

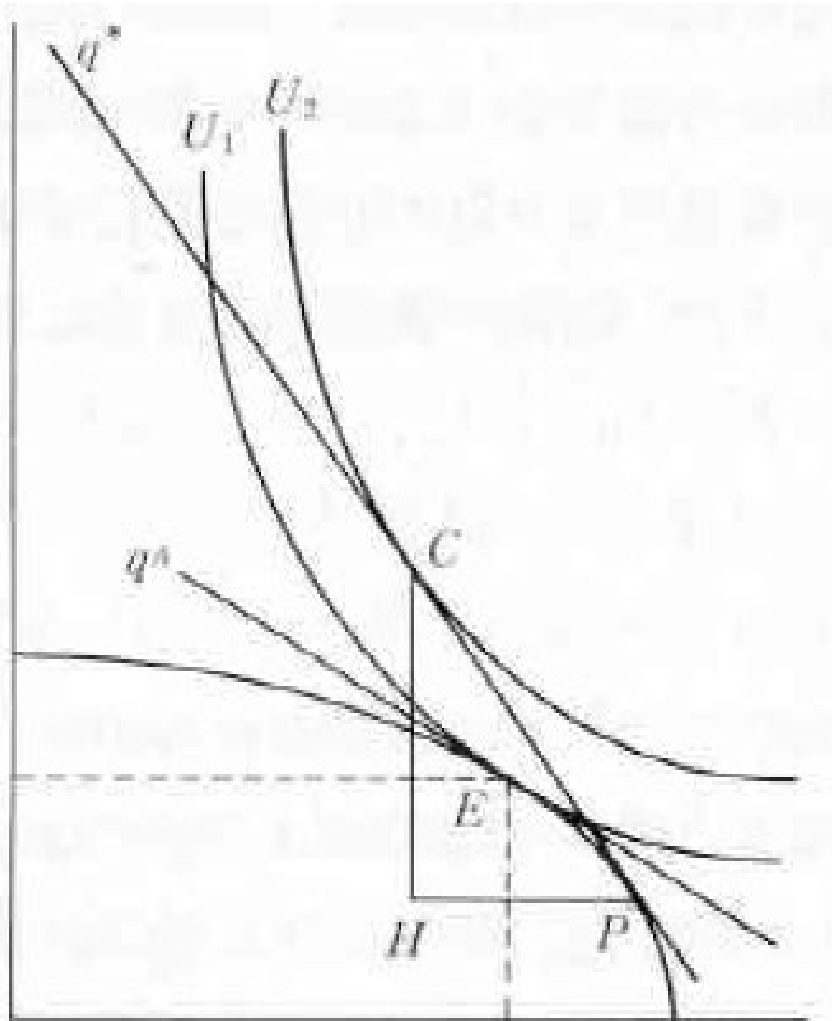
Trade for Growth (2): How to participate in trade?

Comparative advantage in Heckscher-Ohlin Model (2)

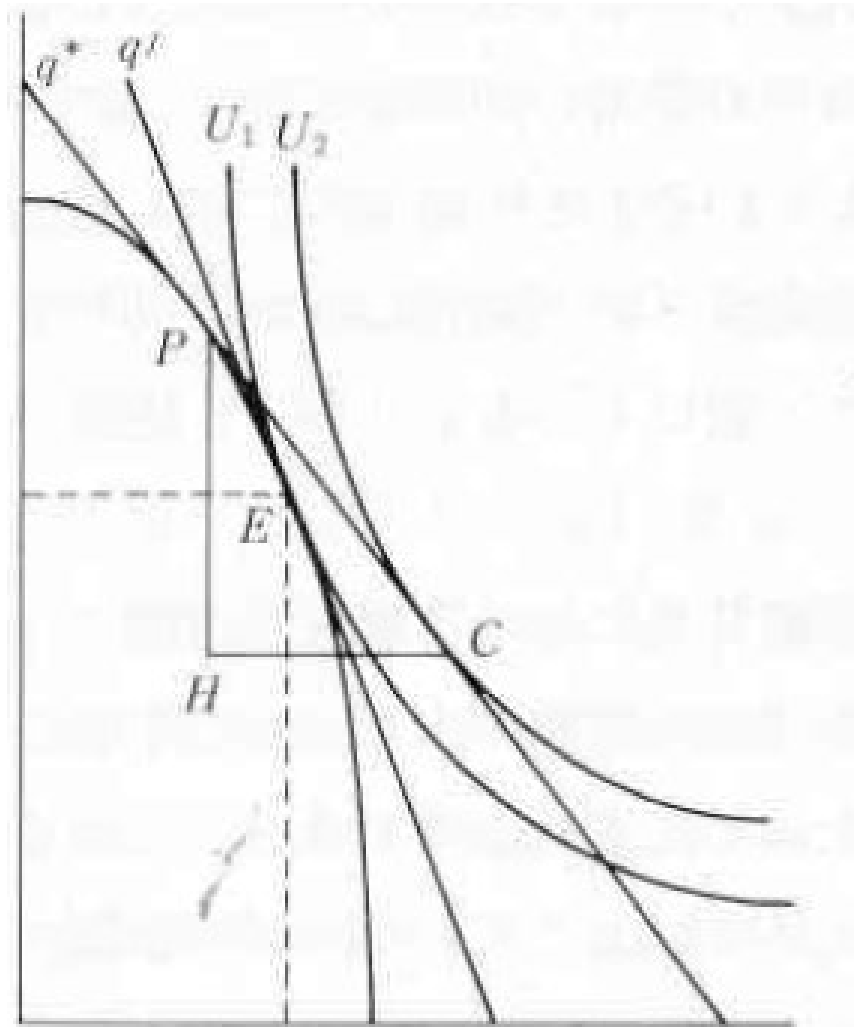
- If Indifference curves are identical, before trade, Self-sufficient economy exists at the contact point (E) between Production frontier and indifference curve)
- If trade starts Production and Consumption loses touch (\rightarrow Produces P and Consumes at C, then Country A exports HP and import HC)
- Comparative price of two goods exists in bilateral trade equilibrium: Term of trade (q^*) between q^A and q^J

