

Full versus partial liberalization of trade: Gains and Losses

Kikuchi Tadashi

Misak Avetisyan

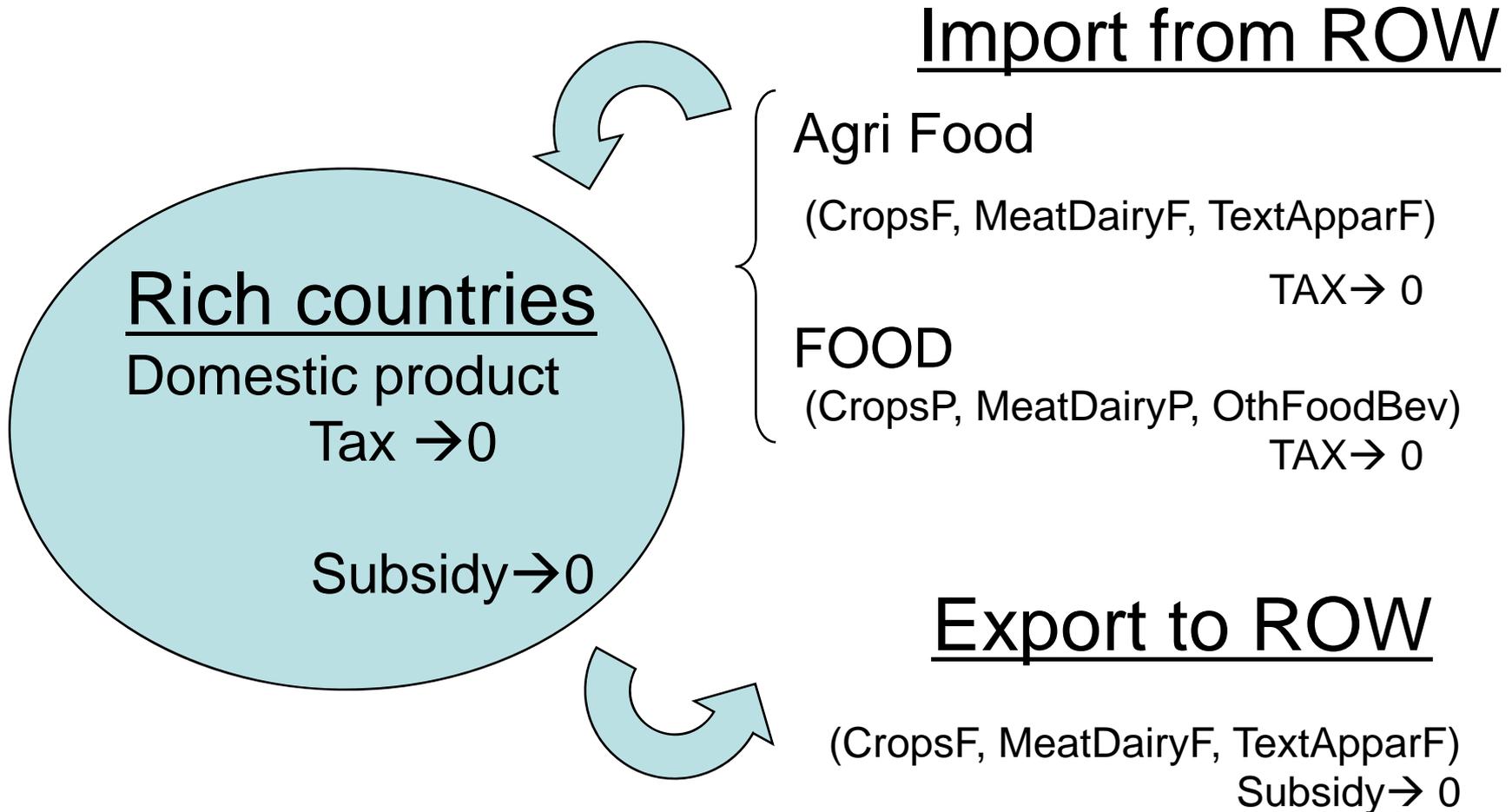
Problem statement

- Full liberalization of trade should benefit developing countries
- Results indicate that this is not always the case

Objective:

Test whether partial liberalization of trade provides more gains for developing countries.

