

# The EAC Common External Tariff: Comparative Evidence

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## Outline

#### PART I: Top Down estimates (gravity)

- Bilateral (calibrated) trade costs are falling across Africa, but not fast enough to catch up
- Correlates of bilateral Trade costs
- Calibrated Trade Costs: EAC vs. Comparators
- Gravity estimates of South-South intra-regional trade : Genetic Distance(1)
- Correlates of bilateral trade in manufactures (2)
- Detecting role of institutions in intra-regional trade (3)

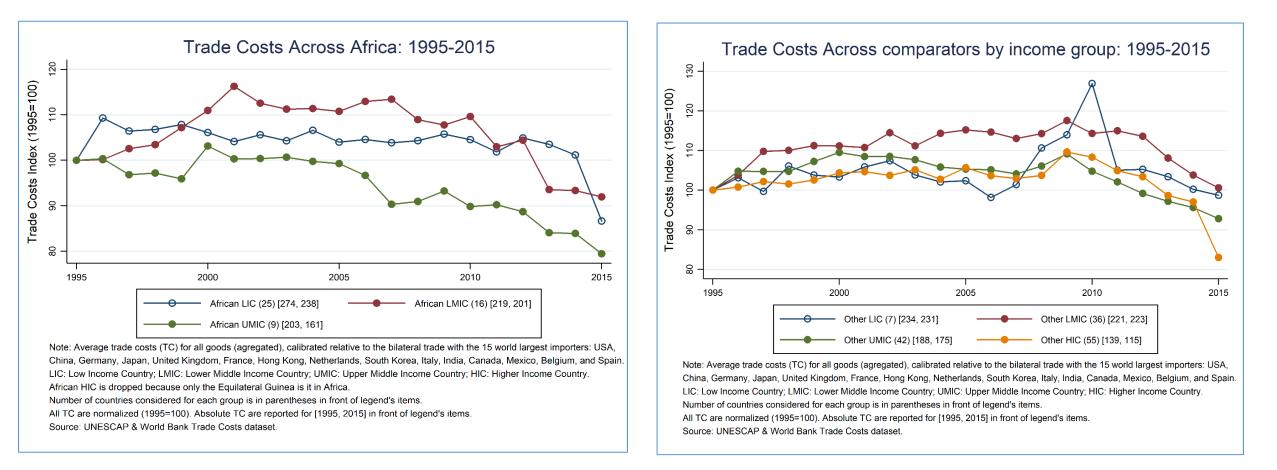
#### PART II: Top Down estimates (gravity)

- SSA: Mostly Upstream participation in supply chain trade (GVCs)...
- ...hampered by high tariff on intermediates
- ... yet some effects in EAC and on regionalization of trade in new products

#### PART III: Case Studies--Leather industry (Uganda); OSBPs (Uganda/Kenya)

- Leather value chain in Uganda: CET rates by production stage and export levy
- Leather chain NRP and ERP structures under tariff reform scenarios
- Evaluating Uganda's deployment of One-stop border Posts (OSBPs)

### Bilateral (calibrated) trade costs are falling across Africa, but not fast enough to catch up



Calibrated from gravity model estimates [2] (Arvis et al. 2016). Figures in parenthesis are average trade costs relative to bilateral trade costs of 15 countries with lowest bilateral trade costs. Number of countries in parenthesis next to each group, e.g. Africa LIC (25). Africa LIC bilateral trade costs 274% above lowest 15 in 1995 and 234% above in 2015.

## Calibrated Trade Costs: EAC vs. Comparators

Table 1: EAC countries' trade costs with other EAC countries, and non-EAC countries, ad valorem equivalent (AVE), 2015 or latest available year.

	EAC (AVE)	Non-EAC (AVE)
Burundi	160.63%	324.92%
Kenya	85.83%	170.77%
Rwanda	139.57%	277.92%
Tanzania	151.72%	162.83%
Uganda	133.72%	221.01%

TC raise the price of imported goods by Uganda from neighbors by 134% and outside EAC by 221%

Source: UNESCAP-World Bank Trade Costs Dataset; and authors' calculations.

Table 2: Comparator countries' trade costs with RTA partners, and other countries, ad valorem equivalent (AVE), 2015 or latest available year.

	RTA (AVE)	Non-RTA (AVE)
Ghana	122.44%	154.19%
Senegal	94.72%	140.75%
China	77.23%	93.30%
Vietnam	47.74%	86.77%

Source: UNESCAP-World Bank Trade Costs Dataset; and authors' calculations.

