Global Value Chains and Foreign Investors:
An empirical analysis of Sub-Saharan Africa and Vietnam

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Aim of the paper

- Depending on the characteristics of the host country and industry, among which the position in GVCs, as well as on the capabilities of the local firms, foreign investors decide:
    - how much to source locally;
    - whether to transfer key resources such as technology and knowledge to their local suppliers;
- Therefore, the developmental impact of FDIs depends on these factors.

Research question

- Is the position in GVCs of a country impacting on the local sourcing strategies of foreign investors?

- The empirical analysis is undertaken in 19 Sub-Saharan African (SSA) countries and in Vietnam taking advantage of two original firm-level surveys collected by UNIDO: the African Investor Survey (AIS) on 19 Sub-Saharan countries and the Vietnam Industrial Survey (VIS).

Table 1. Main characteristics of foreign investors/investment by host countries

		SSA	Vietnam
Foreign investor	% of MNC investments	37.2	66.6
	% of foreign entrepreneurs (FE_INV)	50.5	21.7
Investment	% of greenfield (GREENFIELD)	84.4	87.4
	Average # of years since the first investment (INV_AGE)	16.8	8.9
Motivation	Market seeking (MKT_SEEKING)	74.3	42.4
	Efficiency seeking	6.5	43.0
Location factors (Average score of perceived importance: 1 non important, 2 important, 3 very important)	Political stability	2.65	2.55
	Economic stability	2.64	2.55
	Transparency of business regulations and legal framework	2.27	2.19
	Local market	2.46	2.16
	Labor costs	2.35	2.50
	Skills availability	2.40	2.37
	Raw materials	2.29	1.94
	Local suppliers	2.14	2.14
	Incentives	2.03	2.12
	Bilateral agreements	2.04	2.16
	Infrastructures	2.42	2.39
	Export market	1.92	2.06
Type of information received from Investment Promotion Agencies (yes/no)	Markets	29.4	70.7
	Tax	34.5	91.9
	Strategic partners (i.e. commercial, legal, human resource management partners)	20.2	48.1
	Procurement regulations	46.0	85.9
	Procedures and regulations for doing business	49.3	82.4
	Services availability	24.7	70.7
	Sites (land, office, factory)	30.7	68.0
	Facilitating building construction	19.3	70.6
	Skills availability	17.5	69.7
	Complaint resolution (i.e. labor, customs)	30.4	68.6
	Access to credit	21.5	55.0
	Access to suppliers, buyers	18.3	56.6
	Technological support	16.0	49.5

Source: UNIDO AIS and VIS

Table 2. Linkages with local suppliers

	SSA	Vietnam
# Domestic suppliers	18.90	50.69
# Domestic suppliers in long term relations	5.68	23.57
Exports to parent (% of total export)	14.4	66.4
Origin of inputs (% of total value)		
Domestic inputs	22.29	18.18
Inputs from parent firm	14.33	23.15
Direct imported inputs	49.86	38.43
Indirect imported inputs	10.47	2.28
Assistance to local suppliers (% of total assistance received)		
Quality upgrade	34.1	25.0
Technology transfer	46.0	39.8
Efficiency upgrade	15.8	11.1
Access to financial capital	20.5	13.2
Training	19.5	7.0
Collaboration	18.7	23.3

Source: UNIDO AIS and VI

GVC Indicators

- To investigate whether the position of a host country in Global Value Chains, impact on the quantity and quality of the local linkages established by foreign investors, we use UNCTAD-Eora database.

