Econ 2203 | International Trade and Policy in Agriculture

Department of Development Economics

Recap: Tariffs and Quotas

Last lecture (L7): border instruments that restrict imports

- **Tariffs** → raise domestic price $P_d = P_w(1+t)$, generate revenue $t \cdot M$, DWL $= b + d$
- **Quotas** → fix import volume $\bar{M}$; quota rents go to licence holders
- India: high bound tariffs, TRQs, tariff "water" provides policy flexibility

Today: instruments that *push* exports or distort domestic production: export subsidies, dumping, VERs, and cartels.

Political economy insight: Tariffs/quotas protect import-competing producers. Export subsidies protect exporting producers. Both are driven by producer lobbying — even though consumers and taxpayers bear the cost: Producer surplus gain $>$ Consumer + taxpayer loss? — usually **no** in aggregate, but politically organised producers win.

What Is an Export Subsidy?

An **export subsidy** is a direct government payment s per unit exported.

Mechanism: Domestic producers can sell abroad at P_w and receive subsidy s, so net return = $P_w + s$ → **domestic price rises to** $P_d = P_w + s$.

Group	Direction	Why
Producers	**Gain**	Higher domestic price
Consumers	**Lose**	Pay $P_d > P_w$
Government	**Pays**	$s \times$ export volume

Price wedge identity: $\boxed{P_d = P_w + s}$; $Q_s \uparrow, Q_d \downarrow$, Exports $= Q_s - Q_d \uparrow$

Large-country effect: World price P_w falls as export supply increases → terms of trade deteriorate → exporter loses even more: $\Delta W_{\text{large country}} < \Delta W_{\text{small country}} < 0$

Export Subsidy: Welfare Diagram

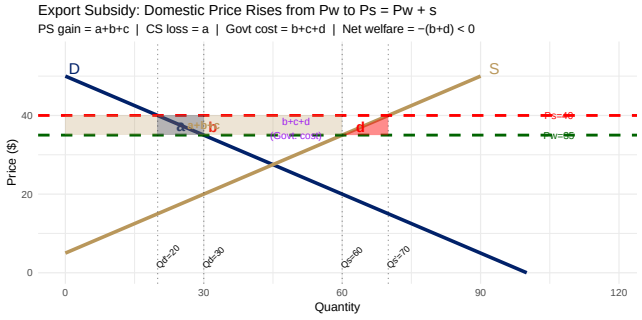

Figure 1: Export Subsidy: Welfare Analysis for the Exporting Country Source: Author's illustration.

Welfare Accounting: Export Subsidy

Full decomposition (exporting country, small-country case):

$$\Delta CS = -a \qquad \Delta PS = +(a+b+c) \qquad \text{Government cost} = -(b+c+d)$$

$$\boxed{\Delta W = -(b+d) < 0}$$

- b = consumption distortion triangle; d = production distortion triangle

Govt cost = $s \times (Q_{s1} - Q_{d1})$ = $5 \times 50 = 250$ units

Numerical check:

Area	Formula	Value
a	5×10	50
b	$\frac{1}{2} \times 5 \times 10$	25
c	$5 \times (60 - 30)$	150
d	$\frac{1}{2} \times 5 \times 10$	25

$\Delta W = -(b+d) = -(25+25) = -50$; Govt pays: $(b+c+d) = 200$; PS gains: $(a+b+c) = 225$; CS loses: $a = 50$

India's Export Subsidies: Sugar Case (WTO DS579)

Background: India's sugar support involves: SMP (Statutory Minimum Price); FRP (Fair and Remunerative Price); production assistance subsidy (₹13.88/quintal); MIEQ (mandated minimum export quota); transport subsidy (₹1,000/tonne).

WTO DS579 (2019): Brazil, Australia, Guatemala challenged India. **2021 Panel ruling:** India's domestic support and export subsidies exceeded WTO AoA commitments. India appealed → pending (Appellate Body non-functional since 2019).

India's defence: "Developing countries have the right to support food security and rural livelihoods."

