International Trade and Policy

WEEK 6 – **Analysis of Trade Policy & Midterm Exam I Review**

University: **Tajik State University of Commerce**
Lecturer: **Abduvaliev Mubinzhon, PhD**

Part 1. COSTS AND BENEFITS OF PROTECTION

Why Protection? The Core Tension

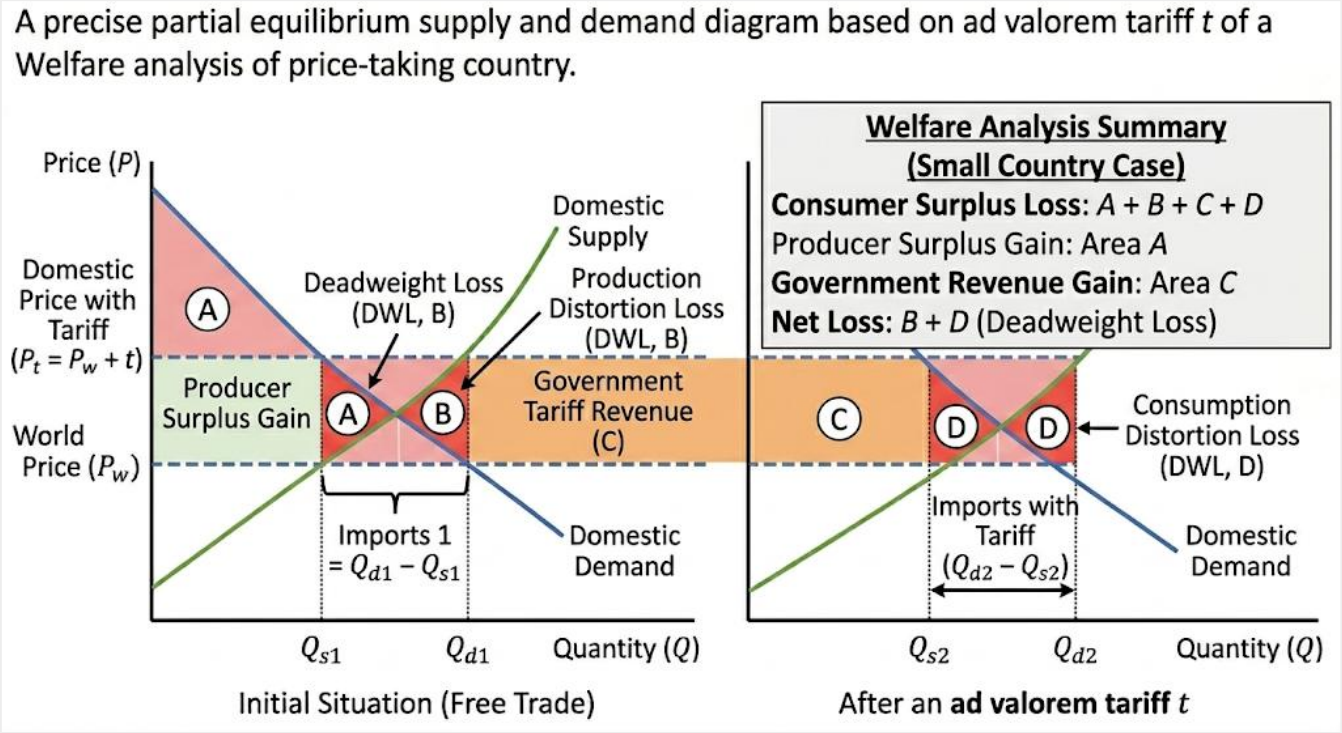
We learned (from the previous lecture, **Week 2**) that a small country always loses from a tariff (DWL). A large country *might* gain from an optimal tariff via terms of trade improvement, but risks retaliation.

If free trade maximizes global welfare, why do all countries restrict trade?

Because trade creates **winners and losers** within a country. Losers from trade (e.g., workers in import-competing sectors) are often better organized politically than winners (consumers or exporters).

