

The Instruments of Trade Policy

Krugman Chapter 9

Topics

- Chapter 8
 - Multinationals and Outsourcing
 - The Firm's Decision Regarding Foreign Direct Investment (FDI)
- Chapter 9
 - Basic Tariff Analysis
 - Costs and Benefits of a Tariff
 - Other Instruments of Trade Policy
 - The Effects of Trade Policy: A Summary

Multinationals and Outsourcing

Multinational Corporation

- US company is considered foreign-controlled,
 - if >10% of its stock is held by a foreign company
- US-based company is considered multinational if it owns >10% of a foreign firms
 - FDI (foreign direct investment): US firms buy more than 10% of a foreign firms
 - brownfield FDI: buying stocks of a foreign countries
 - greenfield FDI: building new production facility abroad

Why would a firm choose to Operate an Affiliate in a Foreign Location?

- Answer depends on the production activities that the affiliate carries out:
 - Type 1: replicates the production process elsewhere in the world
 - Horizontal FDI
 - Type 2: Part of the production processes are transferred to the affiliate location
 - Vertical FDI

Vertical FDI

- The result of Comparative Advantage
- Example: Intel
 - Production process; (A) Wafer fabrication
⇒ (B) Assembly ⇒ (C) Testing
 - (A) is very skill-intensive: US, Ireland, Israel
 - (B,C) are labor-intensive: Malaysia, Philippines, China, etc.
- One of the fastest-growing types of FDI

Horizontal FDI

- Dominated by flows between developed countries
- Multinational parent and affiliates are located in developed countries
- Main reason: to locate production near a firm's largest customer bases
 - Location motive

The Firm's Decision Regarding Foreign Direct Investment (FDI)

Proximity-Concentration Trade-Off

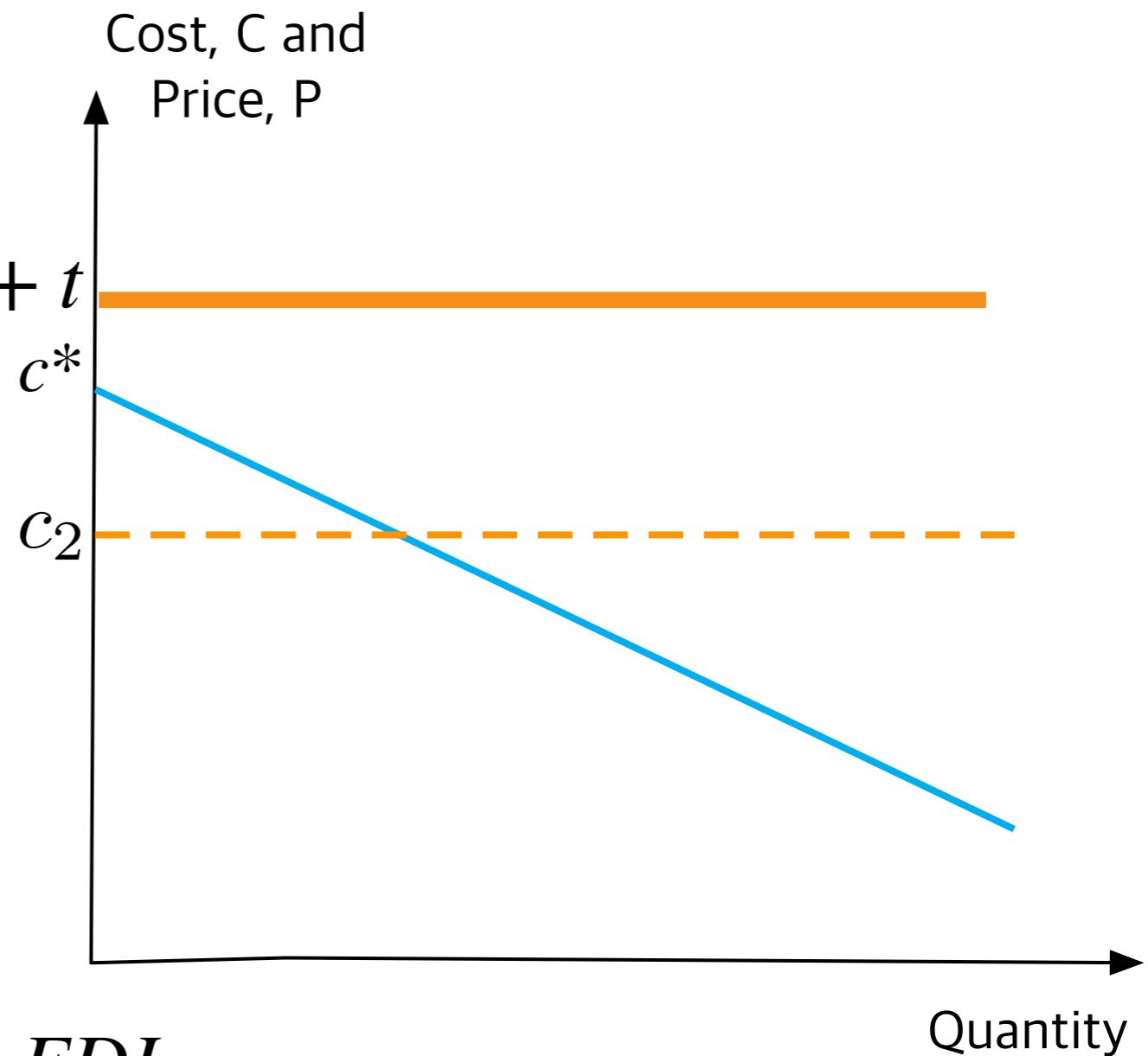
- Proximity (to local production)
 - Related to trade costs
 - Incentive to locate production near customers
- Concentration (to global production)
 - Related to economics of scale
 - Incentive to concentrate production

Multinationals

- Tend to be substantially larger and more productive than nonmultinationals
- We can explain this using monopolistic competition model

The Horizontal FDI Decision

- Horizontal FDI \Rightarrow Build a production facility in Foreign \Rightarrow trade cost (t) disappears
- However, horizontal FDI will incur the fixed cost (F) to build production facility
- Firm's choice:
 - Export
 - Cost = $Q \times t$
 - Horizontal FDI
 - Cost = F



$$Qt > F \Rightarrow Q > F/t \Rightarrow H.FDI$$
$$\tilde{Q}t < F \Rightarrow \tilde{Q} < F/t \Rightarrow Export$$

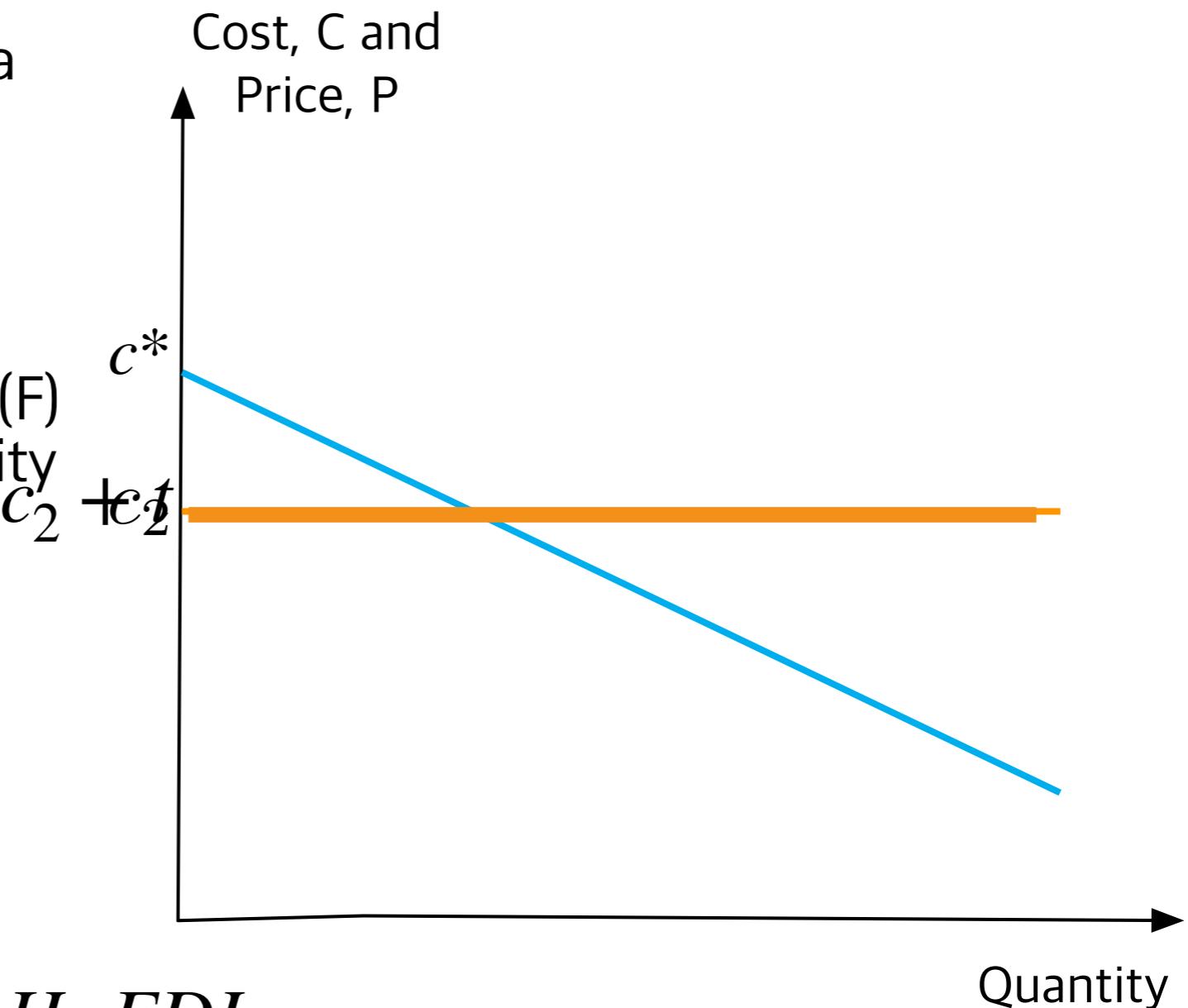
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FDI cutoff, F/t

- If Q exceed the cutoff \Rightarrow
Horizontal FDI is a better choice
- This cutoff summarizes the proximity-concentration
 - $t \uparrow \Rightarrow$ cutoff \downarrow
 - $F \downarrow \Rightarrow$ cutoff \downarrow
 - Firms with sufficiently low c (MC): Q will be higher than cutoff \Rightarrow H. FDI will be best choice

$$Q > F/t \Rightarrow H.FDI$$

$$Q < F/t \Rightarrow Export$$

The Vertical FDI Decision

- Determinant: trade-off between per-unit costs and fixed costs
- Benefit: Gain from V. FDI = MC (domestic production) - MC (V. FDI)
- Cost: Fixed cost
 - To establish production chain to a foreign affiliate (child company)
- $Q > \text{cutoff (V. FDI)}$ \Rightarrow Do Vertical FDI

Outsourcing

- Substitute for horizontal FDI
 - License an independent firm to produce and sell its products in a foreign location
- Substitute for vertical FDI
 - Contract with an independent firm to perform specific parts of the production process in the foreign location

Offshoring

- Relocation of parts of the production chain abroad
- Groups together both foreign outsourcing and vertical FDI
- Intra-firm trade: 1/3 of world trade

Motivation of Offshoring

- Avoiding a risk of losing proprietary technology
- Benefit from internalization
- Trade-off between higher fixed costs and lower per-unit costs
- Only sufficiently larger firms will choose offshoring or V. FDI: These are related to higher fixed cost (F) and lower production cost (c)

Consequences of Multinationals and Foreign Outsourcing

- Question: What are the consequences for welfare of the expansion in multinational production and outsourcing?
- Relocation of production is related to the COST DIFFERENCES generated by comparative advantage
- Consequence: Overall gains from trade, and induce income distribution effects that leave some worse off

Involuntary Worker Displacements

- The most visible effects of multinationals and offshoring
- The best policy response: Providing an adequate safety net to unemployed workers
- Short-run costs, long-run gains.

The Instruments of Trade Policy

Krugman et al. Chapter 8

Topics

- Basic Tariff Analysis
- Costs and Benefits of a Tariff
- Other Instruments of Trade Policy
- The Effects of Trade Policy: A Summary

Basic Tariff Analysis

Tariff

- The simplest of trade policies
- Definition: A tax levied on imported goods
 - Specific tariff: tax levied as a fixed charge for each unit of goods imported
 - Tax base: quantity of goods
 - Ad valorem tariff: tax levied as a fraction of the value of the imported goods
 - Tax base: value of goods

Objects of Tariff

- To provide revenue from tariff
- To protect particular domestic sectors

Means of Industry Protection

- Tariff barrier
 - Tax to imported goods
- Nontariff barriers
 - Import quotas
 - Limitation on the quantity of imports
- Export restraints
 - Limitation on the quantity of exports "from foreign"

Partial Equilibrium Framework

- Ignoring the effect on other sectors
- Opposite concept: General equilibrium framework
 - Considers the overall effects including other sectors
 - Supply, demand, and trade in a single industry → Effects of a tariff → Measuring the amount of protection

