

(H9) TRADE

QUESTIONS TO ANSWER...

TRADE AND ECONOMIC GROWTH?

→ TECHNICALLY

→ IMPORTS HURT ECONOMY

→ EXPORTS BOOST ECONOMY

→ STATISTICALLY

→ ANY TRADE BOOSTS ECONOMY
BY 7%

HOW DOES TRADE BENEFIT
EVERYONE OVERALL?

WHO GAINS? WHO LOSES?

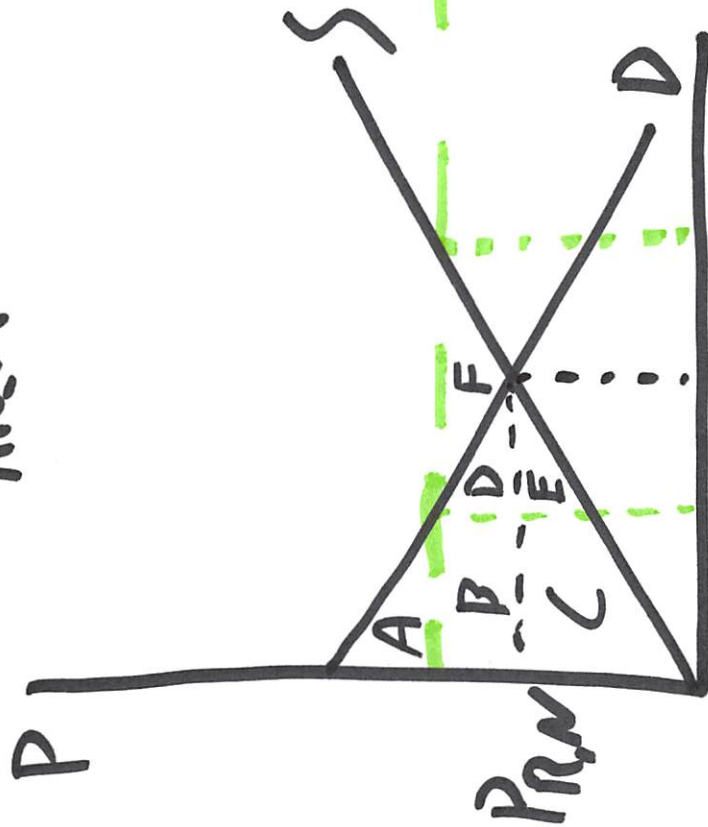
WHO TRADES WHAT?

→ DETERMINED BY

ARBITRAGE: BUY LOW, SELL HIGH

TOYS

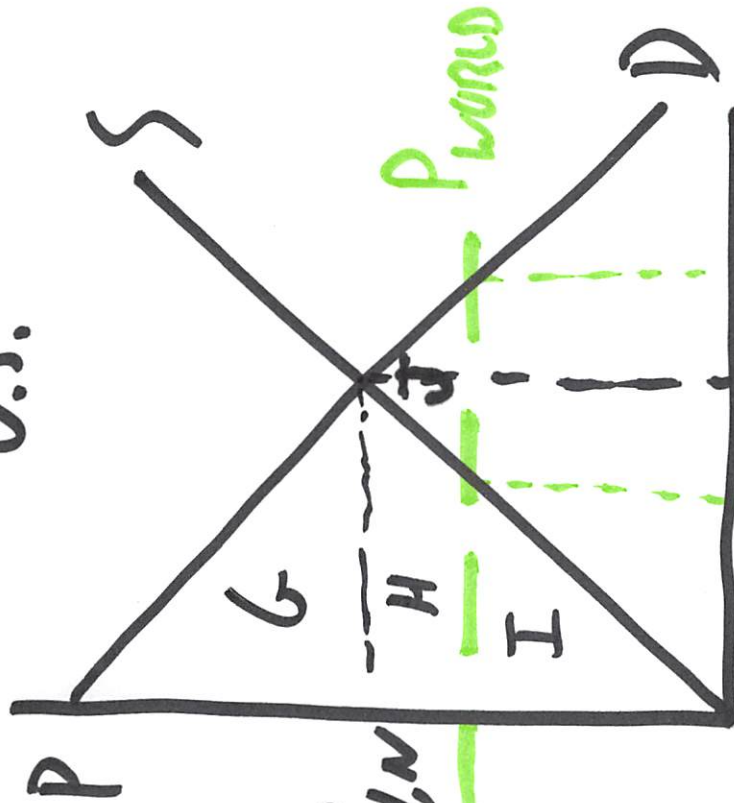
R.O.W.