- AoA **de minimis** provision: Amber Box support ≤ 10% of production value
- Peace Clause for public stockholding; Special and Differential Treatment (SDT)

Market impact: India's subsidised sugar exports depress world prices by an estimated 3–7% — harming Brazil, Thailand, and African sugar exporters.

MSP, FCI, and the Peace Clause

MSP mechanism: CACP recommends MSP for 23 crops pre-season; FCI/NAFED/CCI procure at MSP when market falls below; surplus procured stock → sometimes exported.

WTO problem: If MSP $> P_w$ and surplus exported at P_w: Implicit subsidy $= (\text{MSP} - P_w) \times Q_{\text{exported}}$

	MSP	World price	Implicit subsidy
Rice	$290	$450	—
Wheat	$245	$260	~$15/t

Bali Peace Clause (2013): WTO members agreed not to legally challenge food security stockholding programmes of developing countries — even if support exceeds 10% AMS limit. Condition: transparency + no trade distortion.

Nairobi (2015) → MC13 Abu Dhabi (2024): Permanent solution still pending. India insists on a permanent peace clause without the non-distortion condition. USA/EU resist — argue India's 800M tonne/year FCI operations are massively trade-distorting. **High-stakes stalemate.**

What Is Dumping? Formal Definition

WTO Anti-Dumping Agreement (Article 2): Dumping occurs when the **export price** is below **normal value**:

$$\text{Normal value} = \begin{cases} P_d & \text{(home market price)} \\ P_{3C} & \text{(price to third country)} \\ COP + \text{profit} & \text{(constructed value)} \end{cases}$$

$$\text{Margin of dumping} = \text{Normal value} - P_x > 0$$

Three conditions to impose anti-dumping duty: (1) Dumping margin > 0 (threshold: >2%); (2) material injury (or threat) to domestic industry; (3) causal link between dumping and injury.

Why would a firm dump? Price discrimination (monopoly at home, competitive abroad); predatory intent (eliminate competition); surplus disposal; learning curve; input subsidy pass-through.

Dumping ≠ comparative advantage: Genuinely lower costs look like dumping when compared to high-cost domestic producers.

Types of Dumping

1. Sporadic Dumping: Occasional disposal of excess inventory at below-normal price. *India example:* Bumper harvest years → surplus wheat exported below MSP procurement price. Welfare effect on importer: Minor, temporary.

2. Predatory Dumping: Strategic pricing to eliminate foreign competition, then raise prices once rivals exit. *Classic allegation:* Chinese steel exports to India (2014–16). HRC steel exported at $350/tonne vs cost of $450. Welfare effect: Temporary gain, long-run monopolisation.

3. Persistent Dumping: Chronic price discrimination — domestic market protected → monopoly pricing at home; competitive pricing abroad: $P_d > P_x$ persistently.

Arbitrage prevention: For persistent dumping to work, the exporter must prevent re-importation of cheaply sold exports back into the home market. Methods: different packaging, branding, warranty restrictions, official import controls.

Dumping: Price Discrimination Diagram

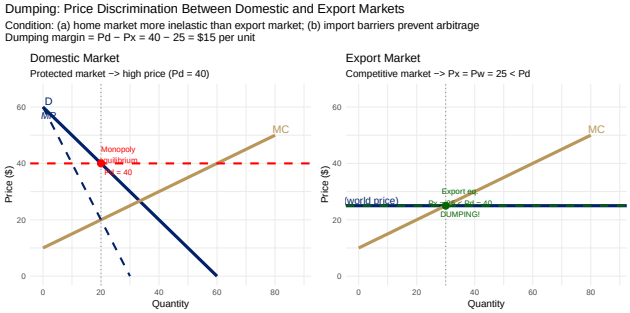

Figure 2: Dumping as Price Discrimination: Domestic Monopoly Price > Export Price Source: Author's illustration.

