Do imports create decent jobs in Africa?
Evidence from firm-level data

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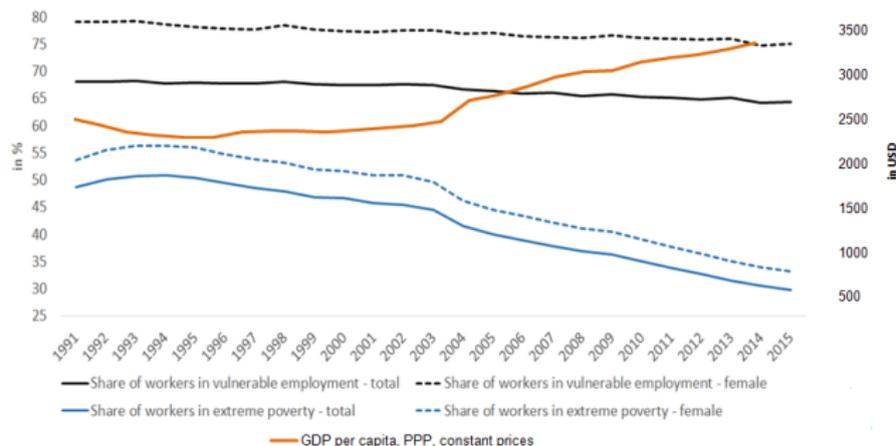
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*All views expressed in this presentation are those of the authors and do not reflect the views of the
institutions they are affiliated with.

Motivation

Vulnerable employment and working poverty (% of total employment) vs. GDP per capita in Africa

Source: ILO, Trends Econometric Models, October 2015; World Bank, World Development Indicators.

Role of trade for development in Africa?

International trade is viewed by a large number of policymakers in Africa as a driver for sustainable and inclusive economic development

Focus on sub-regional and regional preferential trade agreements

Milestones:

- 2015: Conclusion of negotiations for Tripartite Free Trade Area
- 2017: Expectations to finalize negotiations for Continental Free Trade Area
- 2022: Plans to establish Continental Customs Union
- 2028: Plans to establish African Economic Community

$\rightarrow$ Facilitated access of African firms to foreign inputs
$\rightarrow$ More firms might be able to import

Purpose of the paper

Research questions:

What is the size of importer premia on:

- total employment?
- employment by gender?
- wages?
- skill intensity?

Which factors can explain the heterogeneity of importer premia across countries?

Literature (I)

Theoretically, firms can benefit from importing through:

- learning from new technologies embedded in foreign inputs
- access to a better quality of inputs
- access to an increased variety of inputs

Empirically, positive productivity impact has been confirmed:

- Amiti and Konings (2007, *AER*)
- Kasahara and Rodrigue (2008, *JDE*)
- Halpern, Koren and Szeidl (2015, *AER*)

Also evidence for positive wage impact:

- Amiti and Davis (2011, *RES*)

Literature (II)

For Africa, empirical evidence on trade and firms focuses on exports:

- Bigsten, Collier, Dercon, Fafchamps, Gauthier, Gunning, Oduro, Oostendorp, Pattillo, Soederbom, Teal and Zeufack (2004, *Journal of Development Studies*)
- Soederbom and Teal (2003, *Journal of African Economies*)
- Rankin, Soederbom and Teal (2006, *Journal of African Economies*)
- Brambilla, Depetris-Chauvin and Porto (2014, *WP*)

Empirical firm-level evidence on importing is relatively scarce for Africa:

- Bigsten, Gebreeyesus and Soederbom (Forthcoming, *Journal of Development Studies*)

Data source

Data are taken from World Bank Enterprise Surveys (WBES)

65 surveys conducted in 47 African countries in 2006-14

15,391 observations for manufacturing firms

Sample size varies from 21 observations for a survey conducted in Liberia in 2009 to 2,015 observations for a survey conducted in Egypt in 2013