$Q_{R,C}$ $Q_{R,W}$ $Q_{R,P}$ Q

EXPORTS = IMPORTS

U.S.



$Q_{U,P}$ $Q_{U,N}$ $Q_{U,C}$ Q

PRE-TRADE

$$CS: ROW: A+B+D$$

$$PS: ROW: C+E$$

$$CS: US: G$$

$$PS: US: H+I$$

$$TS: ROW: A+B+C+D+E$$

$$TS: US: G+H+I$$

POST-TRADE

$$CS: ROW: A$$

$$PS: ROW: B+C+D+E+F$$

$$CS: US: G+H+J$$

$$PS: US: I$$

$$TS: ROW: A+B+C+D+E+F$$

$$TS: US: G+H+I+J$$

WHO GAINS? BOTH COUNTRIES AS A WHOLE

PRODUCERS IN EXP. COUNTRY

CONSUMERS IN IMP. COUNTRY

WHO LOSES? CONSUMERS IN EXP. COUNTRY

PRODUCERS IN IMP. COUNTRY

CH. 9 TRADE RESTRICTIONS

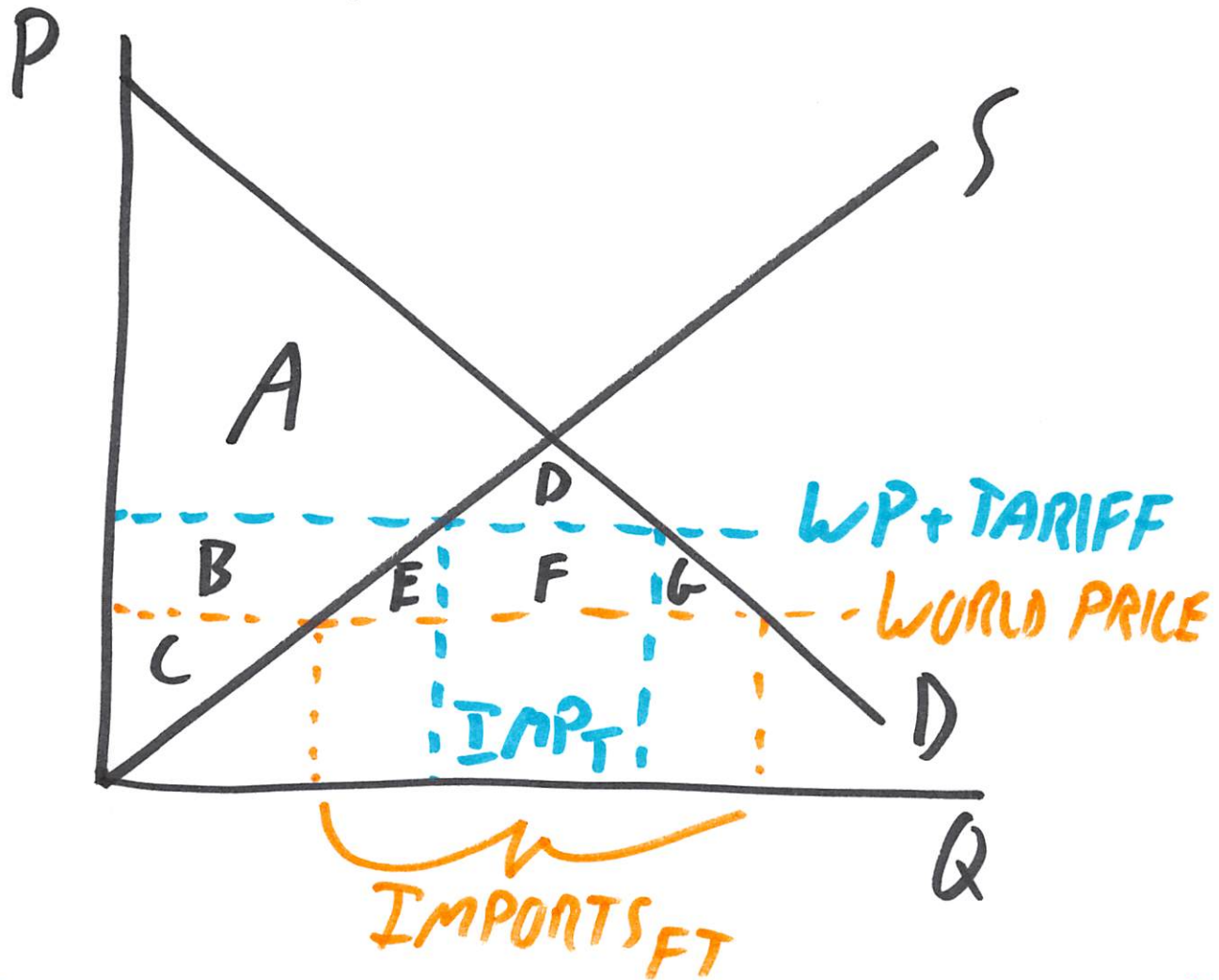
- TARIFF: TAX ON IMPORTS
 - DEPENDS ON GOOD
- QUOTAS: QUANTITY LIMIT ON IMPORTS
 - DEPENDS ON GOOD