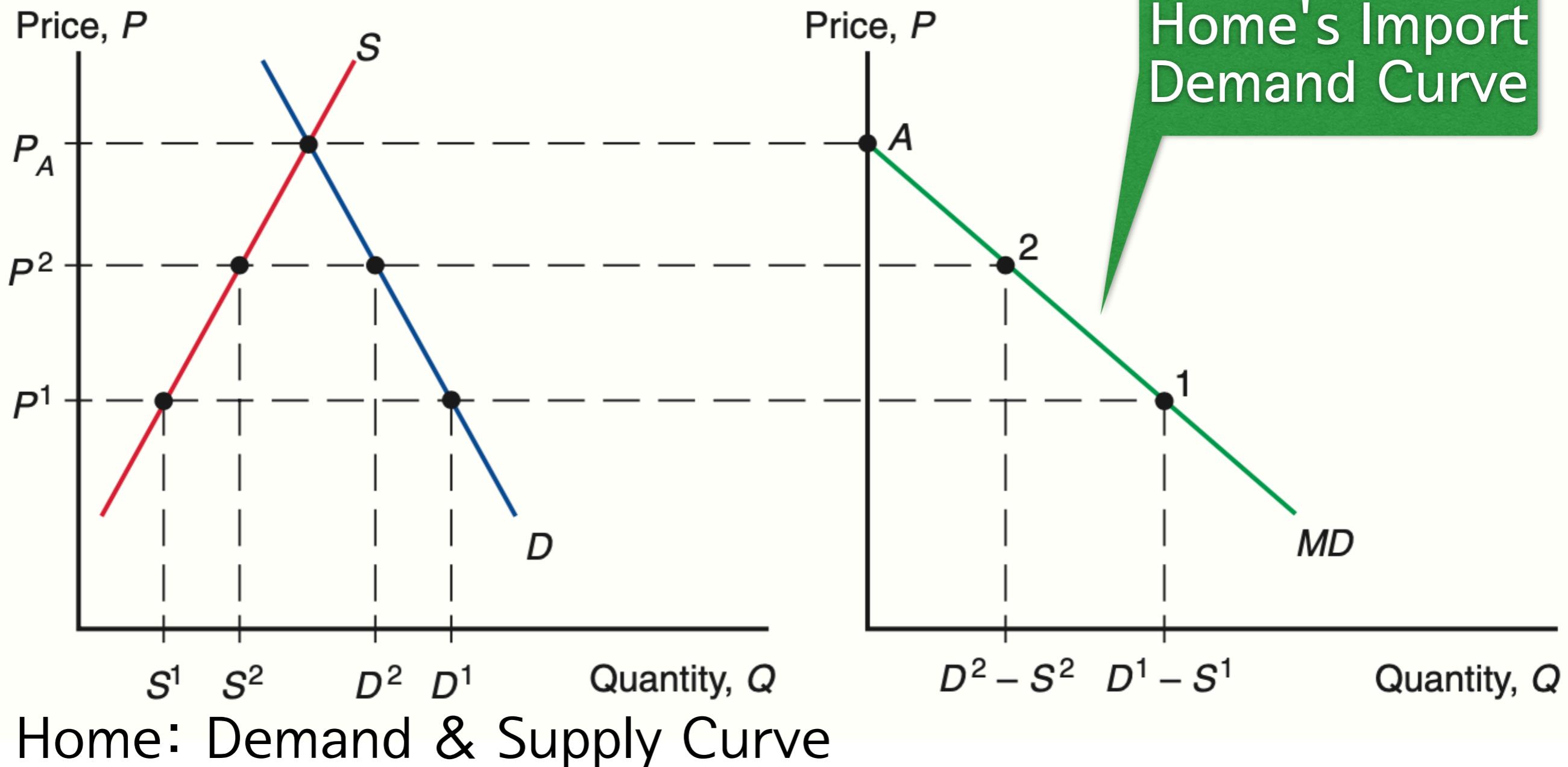
Supply, Demand, and Trade in a Single Industry: Basic Setting

- Two nations: Home and Foreign
- Considering single industry: wheat industry
 - Wheat market is perfectly competitive
- No transport cost: $t = 0$
- Assume $P > P^*$
 - Home: importer, Foreign: exporter
- Exchange rate: Fixed
- Our object: finding (1) the world price, and (2) the quantity traded

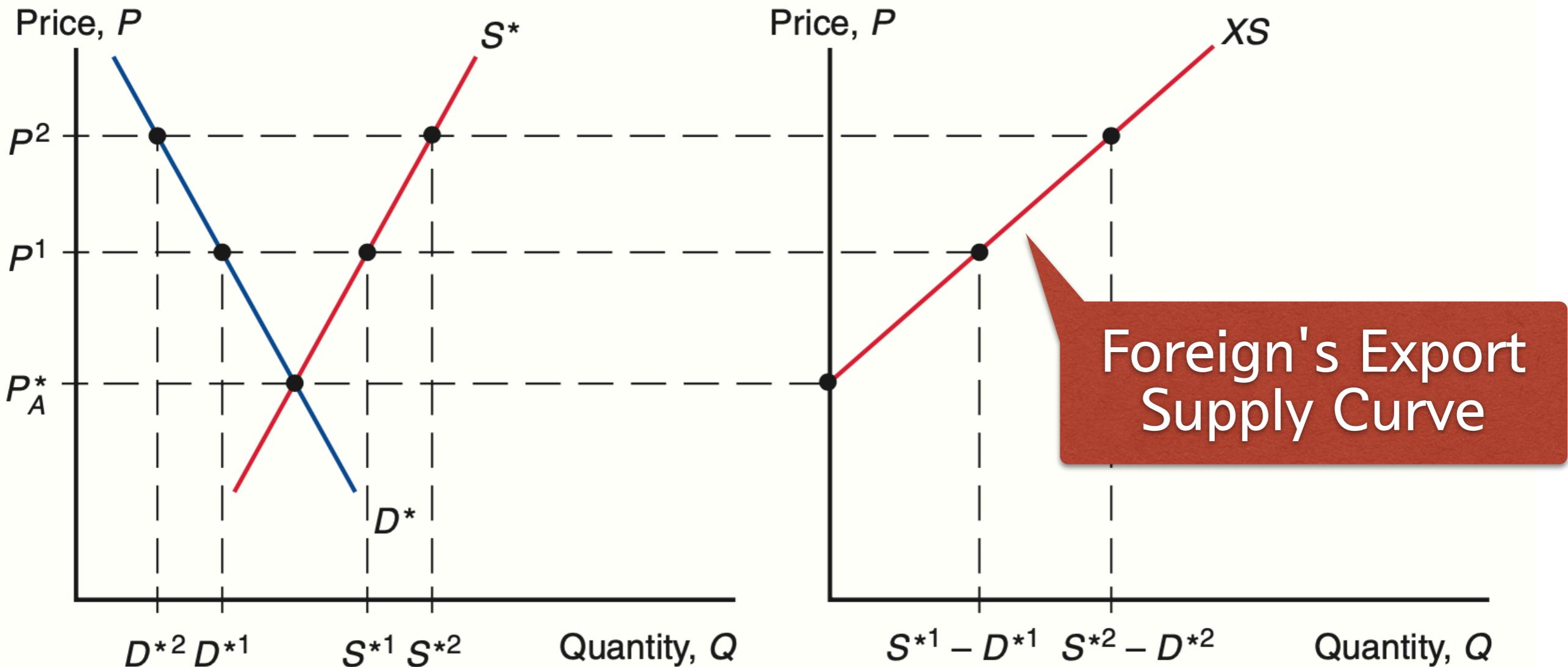
Home Import Demand Curve, Foreign Export Supply Curve

- Home import demand curve: the excess of what Home consumers demand over what Home producers supply
 - Demand (Home) - Supply (Home)
- Foreign export supply curve
 - Supply (Foreign) - Demand (Foreign)

