Potential Impacts of Trade Liberalization in Korea's Motor Vehicle Industry

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Motivation

- *Existence argument: “anti-import bias” in Korea*
  ⇒ “low” imported vehicles (0.97% in 1st Q. 2002; 2,788 out of 285,533 passenger cars)

- *Impacts of trade liberalization?*
  ⇒ not by lowering tariffs but by eliminating preference for domestic vehicles
The Motor Vehicle Industry

- regarded as *a strategic industry*
- *politically sensitive*: large employment
- *severe global competition*, scale economies
- trade tension: e.g. US-Japan, US-Korea

“*anti-import bias argument*”

⇒ examine the trends of MV industry trade, simulation with the GTAP model by eliminating the bias
Korea and World Trade in the MV Industry (include parts)

- **world exports in the MV industry**: U$ 486 bil. in 1998 (9.0% of world merchandise trade)
- **Germany, Japan, the US, Canada, France** account for 62.5%
- **Korea** exported U$ 11.2 bil. (2.3% market share and 11th largest exporter)
Korea and World Trade in the MV Industry

- world MV industry exports:

  *passenger cars* and *MV parts* explain 57.6% and 27.3%, respectively

- the shares of MV industry exports in each country’s total merchandise exports:

  (Germany 17.2%, Japan 18.6%),
  (Mexico 29.1%, Spain 23.5%, Canada 22.1%),
  (Korea 8.4%, the US 7.9%, Italy 7.1%)
National Comparative Advantage
(RCA index in 1998)

- for the MV industry: (Germany 1.90, Japan 2.06), (the US 0.88, Korea 0.93)

- for passenger cars: (Japan 2.48, Germany 2.11, Korea 1.25), (the US 0.46)

- for MV parts: (Germany 1.72, Japan 1.33, the US 1.68), (Korea 0.39)

* the index numbers for Germany and Korea grew quickly between 1990-1998
Korea’s Trade in the MV Industry (HS 87)

- exports: grew from U$ 3.8 to 15.3 bil. between 1988 and 2000
- imports: U$ 0.7 to 1.6 bil.
- surplus: U$ 3.1 to 13.6 bil.
- *passenger cars (HS 8703)* and *MV parts* (HS 8708) explain 89% of exports, 84% of imports in Korea’s MV industry trade
Korea’s Trade in Passenger Cars (HS 8703)

- **imports**: *US share falling* (65.3% in 1989, 18.5% in 2000), *German share rising* (15.5% to 51.8%), Japanese share growing rapidly since ISDP abolition in 1999 (18.3% in 2000 1-10)

- **exports**: *US and Canada share falling* (91.8% to 46.8%), Europe, C&S America, East Asia share rising
Korea’s Trade in MV Parts (HS 8708)

- imports: Japanese share falling (82.2% in 1988 to 49.1% in 2000), US and German share rising (14.6% to 32.0%)

- exports: US and Japanese share falling (52.9% to 29.7%), Europe, Asia, C&S American share growing

- balance: from deficit to surplus, -U$ 352mil. in 1988 to +U$ 539 mil. in 2000
US Trade in MV Industry

- **exports**: growing steadily, U$ 61.9 bil. in 2000, share in total US merchandise exports falling 9.6% in 1993 to 7.9% in 2000, (Korea’s share falling 1.3% to 0.7%)

- **imports**: growing faster than exports, (Korea’s share rising 1.9% to 3.2%)

- **balance**: deficit growing U$ 41.5 bil. in 1993 to U$ 101.9 bil. in 2000 (equivalent to 23% of US trade deficit)
Issues in US-Korea MV Trade (trade performances)

- **MV industry is important in US trade:** explains 7.9% of merchandise trade in 2000

- **growing deficit in MV industry trade:** equivalent to 23.4% of trade deficit in 2000

- **growing deficit in MV trade with Korea:** 4.8% of US MV industry deficit in 2000

⇒ **not a specific trend to US-Korea trade, US** reveals a decaying comparative advantage
Industrial Linkages of Korea’s MV Industry 
(1995 Input-Output Tables)

- products from broad range of other industries are used as inputs to MV industry

- in the MV industry, domestic production and demand are concentrated in passenger cars and MV parts

- **passenger cars**: high export/output ratio 31.8%, **MV parts**: high import/consumption ratio 10.5% \( \Rightarrow \) need to consider altogether
Tariff Rates of the MV Industry
(TRAINS v8.0, 2001)

- **passenger cars**:  
  US 3%, Japan 0%, Canada 6%,  
  *Korea 8% (bounded at the same rate)*,  
  EU 10%, Mexico 20%

- **MV parts and components**:  
  US 0-3%, Japan 0%, Canada 0-9%,  
  *Korea 8%*, Mexico 13-18%
Impacts of Trade Liberalization (Simulation)

- **GTAP Model version 5, 7*7 sectors**

- **country/region**: Korea, US, America (excl. US), Japan, Other Asia, EU, ROW

- **commodity**: agricultural to pulp, chemicals, metal, MVs & parts, oth. transportation eq., electronics, machinery, construction & serv.