Original policy shock



Findings of full trade liberalization

Results: Change in exports, imports, and net exports (trade balance) after implementing policy

Trade balance by region in \$US (millions)

Region	VXWD	VIWS	Net exports before policy	Net exports after policy	Change in net exports
1 Rich	76,916.15	81,172.23	-156,082.65	-160,338.73	-4,256.08
2 RDevAsia	6,274.82	7,330.36	-45,500.85	-46,556.39	-1,055.54
3 RLatAmer	2,236.99	2,414.34	-10,290.85	-10,468.20	-177.35
4 RAfrica	841.55	816.83	-9,560.77	-9,536.05	24.72
5 Mexico	-103.32	-162.71	-3,699.75	-3,640.36	59.39
6 Brazil	1,714.47	1,552.94	-4,200.21	-4,038.68	161.53
7 Thailand	376.36	458.41	-4,088.02	-4,170.07	-82.05
8 Vietnam	-11.92	-3.29	-952.67	-961.30	-8.63
9 Mozambique	-5.39	-5.84	-29.61	-29.16	0.45
10 Malawi	58.20	65.66	-36.07	-43.53	-7.46
Total	88,297.90	93,638.95	-234,441.44	-239,782.49	-5,341.05

Findings of full trade liberalization

Definition

*# terms of trade equation computed as difference in psw and pdw (HT 66) #
(all,r,REG)*

$$\text{tot}(r) = \text{psw}(r) - \text{pdw}(r);$$

Region	PSW	PDW	TOT
1 Rich	-0.13	0.03	-0.16
2 RDevAsia	0.28	0.09	0.19
3 RLatAmer	1.35	0.39	0.96
4 RAfrica	0.68	0.38	0.3
5 Mexico	0.13	-0.03	0.16
6 Brazil	5.23	0.15	5.08
7 Thailand	1.33	0.05	1.28
8 Vietnam	-0.02	0.09	-0.11
9 Mozambique	-0.03	0.44	-0.47
10 Malawi	4.72	0.39	4.33
Total	13.53	1.99	11.54

Intuition behind the results of full trade liberalization

estimate change in index of prices received for tradeables i produced in r
(all,r,REG)

$$\text{VXWREGION}(r) * \text{psw}(r) = \text{sum}(i, \text{TRAD_COMM}, \text{sum}(s, \text{REG}, \text{VXWD}(i, r, s) * \text{pfob}(i, r, s))) + \text{sum}(m, \text{MARG_COMM}, \text{VST}(m, r) * \text{pm}(m, r));$$

estimate change in index of prices paid for tradeable products used in r
(all,r,REG)

$$\text{VIWREGION}(r) * \text{pdw}(r) = \text{sum}(i, \text{TRAD_COMM}, \text{sum}(k, \text{REG}, \text{VIWS}(i, k, r) * \text{pcif}(i, k, r)));$$

eq'n links agent's and world prices (HT 27)
(all,i,TRAD_COMM)(all,r,REG)(all,s,REG)

$$\text{pfob}(i, r, s) = \text{pm}(i, r) - \text{tx}(i, r) - \text{txs}(i, r, s);$$

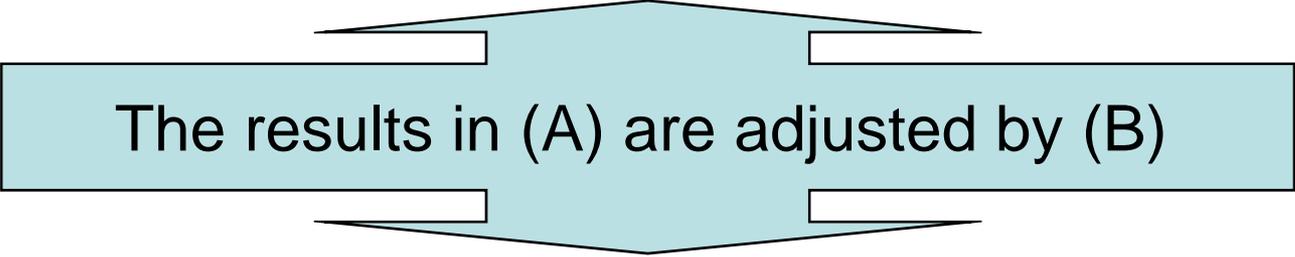
Reason for change:

$(\text{tx}(i, r) = 0 \text{ and } \text{txs}(i, r, s) = 0) \Rightarrow \text{pfob}(i, r, s)$ **depends on** $\text{pm}(i, r)$ and since elasticity is exogenous, then a change in output will cause a change in market price.