Deriving: Home's Import Demand Curve

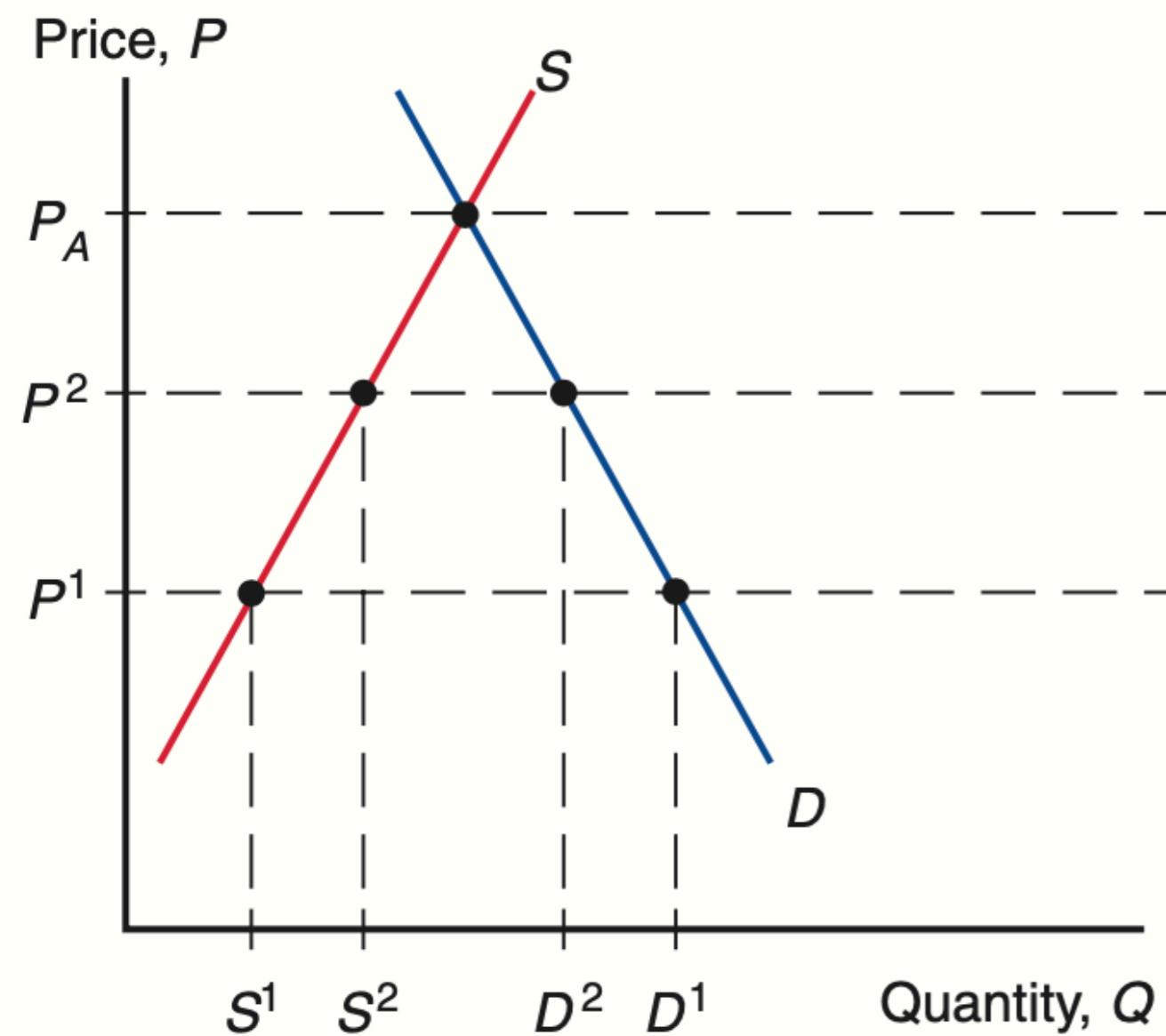


Deriving: Foreign's Export Supply Curve

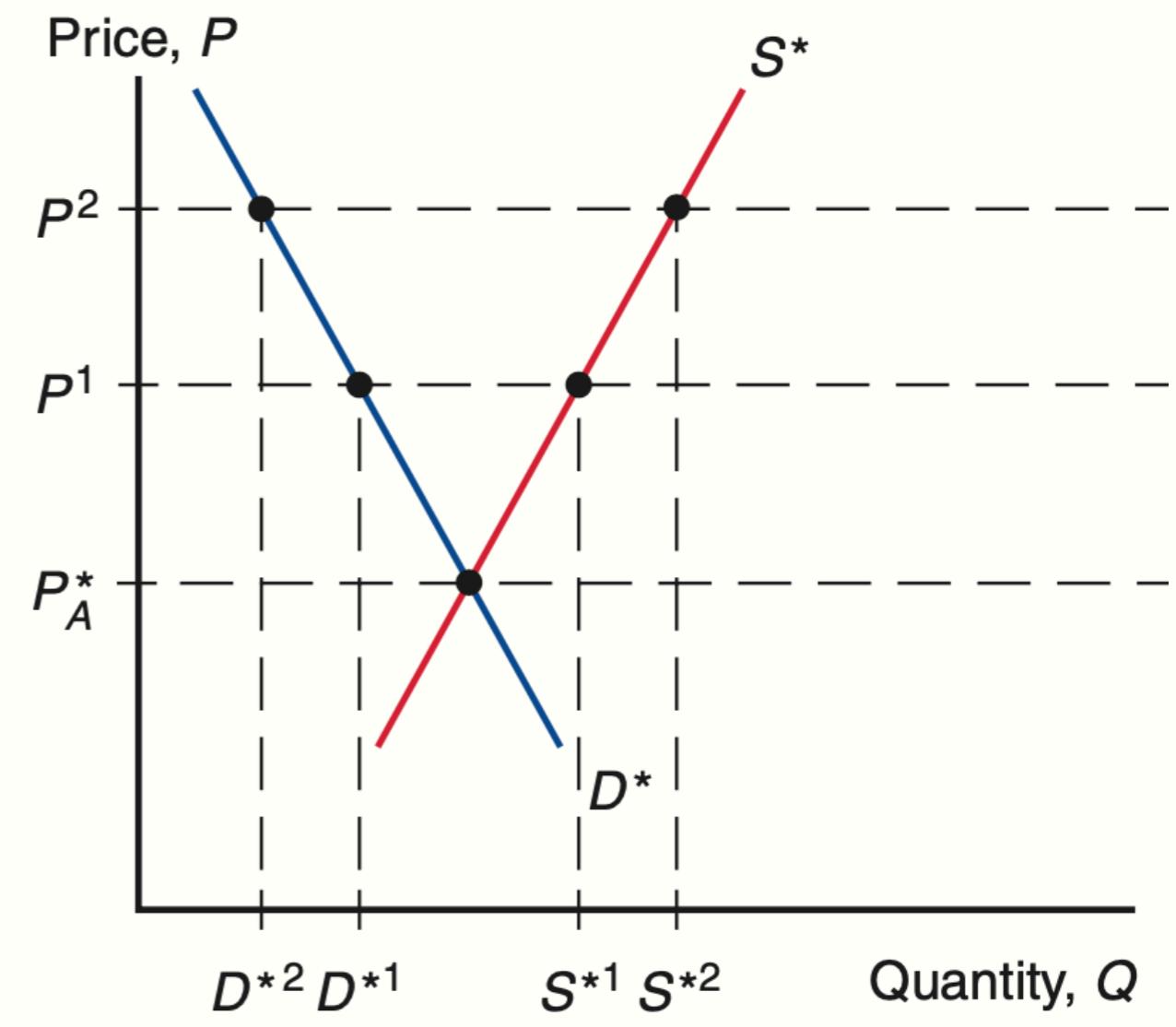


Foreign: Demand & Supply Curve

Both Markets

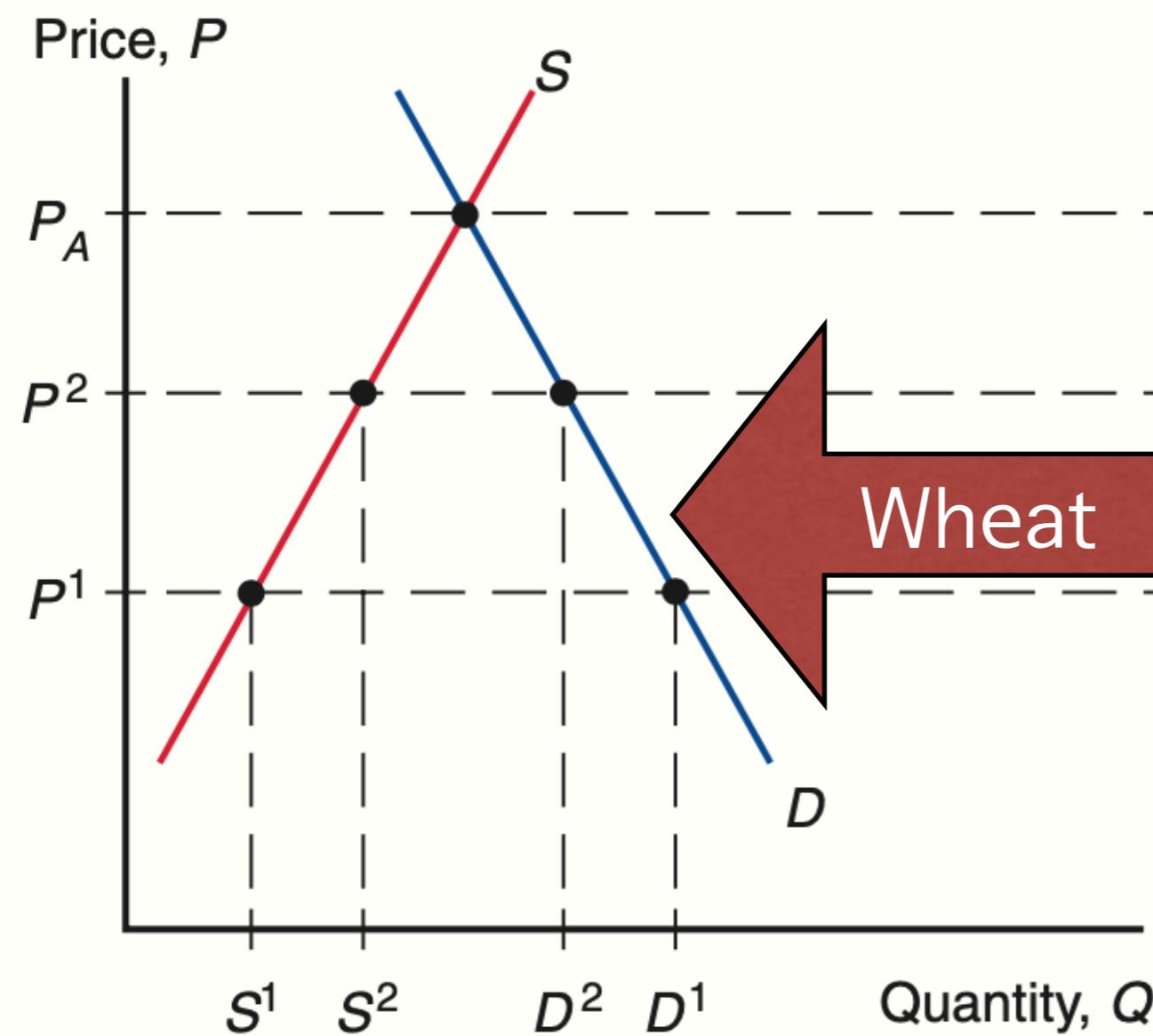


Home Wheat Market

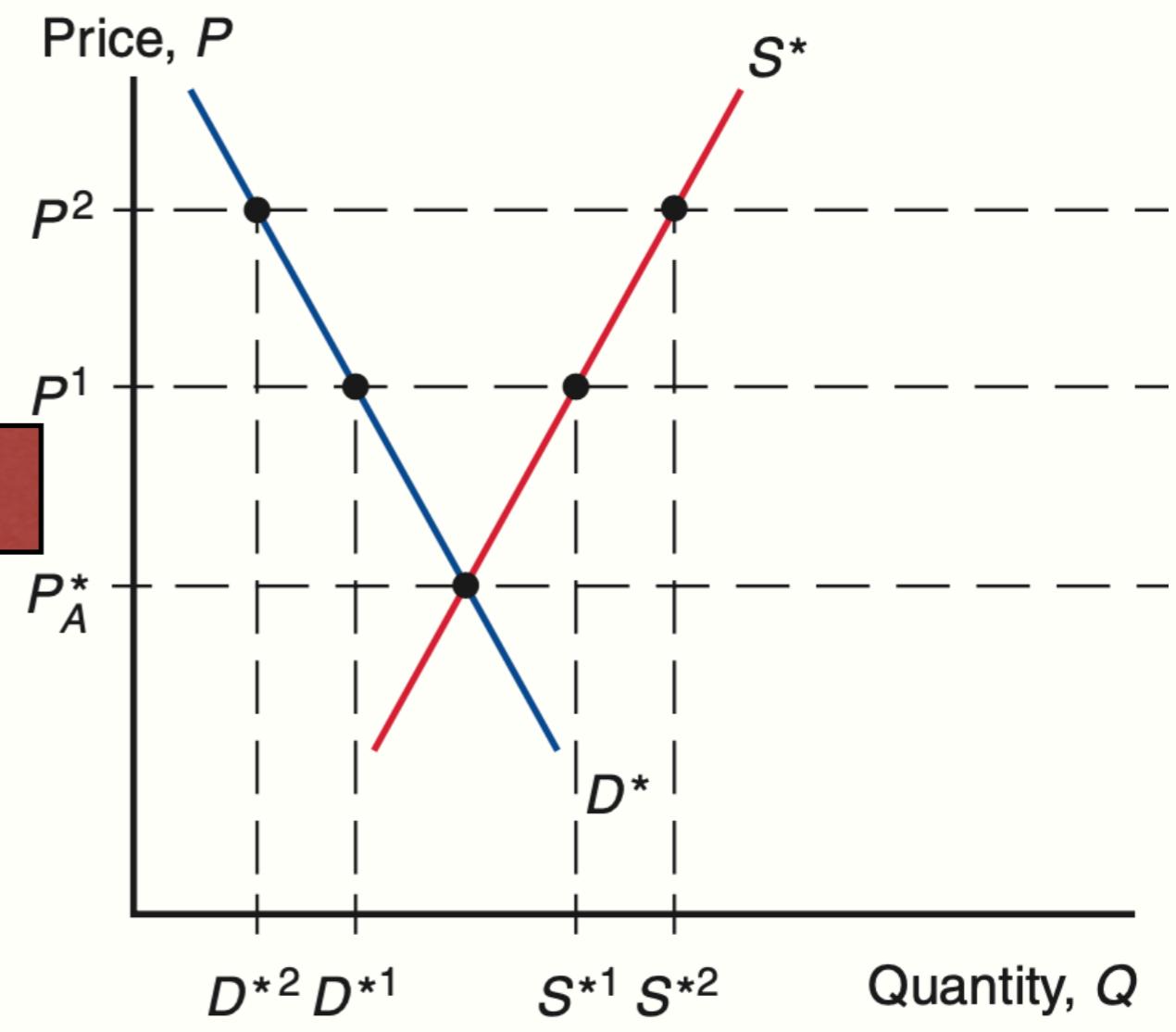


Foreign Wheat Market

Both Markets



Home Wheat Market



Foreign Wheat Market

World Equilibrium

Home demand – Home supply = Foreign supply – Foreign demand

Home demand + Foreign demand = Foreign supply + Home supply

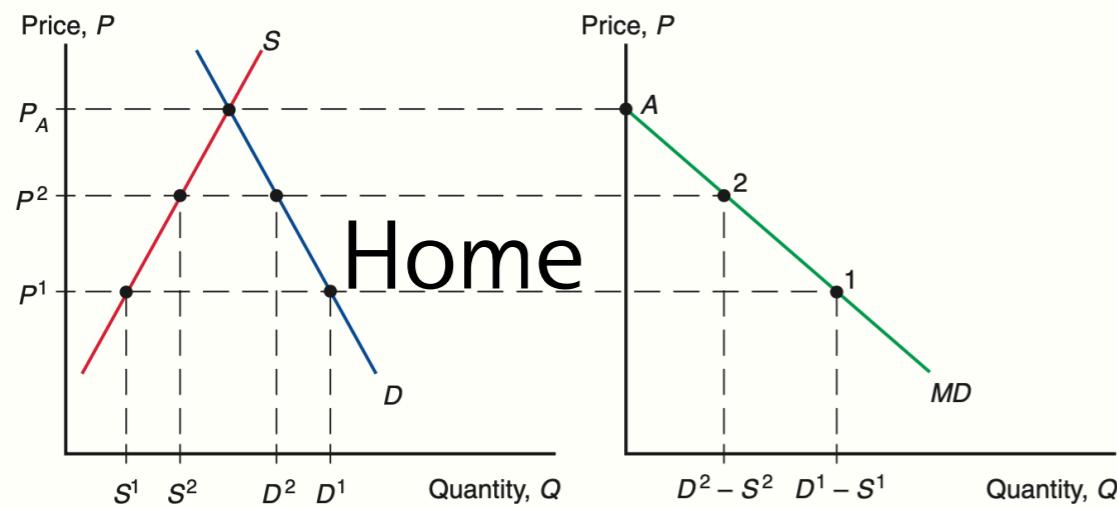
\therefore World Demand = World Supply

World Equilibrium

$\text{Home demand} - \text{Home supply} = \text{Foreign supply} - \text{Foreign demand}$

$\text{Home demand} + \text{Foreign demand} = \text{Foreign supply} + \text{Home supply}$

World Demand = World Supply

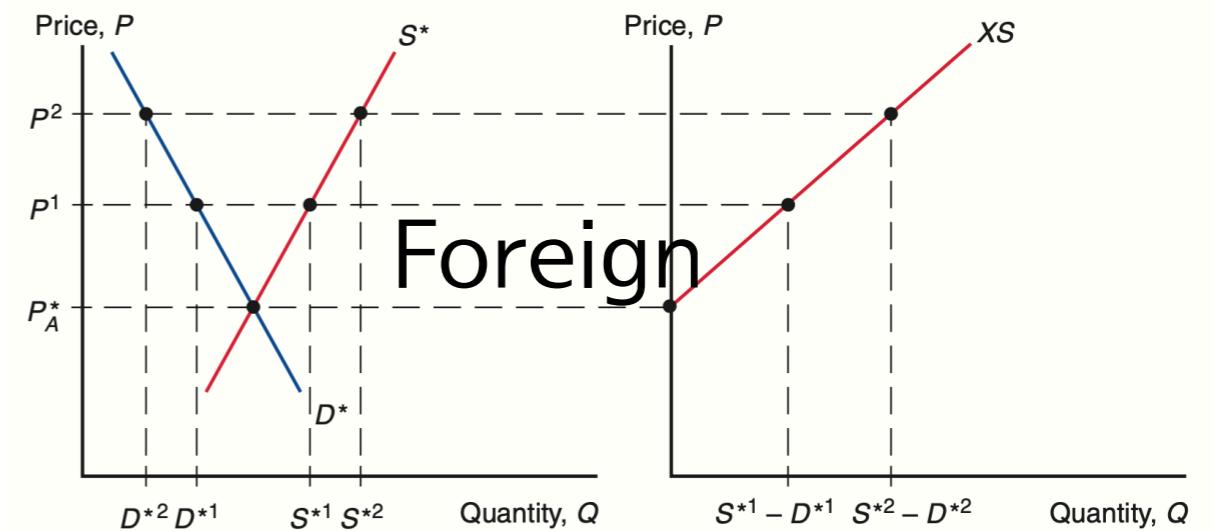
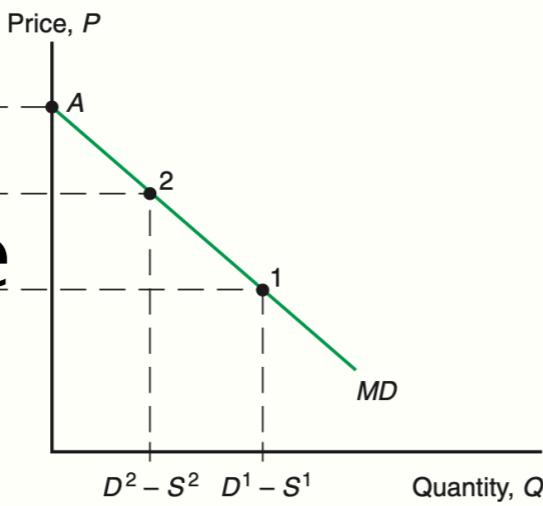
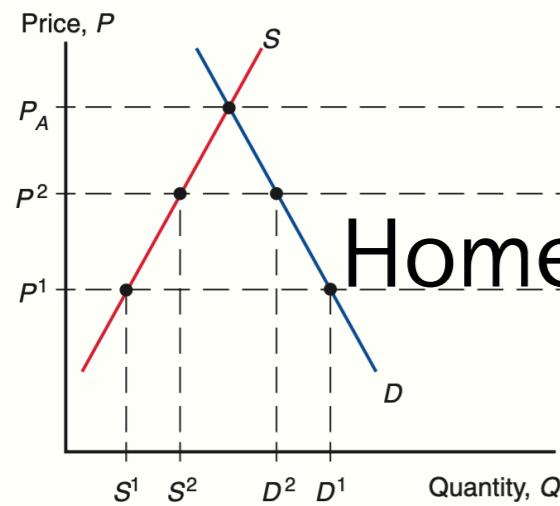


World Equilibrium

Home demand – Home supply = Foreign supply – Foreign demand

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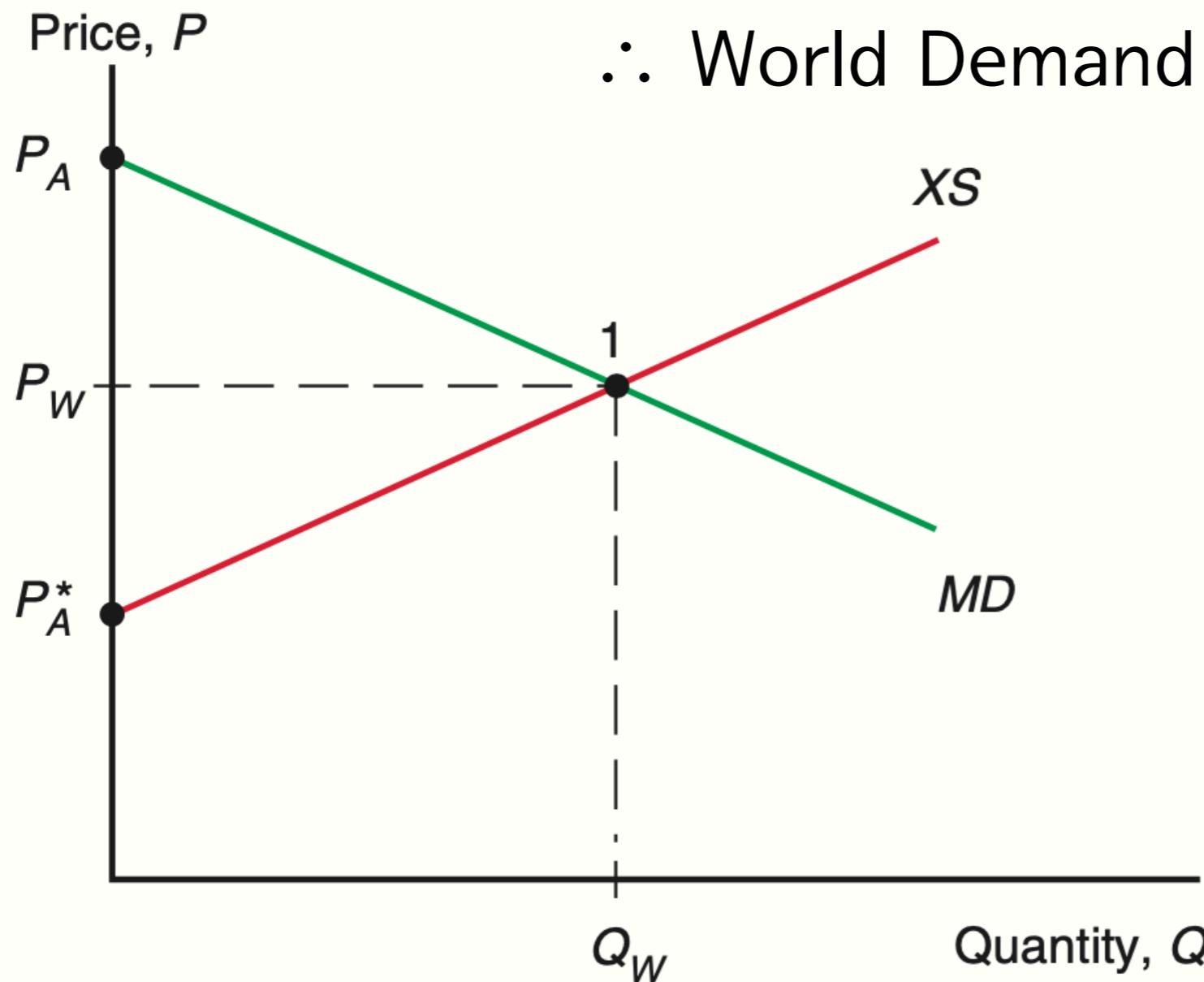
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World Equilibrium