Trade with different factor endowments

Country A



Country J



Static change in trade

- Free trade may be better but not so in reality
- Case of import tariffs or export subsidies
- In free trade:
International price of Agricultural good q_1^* and Industrial good q_2^* , and Country A's domestic price q_1, q_2 , Then,
Terms of trade: $q^* = q_1^*/q_2^*$, and $q = q_1/q_2$,
In trade equilibrium q^* and q^{**} , q and q' are paralleled :
Identical in terms of trade and domestic terms of trade (relative price)

Dynamic impact of Trade

- Competition: Trade enhances competition both in domestic and international markets, Market exit by less competitive firms, Resource redistribution among sectors/industries, Productivity gains \Rightarrow Better efficiency by trade
- Gains from import: Capital goods import enhances productivity gains, Production cost reduction, and Price competitiveness \Rightarrow Technologies embodied in capital goods

Dynamic impact of Trade (2)

- Gains from export: Foreign reserves, Participating Global Value Chains, Value-added ladder for competitiveness
- Gains from international market: Production gains, Economy of scale, Productivity
- Gains from domestic market: Consumer welfare, Better resource distribution
- How to link all?: Import Substitution (IS) or Export Orientation (EO)

Trade and Industrialization strategies

- Large scale of economy: Fixed cost for large volume of production/ Learning-by-doing
- Late comer: AC is higher than More Developed Countries (MDC) → How to compete
 - 1) IS: Protect sectors until internationally competitive and then open trade
 - 2) EO: Open trade with subsidies until competitive
 - 3) OE: Open trade and attracting FDI firms

Import Substitution (1)

- Localizing the production of the imported industrial goods
- Infant industry protection (tariffs, import quota, licensing....)+ FDI protection + Service regulations
- Industrial linkages (Backward/Forward)
- Political values or ideologies for “Self-reliance” (≠Subordination theories)
- Relatively small cost: Tariff gains for gov.

Import substitution (2)

- Import protection: Tariffs, Safety standards, Quantity restriction....
- Imposing tariff, making domestic price higher ($p^d = ep^{\$}(1+t)$)
- Tariffs benefits domestic producers, gov. by tariff gains, but hurts consumers
- But in mean time the competitiveness will gain and all are to be benefitted