PROVE: -TRADE RESTRICTIONS HURT
CONSUMERS + BENEFIT
PRODUCERS

- TARIFFS ARE BETTER THAN
QUOTAS

Selected Tariffs in the US 2004			
HTS Code	Description	MFN/NTR Tariff	Special Tariff
0805.40.40	Grapefruit	1.9¢/kg (Aug-Sep)	Free (CA,D,E,IL, J,JO,MX,SG) 1.6¢/kg (CL)
0805.40.60		1.5¢/kg (Oct)	Free (CA,D,E,IL, J,JO,MX,SG) 1.1¢/kg (CL)
0805.40.80		2.5¢/kg (Nov-Jul)	Free (CA,D,E,IL, J,JO,MX) 2.2¢/kg (CL,SG)
			Non-MFN: 3.3¢/kg
0808.10.20	Grapes, fresh	\$1.13/m ³ (Feb 15-Mar 31)	Free (A+,CA,CL,D,E,
0808.10.40		Free (Apr 1-Jun 30)	Non-MFN: \$8.83/m ³
0808.10.60		\$1.80/m ³ (any other time)	
6912.00.45	Ceramic tableware; plates not over 22.9 cm in maximum diameter and valued over \$6 per dozen; plates over 22.9 but not over 27.9 cm in maximum diameter and valued over \$8.50	4.50%	Free (A+,CA,CL,D,E,
			Non-MFN: 55%
8703.2x.00	Motor cars principally designed for the transport of persons, of all cylinder capacities	2.50%	Free (A+,B,CA,CL,D,
			Non-MFN: 10%
8704.22.50	Motor vehicles for the transport of goods (i.e., trucks), gross vehicle weight exceeding 5 metric tons but less than 20 metric tons	25%	Free (A+,B,CA,CL,D, E,IL,J,MX)
			15% (JO) 22.5% (SG) Non-MFN: 25%
8712.00.15	Bicycles having both wheels not exceeding 63.5 cm in diameter	11%	Free (A+,CA,CL,D,E, IL,J,MX)
			2.2% (JO) 9.6% (SG) Non-MFN: 30%
1701.11.05	Cane sugar:	1.4806¢/kg less .020668¢/kg for each degree under 100 degrees but not less than .943854¢/kg	Free (A*,CA,CL,E*,IL, Non-MFN: 4.3817¢/kg less
6404.11.20		10.50%	Free (CA,CL,D,IL,J+, MX,R) 2.1% (JO) 9.1% (SG) Non-MFN: 35%
9508.31.00	Golf clubs	4.40%	Free (A,CA,CL,E,IL, Non-MFN: 30%
9101.11.40		51¢ each + 6.25% on case and strap + 5.3% on battery	38.2¢ each + 4.6% on case and Free (CA,D,E,IL,J, J+,JO,MX,R
8517.21.00	Fax machines	Free	Non-MFN: 35%
0901.21.00	Coffee, non-decaffeinated	Free	Non-MFN: Free
0902.10.10	Tea, green tea, flavored	6.40%	Free (A,CA,CL,E,IL, J,JO,MX)
			4.8% (SG) Non-MFN: 20%