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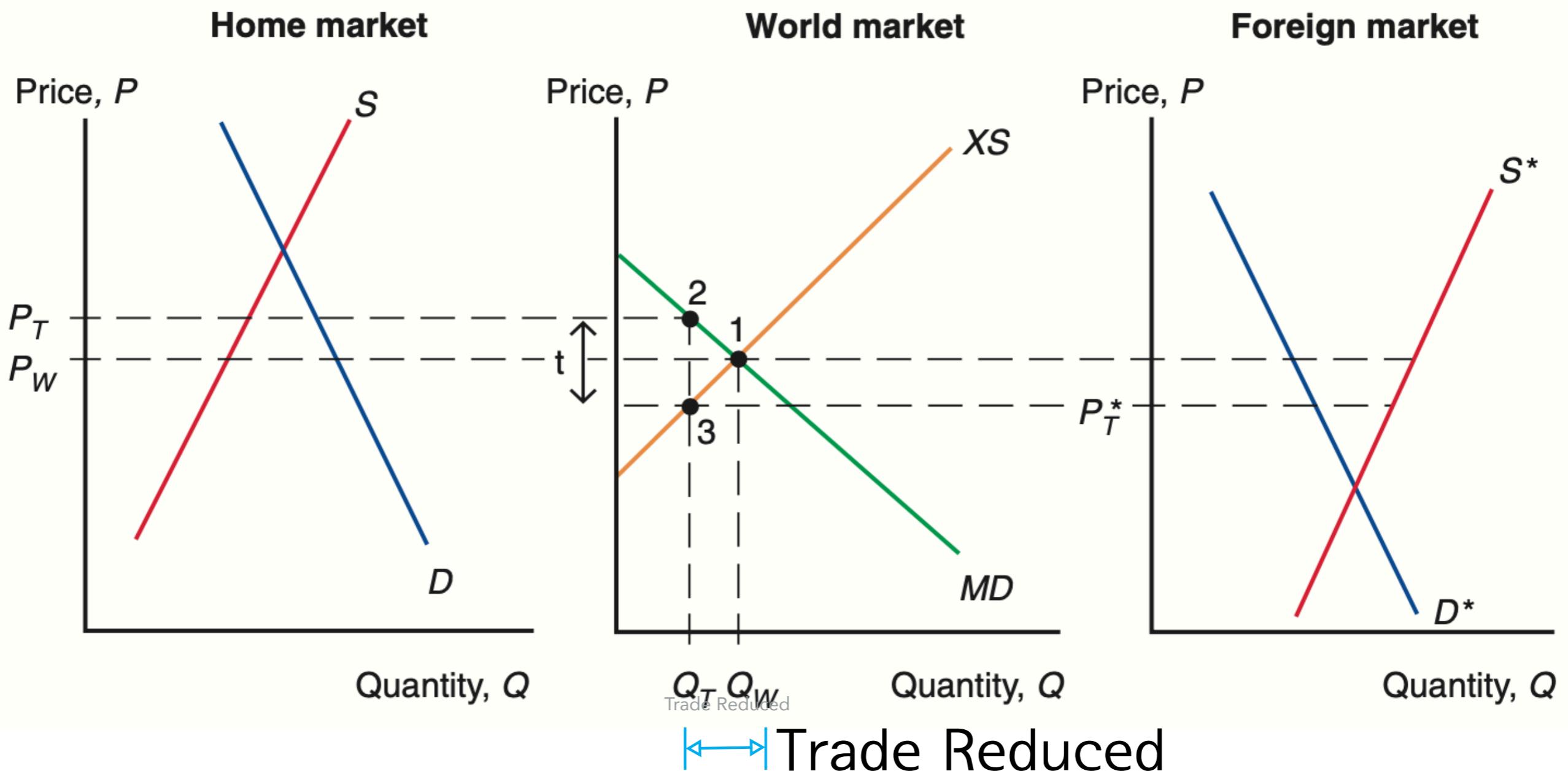


Effects of a Tariff

- From the point of view of economic agents, a tariff acts just like a cost of transportation
 - Import price \uparrow , Export price \downarrow
- Let t be a tariff on wheat in Home
- Then unless $P - P^* \geq t$, there will be no trade
 - $P - P^* \geq t \Rightarrow P^* = P - t$

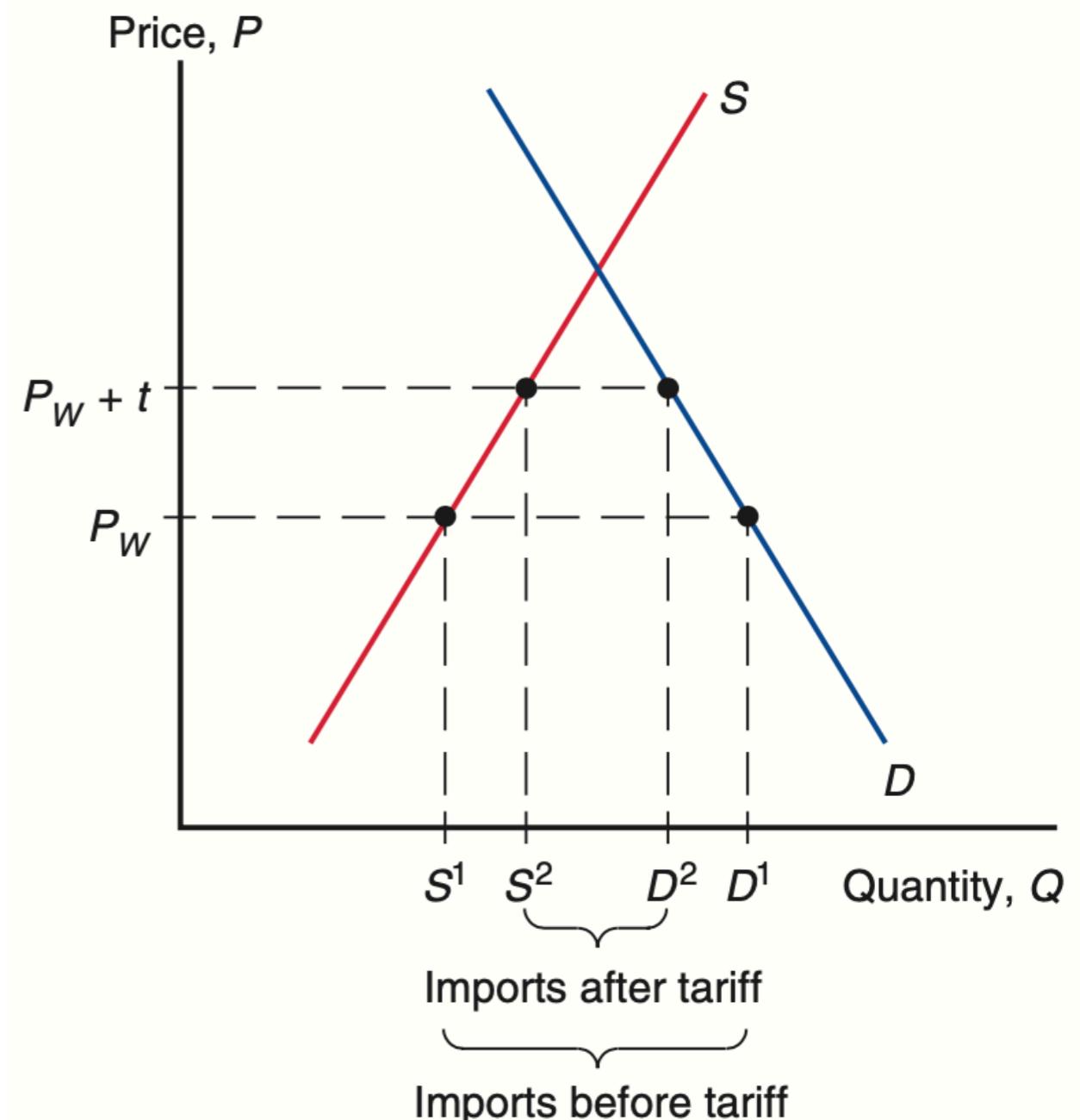
Effects of a Tariff

$$P_T - P_T^* = t$$



The Effects of a Tariff: When Home is Small

- Foreign wheat price will not change if Foreign is large enough
- Then the tariff cannot lower the foreign wheat price \Rightarrow home wheat price rises by tariff
- $P_T - P_W = t$

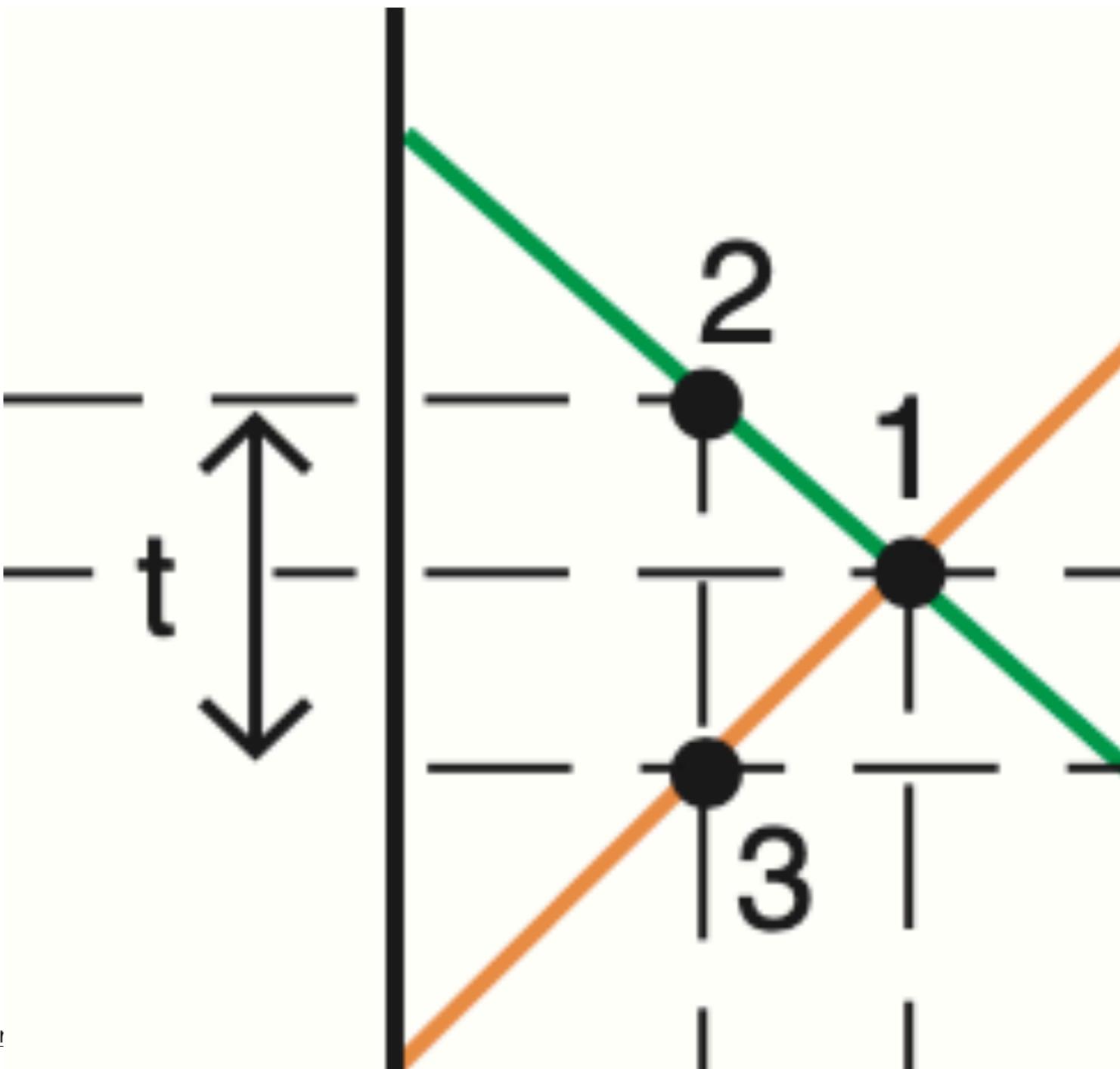


Measuring the Amount of Protection: Simple Calculation

- Question: How much protection a tariff actually provides?
- Answer: Percentage of the price that would prevail under free trade
- Case 1: Tariff is an ad valorem tax:
 - Protection level = Tariff rate
- Case 2: Tariff is specific
 - Protection level = $\text{Tariff}/(\text{Price} - \text{Tariff})$
- However, **this is only valid under small country assumption**