Source: Shepherd et al. (2017)

4 comparators.

TC raise the price of imported goods from RTA partners by less than for non-partners and always lower (except for Kenya with EAC partners)

### Correlates of bilateral Trade costs

 $Trade Cost_{ij} = Ln(dist_{ij}) + ComBor_{ij} + ComLag_{ij}^{ab} + ComLag_{ij}^{af} + Col_{ij} + RTA_{ij} + Ln(LPI_{ij}) + Ln(LSCI_{ij}) + Ln(entry_{ij}) + L$ 

	$All \leftrightarrow All$	Africa ↔ Africa	Africa $\leftrightarrow$ ROW	$\mathrm{SSA} \leftrightarrow \mathrm{SSA}$
Colum	1	2	3	4
Ln(Distance)	0.2885925***	0.4438376***	0.2642152***	0.4383966***
	(0.0029349)	(0.0165805)	(0.0066073)	(0.0202582)
Common border	-0.3592854***	-0.1443379***	0.4806813*	-0.1613322***
	(0.0141386)	(0.038984)	(0.2764615)	(0.0453363)
Common language (ethno.)	0.0283303***	0.0314374	0.0371213**	0.021255
	(0.0099923)	(0.0257454)	(0.0163036)	(0.0416402)
Common language (official)	-0.0796323***	-0.2024926***	-0.1648401***	-0.2061908***
	(0.0105224)	(0.0248907)	(0.0170909)	(0.0409034)
Colony	-0.2628116***	-0.6640527***	-0.4308999***	-1.512178***
	(0.0129911)	(0.1051377)	(0.0235723)	(0.1624555)
RTA	-0.1073734***	0.1082366***	-0.0874271***	0.0925172***
	(0.0046421)	(0.019714)	(0.0077891)	(0.026863)
Ln(LPI)	-0.8751687***	-0.2485128***	-0.6540493***	-0.1327772
	(0.0188874)	(0.0906549)	(0.0342939)	(0.1099194)
Ln(LSCI)	-0.3661557***	-0.4095328***	-0.3410643***	-0.663872***
	(0.0035859)	(0.0220005)	(0.0068411)	(0.0345206)
Ln(entry cost)	-0.2438516***	-0.225526***	-0.1836877***	-0.0062474
	(0.014859)	(0.0452124)	(0.0238496)	(0.0549302)
Constant	1.45794***	-0.3545492*	1.163298***	-0.6753009***
	(0.0652334)	(0.1881161)	(0.1201668)	(0.2322673)
Observations	37,472	2,432	12,868	1,632
R-squared	0.5198556	0.4188175	0.3779113	0.4637997

Dependent variable are the trade costs indices of previous slide.

Usual controls have expected signs and significance (rows 1,2,4,5)

Note that belonging to an RTA increases trade costs for cols 2 and 4 (but smaller samples)

Higher scores on LPI, LSCI, entry cost variables is associated with lower bilateral trade costs .....but these variables are composites so difficult to know

RTA is a dummy variable equal to 1 if there is a regional trade agreement in force between the two countries; LSCI is the Liner Shipping Connectivity Index, computed by UNCTAD, taken a proxy for international transport connectivity; LPI is the Logistics Performance Index, calculated by World Bank, taken here as a proxy for trade facilitation performance; and entry costs are the cost of starting a business, from the World Bank's Doing Business project, taken as a proxy for the costs of market entry