Review of Consumer and Producer Surplus

Figure 1. Partial Equilibrium Analysis of a Small Country Tariff



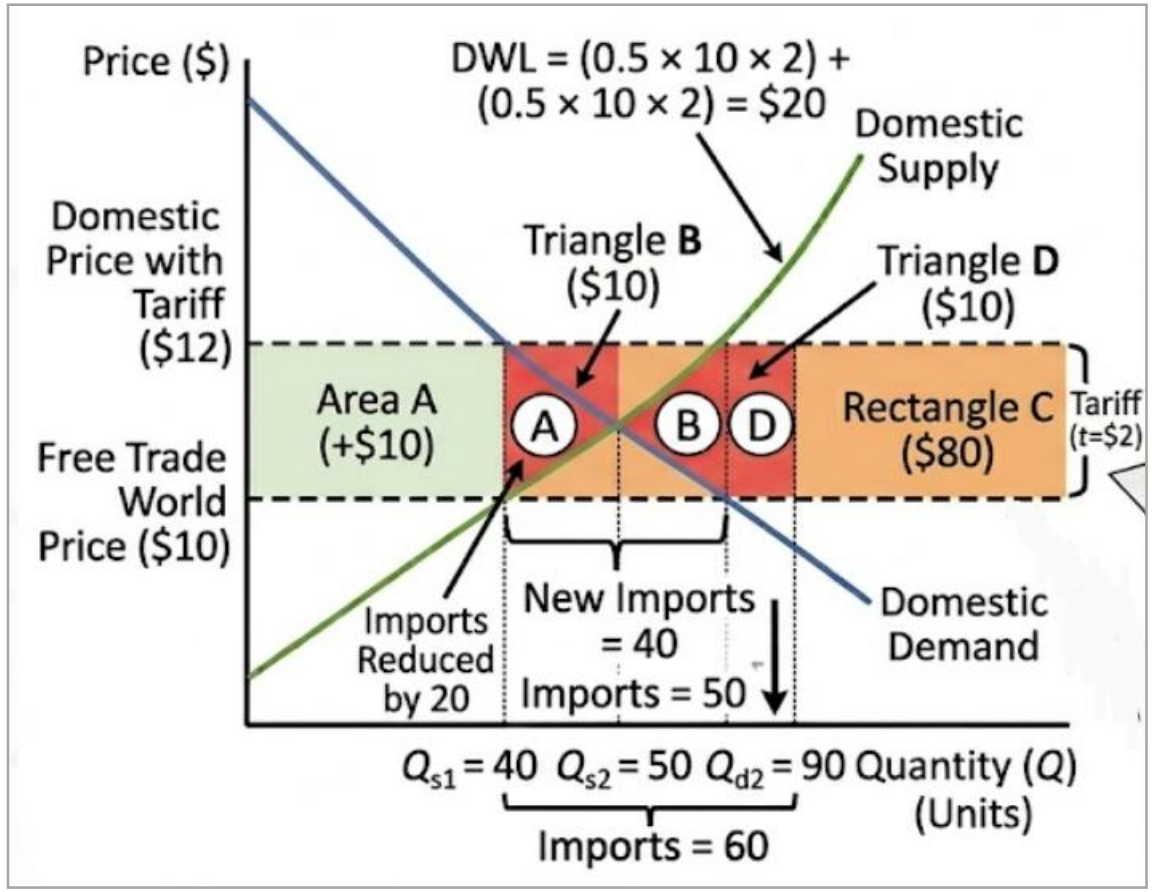
Source: Created by the author

Key insight: The DWL triangles represent **pure economic waste** – no one gets that surplus.