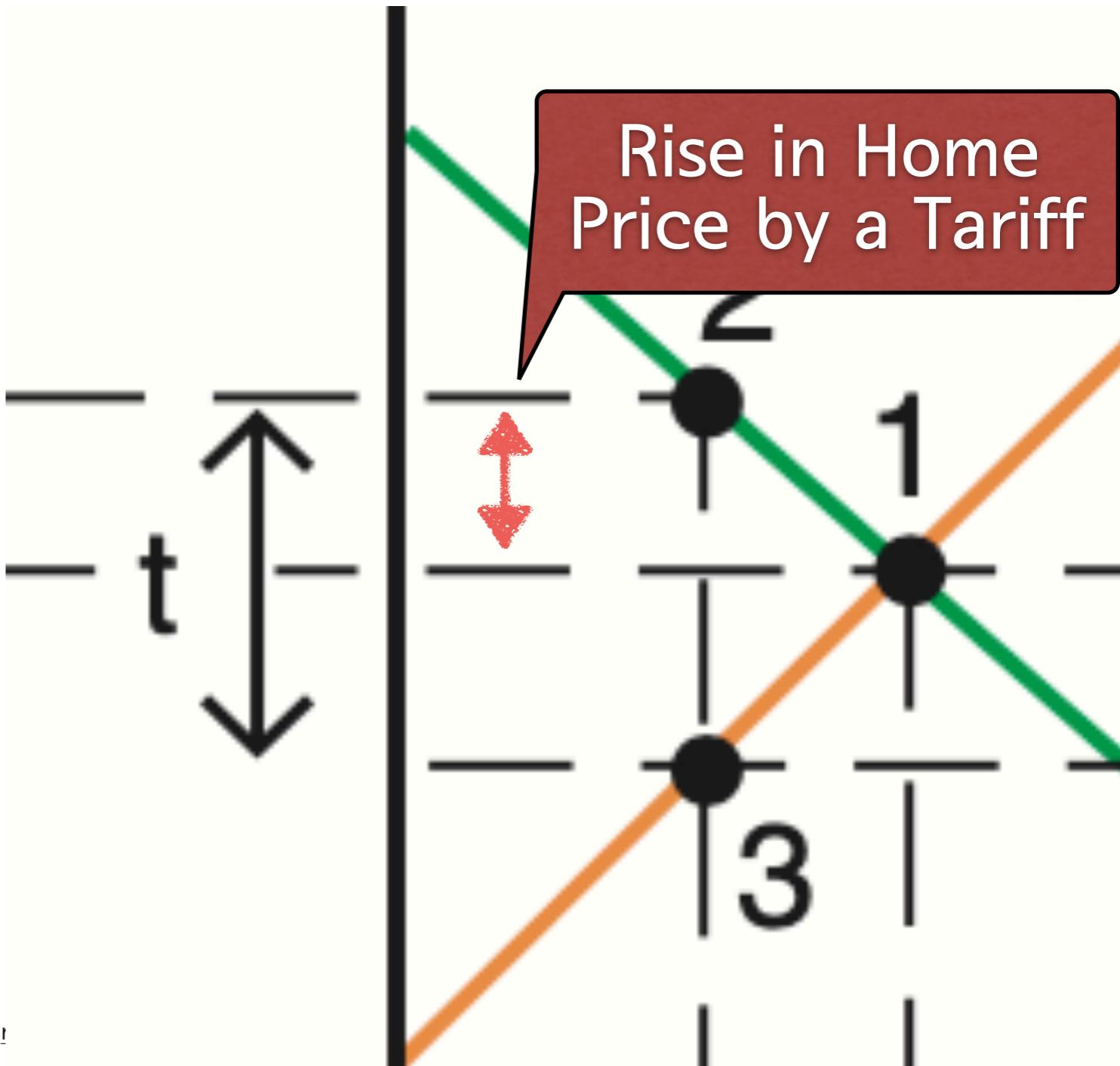
Problem of the Simple Calculation

- If Home is NOT small enough (or Foreign is NOT large enough),
 - Part of the tariff will lower foreign export price
 - Tariff may have very different effects on different stage of production: Effective rate of protection



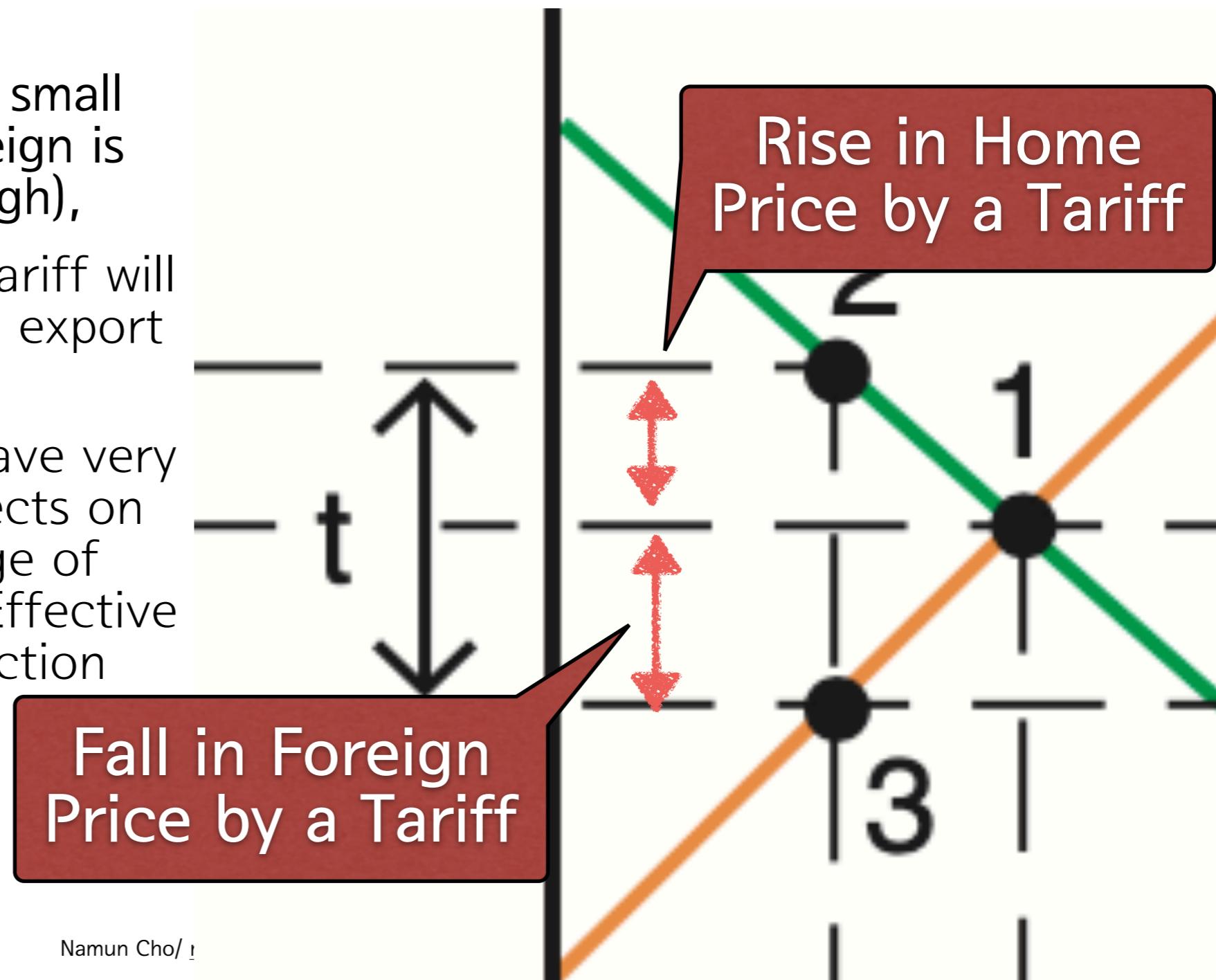
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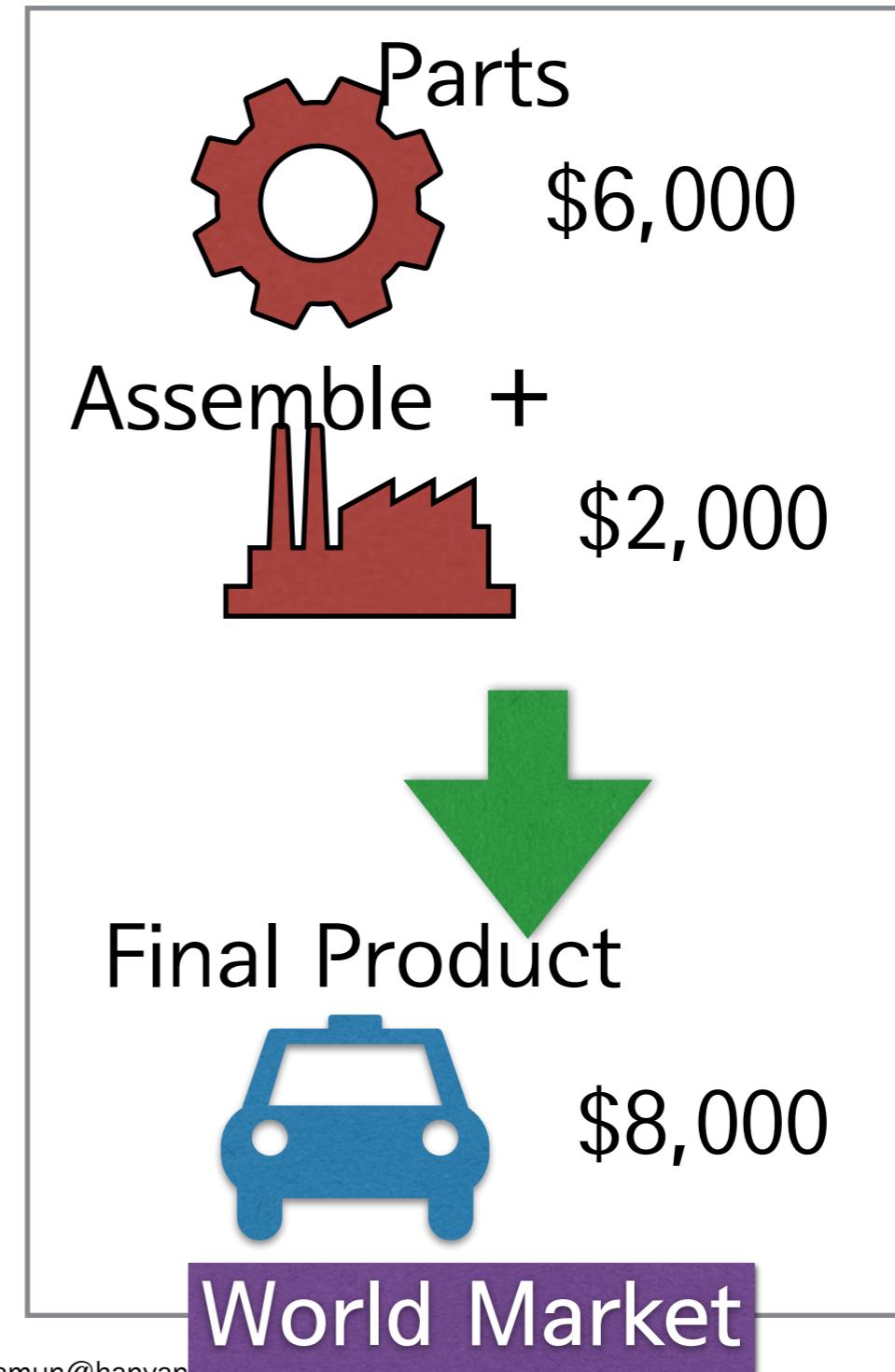
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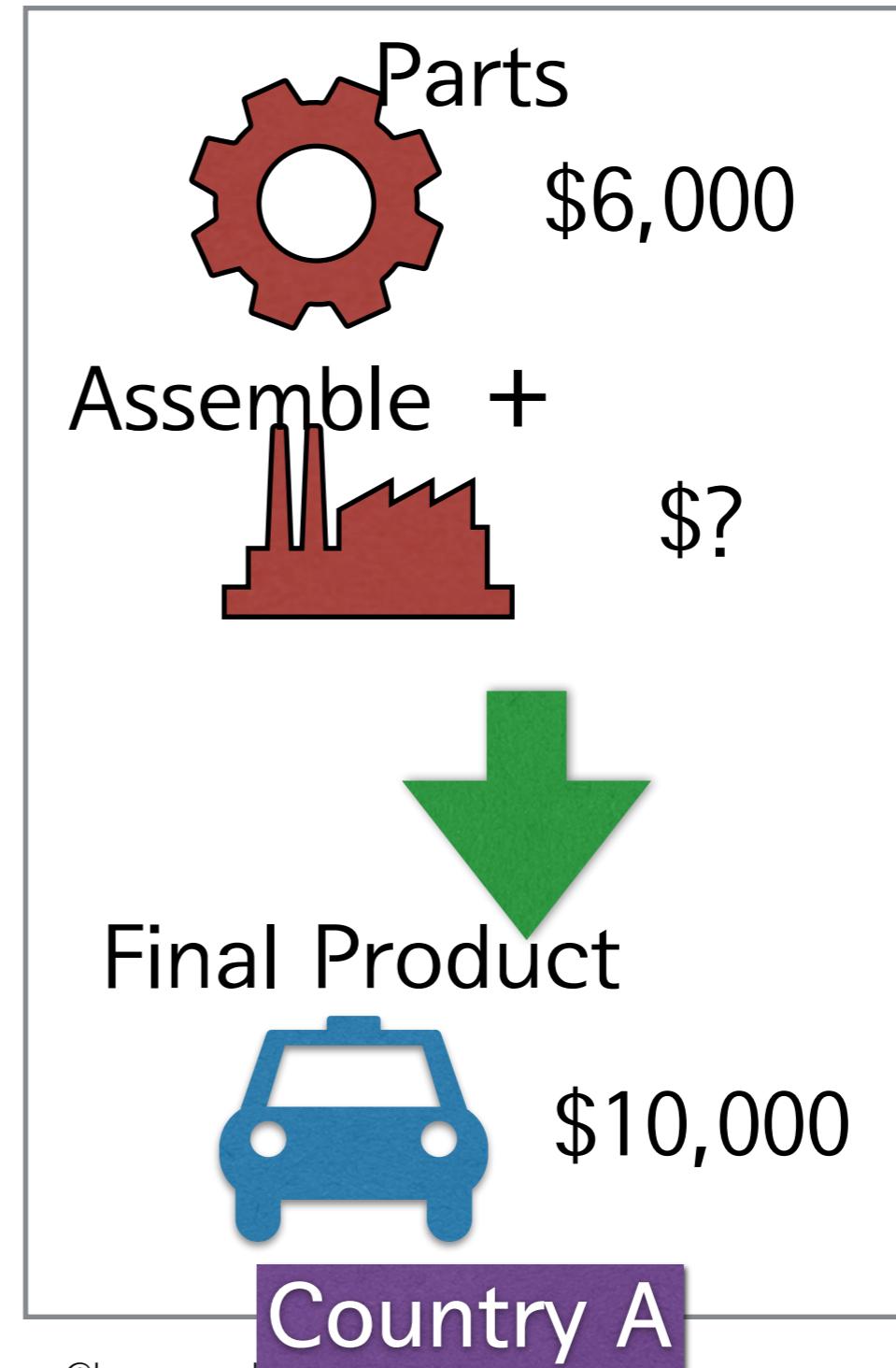
Effective Rate of Protection: A Hypothetical Example