Project	Institution	Data sources	Countries	Industries	Years	Comments
UNCTAD-Eora GVC Database	UNCTAD/Eora	National supply-use and I-O tables, and I-O tables from Eurostat, IDE-JETRO and OECD	187	25-500 depending on the country	1990-2010	"Meta" database drawing together many data sources and interpolating missing points to provide broad and consistent coverage, even of data-poor countries
Inter-Country-Input-Output model (ICIO)	OECD/WTO	National I-O tables	40	18	2005, 2008, 2009	Based on national input-output tables harmonised by the OECD
Asian International I-O tables	Institute of Developing Economies (IDE-JETRO)	National accounts and firm surveys	10	76	1975, 1980, 1985, 1990, 1995, 2000, 2005	US-Asian tables. Also bilateral tables, including China-Japan.
Global Trade Analysis Project (GTAP)	Purdue University	Contributions from individual researchers and organisations.	129	57	2004, 2007	Non-official dataset. Includes data on areas such as energy volumes, land use, CO2 emissions and international migration.
World Input-Output Database (WIOD)	Consortium of 11 institutions. EU funded.	National supply-use tables	40	35	1995-2009	Based on official national accounts statistics. Uses end-use classification to allocate flows across partner countries

Main characteristics of UNCTAD-Eora

- Eora is based on multi-region input-output table (MRIO)

- It brings together different data sources (Input-output tables and main aggregates data from national statistical offices; Eurostat, IDE/JETRO and OECD; UN System of National Accounts, UNCOMTRADE);

- Its main advantage is the use of algorithms that put together unrelated data and minimize accounting discrepancies irrespective of the type of the underlying data, allowing the inclusion of data poor countries;

- It uses input-output tables to estimate the import content ratio in exports and value added trade.

UNCTAD-Eora: how it works?

- **Rows** indicate the use of Gross Output from a particular industry in Country A or B (in grey Exports from Country A to Country B);

- **Columns** indicate the domestic and foreign share of intermediate inputs needed to produce one unit of output;

- **Value added** is the difference between the gross output produced in each country and the sum of the inputs necessary for its production.

|		Intermediate use		Final demand		Gross output
		Country A	Country B	Country A	Country B	
		Industry	Industry	Industry	Industry	
Country A	Industry	Intermediate use of domestic output	Intermediate use by B of exports from A	Final use of domestic output	Final use by B of exports from A	X_A
		+	+			
Country B	Industry	Intermediate use by A of exports from B	Intermediate use of domestic output	Final use by A of exports from B	Final use of domestic output	X_B
		+	+			
Value added		V_A	V_B			
		=	=			
Gross input		X_A	X_B			

Exports from A to B of intermediates

Exports from A to B of final products

Content of UNCTAD-Eora

- 187 countries;
- Coverage for the period 1990-2012;
- 26-sector harmonized classification;
- Open data at www.worldmrio.com

Distance to the final demand

- A proxy for a country's position into a GVC in a given industry (*Antras et al. 2012*);
  - 1 if the production of an industry is all sold in the final market;
  - >1 if part of the production is used as an intermediate input for producing final goods;

- ***The higher the value, the more upstream is the industry;***

- Our countries are all relatively far from the final market and mainly specialized in the production of intermediate inputs in the initial phases of the production process;