### Gravity estimates of South-South intra-regional trade : Genetic Distance(1)

Table 2: Correlates of bilateral trade 2012 (manufactures, South–South)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
VARIABLES	OLS with	OLS with	OLS with	EK Tobit	OLS with	OLS with	EK Tobit
	GDP	FE	FE	with FE	FE	FE	with FE
Ln(distance)	-1.390***	-1.743***	-1.620***	-2.897***	-1.619***	-1.471***	-2.828***
	(0.0450)	(0.0424)	(0.0476)	(0.0834)	(0.0477)	(0.0509)	(0.0881)
Common	1.349***	1.472***	1.406***	2.096***	1.405***	1.352***	2.082***
language	(0.0847)	(0.0815)	(0.0852)	(0.145)	(0.0853)	(0.0846)	(0.144)
Common border	1.681***	1.338***	1.256***	0.290	1.255***	1.083***	0.103
	(0.172)	(0.178)	(0.184)	(0.378)	(0.184)	(0.182)	(0.379)
Ln(GDP exp.)	1.251***						
	(0.0143)						
Ln(GDP imp)	0.868***						
	(0.0144)						
Ln(Genetic dist.)			-0.258***	-0.357***	-0.258***	-0.238***	-0.347***
			(0.0359)	(0.0611)	(0.0359)	(0.0357)	(0.0607)
WTO					0.0983	0.0409	-0.657
					(0.269)	(0.273)	(0.400)
PTA						0.780***	0.552***
-						(0.0945)	(0.170)
Constant	-26.60***			28.56***			28.42***
	(0.684)			(1.060)			(1.184)
Observations	10,798	11,328	10,176	16,277	10,176	10,046	16,022
R-squared	0.528	0.672	0.679		0.679	0.687	
Fixed Effects (FE) importer	no	yes	yes	yes	yes	yes	yes
exporter	no	yes	yes	yes	yes	yes	yes

**Note:** Robust standard errors in parentheses, clustered at country-pair level. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. EK Tobit: Eaton-Kortum Tobit.

**Cross-section** (presence of confounding factors)

With FE for importer and exporter, the greater **the genetic distance**, **the less intense is bilateral trade** (similar results with PPML estimator in col. 6-not OLS)

For N-N sample (not reported), genetic distance is not significant, and distance coefficient is in the range (-1.3, -1.5). A doubling of trade costs would reduce trade by 14% for N-N sample in contrast to the 35% reduction for the S-S sample

Source: Melo et al. [6]

### Correlates of bilateral trade in manufactures (2)

Table 4: Estimates of the trade effects of RECS on trade in manufactures

	(1)	(2)	(3)	(4)	(5)	(6)
	OLS	OLS	EK Tobit	OLS	OLS	EK Tobit
	Manufactures	Manufactures	Manufactures	Manufactures	Manufactures	Manufactures
SAMPLE	S-S trade only	S-S trade only	S-S trade only	All countries	All countries	All countries
РТА	1.053***	0.372***	1.647***	0.464***	0.242***	0.828***
	(0.0640)	(0.0549)	(0.149)	(0.0383)	(0.0279)	(0.0849)
WTO	0.331***	0.0660	1.282***	0.234***	0.0835*	1.213***
	(0.0726)	(0.0658)	(0.0711)	(0.0526)	(0.0449)	(0.0452)
Ln(distance)	-1.473***		-2.738***	-1.450***		-1.986***
	(0.0316)		(0.0631)	(0.0213)		(0.0402)
Com. language	0.808***		-0.498*	0.554***		-0.828***
	(0.113)		(0.259)	(0.113)		(0.275)
Com. border	1.042***		2.565***	0.900***		2.051***
	(0.0505)		(0.103)	(0.0379)		(0.0701)
Ln(GDP exp.)			2.192***			1.946***
			(0.0156)			(0.00911)
Ln(GDP imp)			1.702***			1.538***
			(0.0165)			(0.00929)
Constant			-55.56***			-50.82***
			(0.859)			(0.515)
Observations	92,773	92,026	190,318	256,395	256,901	380,056
R-squared	0.639	0.754		0.729	0.822	
Fixed Effects(FE)	yes	yes	yes	yes	yes	yes
year						
importer	no	no	no	no	no	no
exporter	no	no	no	no	no	no
importer*year	yes	yes	no	yes	yes	no
exporter*year	yes	yes	no	yes	yes	no
bilateral	no	yes	no	no	yes	no

Panel estimates (1962-2012) over 5 year periods

Bilateral FE (cols. 2and 5) control for all omitted bilateral effects that are time invariant (but not for zero and heteroskedacity see next slide).

PTA and WTO coefficients are both positive and significant in col. 6.

Source: Melo et al. [7]

Note: Robust standard errors in parentheses, clustered at country-pair level. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. EK Tobit: Eaton-Kortum Tobit.

