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Exempted Sectors in Free Trade Agreements

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Exempted Sectors

- These are sectors that retain positive tariffs within an FTA
  - These are more common than I once supposed

Exempted Sectors

- GATT/WTO requires only that
  - tariffs be eliminated on "substantially all the trade between the constituent territories on products originating in such territories."
  - (Note "originating." This raises the important issue of Rules of Origin, which I will not address here.)

Exempted Sectors

- Why I expected them to be a concern:
  - Most likely to be sectors most vulnerable to competition from imports
  - Thus I called them "sensitive sectors"
  - These are sectors most likely for **trade creation**
  - Exclusion of sensitive sectors
    - Reduces trade creation, while
    - Retaining trade diversion
  - Thus I thought that exempting sectors was likely to make FTAs welfare-worsening

Exempted Sectors

- In this paper we look in the data for a correlation between
  - Exempted sectors
  - Trade creation relative to trade diversion
- We find it,
  - But only for developed countries
  - Correlation is opposite for developing countries
  - Motivation for exempting sectors seems to differ by income

Exempted Sectors

- Why might low income countries exempt trade diverting rather than trade creating sectors?
- Two potential reasons:
  1. Concern for tariff revenue losses (c.f. Fontagné et al., 2010)
  2. Less bargaining power
- We find some evidence in favor of both of these reasons

Outline

- Model
  - Equations
  - Graph
- Data
- Results

Model

- Three countries, A, B, and C
  - A and B form an FTA
  - Partial equilibrium
  - Linear supplies and demands for a homogeneous good imply linear
    - Import demand by A: M^A
    - Export supply by B and C: X^B, X^C

Model

$$M^A = b^A(a^A - p^A)$$
$$X^i = b^i\left(p^A - t^i - a^i\right), \qquad i = B, C$$
$$M^A = X^B + X^C$$

with:

Autarky prices: $a^i > 0,\ \ i = A, B, C$

Slopes: $b^i > 0,\ \ i = A, B, C$

Specific tariffs by A on B, C: $t^i \geq 0,\ \ i = B, C$

Effects of FTA

- **Trade Creation:**

$$TC = \Delta M^A = \frac{b^A b^B t}{\beta} = -b^A \Delta p^A$$

- **Trade Diversion:**

$$TD = -\Delta X^C = \frac{b^C b^B t}{\beta} = -b^C \Delta p^A$$

- **Relative Trade Creation:**

$$\frac{TC}{TD} = \frac{b^A}{b^C}$$

Effects of FTA on Country A

- **Domestic Markets & Injury:**
- Let $S^A = s^A(p^A - c^A)$ be domestic supply.
- The change in producer surplus in A is

$$\Delta PS^A = -S_0^A \frac{TC}{b^A} + \frac{s^A}{2}\left(\frac{TC}{b^A}\right)^2 < 0$$

- Thus harm to domestic industry is due only to Trade Creation, TC

Effects of FTA on Country A

- **Tariff Revenue:**

$$\Delta R^A = t\Delta X^C - tX_0^B = -t(TD + X_0^B) < 0$$

Thus loss of tariff revenue is due to Trade Diversion, TD, and not at all to trade creation.

Effects of FTA on Country A

- **Welfare**

Private Sector

Gov't

$$\Delta W^A = \left(a^A + \frac{b^B t}{2\beta}\right) TC - tTD - tX_0^B$$

Thus effects on A's total welfare are

- Private Sector Gain due to trade creation
- Government Loss due to trade diversion
- Government Loss of tariff revenue from partner