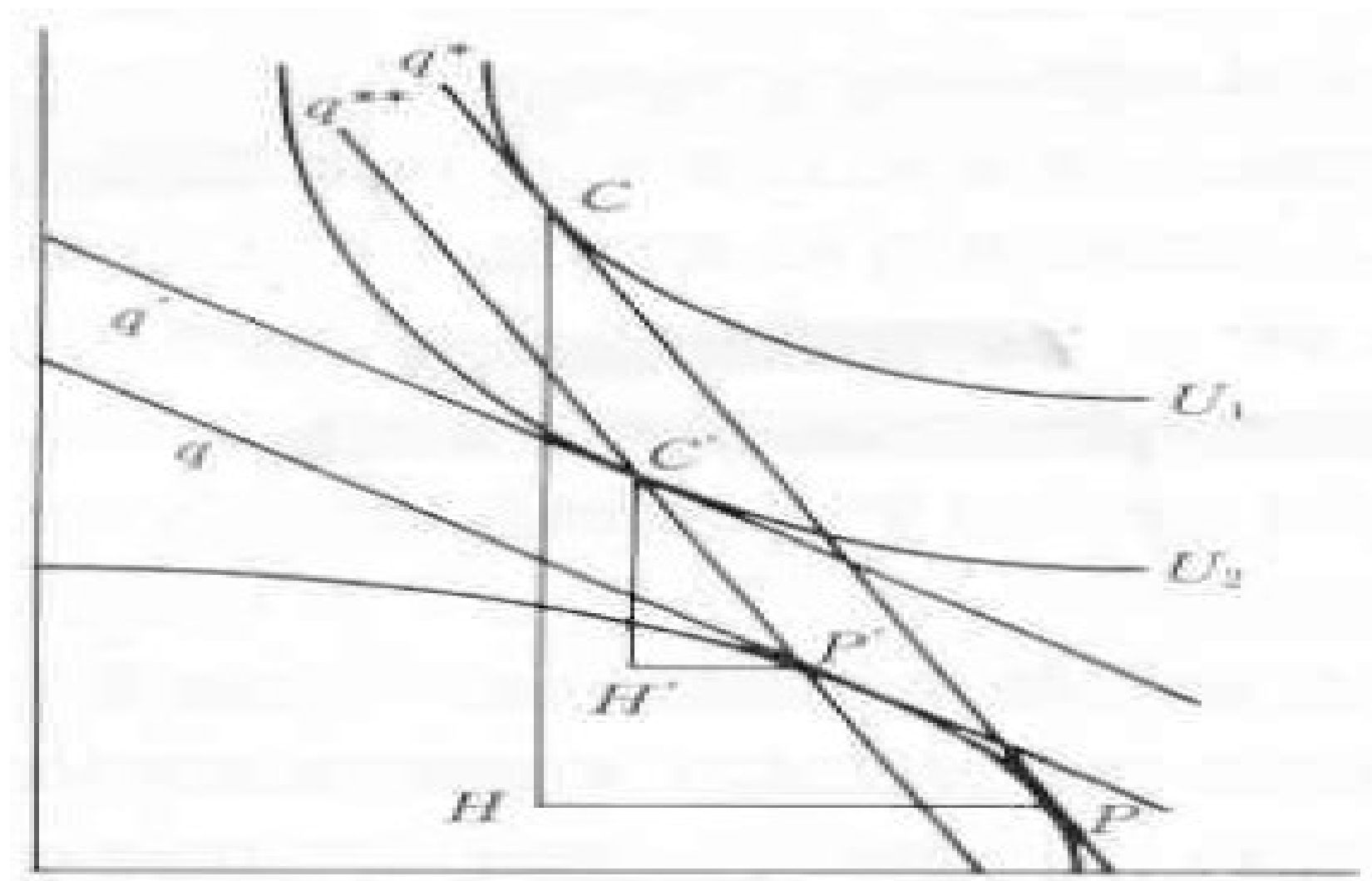
Static change by imposing import tariff

- Impose tariffs on imported good (Industrial good) : Import price goes up (q_2) and domestic price changes, $q < q^*$ (q is lowered than q^*)
(If $t\%$ of tariff on industrial good, $q_1 = q_1^*$ and $q = (1+t)q_2^*$
if domestic terms of trade $q_1/q_2 = q$, international terms of trade $q_1^*/q_2^* = q^*$, then $q = q^*/(1+t)$, then $q < q^*$
- After tariff, country A's production goes to P' having contact with q

Static change by imposing import tariff

- Since Country A is a small, open economy without influence on international price, trade will be continued at q^* , and the Consumption will be moving to somewhere paralleled q^* , that is on q^{**} having contact with P' . Plus, since C' should be on the contact with new indifference curve U_2 and on the q' which is also paralleled with q for domestic price.
- New trade triangle $C'H'P' < CHP$, smaller export and smaller import
- Export production (agriculture) declines, but imported good production (industrial good) increase
- However, the utility declines from U_1 to U_2 .

Trade policy case of import tariff



Import substitution (3)

