

Re-evaluation of Free Trade Agreement

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Table of Contents

1. Introduction
2. Literature Review
3. Re-Evaluation of Free Trade Agreement
4. Research Method
5. Result and Discussion

1. Introduction

1. Korea notified **FTAs with 21** economic parties
 - Including major trade partners, including US, EU, China
2. However, Korea's **FTA utilization rate** remains low
 - New Zealand(42.8%), Vietnam (44.5%), ASEAN(54.1%), China(64.9%)
 - Agricultural, Forestry, Fisheries (64.6%) below the average
3. Why? Errors and **Overestimation**
 - Low utilization of FTA is due to the 'Rules of Origin'
 - Without considering ROO, FTA utilization rate assumes '100%'
 - FTA methodology reflecting RVC(Regional Value Contents)

2. Literature Review

1. **Common methodology** to analyze FTA is consist of 4 steps

1. Tariff reduction

2. Price down

3. Trade Creation

4. Production Expansion

- Tariff cuts have the price of export products lower and increase demand and real-value

2. **CGE modeling** is widely being used for the complexity of relation btw **trade creation** and **trade diversion**

3. Re-Evaluation of FTA

1. **Limitation** : Exports Increase not equal to GDP growth

- 'Gross exports' is not directly connected to GDP, job increase,
- But the value-added created within a country could contribute its growth

2. **Key Question** : would tariff reduction be fully reflected in importing price change?

- To correct the estimation errors, a tariff calculated based upon **DVA**
- **ROO(Rules of Origin)** regulate the minimum share of DVA
- FTA qualification would be determined by **RVC (DVA/ROO)**

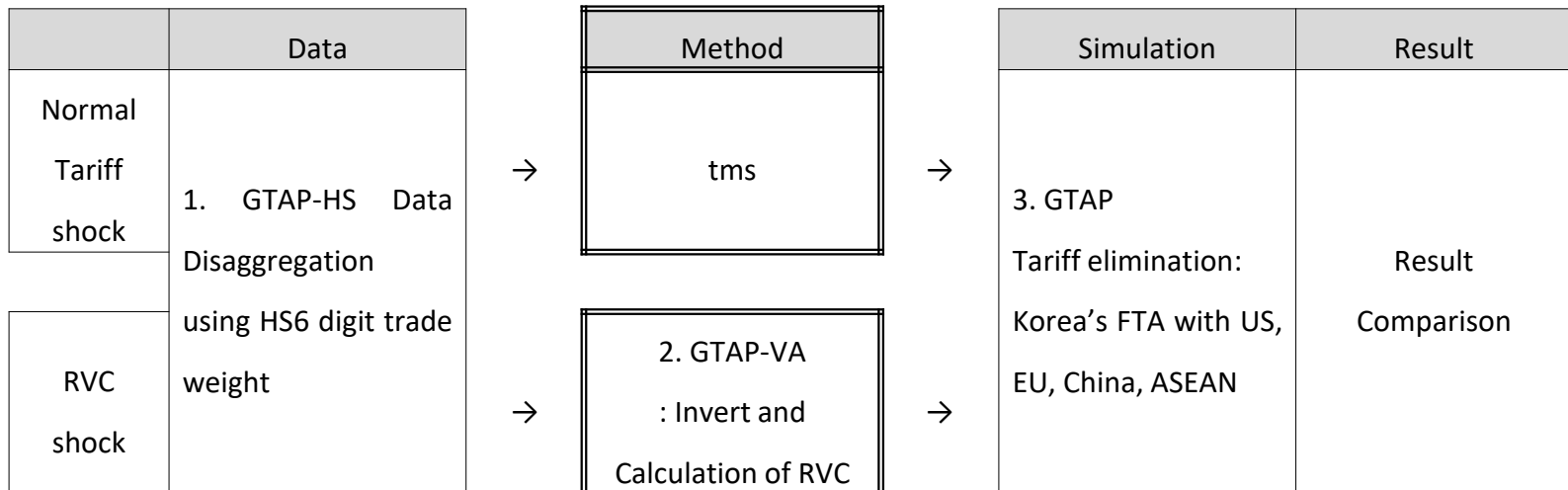
3. Re-Evaluation of FTA

- Assumption: Impact of FTA have been overestimated on **Agriculture, Fisheries, and Livestock sectors**, which have characteristics like,
 1. First, High import tariff rates
 2. Second, Wholly obtained criterion (WO)
 3. Third, Exclusion from participation in GVC
- **Grouping items for WO products** and identifying the level of value-added for products to which WO applies
 - GTAP-HS model (Aguiar et al., 2021)
 - Value added for each WO groups



3. Re-Evaluation of FTA

- Model Description: modified GTAP model considering RVC
 - Using GTAP-HS Data disaggregation**, items for WO(wholly obtained) are classified (HS code from 1 to 24 chapters)
 - GTAP-VA** create RVCs of Agricultural, Forestry, Fisheries by HS chapters
 - Estimation of FTA** : tariff elimination in terms of RVC