- Current world market
 - Price of automobile = \$8,000
 - Price of parts automobile: \$6,000
- Producers will make automobile if: assemble cost < \$2,000
- Country A: want to develop auto assembly industry
- Country B: already has an assembly industry and want to develop a parts industry



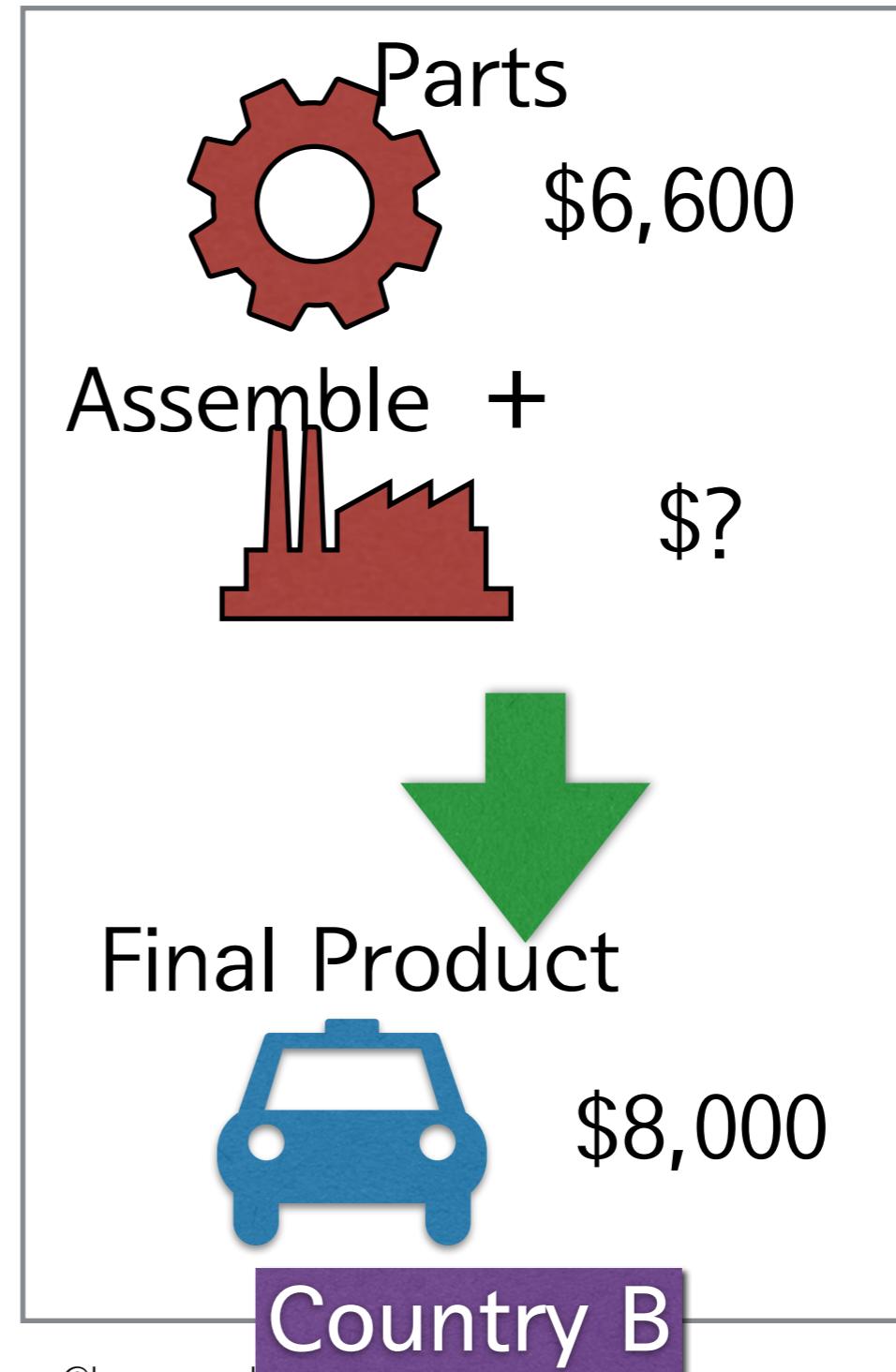
Case 1: Country A's 25% Tariff on Imported Autos

- Auto price before tariff: \$8,000
- Auto price after 25% tariff: \$10,000
- Producers will make automobile if: assemble cost < \$4,000
 - Before tariff: 2000
 - After tariff: 4000 ($100\% \uparrow$)
- \therefore Effective rate of protection = 100%. (Not 25%)



Case 2: Country B's 10% Tariff on Parts

- Price of parts before tariff: \$6,000
- Price of parts after 10% tariff: \$6,600
- Producers will make automobile if: assemble cost < \$1,400
- Before tariff: 2000
- After tariff: 1400 ($30\% \downarrow$)
- \therefore Effective rate of protection = -30%. (Not 25%)



Costs and Benefits of a Tariff

Big Picture

- Consumer Surplus
- Producer Surplus
- Synthesis: Social Surplus
- Application to Welfare Analysis of a Tariff

Consumer Surplus

Willingness to Pay and Demand Curve

- Willingness to Pay (WTP)
 - The maximum price at which he or she would buy a good
 - Other name: reserve price
 - If one know the WTP of all consumers, then demand schedule can be derived

Hypothetical Example: Pen Market

Potential Buyers	Willingness to Pay (\$)
Aleisha	59
Brad	45
Claudia	35
Darren	25
Edwina	10



WTP Table ⇒ Demand Schedule

Potential Buyers	WTP (\$) (Marginal Benefit)
Aleisha	59
Brad	45
Claudia	35
Darren	25
Edwina	10