Recall from Week 2

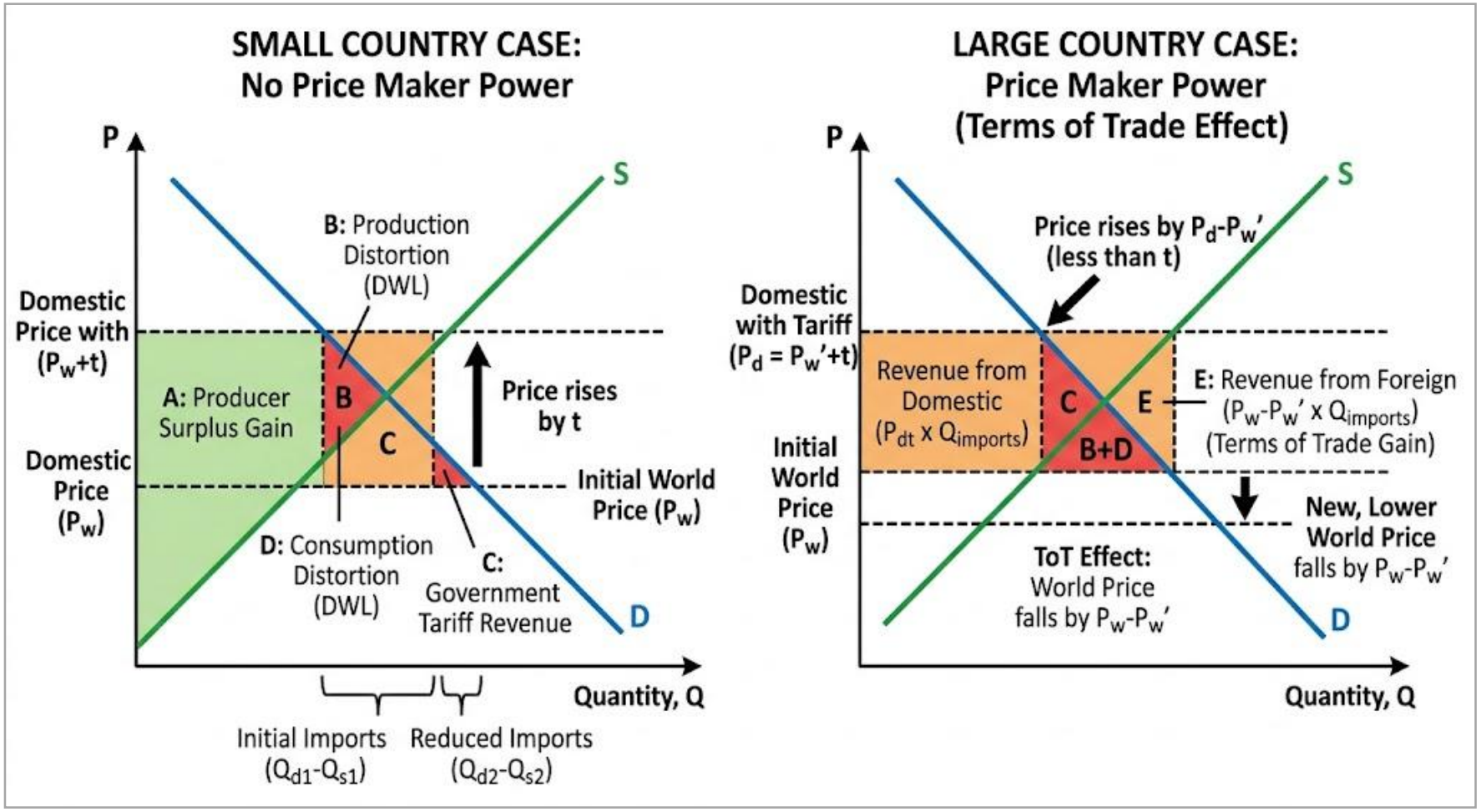
Static Costs of Protection

Figure 2. Optimal Tariff and Terms of Trade in a Large Country



Source: Created by the author

Large and Small Country Tariff – Terms of Trade Gain (Fig. 3)



Recall from Week 2

Source: Created by the author

Quotas vs. Tariffs (from Week 2)

A **quota** is a physical limit on import quantity, which generates quota rents (extra profit for license holders) rather than government revenue unlike a tariff. If import licenses are given to foreign exporters, quota rents flow abroad, resulting in greater welfare loss than a tariff.

A **Voluntary Export Restraint** (VER) is an even worse instrument, as the exporter “voluntarily” limits exports, rents go entirely to foreign firms, and it produces the same deadweight loss as a quota plus lost rents, as illustrated by the 1980s US VER on Japanese autos, where Japanese firms raised prices, kept the rents, and US consumers bore the loss.

Dynamic Costs of Protection (Beyond Static DWL)

Static DWL (triangles B and D) often **underestimates** true costs of protection.

Static Cost	Dynamic Cost	Explanation
Production DWL	X-inefficiency	Protected firms have no incentive to minimize costs → waste
Consumption DWL	Reduced product variety	Consumers get fewer choices
(not in static)	Rent-seeking	Resources spent lobbying for protection, not producing
(not in static)	Reduced innovation	Lack of competition slows technological progress
(not in static)	Retaliation risk	Trade wars reduce export opportunities for domestic firms

Example: Rent-seeking costs

- Estimated at up to 3–5% of GDP in highly protected sectors (Krueger, 1974).
- Firms spend money on lawyers, lobbyists, and campaign contributions instead of R&D or expansion.