Average sample size is 237

Data are representative of formally registered firms that employ at least 5 workers and are not state-owned

Firms can be assigned to 8 different manufacturing sectors

Data are comparable across surveys

Descriptive statistics

Table: Decriptives statistics on African manufacturing firms

Variable	Mean	Sd.	N
Importer dummy (1=importer)	0.53	0.50	13837
Exporter dummy (1=exporter)	0.23	0.42	14972
Log(Sales)	16.70	2.98	13757
Log(Electricity costs)	12.32	3.04	13065
No of full-time permanent employees	82.40	609.68	15207
No of full-time permanent female employees	22.17	343.56	13886
No of full-time permanent male employees	57.77	324.58	13848
No of full-time permanent non-production employees	19.01	85.07	12068
No of temporary employees	14.80	116.72	14667
Log(Average wage)	11.52	2.69	13270
Average length of education (categorical variable)	3.12	1.17	10833

Source: Authors' calculation based on the World Bank Enterprise Surveys.

Methodology: quantifying importer premia (I)

Regression on full sample:

$$L_{ctmi} = \alpha + \beta \cdot IM_{ctmi} + \gamma X_{ctmi} + \epsilon_{ct} + \epsilon_m + \epsilon_{ctmi}$$

Regressions by sector:

$$L_{ctmi} = \alpha_m + \beta_m \cdot IM_{ctmi} + \gamma_m X_{ctmi} + \epsilon_{ct} + \epsilon_{ctmi}$$

Regressions by survey:

$$L_{ctmi} = \alpha_{ct} + \beta_{ct} \cdot IM_{ctmi} + \gamma_{ct} X_{ctmi} + \epsilon_{ctmi}$$

c: country, t: year, m: manufacturing sector, i: firm

L: labour market indicator

IM: $=1$ if firm is importer, $=0$ otherwise

X: control variables

Methodology: quantifying importer premia (II)

Different dependent variables:

- total number of full-time permanent employees (OLS)
- number of full-time permanent employees by gender (OLS)
- average wage (OLS)
- average number of production workers' years of education (Ordered Logit)

Different specifications:

1. no controls
2. controlling for exporter status
3. controlling for exporter status and sales
4. controlling for exporter status and sales and electricity costs

Methodology: explaining importer premia

Dataset of around 40-55 estimated country-specific importer premia

Simple OLS regression:

$$\widehat{\beta}_{ct} = a + b \cdot C_{ct} + u_{ct}$$

C_{ct}: country-year specific characteristics
$\widehat{\beta}_{ct}$: estimated country-year-specific importer premia in terms of total employment, average wage and skill intensity

Bootstrap standard errors as dependent variable is estimated

Importer premia on total employment (I)

Results for full sample and by sector:

Sample	N	Spec 1	Spec 2	Spec 3	Spec 4
Full sample	11496	0.652***	0.437***	0.109***	0.095***
Food & beverages	2910	0.741***	0.582***	0.203***	0.186***
Textiles & garments	2257	0.630***	0.344***	0.129***	0.100***
Wood & paper	1275	0.544***	0.369***	0.052	0.047
Chemicals	712	0.603***	0.410***	0.079	0.062
Non-metals & plastics	1042	0.609***	0.338***	0.009	-0.011
Metals & machinery	1489	0.715***	0.506***	0.116**	0.108**
Furniture	1226	0.312***	0.219***	0.071	0.058
Other manufacturing	585	0.714***	0.474***	0.082	0.117