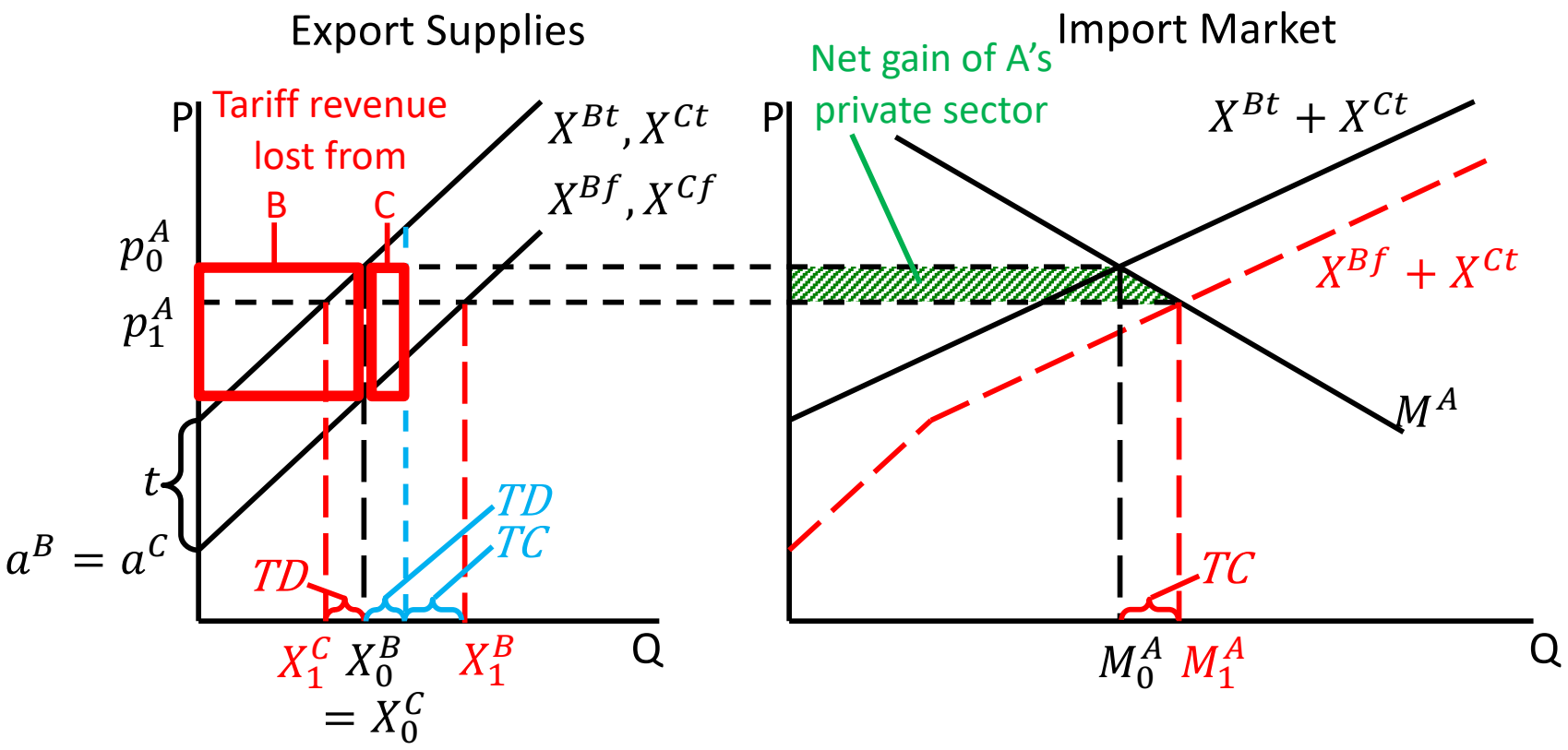
Graphical Illustration*

- As with equations above,
  - Three countries: importer A; exporters B, and C
  - Export supply and import demands are linear
- Countries B and C are identical
- Two equilibria
  - 0: MFN tariff t on exports of both B and C
  - 1: FTA of A and B:
    - tariff t on exports of C;
    - zero tariff on exports of B

For simplicity

*Much of this is an elaboration of material in World Trade Organization, "Causes and Effects of PTAs: Is it all about preferences?", Ch. C: *World Trade Report 2011*, pp. 92-121.

Welfare Effects on Country A



$$\Delta W^A = \left(a^A + \frac{b^B t}{2\beta}\right) TC - tTD - tX_0^B$$

Indicator of Trade Creation/Trade Diversion

$$\frac{TC}{TD} = \frac{b^A}{b^C} = \frac{1}{X^C/M^A} \frac{\eta^A}{\varepsilon^C}(1 - t/p^A)$$

where η^A, ε^C are elasticities of demand and supply.