Example: US steel tariffs (2002, 2018)

- Saved ~10,000 steel jobs.
- Cost downstream industries (auto parts, machinery, construction) ~200,000 jobs.
- Net job loss, not gain.

Benefits of Protection – The Standard Arguments

While mainstream economics favors free trade, protectionist arguments exist but are mostly flawed. The **infant industry** argument is weak because protection is hard to remove and subsidies are superior (though South Korea succeeded). **National security** is often overused for non-strategic goods. A **terms of trade** argument works only for large countries but invites retaliation. **Second-best protection** is always inferior to direct subsidies. And **anti-dumping** frequently disguises protectionism.

Empirical Evidence on Costs of Protection

US Sugar Quotas

- Policy: Restrictive import quotas since 1982.
- **US sugar price** = 2–3× world price.
- **Consumer cost**: ~$3 billion per year.
- **Jobs saved**: ~4,000 sugar farms.
- **Cost per job saved:** ~$750,000/year (far above the farmer's average wage).
- **Downstream jobs lost:** Candy makers and food processors relocate overseas.

Summary Table – Costs vs. Benefits of Protection

Costs	Benefits
Deadweight loss (production & consumption triangles)	Potential terms of trade gain (large country only)
Rent-seeking & lobbying waste	Infant industry maturation (rare, requires good governance)
Higher prices for consumers & downstream firms	National security (narrowly defined – e.g., defense only)
Retaliation & trade wars	Political expediency (saving visible jobs)
Reduced innovation & X-inefficiency	Income transfer to specific groups (e.g., steel workers)
Net job loss in downstream sectors	Anti-dumping against genuine predation (rare)

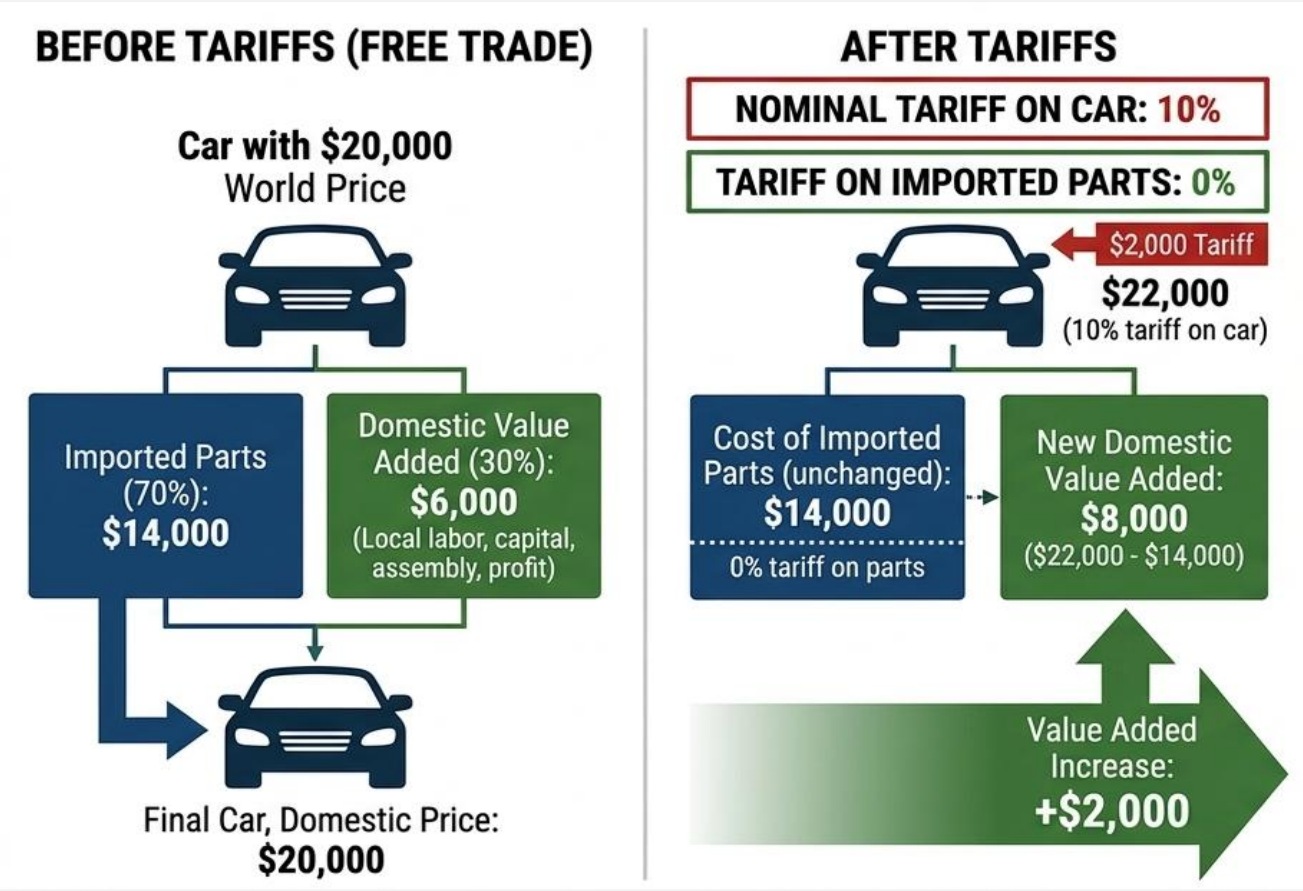
Most protectionist arguments fail cost-benefit analysis except in narrow, temporary, or large-country cases. Even then, a direct subsidy or adjustment assistance is usually superior.

