

Aid-for-Trade : Assessing the Impact of Aid to Services on Manufacturing Exports

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**December 2012
The World Bank**



Summary: What we do

- We analyze the impact of aid to services on exports of downstream manufacturing sectors.
- We present an identification strategy using input-output tables to circumvent reverse-causality between aid and exports.
- We find that, in general, aid to services has a positive effect on manufacturing exports.

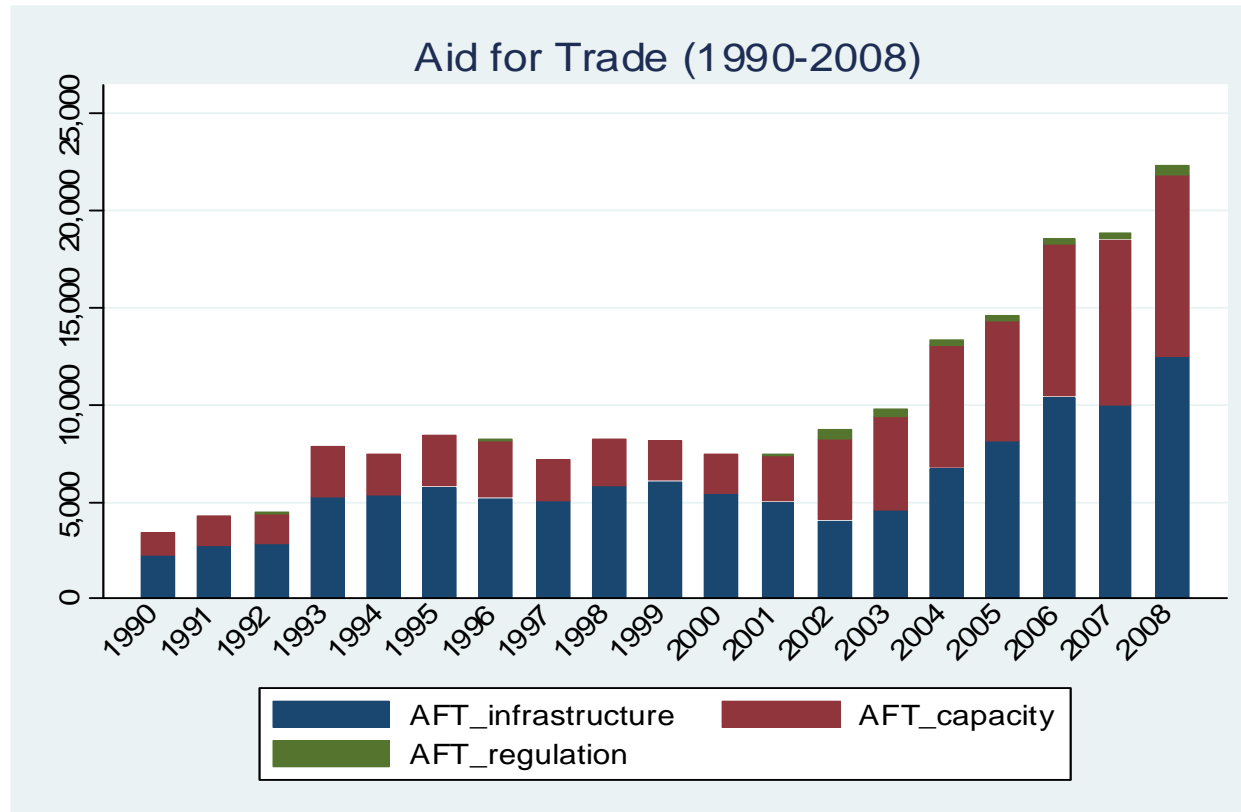
Outline

1. Motivation
2. Literature review
3. Identification strategy
4. Data and Results
5. Final Remarks

1. Motivation: The cope of Aid for Trade

- Aid for Trade (AfT) is a “high level” initiative by the WTO/OECD:
“Aid for Trade aims to help developing countries, particularly least-developed countries, develop the trade-related skills and infrastructure that is needed to implement and benefit from WTO agreements and to expand their trade”.
- The scope of Aft trade is broad, includes aid to:
 - Infrastructure, Productive capacity, Trade policy and regulation, Trade facilitation
- However, the evidence on the impact of AfT on export performance in developing countries is scant.
- Problem of econometric evaluations → potential reverse causality: **Aid ↔ Exports/Production**

AFT through Time



Source: estimates from OECD-CRS database.

