NET & SET Economics: International Economics

Prepared by Dr.Dubba Ranjith

1. International Trade: Basic Concepts and Analytical Tools

International trade is exchange of goods and services across national boundaries. It differs from internal trade because of factor immobility between countries, different currencies, different policies and political barriers.

Analytical tools

- **Production Possibility Curve (transformation curve):** shows maximum combinations of two goods; slope = Marginal Rate of Transformation (MRT) = opportunity cost. Straight line = constant costs (Ricardo); concave = increasing costs (Heckscher–Ohlin).
- **Community indifference curves (Scitovsky):** represent a nation's tastes; non-intersecting only under restrictive assumptions (identical homothetic tastes).
- **Autarky equilibrium:** MRT = MRS = domestic price ratio.
- **Free trade equilibrium:** production where MRT = world price ratio; consumption where MRS = world price ratio; the gap between production and consumption is exports and imports.
- **Offer curves (reciprocal demand curves) — Marshall and Edgeworth:** show quantity of exports a country is willing to give for imports at different terms of trade; intersection gives equilibrium terms of trade.
- **Trade indifference curves (Meade)** and the **Edgeworth box diagram** (factor allocation, contract curve).
- **Partial equilibrium tools:** import demand and export supply curves; consumer and producer surplus analysis of trade policy.

Key concepts

- Absolute advantage, comparative advantage, opportunity cost.
- Terms of trade, gains from trade.
- Factor endowment, factor intensity, factor reversal.
- Small open economy (price-taker) vs large country (affects world prices).

Exam pointers: offer curves; MRT = MRS = price ratio; community indifference curves; constant vs increasing opportunity cost.

2. Theories of International Trade

Mercantilism (16th–18th century)

- Wealth = gold and silver; export surplus is desirable; trade is a zero-sum game. Critique: David Hume's **price–specie flow mechanism**.

Absolute advantage (Adam Smith, 1776)

- A country exports goods it produces at absolute lower cost; trade is mutually beneficial. Cannot explain trade when one country is more efficient in all goods.

Comparative advantage (David Ricardo, 1817)

- Even if a country is absolutely more efficient in both goods, it gains by specialising in the good with the **greater comparative advantage** (lower opportunity cost). Example: England (cloth) and Portugal (wine).
- Assumptions: two countries, two goods, labour theory of value, constant costs, perfect competition, no transport costs, labour immobile internationally.
- J.S. Mill added **reciprocal demand** to determine terms of trade within the limits set by domestic cost ratios.
- **Haberler's opportunity cost theory (1936)** freed comparative advantage from the labour theory of value.

Heckscher–Ohlin (H–O) factor-endowment theory (1919, 1933)

- A country exports goods intensive in its **abundant factor** and imports goods intensive in its scarce factor.
- Factor abundance defined by physical quantity (K/L ratio) or by relative factor prices.
- Assumptions: 2×2×2, identical technology and tastes, constant returns, no factor-intensity reversals, perfect competition, factors mobile within but not between countries.

Theorems derived from the H–O model

Theorem	Statement
Factor Price Equalisation (Samuelson, 1948–49)	Free trade equalises absolute and relative factor prices across countries
Stolper–Samuelson (1941)	A rise in the relative price of a good raises the real return of the factor used intensively in it and lowers the other factor's return
Rybczynski (1955)	At constant goods prices, an increase in one factor raises the output of the good intensive in that factor and reduces the output of the other good absolutely
Magnification effect (R. Jones)	Changes in goods prices produce magnified changes in factor prices

Leontief paradox (1953)

- US, the most capital-abundant country, was found to export labour-intensive goods and import capital-intensive goods.
- Explanations: higher US labour productivity (skills/human capital), natural resources, factor-intensity reversals, demand bias, US tariffs on labour-intensive imports.

Other theories

- **Specific factors model (Ricardo–Viner, Jones–Samuelson):** short-run model with one mobile factor.
- **Technology gap theory (Posner, 1961).**

- **Product life cycle theory (Raymond Vernon, 1966):** new product → mature → standardised; production shifts from innovating to developing countries.
- **Linder's theory of overlapping demand (1961):** manufactured goods trade among countries with similar per capita incomes.
- **Kravis's availability theory.**

Exam pointers: Ricardo vs H–O; Stolper–Samuelson vs Rybczynski; Leontief paradox explanations; Vernon's product cycle.