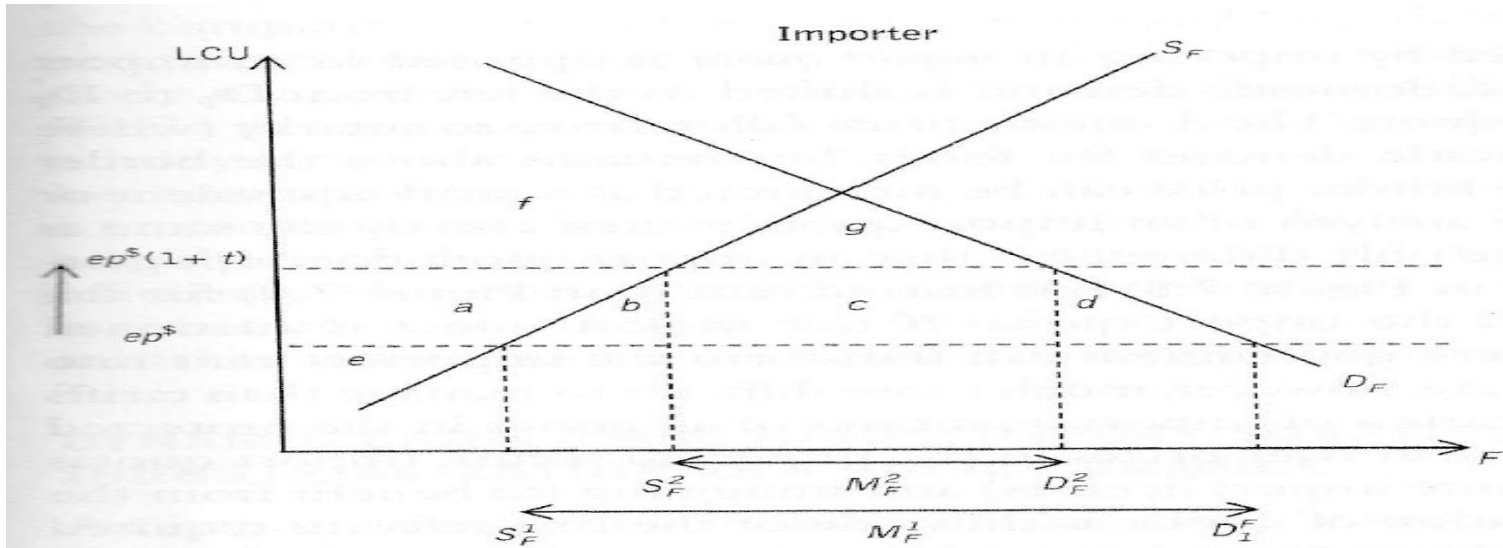


Figure 7.8 Welfare analysis of an import tariff

Table 7.4 Gains and losses from an import tariff for consumers, producers, and the nation

	<i>Exporter</i>			
	<i>Consumer surplus</i>	<i>Producer surplus</i>	<i>Government budget</i>	<i>Net social gain</i>
Free trade	$a + b + c + d + f + g$	e	0	
Import tariff	$f + g$	$a + e$	c	
Net effect	$-(a + b + c + d)$	a	c	$-(b + d)$
Sign of effect	$-$	$+$	$+$	$-$

Import Substitution(4): Infant industry protection

- World price of $p^{\$}$ is decided by the AC of More Developed Countries (AC_{MDC}): Reference AC for the domestic firms
- Under the tariff (t), domestic price (p^d) will become higher ($p^b(1+t)$), then domestic firms start production until the competitive price of ISTE (Import Substitution Then Export)

IS strategies (Source: Janvry and Sadoulet (2016))