Part 2. EFFECTIVE RATE OF PROTECTION (ERP)

Why Nominal Tariffs Are Misleading

Nominal tariffs on final goods underestimate true protection when imported intermediates face low or zero tariffs. In global supply chains, a high final-good tariff combined with low input tariffs **magnifies protection for domestic value added,** a key insight from Week 2.

Figure 4. The Effective Rate of Protection on Domestic Value Added



Source: Created by the author

Example: A car has 70% imported parts.

1. Nominal tariff on cars = 10%.
2. Tariff on parts = 0%.

- A 10% nominal tariff sounds low, but domestic value added gets much higher protection because the cost of imported inputs is unchanged while final price rises.
- **Effective rate of protection** measures protection on **value added**, not final price.

ERP Formula

$$ERP = \frac{V_d - V_w}{V_w} \times 100\%$$

ERP measures net tariff protection on domestic value added, rising when final-good tariffs exceed input tariffs and falling when input tariffs are higher.

Numerical Example 1 – ERP > Nominal

- **Product:** Shirt
- World price = $100
- Inputs: Fabric (50% of cost, af=0.5af=0.5), Buttons (10% of cost, ab=0.1ab=0.1)
- Tariffs: Shirt = 20%, Fabric = 0%, Buttons = 0%
- **Free trade VA** = 100−(50+10)=40100−(50+10)=40
  Protected VA = 120−(50+10)=60120−(50+10)=60
  ERP = (60−40)/40=0.50=50%(60−40)/40=0.50=50% (vs. nominal 20%)

Low tariffs on inputs magnify protection on domestic value added. Domestic shirt producers benefit enormously.

Numerical Example 2 – Negative ERP (Disprotection)

Product: Computer

World price = $1000

Inputs: Chips (60% of cost, ac=0.6ac=0.6)

Tariffs: Computer = 5%, Chips = 20%

Free trade VA = 1000−600=4001000−600=400
Protected VA = 1050−720=3301050−720=330
ERP = (330−400)/400=−17.5%(330−400)/400=−17.5%

High tariff on inputs destroys domestic value added. This is called **tariff escalation in reverse** – discourages domestic assembly. Common in developing countries that tax imported machinery.

Tariff Escalation and Policy Implications

Tariff escalation higher tariffs on final goods than on inputs boosts domestic final production in developed countries but harms developing nations, whose processed exports face high tariffs on their value added.

Example

Tariffs rise from 0% on raw cocoa to 20% on chocolate bars, trapping developing countries as raw material exporters. The Doha Round tried but failed to reduce this escalation.

For policymakers: High ERP (>50%) signals heavy, likely inefficient protection.