- As expected, this is especially true for those countries specialized in the processing of primary resources, such as basic metals in Zambia, or wood and paper products in Cameroon
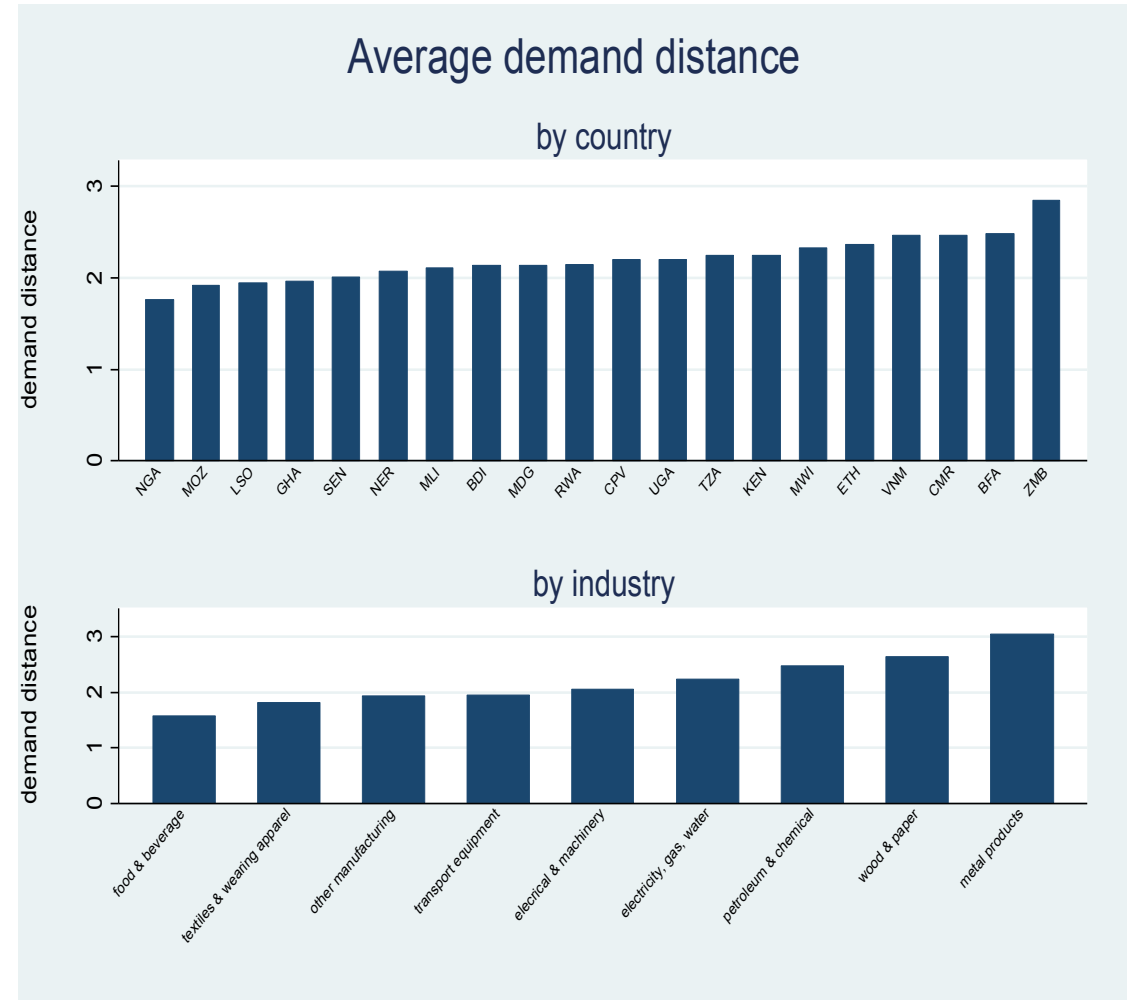
Domestic Value Added

- **Share of domestic VA** incorporated in the exports of any given industry:
  - In relatively upstream activities, as it is often the case in SSA, low shares of foreign inputs are used in the domestic production and accordingly most of the value added is of domestic origin;

- **Change over time in the share of domestic VA** included in the exports from the host country to the home country of the foreign investor:
  - the higher the (change in the) share, the stronger is the dependence of the home country of the investor on the host market in that specific industry.