Analyzing the original experiment

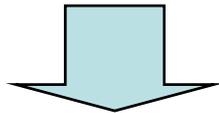
Trade liberalization

(A) Gains and losses considering only trade volume



The results in (A) are adjusted by (B)

(B) Gains and losses under both trade volume and price index change effects



TOT

Explanation of changes in TOT

From our findings and also accounting for level changes (value of trade adjusted by price index change) we see that:

Region	Change in net export, \$US million	Change in trade levels, \$US million	TOT, %
1 Rich	-4256.08	-830145.03	-0.16
2 RDevAsia	-1055.54	192370.68	0.19
3 RLatAmer	-177.35	153071.96	0.96
4 RAfrica	24.72	35724.5	0.3
5 Mexico	59.39	24952.13	0.16
6 Brazil	161.53	323940.45	5.08
7 Thailand	-82.05	100891	1.28
8 Vietnam	-8.63	-2701.58	-0.11
9 Mozambique	0.45	-717.01	-0.47
10 Malawi	-7.46	2841.72	4.33
Total	-5341.05	228.22	11.54

Reasons:

- Vietnam and Mozambique have losses because of weak exporting power (TOT=PSW/PDW).
- Rich countries also experience some losses because of elimination of **export subsidy**.

Extension: Partial liberalization of trade

Experiment new: Shock to, *tfd*, *tfm*, *tms*, and *txs* by -30%.

- Shock to(AGRI_COMM,"Rich") = rate% -30 from file to.shk;
- Shock tfd(TRAD_COMM,AGRI_COMM,"Rich") = rate% -30 from file tfd.shk;
- Shock tfm(TRAD_COMM,AGRI_COMM,"Rich") = rate% -30 from file tfm.shk;
- Shock tms(AGFD_COMM,REG,"Rich") = rate% -30 from file tms.shk;
- Shock txs(AGFD_COMM,"Rich",REG) = rate% -30 from file txs.shk;

Region	Change in net export, \$US million		Change in trade levels, \$US million		TOT, %		Change in TOT
	Full liberalization (-100%)	Partial liberalization (-30%)	Full liberalization (-100%)	Partial liberalization (-30%)	Full liberalization (-100%)	Partial liberalization (-30%)	
1 Rich	-4256.08	207459.04	-830145.03	-167896.05	-0.16	-0.03	0.13
2 RDevAsia	-1055.54	-188147.6	192370.08	41999.46	0.19	0.03	-0.16
3 RLatAmer	-177.35	8929.43	153071.96	41056.34	0.96	0.24	-0.72
4 RAfrica	24.72	-3903.51	35724.5	2706.45	0.3	0.02	-0.28
5 Mexico	59.39	-19369.58	24952.13	-1267.51	0.16	-0.01	-0.17
6 Brazil	161.53	3623.11	323940.45	61416.15	5.08	0.9	-4.18
7 Thailand	-82.05	-18741.06	100891	22810.69	1.28	0.28	-1
8 Vietnam	-8.63	8826.94	-2701.58	-1061.59	-0.11	-0.05	0.06
9 Mozambique	0.45	76.19	-717.01	-166.65	-0.47	-0.11	0.36
10 Malawi	-7.46	-53.65	2841.72	405.67	4.33	0.59	-3.74
Total	-5341.05	-1300.69	228.22	2.95	11.54	1.87	-9.67

Findings of partial trade liberalization

- With partial trade liberalization Mexico experiences negative change in TOT.
- Under partial liberalization the negative change in TOT for Rich countries, Mozambique, and Vietnam is smaller.
- Although the aforementioned countries experience gains, the world TOT is decreasing.

Conclusion: *Based on our findings we recommend full liberalization of trade.*