### Detecting role of institutions in intra-regional trade (3)

 $\ln X_{o,d,t} = \alpha_{o,t} + \beta_{d,t} + \mu_t + \phi_{o,d} + \gamma RTA_{o,d} + \lambda WTO_{o,d,t} + \epsilon_{o,d,t}$ 

	Manufactures, World trade		Manufac	tures,	Manufactures, South-South trade		
			North -Sou	ith trade			
	OLS	Poisson	OLS	Poisson	OLS	Poisson	
	(1)	(2)	(1)	(2)	(1)	(2)	
	Log(imports)	Imports	Log(imports)	Imports	Log(imports)	Imports	
REC dummy	0.754***	0.760***	0.735***	0.542***	0.716***	0.433***	
-	(0.0238)	(0.0398)	(0.0247)	(0.0383)	(0.0301)	(0.500)	
WTO dummy	0.155***	-0.00237	0.144***	0.190***	0.092***	0.132***	
2	(0.0161)	(0.0271)	(0.172)	(0.0265)	(0.0259)	(0.0326)	
%Zero flows FE							
Bilateral	Y	Y	Y	Y	Y	Y	
Year	Y	Y	Y	Y	Y	Y	
Yr-exp	Y	Y	Y	Y	Y	Y	
Yr-imp	Y	Y	Y	Y	Y	Y	
$\mathbb{R}^2$	0.850	0.986	0.832	0.989	0.787	0.976	
Obs.	920'926	1'754'410	806'069	1'601'485	303'750	697'161	
NT 4							

Table XX. Detecting Institutional correlates of bilateral Trade in Manufactures

Notes:

Estimates on annual data covering years 1967-2015 (no gap)

REC dummy is set to one if both importer and exporter are in the same REC. Considered RECs are AMU AGADIR CEMAC COMESA EAC ECOWAS PAFTA SACU SADC WAEMU GCC CENSAD ECCAS IGAD WAMZ Estimator: Poisson Pseudo Maximum Likelihood Robust standard errors in parentheses \* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01

Trade in contract-intensive products (i.e. manufactures) is sensitive to quality of Institutions (Nunn and Trefler (2015)).

Here bilateral FE ( $\phi$ ) control for all time invariant omitted bilateral determinants.

Amounts to assuming that all PTAs are drawn from the same sample so estimates amount to an 'average treatment effect'

PTA coefficients significant across samples.

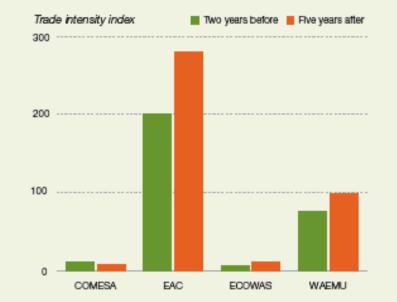
WTO dummy only significant for trade involving South partners (11 SSA countries not yet WTO members)

Source: Melo et al. [7]

... yet some effects in EAC and on regionalization of trade in new products

Trade intensity indices up in EAC(3) 5 yrs after EAC implementation....

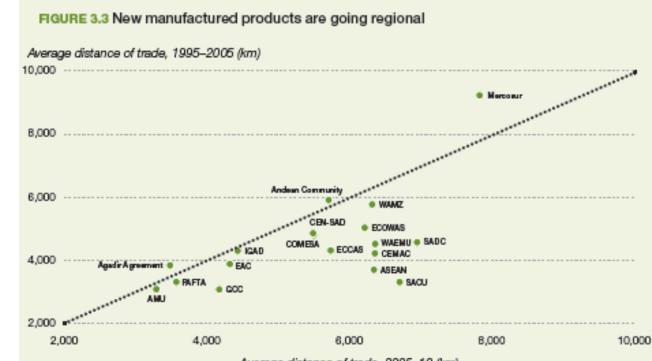
FIGURE 3.2 Trade intensity indices two years before and five years after implementation of regional economic communities



Source: Adapted from de Melo and Tsikata (2015), table 2.

Note: The trade intensity index is the ratio of the bloc's share in member exports to its share in nonmember exports. Time periods are 1991–92 and 1997–98 for COMESA and ECOWAS, 1997–98 and 2003–04 for EAC, and 1992–93 and 1998–99 for WAEMU. WAEMU members are not included in the values for ECOWAS.