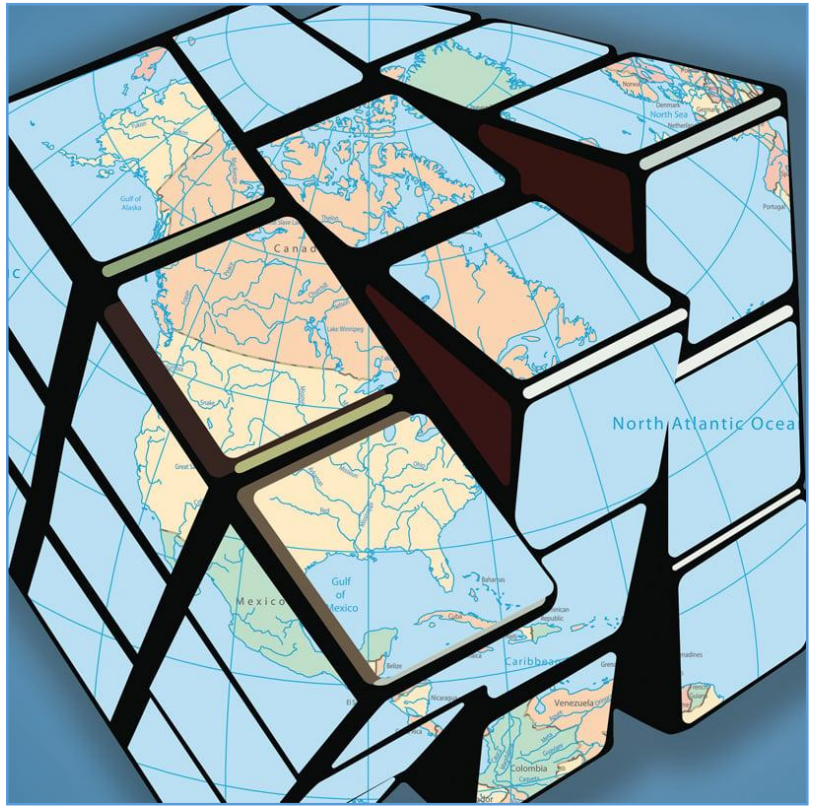
ERP – Summary Table for Exam

Condition	ERP relative to nominal	Interpretation
No imported inputs (∑ai=0∑ai=0)	ERP = tf	Simple case – nominal = effective
Low input tariffs, high final tariff	ERP > tf	High effective protection (common in developed countries)
High input tariffs, low final tariff	ERP < tf (even negative)	Disprotection (common in developing countries)
tf=∑ait∑aiti	ERP = 0	No protection of value added
ERP > 100%	Extremely high	Severe inefficiency; likely rent-seeking

PART III: POLITICAL ECONOMY OF TRADE AND LOBBYING

The Puzzle of Persistent Protection

The puzzle: If protection reduces national welfare (for a small country) and often even for a large country (after retaliation), why does protectionism persist?



Source: The Global Trade Puzzle,"
Georgia Trend Magazine (March 1, 2019)

Answer from political economy: Concentrated benefits vs. diffuse costs (Mancur Olson, 1965).

Group	**Benefit per person from protection**	**Incentive to organize**
Steel workers (winners from tariff)	High (jobs, wages – thousands of dollars per worker)	Strong – they lobby actively
Consumers (losers from tariff)	Very low (pennies per year per person)	Weak – rational ignorance

Consumers don't bother to learn about or fight trade barriers because the cost to each individual is tiny. Producers have large stakes and organize.

Collective Action and Trade Policy

Collective action problem: Large groups with small individual stakes do not organize. Small groups with large stakes do.

- **Implications for trade:**
- **Import-competing sectors** (steel, sugar, textiles, autos) lobby hard for protection.
- **Export sectors** also lobby (for open markets abroad), but less intensely because their gains are more diffuse.
- **Consumer groups** are almost absent from trade debates.

Example

US sugar program. Sugar farmers are ~4,000. Each gains hundreds of thousands of dollars per year. They organize tightly. Consumers are 330 million. Each loses only ~$9 per year. No consumer lobby fights sugar quotas.

Recalling Week 3 (Stolper-Samuelson): Trade hurts the scarce factor. In developed countries, labor (especially low-skilled) is the scarce factor. Workers in import-competing industries have strong incentives to lobby for protection.

Models of Trade Policy Determination

- **Stigler's Capture Theory (1971)** argues that regulation, including trade policy, is effectively "sold" to the highest-bidding interest group. Government officials prioritize political support over social welfare, so protection consistently goes to well-organized industries that lobby effectively.
- **The Grossman-Helpman "Protection for Sale" model (1994)** formalizes this: government maximizes a weighted sum of social welfare and campaign contributions. Organized sectors receive higher protection, especially those with high import penetration, low elasticity of import demand (consumers can't easily switch away), and few downstream users to oppose protection.

Who Lobbies for Protection?