TARIFF - ETHANOL 54¢ GALLON



FREE TRADE

CS: $A+B+D+E+F+G$

PS: C

TARIFF

CS: $A+D$ ☹️

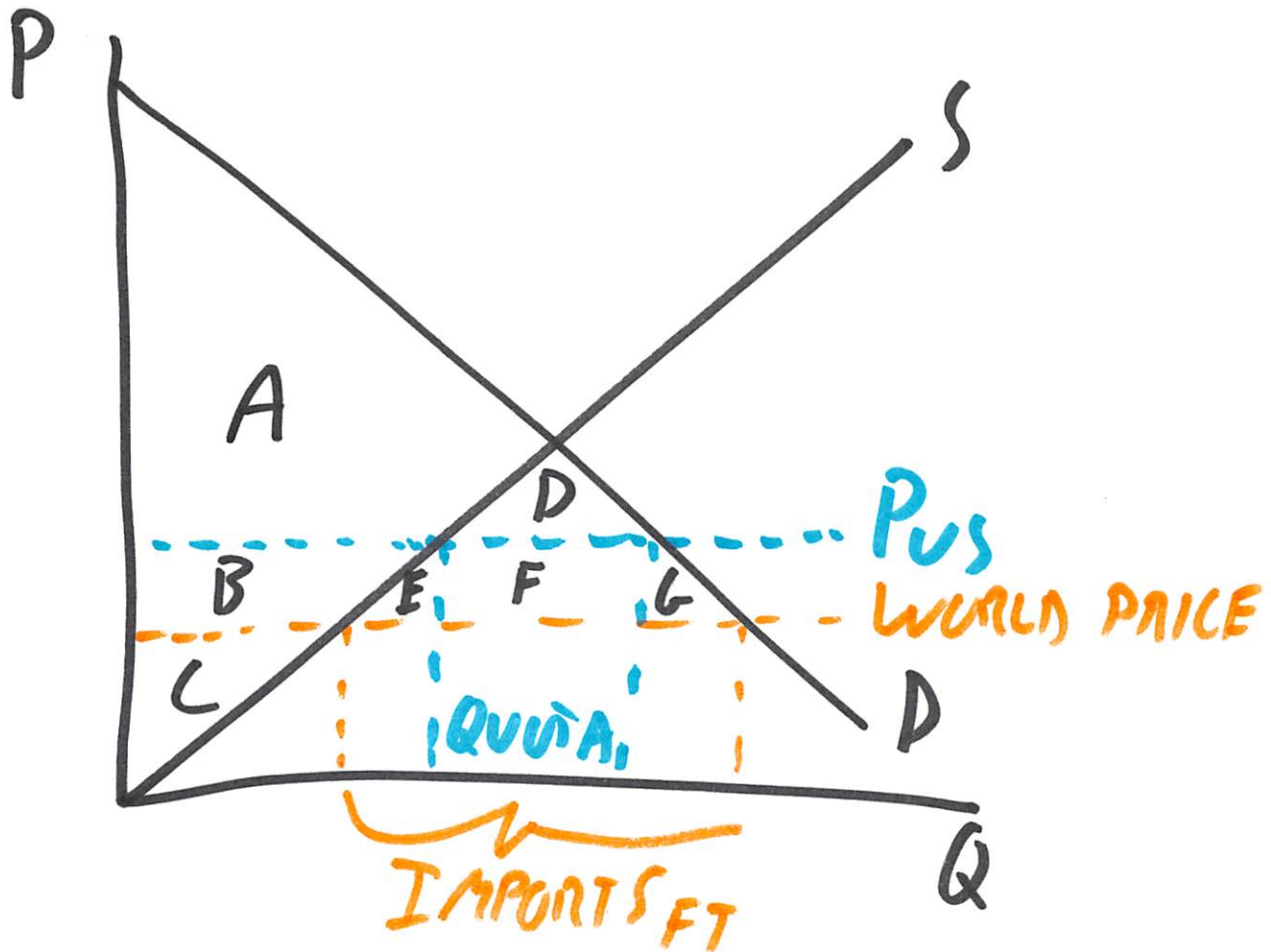
PS: $B+C$ 😊

$Q_T \times \text{TAX} = \text{TAX REV.} : F$

E+G

DEADWEIGHT LOSS

QUOTA - SUGAR



FREE TRADE

CS: $A+B+D+E+F+G$

PS: C

QUOTA

CS: $A+D$ 😞

PS: $B+C$ 😊

TAX: $\emptyset$

REV: $\emptyset$

$E+F+G$

DEADWEIGHT
LOSS

EARTH & ENVIRONMENT

China still emits ozone destroyer

Finding helps explain increase in emissions of banned CFC-11

BY MARIA TEMMING

China has continued producing an ozone-destroying chemical called CFC-11 in violation of an international agreement, researchers report.

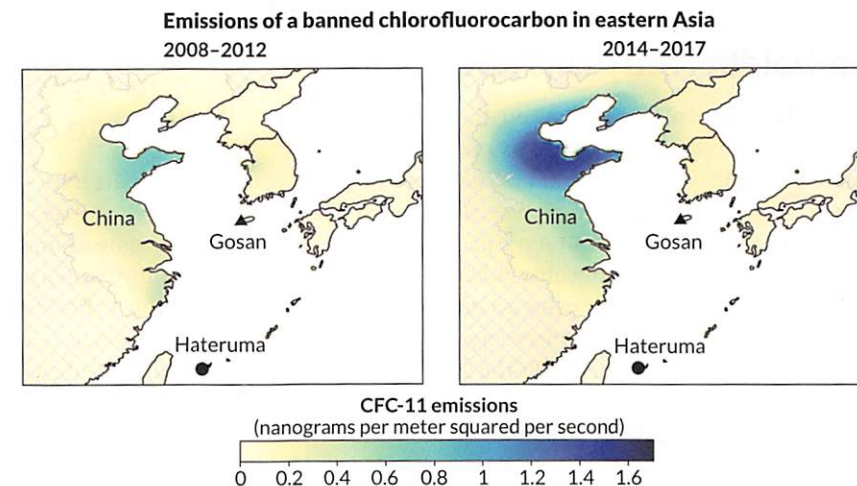
Air samples collected in South Korea and Japan suggest that eastern China emitted about 7,000 metric tons more trichlorofluoromethane a year from 2014 to 2017 than it did from 2008 to 2012. This boost explains a large fraction of the estimated global increase in CFC-11 emissions—between 11,000 and 17,000 tons annually—after 2012, researchers report in the May 23 *Nature*.

CFC-11 has been used to make foams for refrigeration and insulation. But each atom of chlorine from CFC-11 and similar molecules, collectively called chlorofluorocarbons, can destroy 100,000 atmospheric ozone molecules. Under the 1987 Montreal Protocol, an international treaty that phased out the production of CFCs by 2010, no one should be producing CFC-11 anymore.