3. International Trade under Imperfect Competition

Traditional theories cannot explain **intra-industry trade** (simultaneous export and import of similar products) between similar countries. New Trade Theory explains it using economies of scale and product differentiation.

New Trade Theory

- **Paul Krugman (1979, 1980; Nobel 2008):** monopolistic competition with increasing returns — trade enlarges the market, allows scale economies and greater variety for consumers.
- **Helpman and Krugman (1985):** integration of factor proportions with monopolistic competition — inter-industry trade by endowment, intra-industry trade by scale.
- **Grubel–Lloyd index** of intra-industry trade = $1 - |X - M|/(X + M)$; ranges 0 (inter-industry) to 1 (pure intra-industry).
- **External economies of scale** (Marshallian): industry clustering; historical accident can determine trade patterns.

Oligopoly and trade

- **Reciprocal dumping model (Brander and Krugman, 1983):** Cournot oligopolists sell in each other's markets even with transport costs — two-way trade in identical products.
- **Strategic trade policy (Brander and Spencer, 1985):** export subsidies can shift oligopoly profits to domestic firms (Boeing vs Airbus example).
- Critique: retaliation, information requirements, Bertrand competition reverses the result (Eaton–Grossman).

New-New Trade Theory

- **Marc Melitz (2003):** firm heterogeneity — only the most productive firms export; trade liberalisation raises industry productivity by reallocating resources to efficient firms.

Other

- **Gravity model (Tinbergen, 1962):** trade between two countries is proportional to their economic size (GDP) and inversely proportional to distance.
- **New economic geography (Krugman, 1991):** core–periphery model.

Exam pointers: Krugman's model; Grubel–Lloyd index; Brander–Spencer strategic trade; Melitz heterogeneity; gravity model.

4. Balance of Payments: Composition, Equilibrium, Disequilibrium and Adjustment Mechanisms

The **Balance of Payments (BoP)** is a systematic record of all economic transactions between residents of a country and the rest of the world during a period. It is based on **double-entry bookkeeping**, so it always balances in an accounting sense.

Composition (IMF BPM6)

Account	Main items
Current account	Merchandise trade (balance of trade); services (invisibles — travel, transport, software, financial services); primary income (investment income, compensation of employees); secondary income (remittances, grants)
Capital account	Capital transfers, acquisition/disposal of non-produced non-financial assets
Financial account	Foreign direct investment, portfolio investment, external commercial borrowing, banking capital, NRI deposits, other investment, reserve assets
Errors and omissions	Statistical discrepancy

- Balance of trade = merchandise exports − imports. Current account balance = (X − M) of goods and services + net income + net transfers.
- National income identity: **CAB = S − I = (Y − Absorption)**; also CAB = (S − I) + (T − G).

Equilibrium and disequilibrium

- BoP is always balanced in accounting terms; economic disequilibrium refers to autonomous transactions (above the line) not balancing — met by accommodating (compensatory) transactions such as reserve changes.
- Types: **cyclical, secular, structural, fundamental disequilibrium** (persistent, under IMF Article IV).
- Causes: development spending, population growth, inflation, demonstration effect, cyclical fluctuations, overvalued exchange rate.

Adjustment mechanisms

Approach	Proponent	Mechanism
Price–specie flow (gold standard)	David Hume	Gold outflow → fall in money supply and prices → exports rise
Elasticities approach	Marshall, Lerner, Joan Robinson	Devaluation improves the trade balance if **Marshall–Lerner condition** holds: sum of absolute export and import demand elasticities > 1
J-curve effect	—	Trade balance first worsens after devaluation, then improves as elasticities rise over time
Absorption approach	Sidney Alexander (1952)	B = Y − A; devaluation must raise output or reduce absorption
Monetary approach	Johnson, Mundell, Frenkel	BoP is a monetary phenomenon; deficits reflect excess money supply; self-correcting through reserve

Approach	Proponent	Mechanism
		flows
Income approach	Keynes, Machlup	Changes in income via the foreign trade multiplier
Policy assignment	Mundell (1962), Swan diagram, Tinbergen rule	Assign monetary policy to external balance and fiscal policy to internal balance (fixed rates); number of instruments ≥ number of targets

- **Expenditure-switching** (devaluation, tariffs) vs **expenditure-reducing** (tight monetary/fiscal policy) policies (Harry Johnson).