... and new manufactures are going to closer destinations



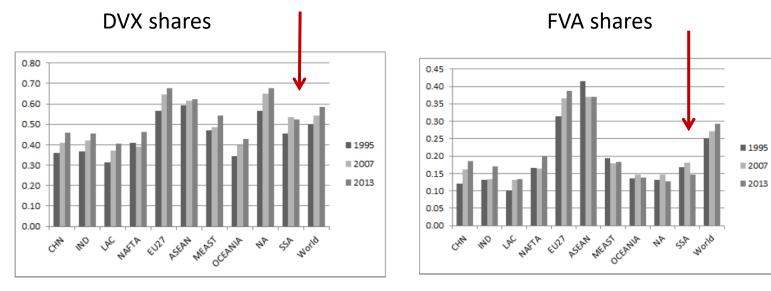
Average distance of trade, 2005–10 (km)

Source: Data from the four-digit level of the Harmonized System Comtrade (mirror data).

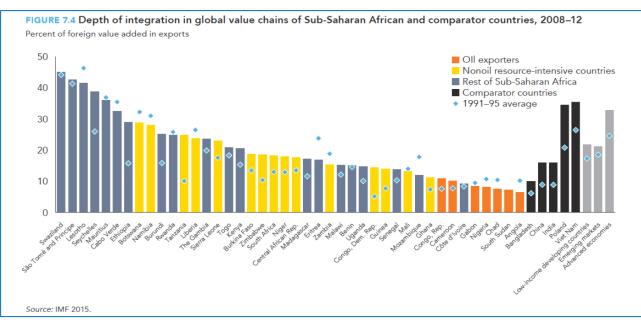
Note: The dotted line is the 45° fitted line. New products are products exported for at least three consecutive years during 2005–15 and not exported for three consecutive years during 1995–2005. Products do not include agricultural products, extractive resources, and Harmonized System categories not elsewhere specified, for a total of 993 potential products.

## Part II Participation in supply chain Trade (Developing RVCs is high priority behind CET tariff reform)

### SSA: Mostly Upstream participation in supply chain trade (GVCs)...



#### Source: Del Prete et al. (2017)



### GVC participation by region

DVX: share of domestic value added embodied as intermediate inputs in foreign countries exports (high for upstream countries)

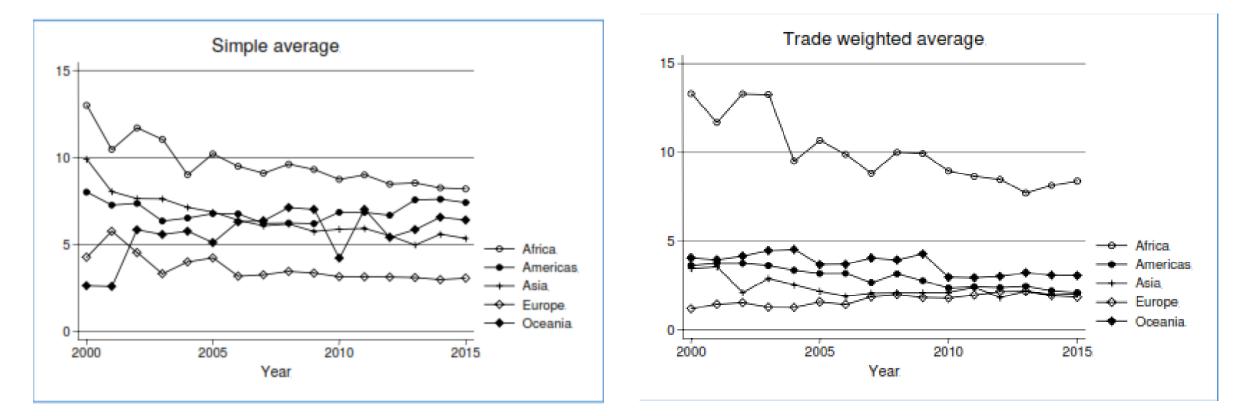
FVA : share of inputs produced in other countries in exports (high in countries in downstream countries

#### **GVC participation across Africa**

FVA shares low for resource-intensive countries.

---Higher for countries in SA orbit (see box 3.10 on T&A and box 3.11 on supermarket chains in AEO2019) shows importance of geography....if only Nigeria were more open!) ---and those in T&A (e.g. Ethiopia, Mauritius)

## ...hampered by high tariff on intermediates



If substitution possibilities were not so limited, the trade-weighted average tariffs for Africa would be lower than simple averages as is the case for other regions

Source: WITS. Intermediate goods defined according to BEC classification. Number of African countries: 46 for trade weighted average, 53 for simple average.