2. Literature review

Aid-for-Trade on exports

- Brenton & von Uexkull (2009)
- Helble, Mann & Wilson (2010)
- Cali & Te Velde (2009)

AfT on trade costs (DB: time/container cost, #documents) :

- Busse et al. (2010):
- Cali and te-Velde (2009)

Aid Effectiveness: large literature, ex:

- Rajan & Subramanian (2009 & forthcoming)
- Brueckner (2010)

3. Identification Strategy

- Problem of econometric evaluations of the impact of aid: potential reverse causality
→ Biased estimates
- Identification strategy:
 - Focus on aid to upstream service sectors (i.e., inputs).
 - Exploit input-output data on intensity of inputs used by downstream manufacturing goods.

code/ sector name	2008	
	Disburs. (USD mill)	
Infrastructure	13,112	51%
210 Transport & Storage	7,494	29%
220 Communications	461	2%
230 Energy	5,157	20%
Production Capacity	11,982	46%
240 Banking & Financial Services	2,892	11%
250 Business & Other Services	1,943	8%
311 Agriculture	4,668	18%
312 Forestry	534	2%
313 Fishing	341	1%
321 Manufacturing	1,362	5%
<i>Agro-industries</i>	86.16	0.4%
<i>Wood industries</i>	2.48	0.0%
<i>Textiles</i>	9.86	0.0%
<i>Chemicals</i>	45.27	0.2%
<i>Non metallic products</i>	0.84	0.0%
<i>Basic Metals</i>	1.87	0.0%
<i>Non-ferrous metals</i>	0.27	0.0%
<i>Machinery</i>	22.90	0.1%
<i>Transport equipment</i>	2.76	0.0%
<i>Energy manufacturing</i>	1.45	0.0%
<i>Industrial policy, , R&D</i>	844.20	3.8%
322 Mineral Resources & Mining	241	1%
Trade Policies and Regulations	795	3%
Total	25,888	100%

Estimation

$$\ln X_{ijt} = \alpha_{ij} + \gamma_{it} + \delta_{jt} + \sum_k \beta_k \ln(\text{aid}_{ikt} \text{intensity}_{ijk}) + \varepsilon_{ijt}$$

***i*: industry** (Agro-ind, Wood-ind, Textiles, Chemicals, Non metallic prod., Basic Metals, Non-ferrous metals, Machinery, Transport Equip.)

***j*: exporter** (aid recipients):
167 countries

***t*: year** 2002-2008

↓
Aid to
service *k*

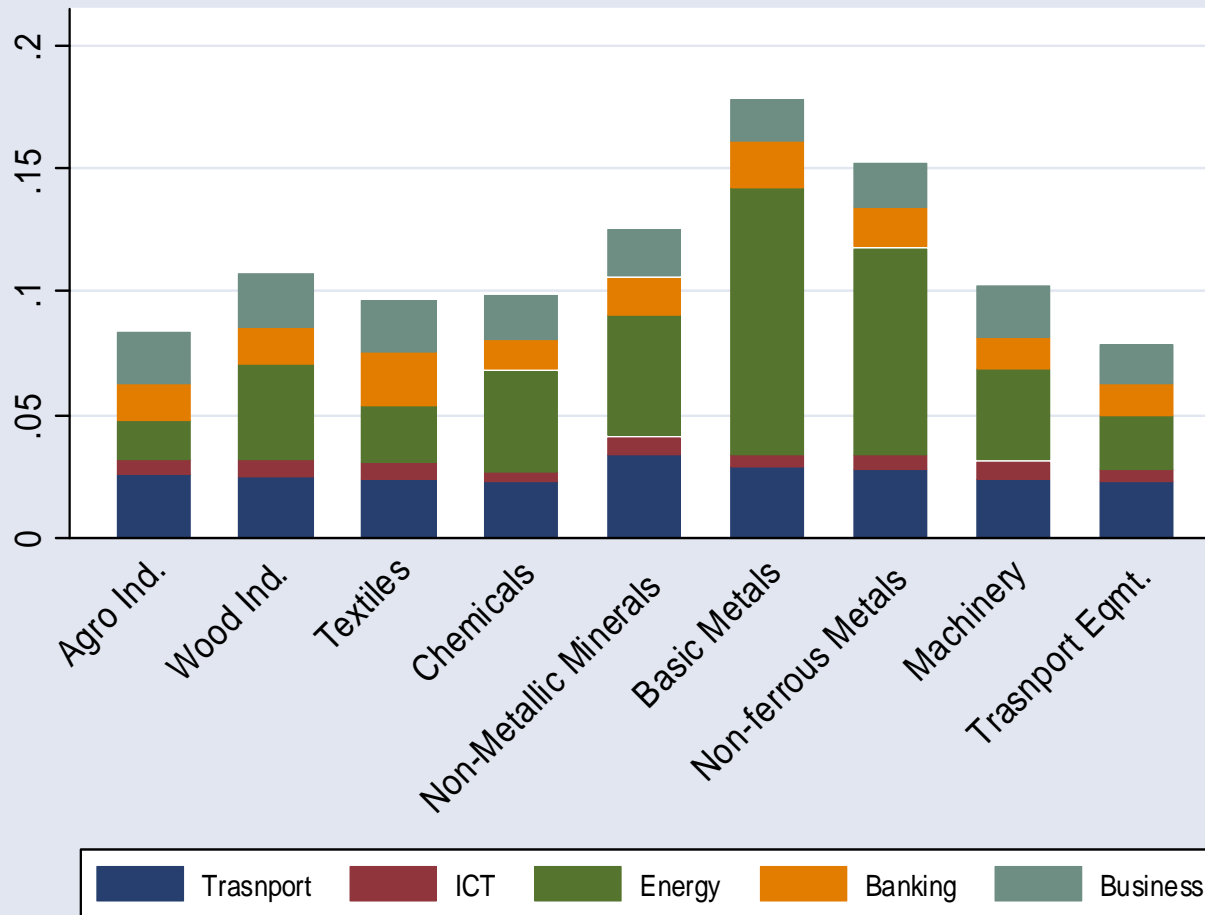
↓
Total requirement of
services *k* in one dollar of
manufactured product *i*