Note: *, ** and *** indicate significance at the 10%, 5% and 1% level, based on robust standard errors.
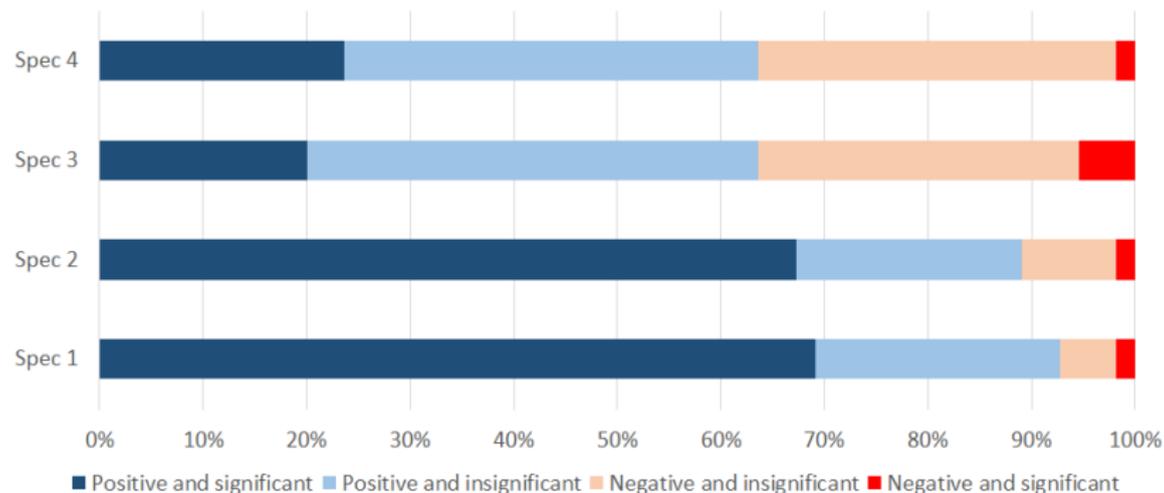
Spec 1: No controls.
Spec 2: Controlling for exporter status.
Spec 3: Controlling for exporter status and sales.
Spec 4: Controlling for exporter status, sales and electricity costs.

Importer premia on total employment (II)

Results by survey:

Note: "Positive" and "Negative" refer to sign of estimated importer premia. "Significant" indicates statistical significance at least at the 10% level.

Spec 1: No controls.
Spec 2: Controlling for exporter status.
Spec 3: Controlling for exporter status and sales.
Spec 4: Controlling for exporter status, sales and electricity costs.

Importer premia on employment by gender (I)

Results for full sample and by sector:

Sample	Female		Male	
	N	Spec 4	N	Spec 4
Full sample	7324	0.132***	10430	0.079***
Food & beverages	2090	0.150***	2674	0.174***
Textiles & garments	1682	0.155***	1934	0.076*
Wood & paper	798	0.249***	1205	-0.006
Chemicals	521	-0.012	653	0.113
Non-metals & plastics	566	-0.064	967	-0.007
Metals & machinery	785	0.188**	1364	0.066
Furniture	529	0.008	1096	0.049
Other manufacturing	353	0.171	537	0.089

Note: *, ** and *** indicate significance at the 10%, 5% and 1% level, based on robust standard errors.

Spec 4: Controlling for exporter status, sales and electricity costs.

Importer premia on employment by gender (II)