## PART III Case Studies: Leather industry (Uganda);OSBPs (Uganda/Kenya)

### Leather value chain in Uganda: CET rates by production stage and export levy

Produ	CET Rate on Imports (In %)	Export Levy (if any)				
(1)	(2)	(3)	(4)	(5)	(7)	
Output (O) [CET Rate] Stages	Inputs (I)	Input coefficient	Value added	Inputs	-	
(i) Live Animals [25%]	Veterinary Medicine, Dips, Sprays & Vaccines	0.13	0.67	0%	-	
	Animal Feed/Fodder	0.13		10%		
	Artificial Insemination	ial Insemination 0.01		0%		
	Other <sup>17</sup>	0.07		N/A		
(ii) Raw Hides &	Live Animals	0.50	0.32	25%	\$0.8/Kg or 35% (AVE) on H&S	
Skins (H&S)	Disinfectants	0.04		0%		
[10%]	Machines	0.07		0%		
	Solid & Liquid Waste mgmt.	0.07		N/A		
(iii) Wet blue, crust leather & finished	Raw hides & skins	0.48	0.20	10%	\$0.8/Kg or 35% (AVE)	
leather	Biocide	0.02		0%	-	
[10%]	Sodium	0.02		0%		
	Lime	0.12		0%	]	
	Tannery Waste Management	0.16		N/A		
(iv) Leather Products	Finished leather	0.50	0.20	10%	-	
[25%]	Accessories	0.30		10%, 25%	1	

----Combination of export levy on H&S and import duty of 10% on wet blue probable impetus to opening of new tanneries (now 8).

---91 products (HS-4) exported to OECD in 2015 and long export survival. Coherent with promising results from gravity simulations in the paper

- 1. Falling VA ratios as one moves down the chain.
- 2. Escalating NRP as one goes down value chain

→ Both contribute to escalating ERPs down the value chain

### Leather chain NRP and ERP structures under tariff reform scenarios: Current (col. 3) and proposed (cols. 4 to 8)

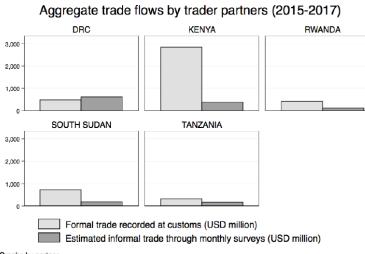
	Stages in the r Industry	Current Scenario	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Output [CET rate]	Nominal/ Effective Protection	EAC-CET 2017	5% tariff on hides & skins (H&S)	20% tariff on tannery (WB, CL, FL)	0% tariff on accessories	100% export levy on H&S	0% export levy on H&S
Live Animals	NRP	25%	25%	25%	25%	25%	25%
[25%]	ERP	27.2%	27.2%	27.2%	27.2%	27.2%	27.2%
	Change in Output (%)	•	-	-	-	-	-
Raw Hides NF & Skins [10%]	NRP	-25% (10% tariff & export levy ~35%)	-30% (5% tariff & export levy ~35%)	-25% (10% tariff & export levy ~35%)	-25% (10% tariff & export levy ~35%)	-90% (10% tariff & export levy =100%)	10% (10% tariff & export levy =0%)
	ERP	-58.1%	-66.6%	-58.1%	-58.1%	-169.2%	1.7%
	Change in Output (%)	•	-7.6%	0%	0%	-99%	+53%
Wet blue, crust	NRP	10%	10%	20%	10%	10%	10%
leather & finished	ERP	27.9%	31.0%	49.6%	27.9%	68.4%	6.08%
leather (WB, CL, & FL) [10%]	Change in Output (%)	-	+6%	+40%	0%	+75%	-40%
Leather Products [25%]	NRP	25%	25%	25%	25%	25%	25%
	ERP	63.3%	65.3%	55.2%	66.1%	88.6%	49.7%
	Change in Output (%)	-	+1.6%	-6.6%	+2.2%	+21%	-11.1%

--- If NRP were the same across all stages NRP= ERP.
Current structure (col. 3) shows large discrepancy in ERPS (-58% for H&S and +63% for Leather
---Give stronger incentives to tannery than raw H&S (indirect in scenario 1 and direct in scenario 2).
Scenario 3 avoids penalizing leather by giving 0% tariff on accessories, an input to leather
---Scenario 4 raises export levy on H&S from 35% to 100%: boosts the leather sector at expense H&S
----Scenario 5 removes export tax on H&S: closest to giving incentives to leather without penalizing other activities in the chain (disparity in ERPs is reduced)