Dumping: Formal Condition and Anti-Dumping Duty

Dumping condition (price discrimination version):

$$P_x < P_d \quad \Leftrightarrow \quad \frac{P_x}{P_d} < 1$$

In profit-maximising terms: $P_d\left(1 - \frac{1}{|e_d|}\right) = P_x\left(1 - \frac{1}{|e_x|}\right)$

If $|e_x| > |e_d|$ (export market more elastic), then $P_x < P_d$. ?

Anti-dumping duty (ADD): ADD $= P_d - P_x =$ margin of dumping — raises P_x back toward P_d.

Welfare effects of ADD for importing country:

Effect	Direction
Consumer surplus	Falls (price rises)
Producer surplus	Rises (domestic producers protected)
Govt revenue (ADD)	Rises
Net welfare	Ambiguous — DWL likely

$\Delta W = -b - d +$ PS gain — if domestic production is efficient, ΔW may be positive; if ADD is protectionist, $\Delta W < 0$.

India’s Anti-Dumping Experience

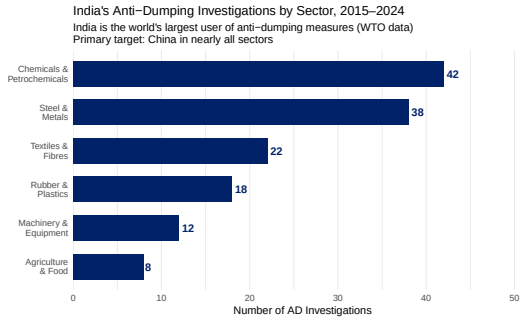

Figure 3: India: Anti-Dumping Investigations Initiated by Sector (2015–2024) Source: DGTR, Ministry of Commerce, GoI.

Indian Agriculture Facing Dumping Allegations Abroad

Indian shrimp exports (USA): USA imposed CVD + AD duties on Indian shrimp (2003, 2013, 2023); margin of dumping: 4.98–6.3% (2023 review). India's argument: low costs reflect **genuine comparative advantage** (labour, aquaculture efficiency), not subsidies.

Indian basmati rice: EU phytosanitary restrictions (pesticide MRLs) periodically block Indian exports — not formal AD, but equivalent effect.

Indian buffalo meat: EU AD allegations (cold cuts); AD margin investigations initiated 2021. India's position: lowest-cost producer due to cattle by-product economics.

Comparative advantage vs. dumping: A developing country with genuinely low costs will *appear* to dump when compared to high-cost producers in developed countries. $P_{\text{India}} < P_{\text{USA}} \not\Rightarrow$ dumping. Dumping requires $P_{\text{export}} <$ normal value. In practice, AD is often used as disguised protectionism.

VERs — Quotas Imposed "Voluntarily" by Exporters

A **Voluntary Export Restraint (VER)** is an agreement where the *exporting* country "voluntarily" limits its exports — usually under diplomatic pressure.

Why "voluntary"? Importing country threatens worse action; exporter prefers VER — quota rent goes to *foreign exporter*; both governments prefer quiet bilateral deal to WTO dispute.

Classic example: Japan–USA auto VER (1981): Japan agreed to limit car exports at 1.68M units/year. Toyota, Honda captured quota rent → funded quality upgrading → ultimately made Japanese cars stronger.

VER vs. Tariff vs. Quota:

Instrument	Who gets rent?	WTO-legal?
Tariff	Importing govt	Yes
Quota	Licence holders	Yes (with rules)
VER	**Foreign exporter**	**No (UR banned)**

Uruguay Round (1994): VERs explicitly prohibited under WTO safeguards agreement. But "Orderly Marketing Arrangements" and "grey area" bilateral deals persist under different names.

VER Welfare Analysis

A VER is economically equivalent to an import quota — but worse for the importing country:

Standard quota welfare: $\Delta W_{\text{import country}} = -(b+d) + c$ where c = quota rent captured by licence holders.

VER welfare: $\Delta W_{\text{import country}} = -(b+c+d)$ because c = quota rent goes to **foreign exporters**, not domestic licence holders.