Thus, for given values of elasticities and tariff, relative trade creation is **inversely** related to the **third-country share of imports**.

Indicator of Trade Creation/Trade Diversion

We therefore regress

- Exemption from FTA zero tariffs

on

- Third-country share of imports

to see whether exemption is negatively or positively related to relative trade creation.

Hypotheses

1. If FTA exemption is to avoid industry disruption, then we expect it to be
   - **Negatively** related to 3rd-country share of imports (& thus positively related to TC/TD)
2. If FTA exemption is to avoid lost tariff revenue, then we expect it to be
   - **Positively** related to 3rd-country share of imports (& thus negatively related to TC/TD)

Data

- Bilateral tariffs: CEPII
  - Bilateral tariff rates, 6-digit HS
  - 3-year averages 2009 – 2011
- MFN tariffs: TRAINS
- Trade: UNCOMTRADE via CEPII
- Tariff revenue: IMF

Data

- Coverage
  - 37 importing countries
    - Mix of high-, middle-, and low-income
  - 240 importer-exporter pairs
  - FTAs from
    - 1998 or later to allow data on pre-FTA trade
    - 2005 or earlier to give time for phasing in cuts
  - EU not included as importer, but does appear as exporter

Importing Countries

Code	Country	Code	Country
ALB	Albania	MDA	Moldolva
AUS*	Australia	MEX	Mexico
BIH	Bosnia and Herzegovina	MKD	Macedonia, Republic of
CAN*	Canada	MOZ	Mozambique
CHE*	Switzerland	MUS	Mauritius
CHL	Chile	MWI	Malawi
CRI	Costa Rica	MYS	Malaysia
DOM	Domminican Republic	NIC	Nicaragua
DZA	Algeria	NOR*	Norway
GTM	Guatemala	NZL*	New Zealand
HND	Honduras	PAN	Panama
HRV	Croatia	PHL	Philippines
IDN	Indonesia	SLV	El Salvador
IND	India	SRB	Serbia
ISR*	Israel	UKR	Ukraine
JPN*	Japan	USA*	United States of America
KOR*	South Korea	VNM	Viet Nam
LKA	Sri Lanka	ZMB	Zambia
MAR	Morocco		

*High Income

Descriptive Statistics

Importer	Fraction Exempted Products	# of Part-ners	Earliest FTA	Latest FTA	Importer	Fraction Exempted Products	# of Part-ners	Earliest FTA	Latest FTA
ALB	0.09	7	2002	2004	MAR	0.11	14	1998	1999
AUS*	0.24	2	2005	2005	MDA	0.11	4	2004	2004
BIH	0.15	5	2002	2004	MEX	0.06	28	1998	2004
CAN*	0.06	1	2002	2002	MKD	0.30	28	2000	2004
CHE*	0.10	9	1999	2005	MOZ	0.06	7	2000	2000
CHL	0.05	26	2002	2004	MUS	0.06	3	2000	2001
CRI	0.24	3	2002	2002	MWI	0.03	1	2000	2000
DOM	0.09	5	2001	2002	MYS	0.28	1	1999	1999
DZA	0.06	14	1998	1999	NIC	0.07	2	1998	2002
GTM	0.14	2	2001	2001	NOR*	0.24	9	1999	2005
HND	0.14	2	2001	2001	NZL*	0.16	2	2001	2005
HRV	0.11	30	1998	2004	PAN	0.26	2	2003	2004
IDN	0.01	1	1999	1999	PHL	0.44	1	1999	1999
IND	0.20	1	2001	2001	SLV	0.28	3	2001	2003
ISR*	0.14	9	1998	2004	SRB	0.16	5	2004	2004
JPN*	0.20	2	2002	2005	UKR	0.18	1	2001	2001
KOR*	0.19	1	2004	2004	USA*	0.10	3	2001	2005
LKA	0.21	2	2001	2005	VNM	0.43	1	1999	1999
MAR	0.11	14	1998	1999	ZMB	0.23	3	2000	2001
MDA	0.11	4	2004	2004					