***k*: services** (Transport & Storage, ICT, Energy, Banking & Financial Services, Business Services)

4. Data

- **Aid:** OECD-CRS. Aid disbursements of AFT from 33 donors (including multilateral donors) over 2002-2008.
- **Exports:** UNCTAD COMTRADE. Total “mirrored” imports for 167 aid recipient countries.
- **Total input requirements:** GTAP7. There are 60 country specific input-output tables and 18 regional input-output tables for the remaining 107 countries.
 - Total input requirements contains estimates of the inputs for each industry that are directly and indirectly required to deliver a dollar of the industry output to final users.

Figure 3 - Service Intensity (mean) by Manufacturing Sector



Results

Table 4 – Baseline Estimations					
	(1)	(2)	(3)	(4)	(5)
	Baseline	I-O only	ARG I-O	05-08	Full export
Transportation	0.196*** [0.017]	0.493*** [0.028]	0.175*** [0.017]	0.311*** [0.023]	0.187*** [0.016]
ICT	0.033* [0.017]	-0.011 [0.013]	-0.02 [0.017]	0.401*** [0.030]	-0.021 [0.016]
Energy	0.684*** [0.020]	0.442*** [0.017]	0.612*** [0.018]	0.035* [0.018]	0.651*** [0.018]
Banking	0.468*** [0.026]	0.467*** [0.024]	0.541*** [0.020]	0.036 [0.044]	0.576*** [0.020]
Business	0.007 [0.014]	-0.018 [0.020]	0.030*** [0.011]	0.405*** [0.045]	0.031*** [0.011]
Observations	8243	3339	8243	3552	7371
R-squared	0.99	0.99	0.99	0.99	0.99

Robust standard errors in brackets. * significant at 10%; ** significant at 5%; *** significant at 1%. Dependent variable is ln(exports). All regressions control for country-sector, country-year, and sector-year effects.

Table 5 – Estimates by Income Groups

	(1) LOW	(2) MIDLW	(3) MIDUP	(4) LDCs
Transportation	0.763*** [0.038]	0.696*** [0.039]	-0.355*** [0.035]	0.354*** [0.029]
ICT	0.061*** [0.020]	-0.395*** [0.032]	1.035*** [0.053]	0.213*** [0.042]
Energy	0.142*** [0.018]	0.283*** [0.025]	1.092*** [0.027]	-0.214*** [0.031]
Banking	0.222*** [0.040]	0.309*** [0.024]	-1.460*** [0.025]	1.072*** [0.030]
Business	-0.189*** [0.020]	0.346*** [0.030]	1.443*** [0.043]	-0.154*** [0.022]
Observations	3265	3195	1783	2995
R-squared	0.99	0.99	0.99	0.99

Robust standard errors in brackets. * significant at 10%; ** significant at 5%; *** significant at 1%.

Dependent variable is ln(exports). All regressions control for country-sector, country-year, and sector-year effects.

Table 7 – Output vs. Exports

	(1)	(2)
	output	exports
Transportation	0.389*** [0.007]	0.323*** [0.015]
ICT	-0.369*** [0.005]	-0.324*** [0.015]
Energy	0.079*** [0.003]	0.064*** [0.006]
Banking	0.384*** [0.004]	0.342*** [0.008]
Business	0.327*** [0.008]	0.307*** [0.016]
Observations	2070	2069
R-squared	0.99	0.99

Robust standard errors in brackets. * significant at 10%; ** significant at 5%; *** significant at 1%. Dependent variable in column 1 is ln(ouput) in column 2 is ln(exports). All regressions control for country-sector, country-year, and sector-year effects.

Conclusions

- We analyze the impact of aid to services on exports of downstream manufacturing sectors.
- We present an identification strategy using input-output tables to circumvent reverse-causality between aid and exports.
- We find that, in general, aid to services has a positive effect on manufacturing exports.
- The estimates of the effect of aid to transportation, energy, and banking are the most robust.