VER strictly worse than equivalent quota for importing country

Numerical example: Suppose VER restricts imports to $\bar{M}$.

- b = production distortion: $\frac{1}{2}(P_d - P_w) \cdot \Delta Q_s$
- c = quota rent: $(P_d - P_w) \cdot \bar{M}$
- d = consumption distortion: $\frac{1}{2}(P_d - P_w) \cdot \Delta Q_d$

Under tariff: $\Delta W_{\text{tariff}} = -(b+d) + t \cdot M$; Under VER: $\Delta W_{\text{VER}} = -(b+c+d) < \Delta W_{\text{tariff}}$

What Is a Cartel? Conditions for Success

A **cartel** is a formal/informal agreement among producers to restrict output, fix prices, or divide markets.

Profit-maximising cartel acts as a monopolist: $MR = MC \Rightarrow Q^* < Q_{\text{competitive}}, P^* > P_{\text{competitive}}$; world welfare loss = $-(b + d)$.

Conditions for cartel success: (1) Concentrated supply; (2) inelastic demand; (3) discipline (no cheating); (4) barriers to entry; (5) product homogeneity.

OPEC as reference: OPEC controls ~38% of world oil supply. Production cuts (2022–23) raised Brent crude from $75 to $120/barrel.

Agricultural cartels rarely succeed: Many producers; many substitutes (rice ↔ wheat ↔ maize); perishable goods; low entry barriers; political pressure to sell for domestic food security.

$\Rightarrow$ Agricultural cartels are theoretically possible, practically unstable

International Commodity Agreements (ICAs): instruments

ICAs are multilateral attempts to **stabilise commodity prices**.

- **Buffer stocks:** buy when price is “too low”, sell when “too high”
- **Export quotas:** allocate export shares across members
- **Long-term contracts:** guarantee volumes at agreed prices
- **Works best when:** large market share, homogeneous commodity, credible financing
- **Key caution:** agriculture has close substitutes → stability is hard

Why ICAs fail in practice

- **Free-rider problem:** non-members expand exports when prices rise
- **Cheating:** members secretly exceed quotas
- **Financing constraint:** buffer stocks become fiscally unsustainable
- **Substitutes + tech change:** demand shifts undermine price bands
- **North–South conflict:** producers want high prices; consumers want low prices

History of International Commodity Agreements

Examples and outcomes:

- Coffee (ICO): collapsed (free-riding)
- Tin (ITA): collapsed (buffer-stock bankruptcy)
- Sugar (ISA): weakened (price provisions abandoned)
- Jute (IJO): wound down (2014)
- Cocoa (ICCO): repeated failures; restructured

Tin crisis (1985): why buffer stocks fail

- Prices fell sharply; buffer-stock manager ran out of funds
- Agreement collapsed and disrupted the tin market
- Prices plunged by about **40%** in days
- Price bands require **credible financing** (hard politically)
- Takeaway: ICAs are fragile when compliance and funding are weak

India's Rice Export Ban (2023): Unilateral Market Power

India's rice export market position:

- World's largest rice exporter: **~40% of global rice trade** (FY2022-23: 22 MMT)
- Dominant in non-basmati white rice: ~60% of world market

August 2023 policy actions:

1. **Ban** on non-basmati white rice exports
2. **20% export duty** on parboiled rice
3. **$1,200/tonne MEP** on basmati rice

Immediate market impact:

- World rice prices surged **20–30%** in 2 months
- Philippines, Indonesia, West Africa most affected
- Bangladesh, Senegal faced acute food security risks

Economic analysis:

With 40% world market share, India has significant **monopsonist/monopolist power** in rice — analogous to a cartel without formal coordination.

India's justification: WTO Article XI permits export restrictions for food security.

Counter-argument: When a single country controls 40% of world supply, its "domestic food security" restriction *is* a global food security threat.