Data

- Note range of
  - Exempted sectors:
    - 1% for Indonesia to 44% for Philippines
    - Sample mean: 16%
  - Number of FTA partners
    - 1 for several, including US
    - 26-30 for Chile, Croatia, Mexico, Macedonia
      - (Countries can have different tariffs on different EU exporters; results the same without them)
    - Sample mean: 6.5; median 3

Results

Table 2: Baseline Regressions

	(1)	(2)	(3)	(4)	(5)	(6)
	Dependent Variable: Exempted Product Indicator					
Third country share	0.065***	-0.195***	0.076***			
	(0.007)	(0.032)	(0.007)			
Third country share (combined)				0.056***	-0.177***	0.060***
				(0.008)	(0.033)	(0.008)
Observations	112,378	34,796	77,582	243,822	38,654	205,168
R-squared	0.209	0.074	0.259	0.19	0.076	0.207
Imp-Exp FE	Yes	Yes	Yes	Yes	Yes	Yes
Sample	All	High Inc.	Not High Inc.	All	High Inc.	Not High Inc.

Importer-product clustered standard errors

*** p<0.01, ** p<0.05, * p<0.1

Results

- Implications of Table 2:
  - High-income countries exempt products where there would have been trade creation
  - Not-high-income countries exempt products where there would have been trade diversion
- Thus lower-income countries' FTAs are more likely net beneficial

Table 3: Regressions with Interaction Terms

	(1)	(2)	(3)	(4)	(5)
	Dependent Variable: Exempted Product Indicator				
Third country share (3S)	0.076***	0.068***	0.034***	0.002	-0.037***
	(0.007)	(0.008)	(0.008)	(0.008)	(0.010)
3S x high income	-0.271***	-0.264***	-0.244***	-0.245***	-0.225***
	(0.032)	(0.033)	(0.032)	(0.032)	(0.032)
3S x high tariff reliance		0.029**			0.077***
		(0.015)			(0.016)
3S x high inc. partner			0.066***		0.065***
			(0.012)		(0.015)
3S x exporter larger				0.105***	0.077***
				(0.011)	(0.013)
Observations	112,378	112,378	112,378	111,603	111,603
R-squared	0.210	0.210	0.210	0.212	0.212
Importer-Exporter FE	Yes	Yes	Yes	Yes	Yes
Sample	All	All	All	All	All

Importer-product clustered standard errors

*** p<0.01, ** p<0.05, * p<0.1

Results

- Implications of Table 3:
  - As in Table 2, high-income countries exempt sensitive sectors (TC)
  - Countries exempt trade-diverting (TD) sectors if
    - They rely on tariff revenue
    - They import from high income partners
    - They import from larger partners

Table 4: Regressions with Product Fixed Effects

	(1)	(2)	(3)	(4)
	Dependent Variable: Excluded Product Indicator			
Third country share (3S)	0.053***	-0.133***	0.062***	-0.025***
	(0.006)	(0.028)	(0.006)	(0.010)
3S x high income				-0.177***
				(0.028)
3S x high tariff reliance				0.056***
				(0.015)
3S x high inc. partner				0.048***
				(0.014)
3S x exporter larger				0.060***
				(0.012)
Observations	112,295	34,425	77,366	111,521
R-squared	0.399	0.410	0.446	0.403
Importer-Exporter FE	Yes	Yes	Yes	Yes
Product FE	Yes	Yes	Yes	Yes
Sample	All	High Income	Not High Income	All

Standard errors are clustered at the importer-product level

*** p<0.01, ** p<0.05, * p<0.1

Conclusions

- Exempted products from FTAs are common
- In developed countries, they tend to be in "sensitive sectors," thus limiting trade creation and the benefits of FTAs
- In poorer countries they tend to be where there would have been trade diversion due to concern for
  - Tariff revenue
  - Pressure from stronger FTA partners
  - Exemptions are thus more likely beneficial