Results by survey - female:
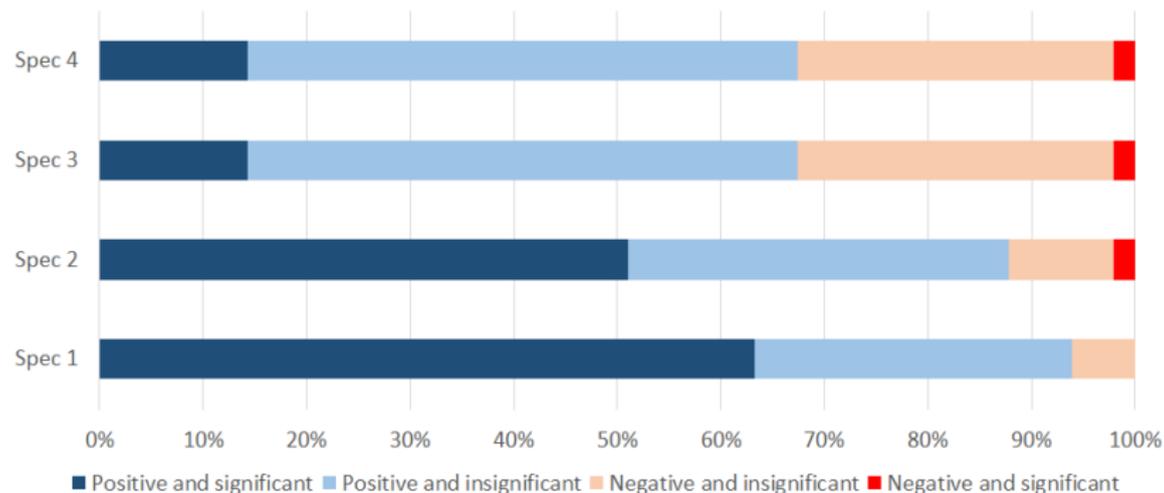
Note: "Positive" and "Negative" refer to sign of estimated importer premia. "Significant" indicates statistical significance at least at the 10% level.

Spec 1: No controls.
Spec 2: Controlling for exporter status.
Spec 3: Controlling for exporter status and sales.
Spec 4: Controlling for exporter status, sales and electricity costs.

Importer premia on employment by gender (III)

Results by survey - male:

Note: "Positive" and "Negative" refer to sign of estimated importer premia. "Significant" indicates statistical significance at least at the 10% level.

Spec 1: No controls.
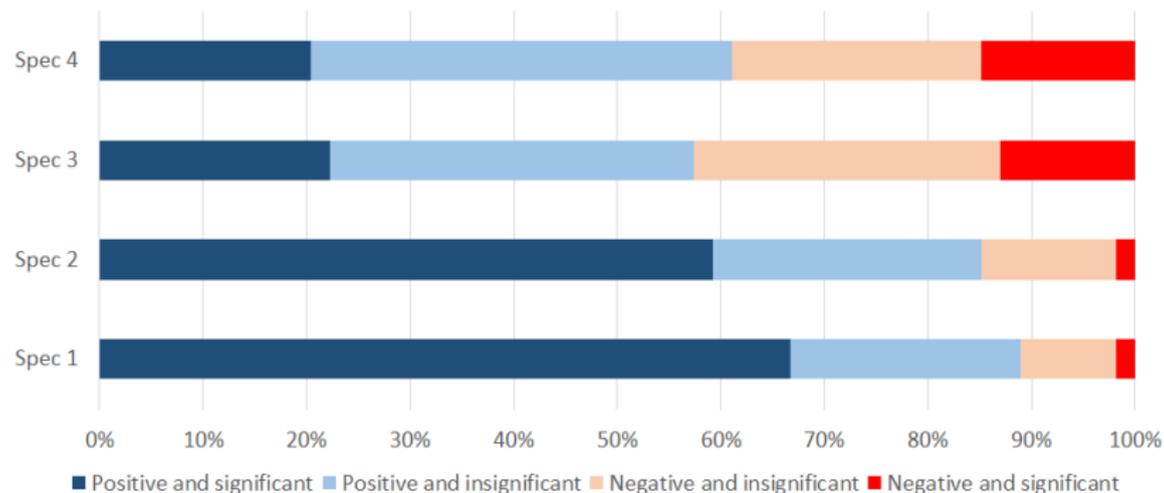Spec 2: Controlling for exporter status.
Spec 3: Controlling for exporter status and sales.
Spec 4: Controlling for exporter status, sales and electricity costs.