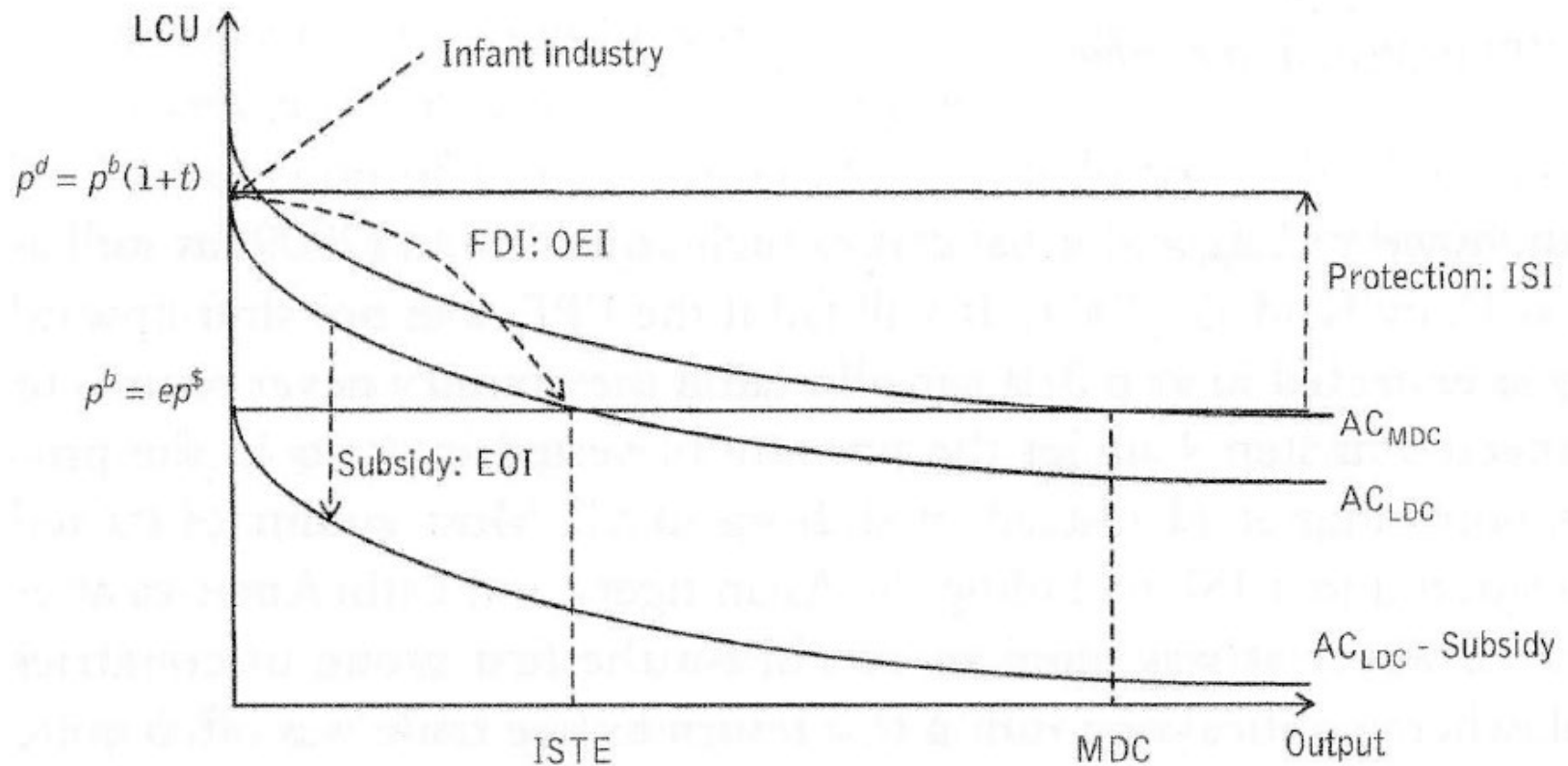


Figure 7.12 Industrialization strategies compared: ISI, EOI, and OEI

Import Substitution (5)

- Before IS, ToT between agriculture and industry is p_A/p_I , Producing at A and Consuming at C
- Protective tariff t_M on Industry, then ToT will be $p_A/p_I(1+t)$, Producing at B and Consuming at E
- Industry sector attract investment and technology changes will bring production frontier UPWARD TOWARD industry
- Then Producing at F and Consuming at H
- Then going back to free trade, Production at A' and Consumption at C'
- Success: $C' > H > C$
- Failure: Remaining at H

IS strategies (6) (Source: same as P6))