- **elast. of substitution** btw. IM & Dom. MVs: 5.2, btw. IM from different sources: 10.4
Policy Simulations

- *typical simulation*: tariff reduction or removal, however tariffs are already low

- *our simulation*: eliminate consumer preference for domestic MVs

  ⇒ by *raising substitutability btw. imports & domestic vehicles* in Korea or worldwide

- with *an exogenous shock*: 1% productivity increase in Korea’s MV industry
Scenarios

- *(Scenario I)*: 1% productivity increase in Korea’s MV industry
- *(Scenario II)*: raise substitutability between imports & domestic vehicles in Korea (w/ I)
- *(Scenario III)*: raise substitutability between imports & domestic vehicles all over the world (w/ I)

- *net impacts*: (Sn. II)-(Sn. I), (Sn. III)-(Sn. I)
Results (Scen. II – Scen. I)

- *(MV imports)*: in Korea fall by 5.1%, in other regions minor fall by 0.002 to 0.009%.

- *(MV exports)*: in Korea fall by 0.17%, in other regions fall e.g. Other Asia (-0.37%).

- *(MV balance)*: in Korea improve by U$ 127 mil., in other regions deteriorate by U$ 2 to 33 mil.
Results (Scen. II – Scen. I) : continue

- *(MV production)*: in Korea rise by 0.45%, in other regions fall by 0.009 to 0.033%

- *(MV prices)*: in Korea rise by 0.019%, in major MV producers fall by 0.0002 to 0.0007%

- *(Welfare, EV)*: in Korea rise by U$ 31.8 mil., in other regions fall by U$ 6.6 to 12.6 mil.
Results (Scen. III – Scen. I)

- **(MV imports)**: in Korea fall by 5.0%, in other regions rise by 0.05 to 0.21% (net-importers)

- **(MV exports)**: in Korea fall by 0.04%, in other regions rise by 0.03 to 0.12% except Other Asia fall by 0.22%
Results (Scen. III – Scen. I) - continue

- \textit{(MV balance)}: in Korea improve by U$ 140 mil.; in MV net-exporters improve Japan and EU (U$ 37, 58 mil.); in MV net-importers deteriorate US (U$ 79 mil.), Other Asia (U$ 76 mil.), ROW (U$ 92 mil.)

- \textit{(MV production)}: in Korea rise by 0.49%; in MV net-exporters rise Japan and EU (0.02%); in MV net-importers fall US (-0.03%), Other Asia and ROW (-0.14%)
Results (Scen. III – Scen. I) - continue

- *(MV prices)*: in Korea rise by 0.021%; in MV net-exporters rise Japan (0.0024%), EU (0.0006%); in MV net-importers fall US, Other Asia, ROW (-0.0010 to -0.0019%)

- *(Welfare, EV)*: in Korea rise by U$ 36.9 mil.; MV net-exporters rise Japan, EU (U$ 12.8, 16.1 mil.); MV net-importers fall US (U$ -15.7 mil.), Other Asia (U$ -13.9 mil.), ROW (U$ -12.7 mil.)
Summary of the Results

(*If consumers’ perception improved in Korea*)

- MV industry IM and EX fall for all regions
- MV industry balance & welfare: in Korea improve, in all other region aggravate (e.g. MV net-exporters)
(If consumers’ perception improved worldwide)

- MV industry IM and EX: in Korea fall, in all other regions rise
- MV industry balance & welfare: in Korea and MV net-exporters (Japan, EU) improve, in MV net-importers (e.g. US) aggravate

⇒ Korea will benefit by improving consumer preference, the benefits can be shared if consumer preference improved worldwide
Implications

- **US-Korea MV trade**: need to be examined in terms of *global competitiveness trend*

- *the improvement of consumer preference worldwide as well as in Korea will be beneficial* (to Korea and broader region)

- *Korea*, whose MV exports growing fast, *needs concrete cooperative actions*; e.g. invite foreign investment, diversify trade partners, increase imports of parts and overseas production