Average domestic VA share

by country

by industry
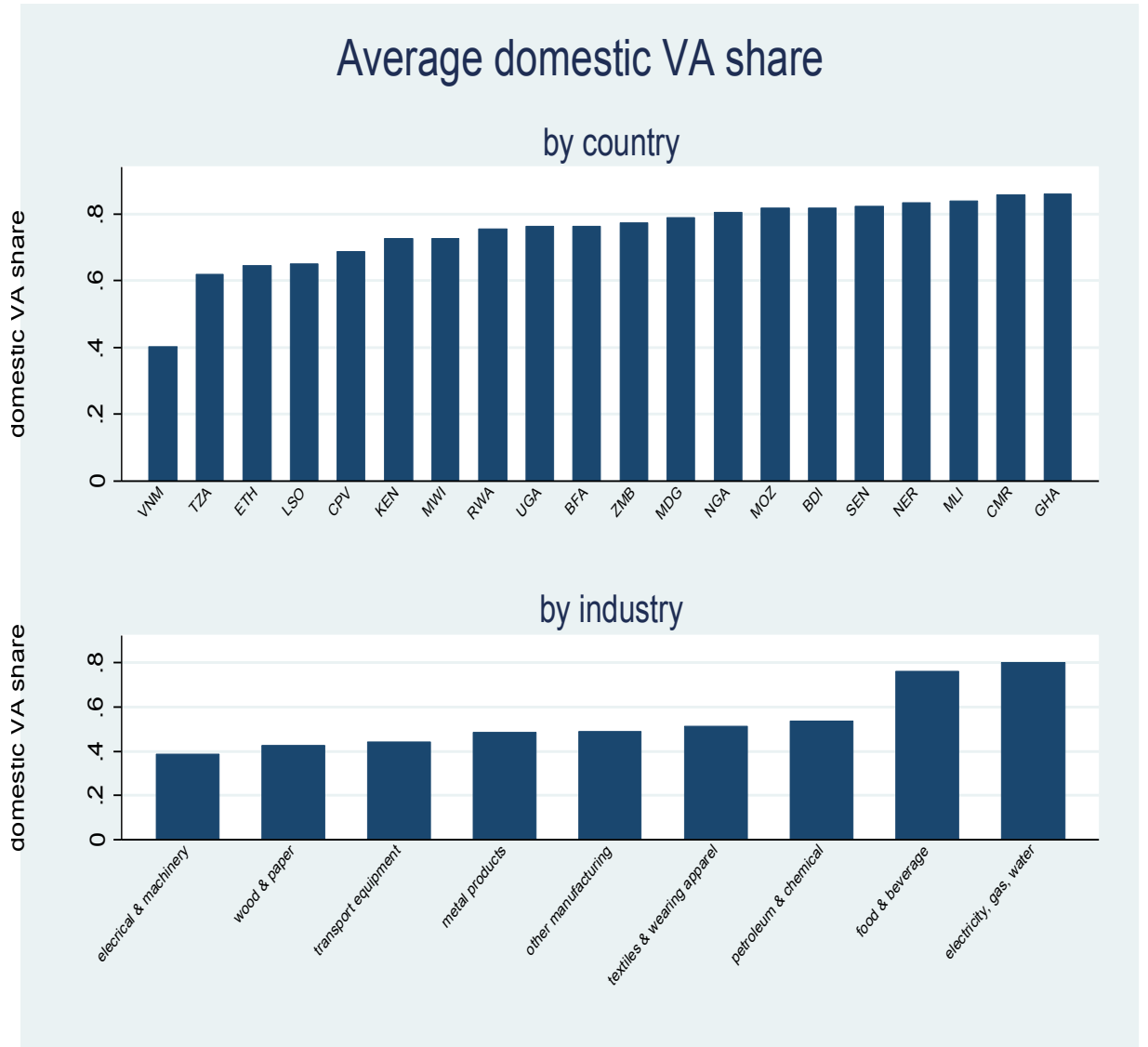
The empirical model

$$Yi = Xi + \Sigma Zsk + \delta s + \lambda k + \gamma sk + \varepsilon i$$

- *Yi is* the degree of local sourcing of foreign investors, measured through:
  - the *quantity* (i.e. the share of inputs that are sourced locally)
  - the *quality* of their linkages with domestic firms, which are a proxy for the *intentional* transfer of resources (or knowledge flows);

- X_i are the characteristics of investors: *age, destination and motivation of the investment*; *type of investor*; *entry mode*;

- (Z_i), are the GVC indicators: *DEMAND_DISTANCE, VA_CHANGE* and *DOMESTIC_VA.*

Main preliminary findings

- Positive relation between the distance to the final market of an industry and the share of local sourcing from foreign firms;

- This relation is negative for Vietnam, where investors' local sourcing is rather correlated with higher proximity to final demand. This means that Vietnam, *relative* to SSA, attracts more investments and local sourcing in downstream activities, considering its stronger production capacities;

- Interacting the demand distance coefficient with some characteristics of the host countries, we find that the relation is stronger in lower income countries; in countries with lower institutional quality; as well as in countries with lower access to credit.

Some preliminary conclusions

- Quality linkages will provide insights

Thank you

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