“Now there is a very clear indication that some places are not adhering to the Montreal Protocol,” says A.R. “Ravi” Ravishankara, an atmospheric scientist at Colorado State University in Fort Collins who wasn’t involved in the work.

These results demonstrate “the need for verification and continued vigilance” in enforcing the treaty, he says. Continued production of the chemical may delay the recovery of the hole in the ozone layer (*SN*: 12/24/16, p. 28).

Hints of illegal CFC-11 production came in 2018. Observations revealed that the global decline of CFC-11 in the atmosphere slowed significantly



Going up Atmospheric data from Gosan station in South Korea and Hateruma station in Japan suggest that annual CFC-11 emissions in eastern China increased by about 7,000 metric tons between 2008–2012 (left) and 2014–2017 (right).

after 2012, but the culprits responsible for ramping up emissions remained uncertain.

Sunyoung Park, a geochemist at Kyungpook National University in Daegu, South Korea, and colleagues homed in on the CFC-11 source by analyzing air samples collected from monitoring stations in North America, Europe, Australia and eastern Asia from 2008 to 2017.

“In the non-Asian stations, the signals are consistent with declining regional emissions, whereas at the eastern Asian stations, we saw signals that very strongly suggested that emissions increased,” says Matthew Rigby, an atmospheric scientist at the University of Bristol in England. Stations in Japan and South Korea showed spikes in CFC-11 levels as plumes of pollution wafted overhead. The size of those spikes grew after 2012.

The team ran computer simulations to determine where the CFC-11 could have originated. From 2008 to 2012, eastern China emitted an average of about 6,400 tons of CFC-11 per year, the analysis indicated. That number increased to about 13,400 tons per year from 2014 to 2017. This pollution boost arose primarily around the northeastern Chinese provinces of Shandong and Hebei. The researchers found no evidence of significantly increasing emissions from any other eastern Asian country.

On-the-ground investigations by the

Environmental Investigation Agency, an international nonprofit organization, and Chinese authorities have also turned up evidence of illegal CFC-11 use in manufacturing. “China will continue cracking down on illegal production and use of [ozone-depleting substances] and strengthen regulation over relevant industries,” Zeng Rong, a spokesperson of the Chinese Embassy in England, wrote in a letter to the *Guardian* newspaper in August 2018 in response to a news article about China’s production of CFC-11.

The annual 7,000-ton bump in CFC-11 emissions from eastern China accounts for only about 40 to 60 percent of the estimated global increase in CFC-11 emissions after 2012. That leaves scientists wondering where the rest is coming from, Ravishankara says. “It really would help if [we had] these measurements from other parts of the world.” The monitoring network used in this study doesn’t extend to other parts of Asia, Africa or South America.

Further investigations are also needed to tease out which industrial processes are responsible for the emissions, Rigby says. If CFC-11 is trapped inside newly manufactured materials like foams, that gas will eventually leak out, he says. “It’s entirely possible that the total emissions that we’ve seen so far are actually a relatively small fraction of the total amount of CFC-11 that was produced.” ■

[H.9] BENEFITS TO TRADE

- ① INCREASED TOTAL SURPLUS
- ② INCREASED VARIETY OF GOODS
- ③ ECONOMIES OF SCALE
(BIGGER IS CHEAPER)
- ④ TRADE $\rightarrow$ COMPETITION $\rightarrow$ BETTER QUALITY
- ⑤ TECHNOLOGY TRANSFERS

WHY RESTRICT TRADE?

- ① JOBS ☹️
- ② INFANT INDUSTRY 😊
- ③ NATIONAL DEFENSE 😊
- ④ UNFAIR? COMPETITION (P & MC) 😊
- POOR LABOR PRACTICES, LAX ENVIRONMENTAL STANDARDS
- ⑤ RETALIATION 😊