Exam pointers: BoP components; Marshall–Lerner condition; J-curve; absorption approach; Tinbergen rule and Mundell assignment.

5. Exchange Rate: Concepts and Theories

The exchange rate is the price of one currency in terms of another.

Concepts

- **Direct quote** (domestic currency per unit of foreign currency, used in India: ₹ per US$) vs **indirect quote**.
- **Appreciation/depreciation** (market-determined) vs **revaluation/devaluation** (official, under fixed regime).
- **Nominal exchange rate**; **real exchange rate** = e × P*/P (adjusts for price levels).
- **NEER** (Nominal Effective Exchange Rate): weighted average of bilateral rates against trading partners; **REER**: NEER adjusted for relative inflation.
- Spot rate vs forward rate; forward premium/discount.

Exchange rate regimes

Regime	Features
Gold standard (1870s–1914)	Mint parity; automatic adjustment
Bretton Woods (1944–1971/73)	Adjustable peg to US, □□ convertible to gold at $35/ounce
Free (clean) float	Market determined
Managed (dirty) float	Market determined with central bank intervention (India since 1993)
Crawling peg, currency board, dollarisation, target zones	Intermediate and hard pegs

- **Impossible trinity (Mundell–Fleming trilemma):** a country cannot simultaneously have a fixed exchange rate, free capital mobility and independent monetary policy.

Theories of exchange-rate determination

- **Mint parity theory** (gold standard).
- **Purchasing Power Parity (Gustav Cassel, 1918):** absolute PPP — e = P/P*; relative PPP — % change in e = domestic inflation − foreign inflation. Big Mac index is a popular test.

Balassa–Samuelson effect: price levels higher in rich countries because of productivity in tradables.

- **Balance of payments (demand–supply) theory.**
- **Interest Rate Parity:** covered IRP — forward premium = interest differential; uncovered IRP — expected depreciation = interest differential.
- **Monetary approach** (flexible-price — Frenkel; sticky-price **overshooting model — Dornbusch, 1976**: exchange rate overshoots its long-run value after a monetary shock because asset markets adjust faster than goods markets).
- **Portfolio balance approach** (Branson): exchange rate balances demand and supply of financial assets.
- **Asset market approach**, news and expectations.

Exam pointers: PPP (Cassel); Dornbusch overshooting; interest parity; impossible trinity; NEER vs REER.

6. Foreign Exchange Market and Arbitrage

Foreign exchange market

- Market where currencies are bought and sold; largely over-the-counter, 24-hour, global (London is the largest centre).
- Participants: commercial banks (authorised dealers), central banks, corporations, brokers, speculators, hedgers.
- Functions: **transfer** of purchasing power, **credit** (financing trade), **hedging** against exchange risk.
- In India: regulated by RBI under **FEMA, 1999** (replaced FERA, 1973); rupee fully convertible on current account (August 1994) and partially on capital account.

Transactions and instruments

- **Spot transactions** (settlement within two business days); **forward contracts** (fixed future date at agreed rate); **futures** (standardised exchange-traded); **options** (right but not obligation — call/put); **swaps** (currency and interest rate).

Arbitrage, hedging and speculation

- **Arbitrage:** simultaneous purchase and sale of a currency in different markets to profit from rate differences; it equalises rates across centres.
  - **Two-point (spatial) arbitrage:** between two centres.
  - **Three-point (triangular) arbitrage:** using three currencies when cross rates are inconsistent.
  - **Covered interest arbitrage:** move funds to the higher-interest centre and cover exchange risk with a forward contract; continues until covered interest parity holds.
- **Hedging:** covering an open position to avoid exchange risk (exporters sell foreign currency forward).
- **Speculation:** deliberately taking an open position to profit from expected rate changes; stabilising (Friedman) or destabilising.
- Exchange risk types: transaction, translation (accounting) and economic exposure.

Exam pointers: spot vs forward; triangular arbitrage; covered interest arbitrage; hedging vs speculation; FEMA 1999.