Importer premia on average wage (I)

Results for full sample and by sector:

Sample	N	Spec 1	Spec 2	Spec 3	Spec 4
Full sample	11221	0.196***	0.144***	-0.108***	-0.119***
Food & beverages	2845	0.136**	0.087	-0.214***	-0.223***
Textiles & garments	2212	0.085	0.028	-0.116**	-0.139***
Wood & paper	1229	0.192**	0.119	-0.115	-0.118
Chemicals	699	0.162	0.089	-0.137	-0.139
Non-metals & plastics	1028	0.368***	0.266***	0.060	0.047
Metals & machinery	1453	0.282***	0.234***	-0.091	-0.099
Furniture	1183	0.008	0.024	-0.160*	-0.187*
Other manufacturing	572	0.322***	0.286**	-0.004	0.007

Note: *, ** and *** indicate significance at the 10%, 5% and 1% level, based on robust standard errors.

Spec 1: No controls.
Spec 2: Controlling for exporter status.
Spec 3: Controlling for exporter status and sales.
Spec 4: Controlling for exporter status, sales and electricity costs.

Importer premia on average wage (II)

Results by survey:

Note: "Positive" and "Negative" refer to sign of estimated importer premia. "Significant" indicates statistical significance at least at the 10% level.
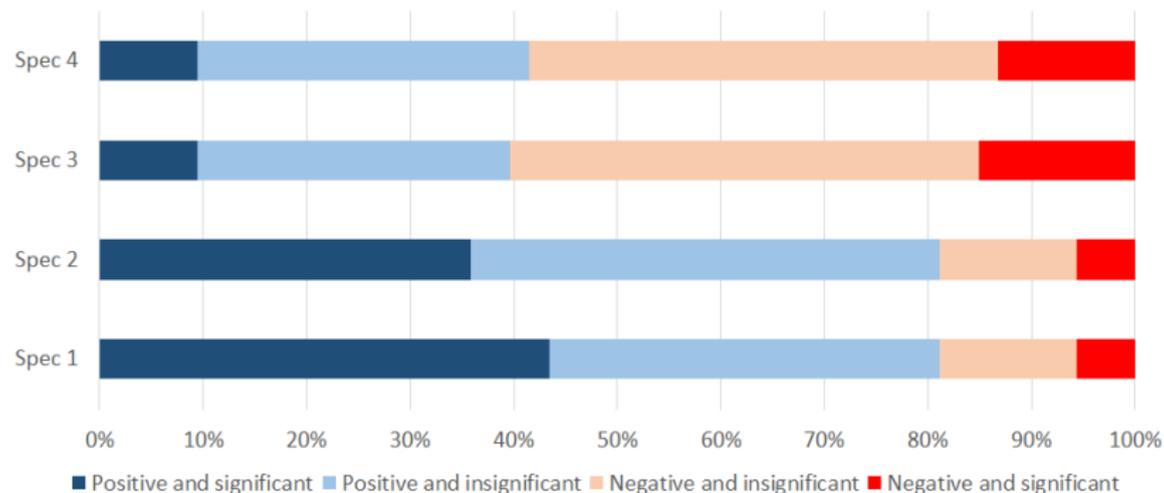
Spec 1: No controls.
Spec 2: Controlling for exporter status.
Spec 3: Controlling for exporter status and sales.
Spec 4: Controlling for exporter status, sales and electricity costs.

Importer premia on skill intensity (I)

Results for full sample and by sector:

Sample	N	Spec 1	Spec 2	Spec 3	Spec 4
Full sample	9065	0.274 ***	0.265 ***	0.160 ***	0.157 ***
Food & beverages	2182	0.299 ***	0.286 ***	0.186 **	0.185 **
Textiles & garments	1743	0.181 *	0.200 **	0.141	0.130
Wood & paper	1040	0.309 **	0.339 **	0.242 *	0.241 *
Chemicals	586	0.193	0.147	0.070	0.066
Non-metals & plastics	843	0.108	0.007	-0.119	-0.138
Metals & machinery	1216	0.413 ***	0.390 ***	0.235 *	0.246 **
Furniture	973	0.305 **	0.356 ***	0.311 **	0.310 **
Other manufacturing	482	0.388 *	0.362	0.126	0.139

Note: *, ** and *** indicate significance at the 10%, 5% and 1% level, based on robust standard errors.

