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VIP Pass to Markets: What Customs Certification Tells us about NTMs Restrictiveness

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IATRC, 12/09/2019



A new generation of trade agreements

- Second generation trade agreements negotiated in the 2010s
 - EU-Canada Comprehensive Economic and Trade Agreement
 - Aimed at **going beyond tariffs**
 - Reduction of trade costs induced by Non-Tariff Measures
 - Without lowering off the level of protection for the consumers
 - Different measures to achieve this goal
 - Mutual recognition of certification bodies
 - Trade facilitation provision at the border
- ⇒ **Reduction of the administrative component of NTMs**

This paper

- **Aims at assessing the amount of trade costs that can be reduced through trade facilitation provision on NTMs**
- Relies on the **AEO certification**, a firm level trade facilitation measure
- Uses :
 - An original database of French AEO certified firms
 - French firm-level trade and characteristics data
 - WITS occurrence of NTMS for a large set of countries
- Follows a differences-in-differences approach to assess the impact of NTMs **before and after** firms' certification
- Deals with **endogeneity** of certified firms

Literature (1)

- Effects of **NTMs** are manifold: (*Fugazza 2008*)
 - **Cost-raising** effect (variable/fixed, ex ante/at the border, information/compliance)
 - **Supply-shift** effect (compatibility standards, hazardous products)
 - **Demand-shift** effect (labelling)
 - Trade **barriers** (*Beghin et al. 2005*) or **catalyst** (*Crivelli and Groeschl 2015*)
 - Heterogeneity in **NTMs types** (*Santeramo and Lamonaca 2010*)
 - Heterogeneous effects according to the size and **type of firms** (*Fontagné Orefice 2018, Fontagné et al 2015*)

Literature (2)

- The extend of general **Administrative costs**
 - Computation of ad-valorem equivalent of per-shipment cost reduction (*Hornok and Koren 2013*)
 - Trade effect of a day in transit (*Hummels and Schaur 2013*)
- Literature on **Trade facilitation measures**
 - Focusing on the Trade Facilitation Agreement, using the OECD Trade Facilitation Indicators (*Moise et al 2011, Fontagné et al 2016, Hillberry and Zhang 2017*)

⇒ **Our objective: bridge the gap between administrative costs and NTMs in the literature.**

Authorized Economic Operators

- **Customs-to-Business partnership**
 - Part of World Customs Organization (WCO) programs
 - Aims to enhance international supply chain security
 - Certification by national customs authorities
 - Based on the internationally recognized standards

- **Benefits :**
 - Customs simplifications
 - Fewer physical and document-based controls
 - Priority treatment if selected for control

- **Granted:**
 - At the border of the exporting country
 - At the entry of the EU and of countries with **mutual recognition agreement** (Switzerland 2009, Norway 2009, Japan 2010, USA 2012, China 2014)

Data sources

■ Firm level data

- Original and exhaustive dataset of AEO firms from the European Customs
- French Customs trade data (value and quantity) by firm, product, destination and year
- FARE Data characteristics of firms (VA, turnover, employees)

■ Country level data

- Occurrence of NTMs by country from WITS (SPS and TBTs - chapter A and B of UNCTAD classification)
- World Bank WDI GDP

