	-6.93e-05***	-5.70e-05*
	(2.71e-05)	(3.20e-05)	(2.63e-05)	(2.43e-05)	(3.06e-05)
Manufacturing (value added share; %)	0.0472***	0.00143	-0.0385***	-0.0367***	-0.0450***
	(0.00922)	(0.0102)	(0.00835)	(0.00779)	(0.00996)
FDI inflows (last 5 years; % of GDP)	-0.0301**	-0.00787	0.0169	0.0102	0.00439
	(0.0136)	(0.0156)	(0.0124)	(0.0121)	(0.0167)
Business environment quality	0.137*	-0.0310	0.146**	0.275***	0.245***
	(0.0737)	(0.0866)	(0.0599)	(0.0625)	(0.0849)
Strength of legal rights index (0=weak to 10=strong)	-0.0147	-0.0162	-0.00493	-0.0136*	-0.0116
	(0.00966)	(0.0112)	(0.00765)	(0.00737)	(0.0110)
Corruption (informal payments to public officials; % of firms)	0.130***	-0.00966	-0.205***	-0.283***	-0.225***
	(0.0447)	(0.0520)	(0.0468)	(0.0414)	(0.0524)
Access to bank credit	-0.0195***	-0.00605	0.0208***	0.00692	0.00996
	(0.00501)	(0.00589)	(0.00482)	(0.00483)	(0.00632)

Research Question 3: **How do domestic firms react to the presence of MNEs in their countries? Are the 'winner' more active than the 'losers'?**

- The **dynamic effects** induced by the presence of new competitors are very important in understanding **how the host economy is structurally changed by FDI inflows**.

Table 6. How do domestic firm react to the presence of foreign affiliates in their countries?

Type of strategy	All firms[1]	Winners	Losers
Production of similar products	29,5%	37,9%	31,2%
Adopt similar production technologies	15,5%	17,7%	19,6%
Adopt similar marketing strategies and methods	28,1%	35,7%	30,9%
Recruit key employees from foreign investors	6,4%	9,2%	6,7%
Buy licence or patents from the foreign firm	3,9%	5,0%	3,0%
Produce different products to avoid competition	22,8%	25,2%	27,5%
Produce complementary products	21,2%	25,3%	21,9%
No strategic reactions	38,8%	24,7%	33,9%
Observations	*3723*	*1260*	*899*

[1] Includes domestic firms which experience no effects from the presence of foreign firms.

Concluding remarks

- Strong evidence of **highly heterogeneous effects of FDI inflows in SSA**.

- Observed differences depend both on **firm level characteristics** and on the **macroeconomic environment** of each country.

- **Linkages matters**.

Concluding remarks

- FDI attraction policies might be designed in a way that increases **the likelihood of generating stable linkages with domestic firms** …

- … but a **good macroeconomic environment is a fundamental pre-condition** …

  → for attracting the 'right MNEs';

  → for putting domestic firm in the condition to benefit from FDI inflows.

Thank you for your attention!

More info: francesco.prota@uniba.it