7. Gains from Trade, Terms of Trade and Trade Multiplier

Gains from trade

- **Static gains:** specialisation by comparative advantage → higher consumption; separated into **gains from exchange** (consumption) and **gains from specialisation** (production).
- **Dynamic gains:** economies of scale, technology transfer, competition, vent for surplus (Adam Smith; Hla Myint), capital inflows, learning.
- **Trade as an engine of growth** (D.H. Robertson; Nurkse) — 19th-century experience.
- Distribution of gains depends on terms of trade; the country whose domestic cost ratio is further from the international price ratio gains more.

Terms of trade

Concept	Formula / meaning	Author
Net barter (commodity) ToT	(Px/Pm) × 100	Taussig
Gross barter ToT	(Qm/Qx) × 100	Taussig
Income ToT	(Px/Pm) × Qx — capacity to import	G.S. Dorrance
Single factoral ToT	(Px/Pm) × Zx (Zx = productivity in exports)	Viner
Double factoral ToT	(Px/Pm) × (Zx/Zm)	Viner
Real cost ToT; Utility ToT	Adjusted for real costs and utility of imports	Viner

Prebisch–Singer hypothesis (1950)

- Secular deterioration of terms of trade of primary-producing developing countries vis-à-vis manufacturing countries.
- Reasons: low income elasticity of demand for primary goods (Engel's law), technological progress benefits passed on as lower prices in primary sectors but as higher wages/profits in industrial countries, synthetic substitutes, monopoly power of industrial countries.
- Policy: import-substituting industrialisation; UNCTAD (1964).
- **Immiserising growth (Jagdish Bhagwati, 1958):** export-biased growth in a large country can so worsen terms of trade that welfare falls.

Foreign trade multiplier

k = 1/(MPS + MPM) (with taxes: 1/(MPS + MPM + MPT))

- An increase in exports raises income by a multiple; imports are a leakage.
- **Foreign repercussions:** in a two-country model, rise in one country's imports raises the other's income and exports back (Machlup, Metzler).
- Harrod's trade multiplier: Y = X/MPM (when only imports leak).

Exam pointers: types of ToT with authors; Prebisch–Singer; immiserising growth; foreign trade multiplier formula.

8. Tariff and Non-Tariff Barriers to Trade; Dumping

Tariffs

- **Types:** specific (per unit), ad valorem (% of value), compound; import and export duties; revenue vs protective tariffs; optimum tariff; tariff-rate quotas.
- **Partial equilibrium effects (small country):** protective effect, consumption effect, revenue effect, redistribution effect (to producers), and **deadweight loss** (production and consumption distortion triangles).
- **Large country:** a tariff can improve terms of trade; **optimum tariff** = $1/(e^* - 1)$, where e^* is the foreign offer-curve elasticity.
- **Metzler paradox (1949):** a tariff may lower the domestic relative price of the imported good.
- **Effective Rate of Protection (Corden, Johnson):** ERP = (Value added at domestic prices − Value added at world prices)/Value added at world prices; ERP = $(t - \Sigma a_i t_i)/(1 - \Sigma a_i)$. Tariff escalation (higher tariffs on finished goods) raises ERP.
- Arguments for protection: **infant industry (Hamilton, List)**, employment, BoP, anti-dumping, national security, diversification, terms of trade, revenue.

Non-tariff barriers (NTBs)

- **Import quotas** (unlike tariffs, generate quota rents and are not price-responsive), **voluntary export restraints (VERs)**, licensing, state trading.
- Technical barriers to trade (standards), sanitary and phytosanitary (SPS) measures, local content requirements, government procurement preferences, export subsidies, administrative delays, exchange controls.
- Equivalence of tariffs and quotas breaks down under monopoly or growth in demand (Bhagwati).

Dumping

- Selling in a foreign market below the price charged in the home market (or below cost) — **international price discrimination**.
- Conditions: imperfect competition, separable markets, foreign demand more elastic.
- Types: **sporadic** (disposal of surplus), **predatory** (to drive out rivals, then raise prices), **persistent** (continuous price discrimination).
- WTO allows **anti-dumping duties** if dumping causes material injury; **countervailing duties** against subsidies; safeguard measures against import surges. In India, the Directorate General of Trade Remedies (DGTR) investigates.

Exam pointers: welfare effects of tariff; optimum tariff; ERP formula; quota vs tariff; types of dumping.