4. Research Method

- The existing methodology for FTA estimation in CGE model uses **market price(pms)** affected **by import price(pcif)** and **tariff(tms)**, like following

$$PMS_{i,r,s} = PCIF_{i,r,s} TMS_{i,r,s} \quad (\text{existing methodology})$$

$$PMS_{i,r,s} = PCIF_{i,r,s} TMSO_{i,r,s} \quad (\text{new methodology})$$

$$TMSO_{i,r,s} = \frac{RVC_{i,r,s}}{ROO_{i,r,s}} TMS_{i,r,s}, \text{ where } RVC_{i,r,s} \leq ROO_{i,r,s}$$

$$RVC_{i,r,s} = \frac{DVA_{i,r,s}(blt)}{VXE_{i,r,s}}, \quad DVA = DVA(blt) + DVA(mlt)$$

4. Research Method

- The Gempack code for 'RVC' calculation is as follows.

Coefficient (all,i,TRAD_COMM)(all,r,REG)(all,s,REG)

RVC (i,r,s) # Regional Value Content # ;

Formula (all,i,TRAD_COMM)(all,r,REG)(all,s,REG)

RVC (i,r,s) = if [r NE s, (VADIR (i,r,s) / VATOT (i,r,s))*100] + if [r EQ s,0] ;

Coefficient (all,i,TRAD_COMM)(all,r,REG)(all,s,REG)

RVC_dm (i,r,s) # Regional Value Content dummy # ;

Formula (all,i,TRAD_COMM)(all,r,REG)(all,s,REG)

RVC_dm (i,r,s) = if (RVC(i,r,s) >= ROO(i,r,s), 1) + if (0< RVC(i,r,s) and ROO(i,r,s) >

RVC(i,r,s), RVC(i,r,s)/ROO(i,r,s)) ;

4. Research Method

- The Gempack code for 'tmso' calculation is as follows.

Variable (all,i,TRAD_COMM)(all,r,REG)(all,s,REG)

tmso (i,r,s) # source-spec. change in tax on imports of i from r into s #;

Coefficient (all,i,TRAD_COMM)(all,r,REG)(all,s,REG)

RVC_dm (i,r,s) # source-spec. change in tax on imports of i from r into s #;

READ *RVC_dm* from file GTAPDATA header "RVCD" ;

Equation E_tmso (all,i,TRAD_COMM)(all,r,REG)(all,s,REG)

tmso(i,r,s) = *RVC_dm* (i,r,s) * *tms*(i,r,s) ;

Equation MKTPRICES (all,i,TRAD_COMM)(all,r,REG)(all,s,REG)

pms(i,r,s) = *tm*(i,s) + *tmso*(i,r,s) + *pcif*(i,r,s); # eq'n links domestic and world prices (HT 24) #

4. Research Method

- **ROOs** in Agricultural, Fisheries, Livestock products
 - WO applies to **806 items among 972(82.9%)** HS (unit 6) of Agricultural, Fishery and Livestock products (HS 1 to 71).

HS	01	02	03	04	05	06	07	08	09	10	11
CT	-	-	-	-	-	-	-	-	-	-	-
WO	34	66	189	32	14	16	67	66	39	26	27
Total	34	66	189	32	14	16	67	66	39	26	27
HS	12	13	14	15	16	17	18	19	20	21	22
CT	-	-	-	-	18	-	11	7	18	14	18
WO	48	10	5	47	23	17	-	12	34	2	2
Total	48	10	5	47	41	17	11	19	52	16	20
HS	23	24	41	43	44	50	51	52	53	71	Total
CT	19	-	9	5	7	8	16	-	16	-	166
WO	4	10	-	-	-	1	11	1	-	3	806
Total	23	10	9	5	7	9	27	1	16	3	972

* CT (Change of Tariff), WO (Wholly Obtained)

5. Result and Discussion

- Key Results: **Korea's Overestimation** in FTA import estimation

FTA	basedata	Previous model (A)	This model (B)	diff (A-B)
USA	6,547	53,228 (713.0)	48,373 (638.8)	4,855 (74.1)
EU	1,713	5,955 (247.5)	5,088 (196.9)	867 (50.6)
China	4,059	12,918 (218.2)	11,478 (182.8)	1,439 (35.5)
ASEAN	2,624	4,492 (71.2)	4,138 (57.7)	354 (13.5)

- Considering RVC, the error of overestimation cannot be avoided.
 - In connection with the **US and the EU, economic effects were considerably overestimated** in terms of import

6. Conclusion

- Key Point:

1. **100% utilization rate** of FTA is unrealistic
2. **ROO(The Rules of Origin)** matters in estimation of FTA
3. **WO products**(Agricultural, Fisheries and Livestock sectors) should be reviewed

- Next research topic:

1. What about **RCEP, CPTPP, and possibly IPEF**?
2. What if the **level of ROO rise** higher than before in FTAs? (ex. USMCA)