Price(\$)	Demand(EA)
over 59	0
46~59	1
36~45	2
26~35	3
11~25	4
below 10	5

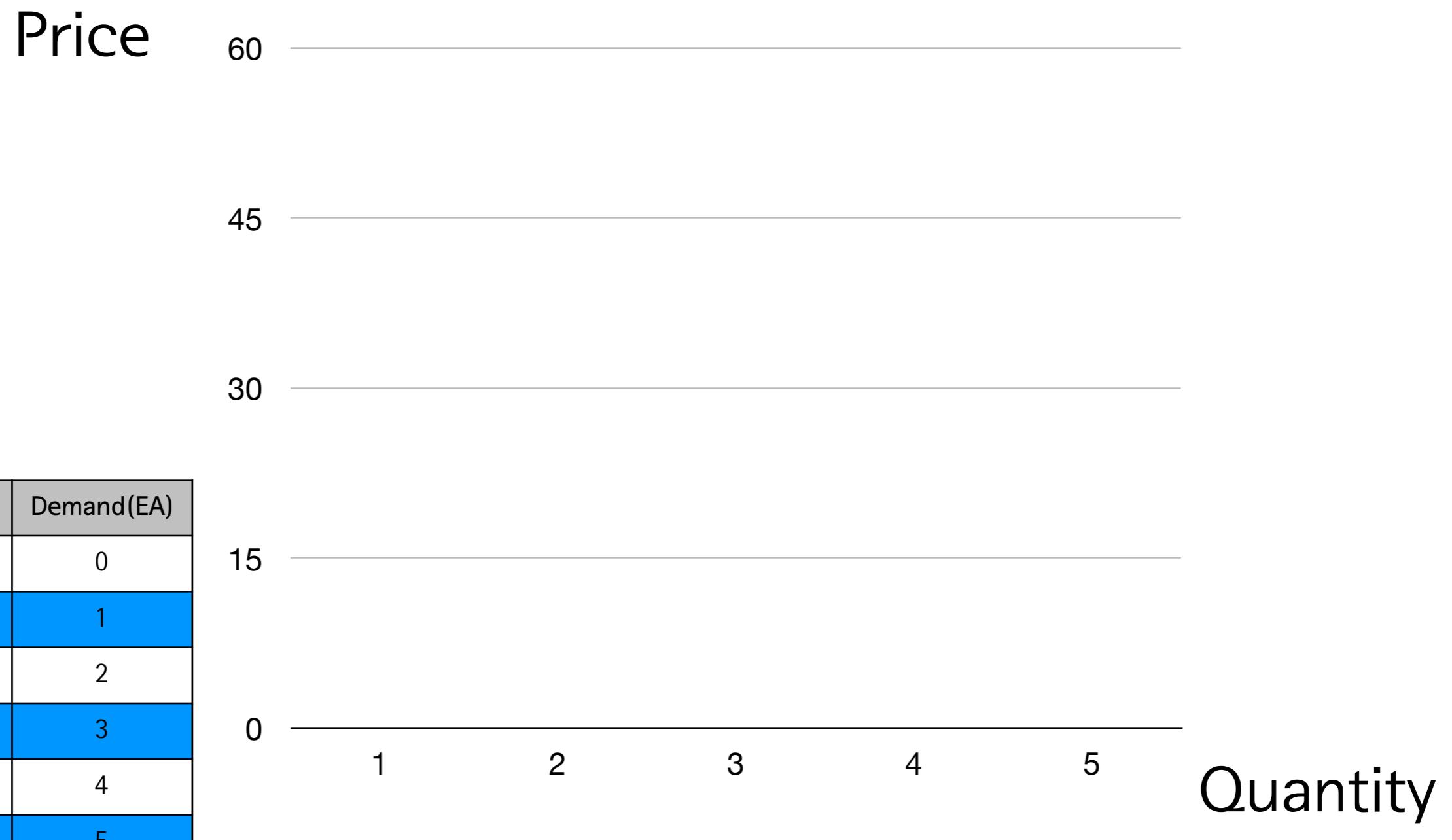
Deriving Demand Curve

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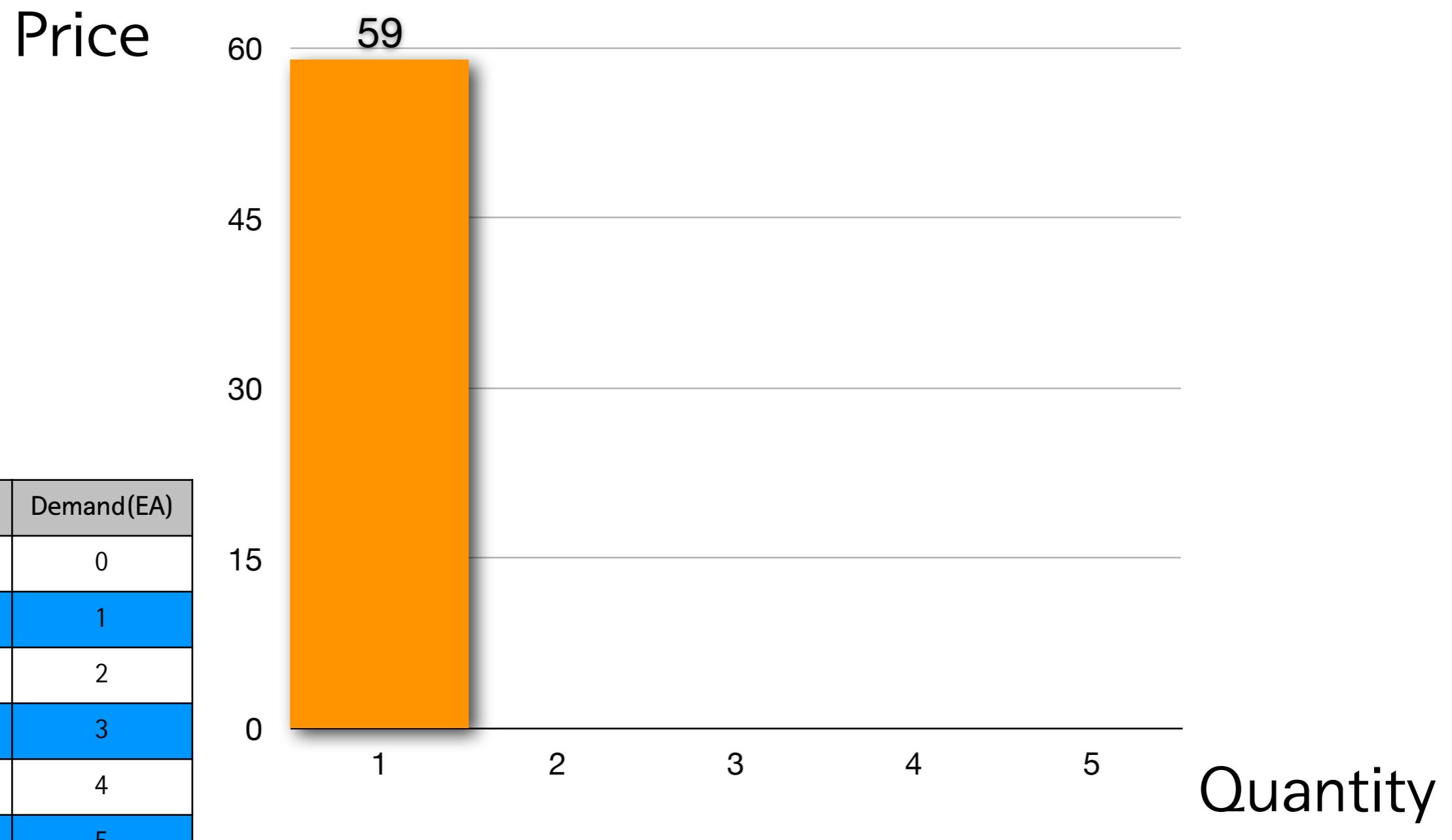
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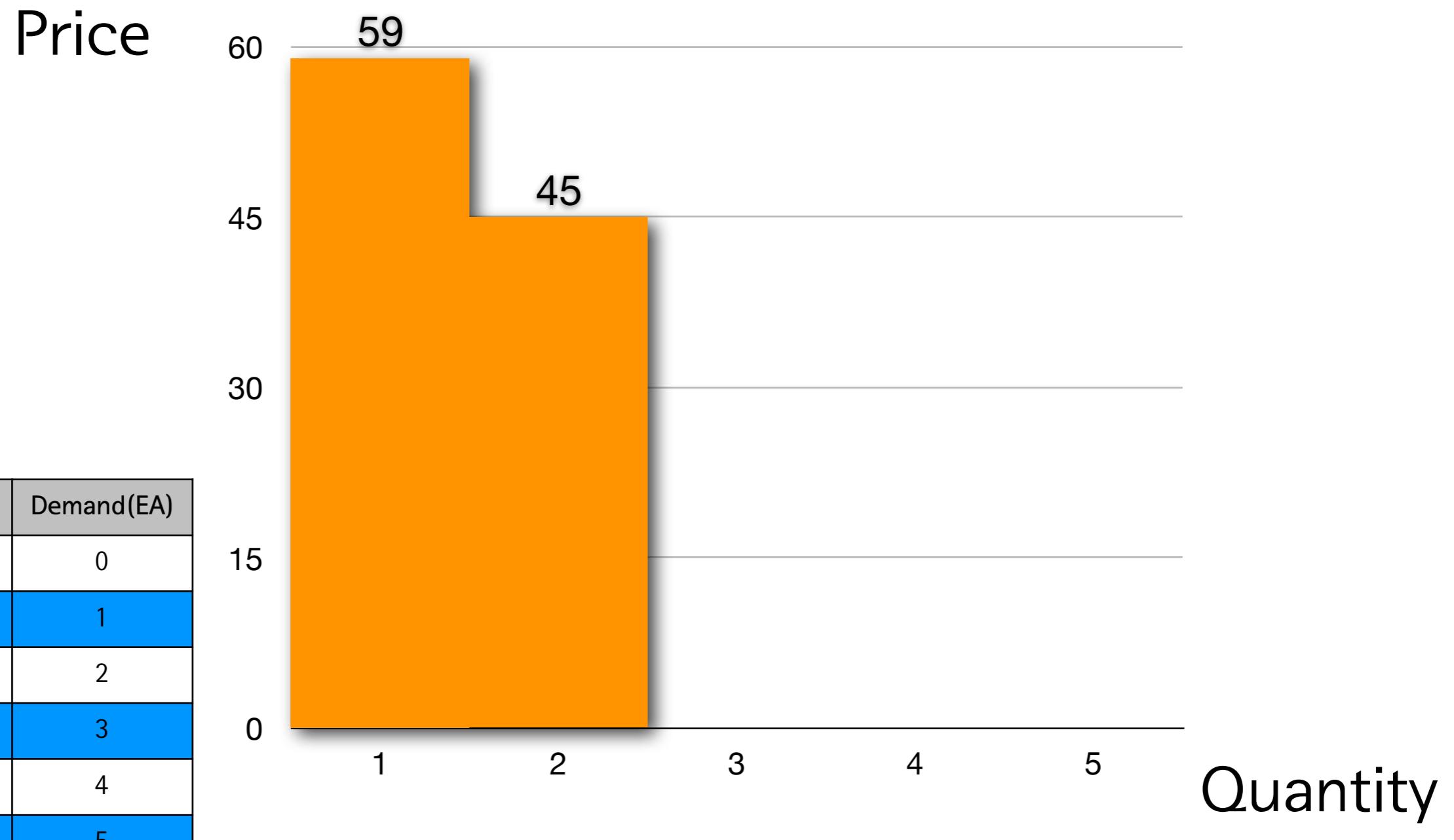
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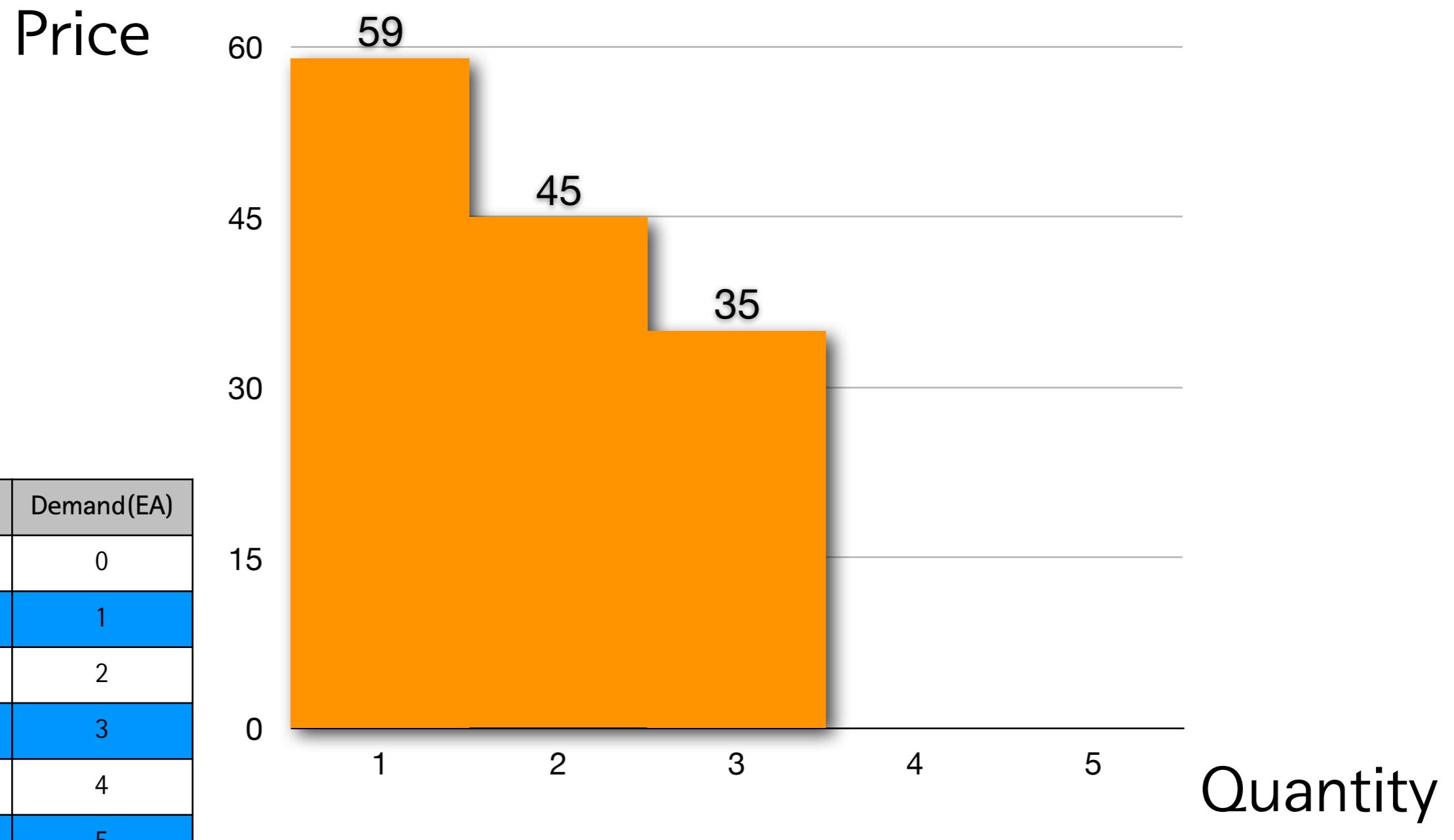
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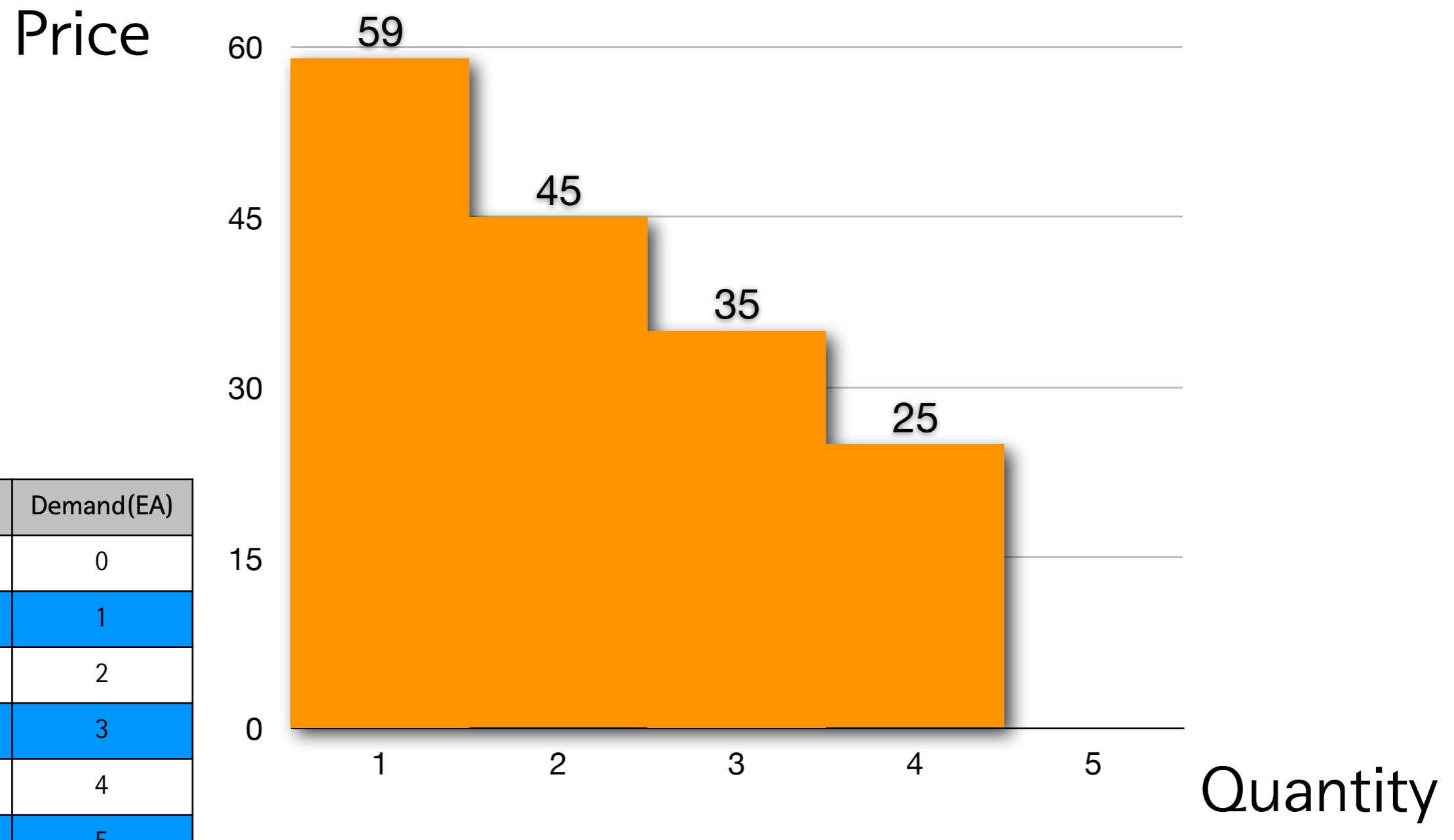
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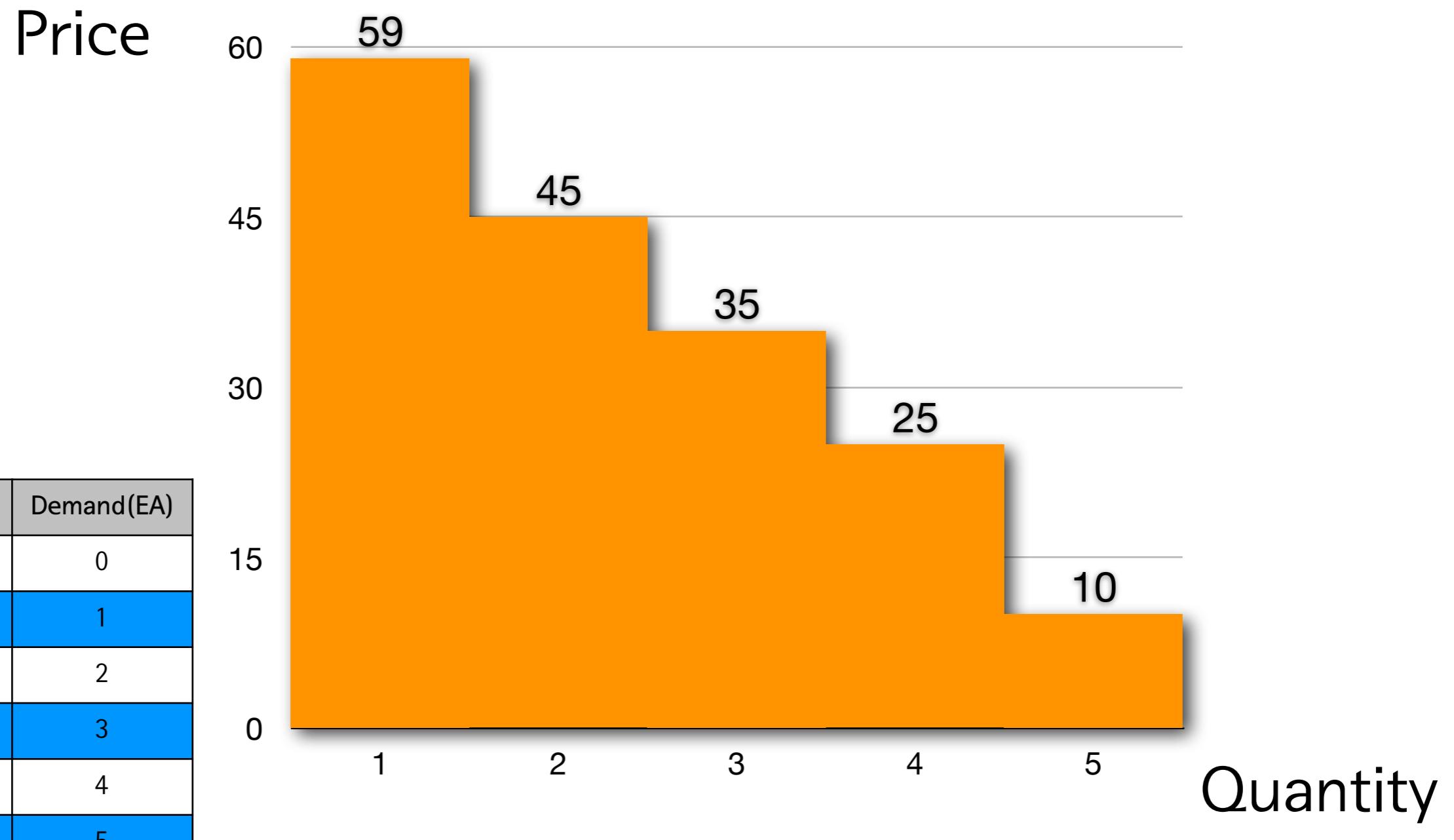
Deriving Demand Curve



Deriving Demand Curve



Deriving Demand Curve



Consumer Surplus

- The net gain to an individual buyer from the purchase of good
 - Individual Consumer Surplus := WTP - Price paid
 - Total Consumer Surplus: Sum of all individual consumer surplus

Case 1: Price = \$30

Potential Buyer	WTP(\$)	Price paid(\$)	Individual Consumer Surplus (\$)
Aleisha	59	30	29
Brad	45	30	15
Claudia	35	30	5
Darren	25	30	-
Edwina	10	30	-
total	-	-	49

Case 1: Price = \$30

Potential Buyer	WTP(\$)	Price paid(\$)	Individual Consumer Surplus (\$)
Aleisha	59	30	29
Brad	45	30	15
Claudia	35	30	5
Darren	25	30	-
Edwina	10	30	-
total	-	-	49