→ 40,632 firms from 2008 to 2016

→ All products, all non-European destinations

→ Exclusion of wholesalers and transportation activities

Descriptive statistics

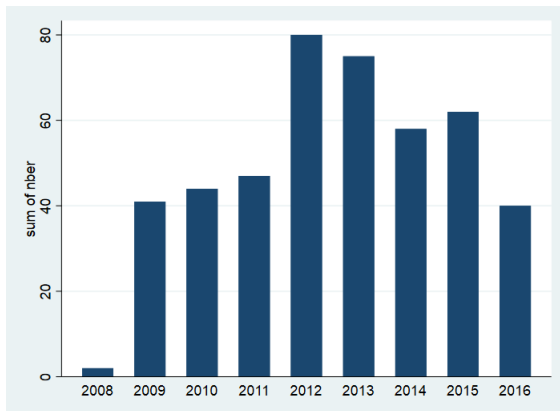


Figure: Number of certified firms, 2008-2016

Descriptive statistics

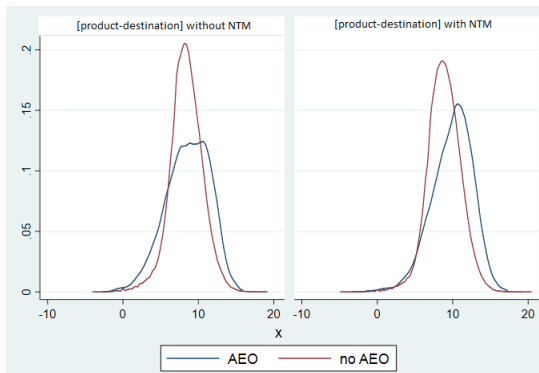


Figure: Mean export value by firm-destination-product-year for AEO and non AEO firms, for destination-product with NTM, 2008-2016

Descriptive statistics

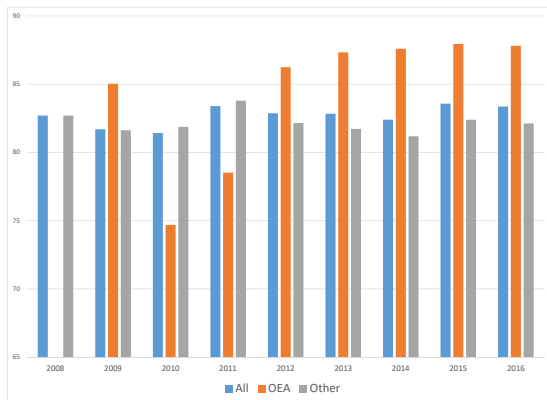


Figure: Share of export values on product-destination with NTM

Specification

$$\begin{aligned}
 Exp_{fjkt} = & \alpha_0 + \alpha_1 AEO_{ft} + \alpha_2 MRA_{jt} + \alpha_3 AEO_{ft} \times MRA_{jt} \\
 & + \alpha_4 AEO_{ft} \times NTM_{jt} + \alpha_5 MRA_{jt} \times NTM_{jt} + \alpha_6 AEO_{ft} \times MRA_{jt} \times NTM_{jk} \\
 & + \beta AVE_{jkt} + \Gamma productivity_{ft} + \delta GDP_{jt} + \xi_{fjk} + \nu_t + \varepsilon_{fjkt}
 \end{aligned}$$

AEO_{ft} is a dummy indicating whether firm f is certified the year t
 MRA_{jt} a dummy indicating whether country j has a Agreement with France in t
 NTM_{jk} , a dummy indicating whether a NTM applies on product k in j

Intensive margin $Exp_{fjkt} = l_{v_{fjkt}}$ log of exports of f to j for the k at t
 extensive margin $Exp_{fjkt} = X_{fjkt}$ dummy indicating whether f export k to j ft

⇒ Differences-in-differences specification : impact of NTMs **before and after** firms' certification through firm-product-destination fixed effect ξ_{fjk} .

Endogeneity of firm's certification

- **Endogeneity of firm's decision to certify** : can be linked to their decision to export (or to export more / to some specific destinations) or to their products specialization
- **Instrumental variables approach**
 - share of the firms' turnover made on foreign markets
 - share of the firms' exports made on markets with mutual recognition agreement the year before

Results (1)

	lv_{fjkt}		X_{fjkt}	
	(1)	(2)	(3)	(4)
AEO_{ft}	0.743** (0.292)	0.599** (0.256)	0.401*** (0.112)	0.449*** (0.109)
AEO _{ft} × MRA _{jt}	0.166 (0.222)	-0.015 (0.187)	-0.019 (0.052)	-0.097* (0.050)
AVE _{jkt}	-0.087 (0.275)	-0.092 (0.274)	0.091 (0.070)	0.096 (0.070)
Productivity _{ft}	0.057 (0.124)	0.056 (0.123)	-0.023 (0.038)	-0.020 (0.038)
GDP _{jt}	0.434** (0.171)	0.415** (0.169)	0.066** (0.039)	0.077* (0.042)
MRA _{jt}	-0.081 (0.153)	-0.016 (0.187)	0.004 (0.036)	0.045 (0.036)
AEO _{ft} × MRA _{jt} × NTM _{jk}		0.208 (0.276)		0.118* (0.065)
AEO_{ft} × NTM_{jk}		0.214*** (0.078)		-0.090*** (0.024)
MRA _{jt} × NTM _{jk}		-0.111 (0.280)		-0.053 (0.049)
Nber Obs.	350,590	350,590	1,025,187	1,025,187
R-squared	-0.02	-0.02	-0.08	
Hansen p value	0.89	0.50	0.66	0.25
Underidentification	11.66	9.37	35.54	17.54
Weak identification F-test	16.60	18.88	30.86	42.12
Weak identification p-value	0.00	0.00	0.00	0.00
Hausman Wu test p-value	0.05	0.34	0.36	0.10