<u>Conclusion</u>: Few tariff bands (not more than 4 and preferably 3) is key to avoid repeating the failure of past inward industrialization strategies

Source: Sheperd et al. [8]

## Trade Facilitation: OSBPs in Uganda (1)

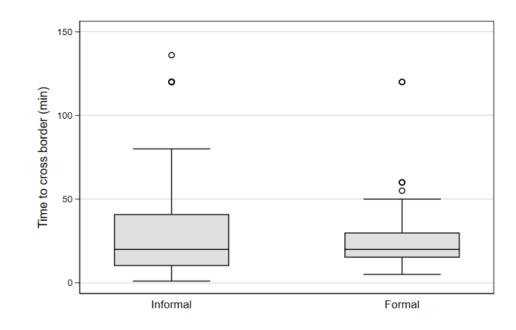


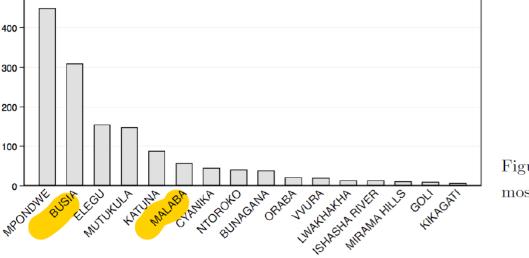
Graphs by partner

500

← Informal Cross Border Trade (ICBT) widespread, but varies greatly across partners and border posts.

In yellow below, the two One Stop Border Posts (OSBPs) treated in the survey Busia and Malaba, both with Kenya. (Formal and informal posts w/n 500m). Random sample of 876 traders selected from all (4300) traders at the 2 posts. Data in figure 5 show that average time (17 min.) to cross border is about the same for both informal and the OSBP with greater variance for the informal





Informal cross-border trade in USD million by customs (2015-2017)

Figure 5: The time taken for the exporter/importer in Busia and Malaba to cross the h most recent crossing. Graph excluded two data points which are above 300 minutes -

#### Source: Siu (2019)

### Trade Facilitation: OSBPs in Uganda (2)

	(1)	(2)	(3)
	All	Agriculture	Industrial
OSBP	-0.375**	-0.321*	-0.410
	(0.181)	(0.174)	(0.280)
Physical infra	0.288	0.334	0.384
	(0.310)	(0.287)	(0.345)
lag1_OSBP	-0.0888	-0.0826	-0.125
	(0.245)	(0.228)	(0.427)
Precipitation	-0.0142**	-0.0257**	-0.00770
	(0.00712)	(0.0119)	(0.0127)
Observations	751	375	376

Standard errors in parentheses

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

Gravity-type estimates show that the ratio of ICBT/formal trade falls at OSBSP, but only for one quarter.

Response to questions also show that only 5% switched (in spite of a simplified Rule of origin and ¼ reported that they would stop trading if only channel was official border.

Persistent informality: mostly male traders and traders of perishable goods

Table 2: Effect of an introduction of an OSBP on quarterly informal-total trade ratio with neighbouring countries, with one lag. Includes the following fixed effects: exporter, importer, exporter-time, importer-time, country-pair, country-pair-time, customs, sector, sector-time, time.

# Final Thoughts

Long road to integration with EAC making progress.

- See AEO box on 3.2 "Monitoring progress towards a customs Union in the EAC an excellent tool for monitoring de jure progress that should be followed by other RECs
  - Regulations coded in scorecard only measure de jure compliance through national laws and not de facto compliance
  - Box summarizes how CMS that covers free movement of goods, of capital and services is essential to detect any backtracking (next CMS will likely indicate backtracking in goods trade if passage of 3 to 4 band even if SOA are removed.
  - CMS 2016 also reports that countries continue to rely on tariff equivalent measures and to not recognize certificates of origin

Reform of CET towards more tariff bands (even with better classification of products via BEC rather than HS classification) will result in greater dispersion of effective rates of protection, just the opposite of what would be needed for a more efficient allocation of resources.

### References

[1] Africa Economic Outlook 2019 "Integration for Africa's Economic Prosperity", chp. 3 of AEO 2019, <a href="https://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/2019AEO/AEO\_2019-EN-CHAP3.pdf">https://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/2019AEO/AEO\_2019-EN-CHAP3.pdf</a>

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