9. GATT, WTO and Regional Trade Blocs; Trade Policy Issues

GATT (1947–1994)

- General Agreement on Tariffs and Trade signed in 1947 (23 countries, including India), effective 1 January 1948.
- Principles: **Most Favoured Nation (MFN)** — non-discrimination; **national treatment**; tariff reduction through negotiations; prohibition of quantitative restrictions (with exceptions).
- Eight rounds; **Uruguay Round (1986–94)** — the most comprehensive — created the WTO (Marrakesh Agreement, 1994).

WTO (1 January 1995, Geneva)

- Covers goods (GATT 1994), services (**GATS**), intellectual property (**TRIPS**) and investment measures (**TRIMs**); **Agreement on Agriculture** — market access, domestic support (Amber, Blue, Green boxes), export subsidies; Dispute Settlement Body; Trade Policy Review Mechanism.
- Highest body: **Ministerial Conference** (every two years). **Doha Development Round (2001)** remains largely stalled; **Trade Facilitation Agreement** (Bali, 2013) in force since 2017.
- Issues for developing countries: special and differential treatment, public stockholding for food security, fisheries subsidies, e-commerce moratorium, the paralysed Appellate Body.

Regional trade blocs (economic integration — Bela Balassa's stages)

1. **Preferential trade area** (reduced tariffs among members)
2. **Free trade area** (no internal tariffs; own external tariffs — rules of origin needed): NAFTA/USMCA, SAFTA, ASEAN FTA
3. **Customs union** (common external tariff): Mercosur
4. **Common market** (free factor mobility)
5. **Economic union** (harmonised policies; e.g., European Union with euro)
6. Complete economic integration

- **Jacob Viner (1950):** customs unions create **trade creation** (shift from high-cost domestic to low-cost partner — welfare gain) and **trade diversion** (shift from low-cost non-member to higher-cost member — welfare loss).
- Regional agreements involving India: SAARC/SAFTA, BIMSTEC, India–ASEAN FTA, CEPA with UAE, ECTA with Australia, TEPA with EFTA. India withdrew from RCEP in 2019.

Trade policy issues

- Free trade vs protection; import substitution vs export promotion (outward orientation — East Asian experience).
- Trade and environment, labour standards, IPR and public health (TRIPS flexibility, compulsory licensing), agricultural subsidies, rise of protectionism and trade wars, global value chains.

Exam pointers: MFN and national treatment; Uruguay Round agreements; WTO boxes; Viner's trade creation vs diversion; stages of integration.

10. IMF and World Bank

Both were established at the **Bretton Woods Conference (July 1944)**, New Hampshire, USA, and began operations in 1945–46; headquarters in Washington DC. India is a founder member of both.

International Monetary Fund (IMF)

- **Objectives:** promote international monetary cooperation, exchange-rate stability, balanced growth of trade, help members with temporary BoP problems, establish a multilateral payments system.
- **Quotas:** determine subscription, voting power and access to finance; reviewed periodically.
- **Special Drawing Rights (SDRs, 1969):** international reserve asset; valued against a basket of five currencies — US dollar, euro, Chinese renminbi (since 2016), Japanese yen, British pound.
- **Lending facilities:** Stand-By Arrangements, Extended Fund Facility, Rapid Financing Instrument, Flexible Credit Line, Poverty Reduction and Growth Trust, Resilience and Sustainability Trust. Loans carry **conditionality** (structural adjustment).
- Surveillance (Article IV consultations), World Economic Outlook, technical assistance.
- India borrowed during the 1991 BoP crisis, leading to the New Economic Policy.

World Bank Group

Institution	Year	Function
IBRD (International Bank for Reconstruction and Development)	1944	Loans to middle-income and creditworthy countries
IDA (International Development Association)	1960	Concessional (soft) loans and grants to poorest countries
IFC (International Finance Corporation)	1956	Finance to the private sector
MIGA (Multilateral Investment Guarantee Agency)	1988	Political risk insurance for investors
ICSID	1966	Settlement of investment disputes

- IBRD and IDA together are called “the World Bank”.
- Focus has shifted from reconstruction to poverty reduction, infrastructure, human development, climate finance; publishes the **World Development Report**.
- Criticism: conditionality, Washington Consensus policies, voting dominance of developed countries.

Exam pointers: Bretton Woods (1944); SDR basket; IMF vs World Bank functions; members of World Bank Group with years.