Spec 1: No controls.
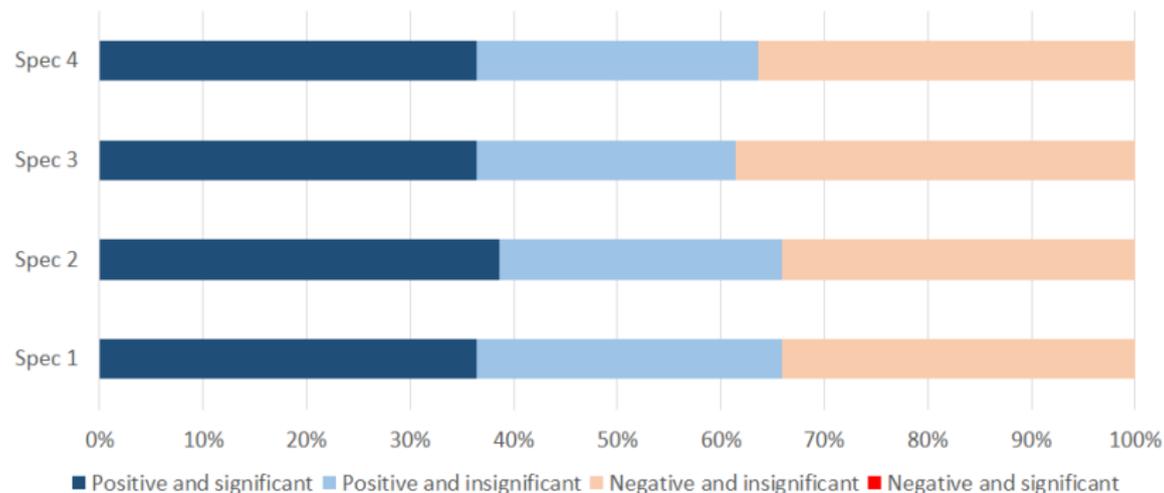Spec 2: Controlling for exporter status.
Spec 3: Controlling for exporter status and sales.
Spec 4: Controlling for exporter status, sales and electricity costs.

Importer premia on skill intensity (II)

Results by survey:

Note: "Positive" and "Negative" refer to sign of estimated importer premia. "Significant" indicates statistical significance at least at the 10% level.

Spec 1: No controls.
Spec 2: Controlling for exporter status.
Spec 3: Controlling for exporter status and sales.
Spec 4: Controlling for exporter status, sales and electricity costs.

Which factors can explain importer premia?

| | Employment | | Gender gap | |
	Spec 1	Spec 4	Spec 1	Spec 4
Log(GDP per capita)	-0.013	0.018	0.080	0.055
	(0.060)	(0.032)	(0.053)	(0.057)
R2	0.00	0.01	0.05	0.02
Number of observations	53	53	47	47

| | Wage | | Skill intensity | |
	Spec 1	Spec 4	Spec 1	Spec 4
Log(GDP per capita)	-0.103*	-0.018	-0.178	-0.075
	(0.053)	(0.046)	(0.124)	(0.178)
R2	0.06	0.00	0.05	0.1
Number of observations	51	51	42	42

Note: *, ** and *** indicate significance at the 10%, 5% and 1% level, based on robust (not yet bootstrapped) standard errors.

Conclusion

Main results:

- Very strong evidence for an importer premium on skill intensity
- Relatively strong evidence for an importer premium on employment
- No conclusive evidence for an importer premium on wages

Future work:

- Extend work on drivers of importer premia (policy-related drivers? dependency on importing source? regressions by groupings based on GDP/HDI/governance level? etc.)
- Extend analysis to the country-year-sector level
- Run analysis on firm-employees database