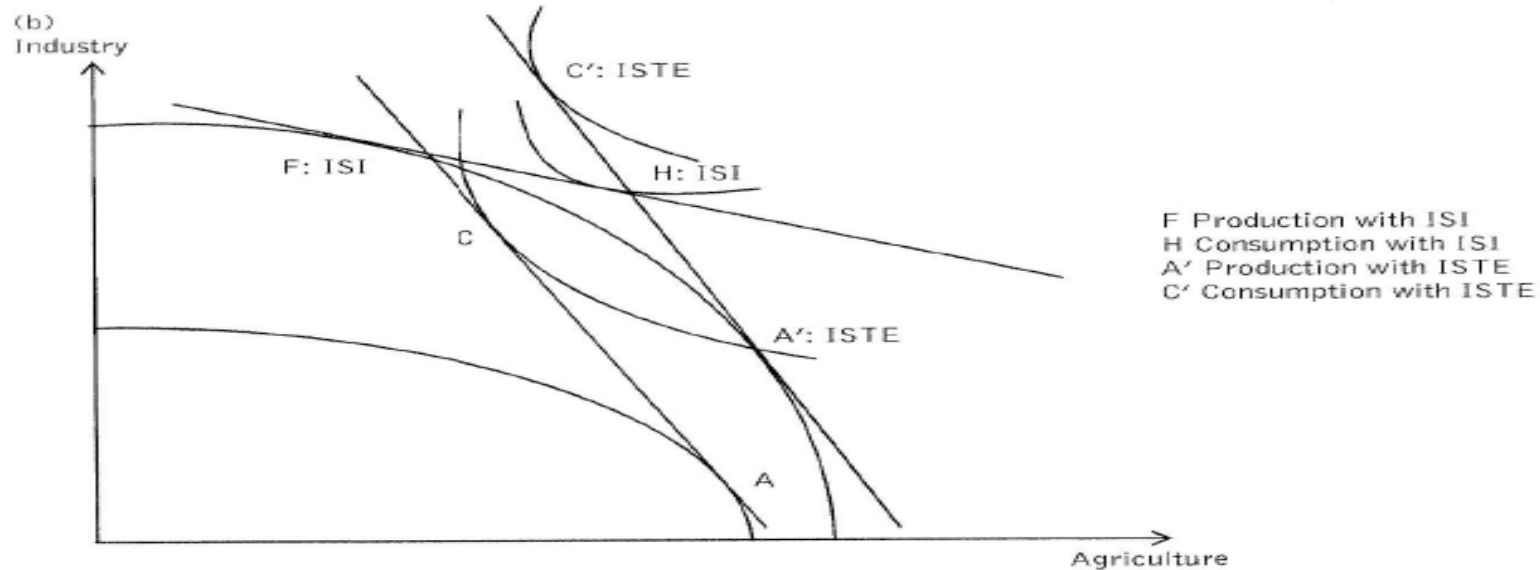
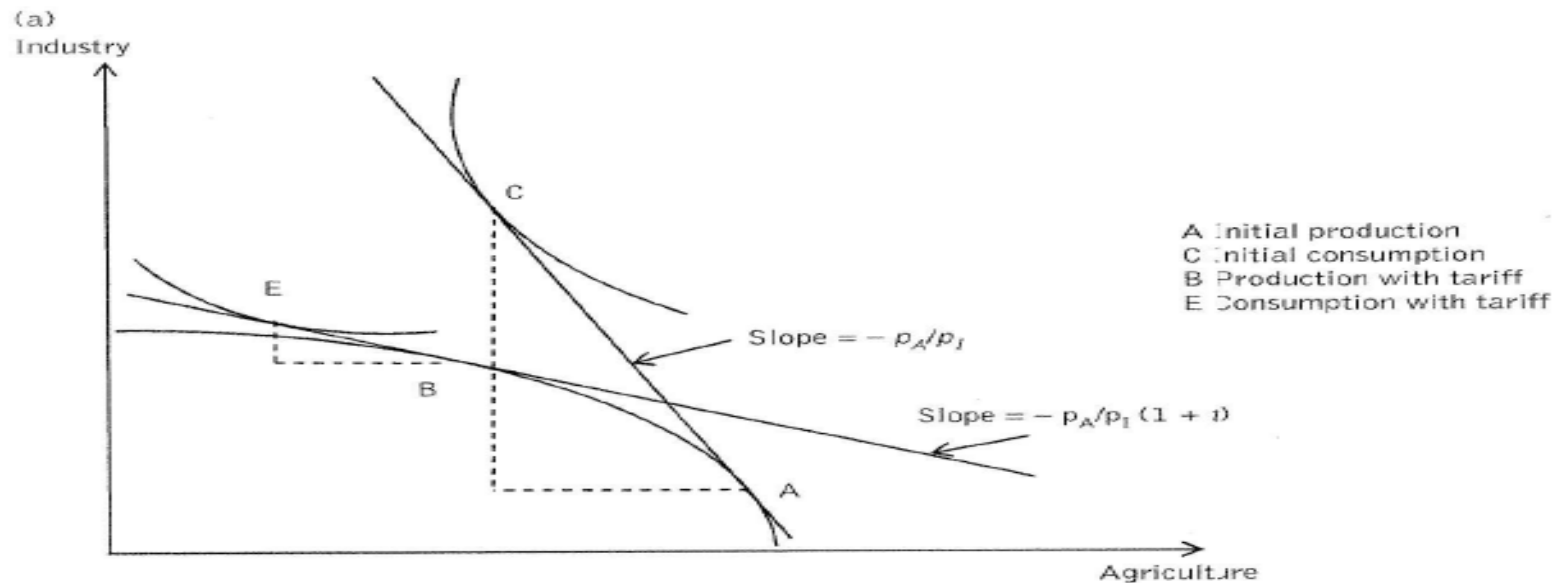