$P_{\text{world}} \uparrow 25\% \Rightarrow$ 500M+ people in importing countrie

Lesson: Market concentration creates policy

Strategic Trade Policy and Infant Industry Argument

Infant industry argument (Hamilton 1791; List 1841): Temporary protection allows a new industry to: 1. Achieve economies of scale 2. Move down the learning curve 3. Become internationally competitive

Learning-by-doing model:

$$C_t = C_0 \cdot e^{-\lambda Q_t^{\text{cumulative}}}$$

where λ = learning rate. Production cost falls with cumulative experience.

Protection justified if:

$$\sum_{t=0}^{T} \frac{\text{PS gain}_t - \text{CS loss}_t}{(1+r)^t} > 0$$

i.e., present value of future gains exceeds current protection costs.

India examples:

Edible oil (1970s-90s): Heavy protection of domestic oilseed processing. - Result: Yellow revolution (oilseed production rose) - But productivity gains lagged; protection lasted too long

Sugar industry: - 100+ years of protection - Still high-cost producer by global standards - Protection → no incentive to compete

Counter-argument to infant industry: If the learning curve is genuinely valuable, private capital should finance it. Government intervention needed only if: (a) capital market failure, or (b) positive spillovers (externalities) that private firm cannot capture.

WTO Disciplines: Key Rules Summary

Instrument	WTO status
Export subsidies (developed)	**Prohibited** (MC10 Nairobi 2015)
Export subsidies (developing)	Phased out
Domestic subsidies (Amber Box)	Limited by AMS cap
Anti-dumping duties	Permitted (ADA)
Countervailing duties	Permitted (SCMA)
VERs	**Prohibited** (Art. 11, SA)
Export restrictions (quotas/bans)	Permitted for food security (Art. XI:2)
Export cartels	No explicit WTO rule — governed by domestic

Countervailing Duties (CVD):

CVDs target foreign *subsidies* (not dumping):

$$\text{CVD} = \text{amount of foreign subsidy}$$

Condition: subsidy is "specific" (to a firm/industry) AND causes material injury.

SCMA Agreement governs CVDs.

India has faced CVDs primarily from USA on shrimp, steel, and pharmaceutical exports.

India has used CVDs less frequently than AD duties — but use is growing as India targets subsidised Chinese and EU agricultural exports.

Key Takeaways: Lecture 8

1. **Export subsidies** distort production and trade; harm importing-country farmers; impose fiscal costs on the subsidising government. Net welfare effect for exporting country: $\Delta W = -(b + d) < 0$.

2. **India's MSP + FCI procurement** creates implicit export subsidies when procurement prices exceed world prices. Sugar WTO dispute (DS579) shows WTO's limits in disciplining developing country support.

3. **Dumping** = selling below normal value. Formal condition: $P_x < P_d$ or $P_x < AVC$. India is the world's largest AD user; but Indian exporters also face spurious AD allegations that confuse genuine comparative advantage with dumping.

4. **VERs** are strictly worse than equivalent tariffs for the importing country — quota rent is transferred abroad: $\Delta W_{\text{VER}} = -(b + c + d) < -(b + d) = \Delta W_{\text{tariff}}$.

5. **Agricultural cartels** fail because: many producers, many substitutes, perishable goods, easy entry. But India's unilateral market power in rice (40% of world exports) achieves cartel-like effects without formal coordination.

Next Lecture Preview

Lecture 9 — Balance of Trade & Balance of Payments *June 20, 2026*

- What is the BoP? Three-account structure and accounting identity
- National income identity approach: CA $= Y - A = S - I + (T - G)$
- India's current account: merchandise deficit, services surplus, remittances
- Capital and financial account: FDI vs FPI, RBI reserve management
- Marshall-Lerner condition: $|e_X| + |e_M| > 1$

Additional Resources

Further Reading

- *International Economics* — Salvatore (Ch. 9-11)
- *International Economics* — Appleyard & Field (Ch. 9-11)
- RBI/DGCI&S/APEDA databases for latest data

Key Data Sources

- DGCI&S: India's merchandise trade
- RBI: Balance of payments data
- APEDA: Agricultural export statistics
- WTO: Tariff and trade databases