Firm-destination-product and year fixed effects included
 Robust standard errors clustered by country-pairs in parentheses.

Results (2)

	lv_{fjkt} (1)	X_{fjkt} (2)
...
$\Delta EO_{ft} \times MRA_{jt} \times NTM-ADM_{jk}$	0.294 (0.340)	0.093 (0.065)
$\Delta EO_{ft} \times NTM-ADM_{jk}$	0.290***	-0.087***
$\Delta EO_f \times MRA_{jt} \times NTM-OTH_{jk}$	-0.002 (0.362)	0.174* (0.089)
$\Delta EO_{ft} \times NTM-OTH_{jk}$	0.101 (0.089)	-0.094*** (0.024)
$MRA_{jt} \times NTM-ADM_{jk}$	-0.162 (0.319)	-0.042 (0.049)
$MRA_{jt} \times NTM-OTH_{jk}$	-0.040 (0.302)	-0.077 (0.061)
...

Firm-destination-product and year fixed effects included

Robust standard errors clustered by country-pairs in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Results (3)

	lv_{fjkt} (1)	X_{fjkt} (2)
...
$AEO_{ft} \times MRA_{jt} \times SPS-ADM_{jk}$	0.052 (0.337)	-0.139** (0.062)
$AEO_{ft} \times SPS-ADM_{jk}$	-0.044 (0.152)	0.001 (0.035)
$AEO_{ft} \times MRA_{jt} \times TBT-ADM_{jk}$	-0.294 (0.890)	0.014 (0.119)
$AEO_{ft} \times TBT-ADM_{jk}$	0.359** (0.143)	-0.080*** (0.023)
$AEO_{ft} \times MRA_{jt} \times SPS-OTH_{jk}$	0.224 (0.715)	0.366 (0.192)
$AEO_{ft} \times SPS-OTH_{jk}$	0.063 (0.111)	-0.065* (0.037)
$AEO_{ft} \times MRA_{jt} \times TBT-OTH_{jk}$	-0.432 (0.749)	0.027 (0.105)
$AEO_{ft} \times TBT-OTH_{jk}$	0.132 (0.122)	-0.088*** (0.023)
$MRA_{jt} \times SPS-ADM_{jk}$	0.212 (0.287)	0.137*** (0.048)
$MRA_{jt} \times TBT-ADM_{jk}$	0.165 (0.681)	0.000 (0.077)
$MRA_{jt} \times SPS-OTH_{jk}$	-0.102 (0.521)	-0.217 (0.139)
$MRA_{jt} \times TBT-OTH_{jk}$	0.183 (0.547)	0.023 (0.065)
...

Firm-destination-product and year fixed effects included

Robustness checks

- We performed a robustness checks with an alternative set of IV
 - Share of neighboring firms that are certified in the same sector
 - Share of exported products with Non-Tariff Measures
- Our results remain the same and the statistical tests validate the choice of these instruments equally

Conclusion (1)

- We rely on the AEO certification of French firms to assess the level of administrative trade costs induced by NTM at the border
- We show that :
 - AEO certification fosters trade value, to a greater extend when facing NTM, in particular TBT conformity assessment
 - AEO certification increases trade probability, to a smaller extend when facing NTM
 - Mutual Recognition Agreement only impact trade probability for products with SPS

Conclusion (2)

- We can conclude that :
 - A reduction on customs formalities has a greater impact on volumes of products with NTMs
 - NTMs have an administrative component, that can be reduced through trade facilitation provisions
 - Difference of impact on trade volumes / trade probability
- A work in progress !
 - Theoretical model to discuss the fixed/variable nature of the administrative costs induced by NTM