Figure 7.11 ISI strategy as a gamble

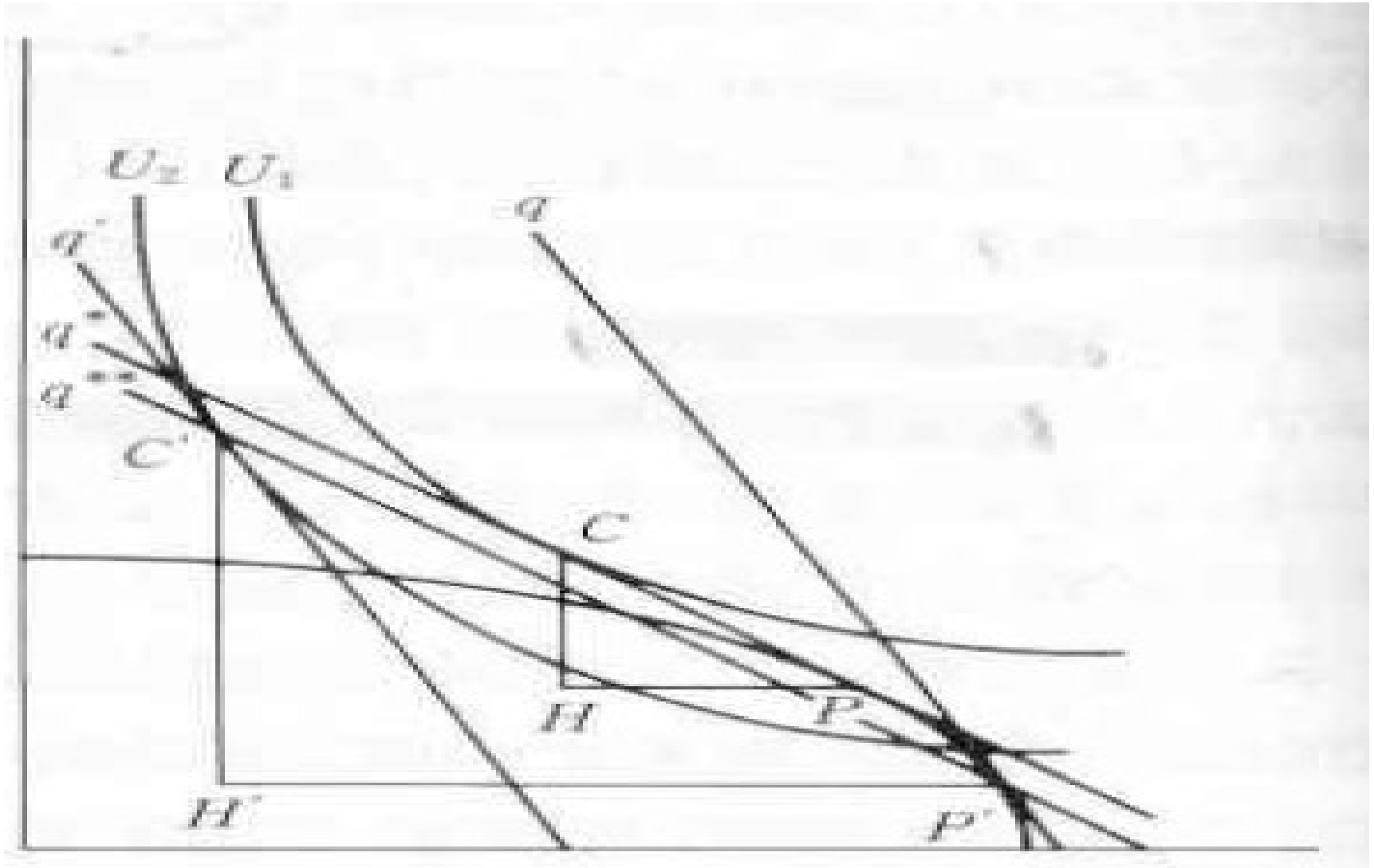
Export Orientation

- Export subsidies for the potential exporters: state-subsidized credit, financial guarantees, tech. assistance, subsidized R&D and information supports
- Subsidies are to improve the competitiveness of the selected firms to enjoy economy of scale
- Gains for firms, Loss for the gov. $(a+b)$ but no loss to consumers (Net Social Gain remains $-b$ → Less distorting

Trade policy in export subsidy

- Government subsidizes agricultural goods for export
- Domestic relative price $q > q^*$ (International terms of trade)
 - \Rightarrow Production $P \rightarrow P'$ (Contact point with Production frontier and q)
 - \Rightarrow Consumption $C \rightarrow C'$ (Contact point with Production frontier and q')
- Since trade should go balanced, P' and C' should be each on lines paralleled with q^* ($=q^{**}$).
- Now Trade triangle of $C'H'P' > CHP$, so trade will grow
- However, while export good (agriculture) production grows, but Industrial good production declines
- Since $U_2 < U_1$, Utility also goes down