Pro-protection lobbies (the "demand side"):

- Domestic firms in import-competing industries (e.g., US Steel, Nucor)
- Labour unions (United Steelworkers, UAW, textile unions)
- Specific industries: sugar, dairy, peanuts, steel, semiconductors, solar panels

Pro-free trade lobbies:

- Export-oriented firms (need access to foreign markets – Boeing, Caterpillar)
- Multinational corporations (global supply chains – Apple, GM)
- Retailers (Walmart, Target – want low prices for consumers)
- Consumer groups (rarely effective due to diffuse interests)

How Lobbying Works (Instruments)

Method	Example
Campaign contributions	PACs, Super PACs to congressional candidates (US)
Grassroots mobilization	"Save our jobs" advertisements, rallies
Administrative filings	Anti-dumping and countervailing duty petitions
Revolving door	Former government officials become lobbyists
Testimony at ITC	Presenting injury claims from imports (US International Trade Commission)
Direct meetings	Lobbying visits to trade ministry or parliament

Anti-Dumping as Disguised Protection

Dumping (selling below cost or home market price) triggers anti-dumping (AD) duties equal to the dumping margin, but AD is widely abused as a legal protectionist tool: domestic firms file petitions to harass foreign competitors, duties often last for decades, and "zeroing" artificially inflates margins. The WTO allows AD with an injury test, yet abuse persists e.g., US AD on Chinese steel since the 1990s, with each new Chinese firm facing separate investigations. Politically, AD petitions are a form of lobbying, allowing firms to secure protection without new legislation.

Institutions and Trade Policy (US Context – for reference)

Institution	Role
Congress	Writes trade laws (e.g., Trade Act of 1974)
USTR (Office of US Trade Representative)	Negotiates trade agreements
ITC (International Trade Commission)	Investigates injury from imports (safeguards, AD injury)
Commerce Department	Conducts anti-dumping and countervailing duty investigations
WTO	Dispute settlement, but slow and under threat

PART 4: MIDTERM EXAM I REVIEW

Exam Structure

- Multiple choice (20%) – definitions, small calculations
- Short answer (30%) – explain concepts, draw diagrams
- Problems (30%) – tariff welfare, ERP, comparative advantage, H-O
- Essay (20%) – political economy or protection argument evaluation
- Exam time allocation (90 minutes): 20 min for multiple choice, 25 min for short answer, 30 min for problems, and 15 min for the essay.

Key Concepts Checklist (Weeks 1–5)

Week 1 (Foundations):

Week 2

(Supply and Demand in Global Markets)

Week 3

(Comparative Advantage and Factor Endowments)

Week 4

(Beyond Comparative Advantage)

Week 5

(Trade Policy Instruments)

Practice Problems for Midterm I

Problem 1 (Small Country Tariff):

Demand: Q*d*=100−P*Qd*=100−*P*,

Supply: Qs=20+P*Qs*=20+*P*, World price = $20. Impose a $10 specific tariff.

Find imports before/after, DWL !!!

Solution:

- Freetrade: P=20*P*=20,Qd=80*Qd*=80, Qs=40*Qs*=40, imports = 40.
- Tariff: P=30*P*=30, Qd=70*Qd*=70, Qs=50*Qs*=50, imports = 20.
- DWL= 0.5×10×10+0.5×10×10=1000.5×10×10+0.5×10×10=100

Practice Problems for Midterm I

Problem 2 (ERP Calculation):

Final good price = $200.

Inputs: A (40% of cost, tariff 5%), B (30% of cost, tariff 15%). Final good tariff = 25%.

Find ERP.

Solution:

aA=0.4,aB=0.3,∑ai=0.7aA=0.4,aB=0.3,∑ai=0.7

Numerator

= 0.25−(0.4×0.05+0.3×0.15)=0.25−0.065=0.1850.25−(0.4×0.05+0.3×0.15)=0.25−0.065=0.185

Denominator

= 1−0.7=0.31−0.7=0.3

ERP

= 0.185/0.3=0.6167=61.7%0.185/0.3=0.6167=61.7%

Practice Problems for Midterm I

Problem 3 (Stolper-Samuelson):

Country X is capital-abundant, labour-scarce. It opens to trade.

Which factor gains? Which loses? Why?

Solution:

- Country X exports capital-intensive goods (H-O theorem).
- Capital is abundant → gains (↑ real return).
- Labor is scarce → loses (↓ real wage).

This explains why workers in developed countries often oppose trade liberalization.

MIDTERM EXAM I Question

are attached in Google Drive

Thank you!