Trade Policy case of export subsidy



Export subsidies

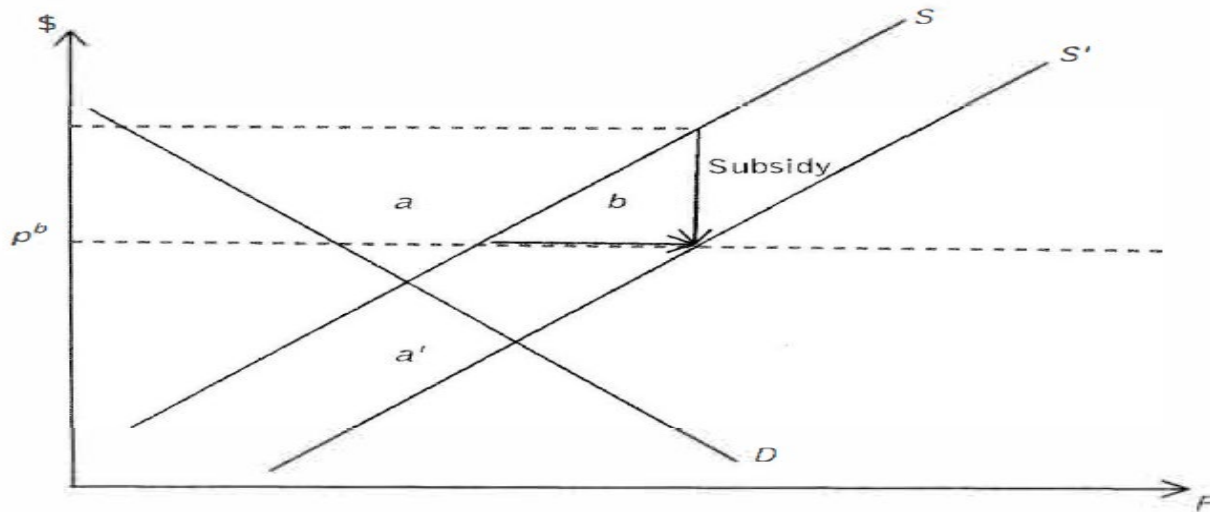


Figure 7.10 Welfare analysis of a production subsidy in support of EOI

Table 7.5 Gains and losses from a production subsidy to stimulate exports under EOI

	Exporter			
	Consumer surplus	Producer surplus	Government budget	Net social gain
Net effect	0	$a' = a$	$-(a + b)$	$-b$
Sign of effect	0	+	-	-

Failure of IS

(1) Rent for the protected industries: Specific firms and foreign companies

(2) Limited Capital / Intermediate goods access (technologies embodied)

(3) Exchange rate problems (Substantially over appreciated rate in fixed regime): Export constraints, Smuggling incentives, Bias for Capital intensive industries

(4) Backward/ Forward industrial relations shaped?
ex. : Effective protection \neq Nominal protection: If there is a car of international price \$10,000 (Assembling process with labor value-added of \$2,000 + Input \$8,000 \rightarrow If finished car is with 10% of tariff but no tariffs on imported inputs, then $\$11,000 - \$8,000 = \$3,000$, 50% of \$2,000 is protected

Difficulties for export orientation after IS

- Typical ends for IS: Rent-seeking and inefficiencies, Appreciated exchange regime, State enterprises
 - Shift into EO: Exchange rate adjustment (depreciation), Import liberalization, FDI for EO (industrial parks)
 - Before WTO: Export performance criteria, Foreign exchange balance, JV requirement....
- ⇒ IS: Comparative advantage by the market (not by the government), Economy of scale, Technology access?
- ⇒ However, resistance for the policy package of macro-adjustment (Exchange rate depreciation + High interest rates + Import liberalization)

Import substitution (IS) or Export orientation (EO)? Exchange rate matters

- Importance of exchange rate: Incentives for domestic producers
- If one good (1\$) is traded and the exchange rate is fixed at $1\$ = 140 \text{ ¥}$, and for the domestic producer's cost and profit is $145 \text{ ¥} \rightarrow$ No export, No import for survival
- How about 10% import tariff?
- How about 5% of export subsidies?

Trade policies and Protection Indicators (1)

- Prices are affected by TRADE POLICIES (t_M) and EXCHANGE RATE(e)
- $p^{\$}$ = world market price in foreign currency 1US\$, p^b =border price in local currency units (LCU), p^d =domestic price in LCU, e =nominal exchange rate in LCU/\$
- Nominal Protection Coefficients
$$NPC = p^d / p^b = 1 + t$$
- If $NPC > 1$, producers are protected, consumers are dis-protected (taxed) , $NPC < 1$ (vice versa)

Trade policies and Protection Indicators (2)

- Effective Protection Coefficient (EPC)
- Better than NPC by reflecting the intermediate input
- Production + Intermediate inputs
- p =unit value of output, c =cost of intermediate goods in production, VA =Value added, cost of labor, financial capital per unit of production, then $p=c+VA$ ($VA=p-c$)
- $EPC = VA^d / VA^b = p^d - c^d / p^b - c^b$
- If $EPC > 1$, producers are protected and consumers are taxed, $EPC < 1$ (vice versa)

Suggested Readings

- Dani Rodrik (2004) “Industrial Policy for the Twenty-First Century”, Working Paper Series 04-047, Kennedy School of Government, Harvard University.
- Robert Wade (1990) *Governing the market*, Princeton University Press.
- Richard Baldwin (2016) *The Great Convergence: Information Technology and the New Globalization* Belknap Press: An Imprint of Harvard University Press