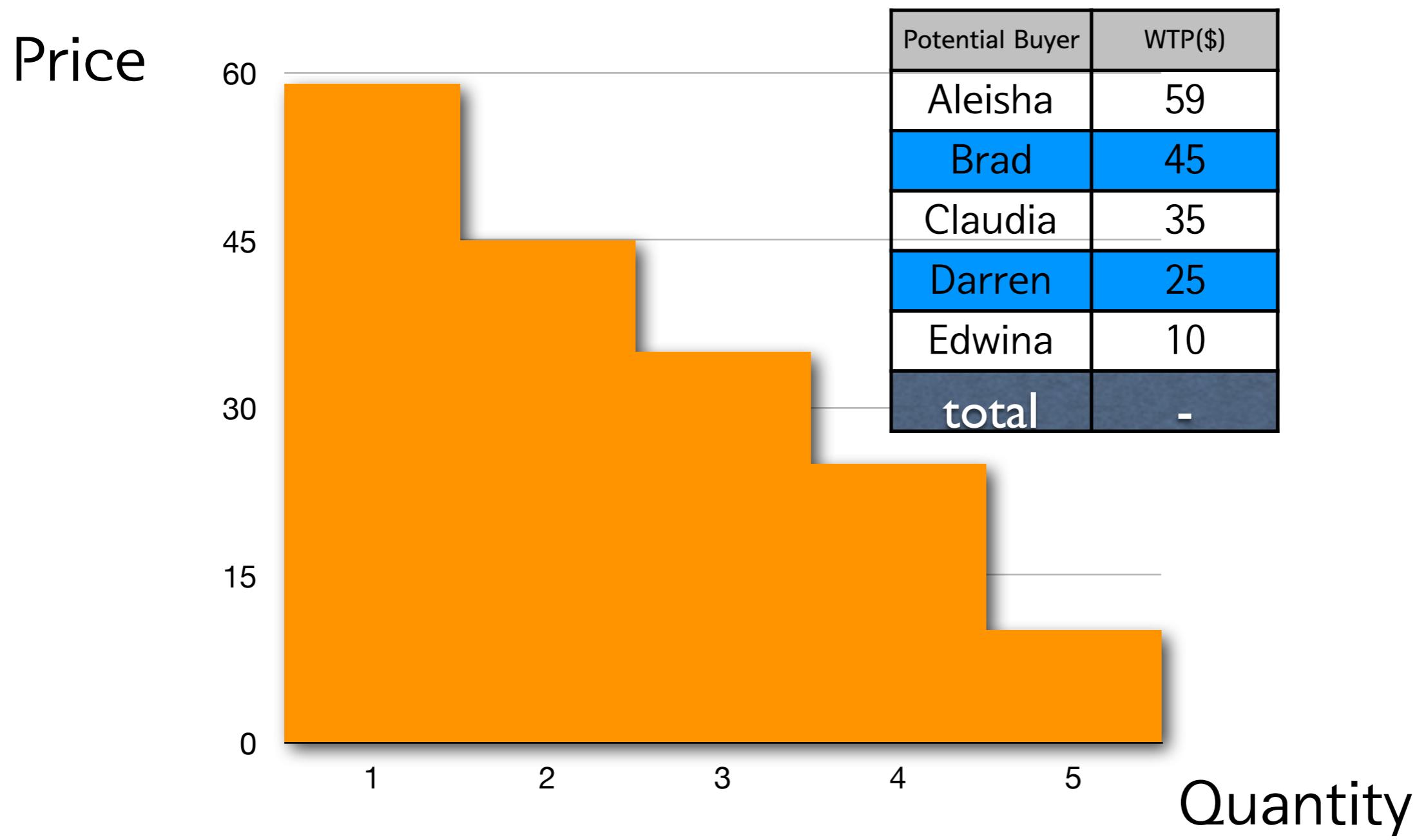
Total
Consumer
Surplus

Consumer Surplus

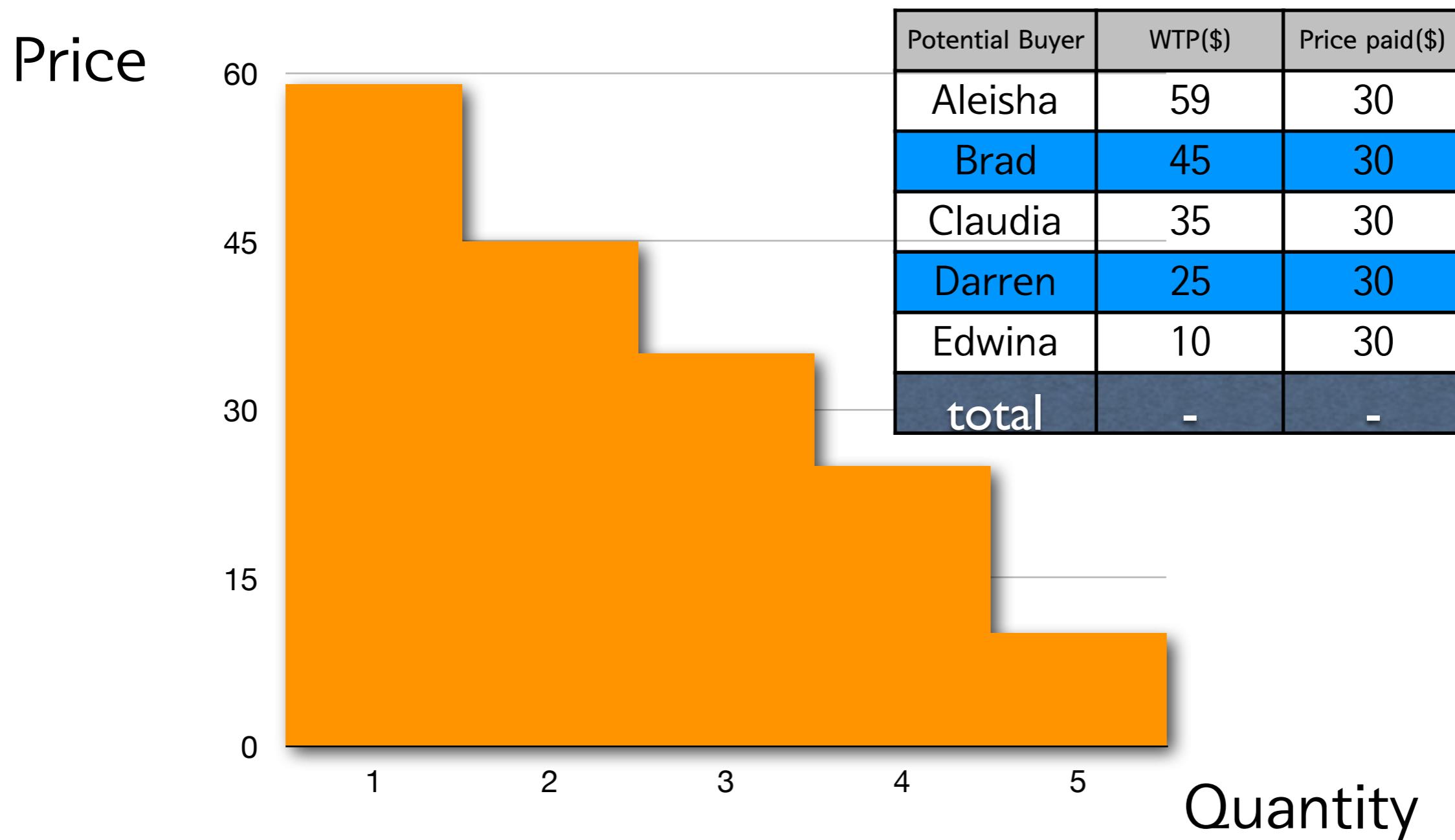
Consumer Surplus

Potential Buyer	WTP(\$)
Aleisha	59
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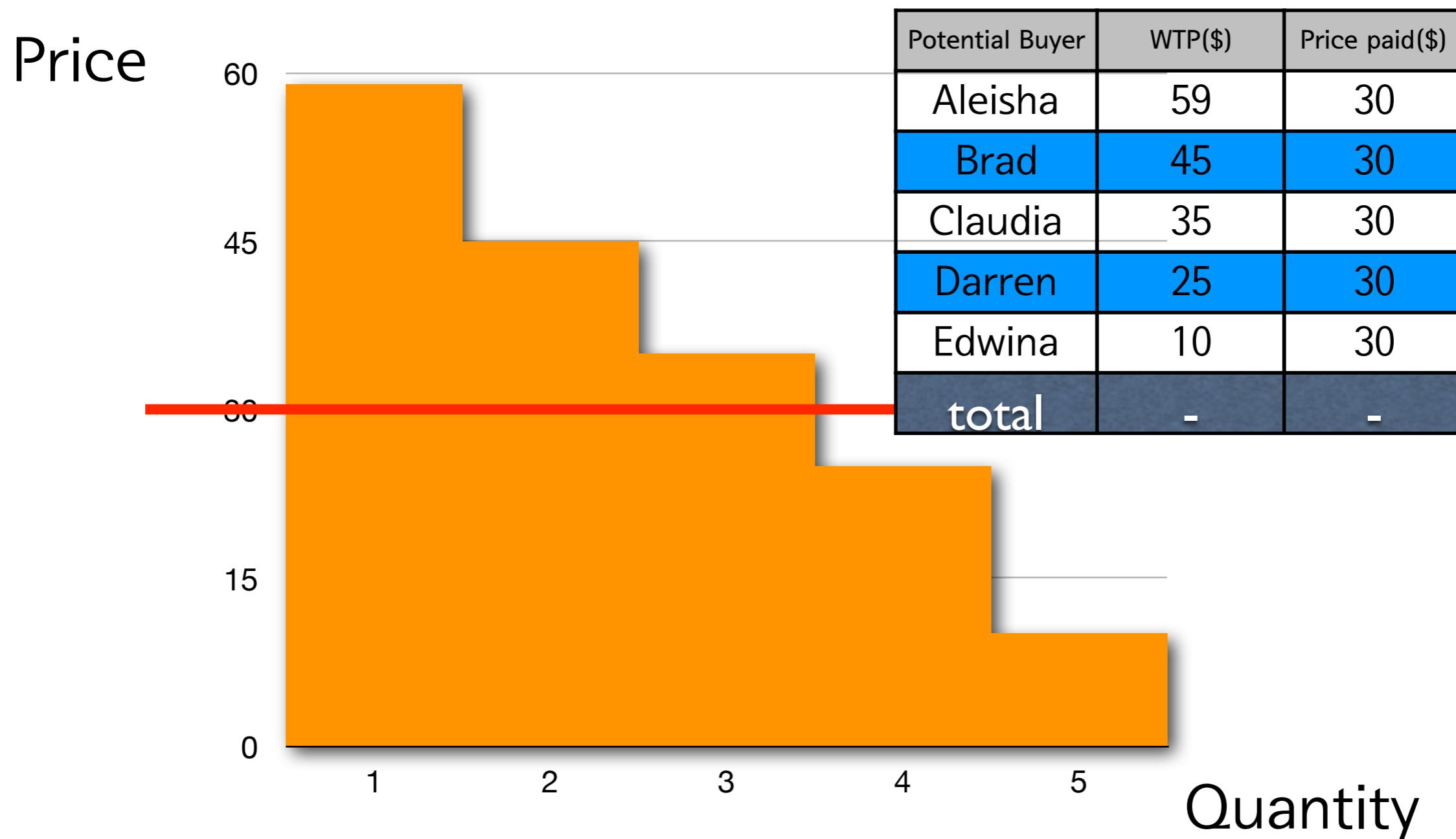
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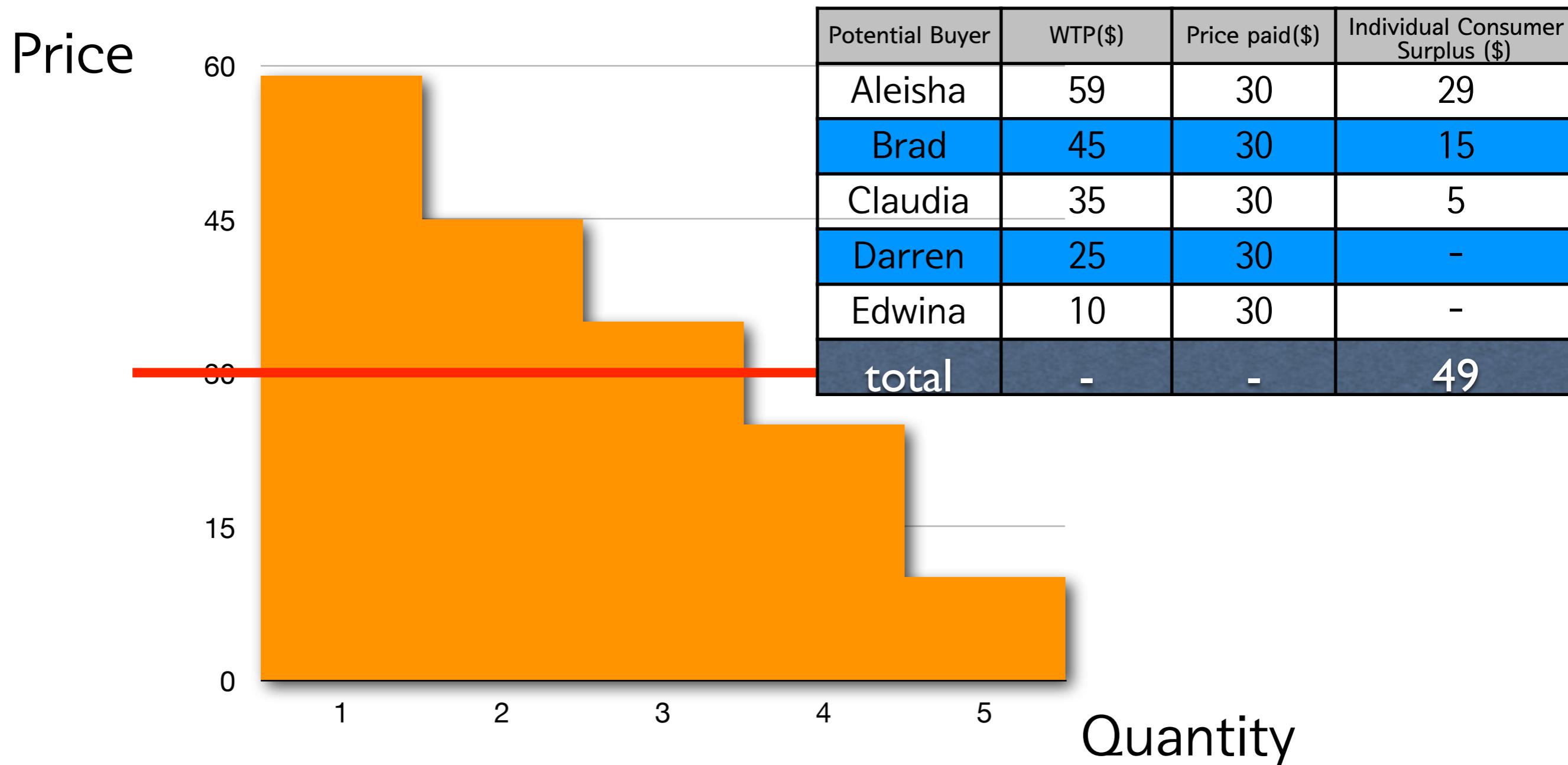
Consumer Surplus



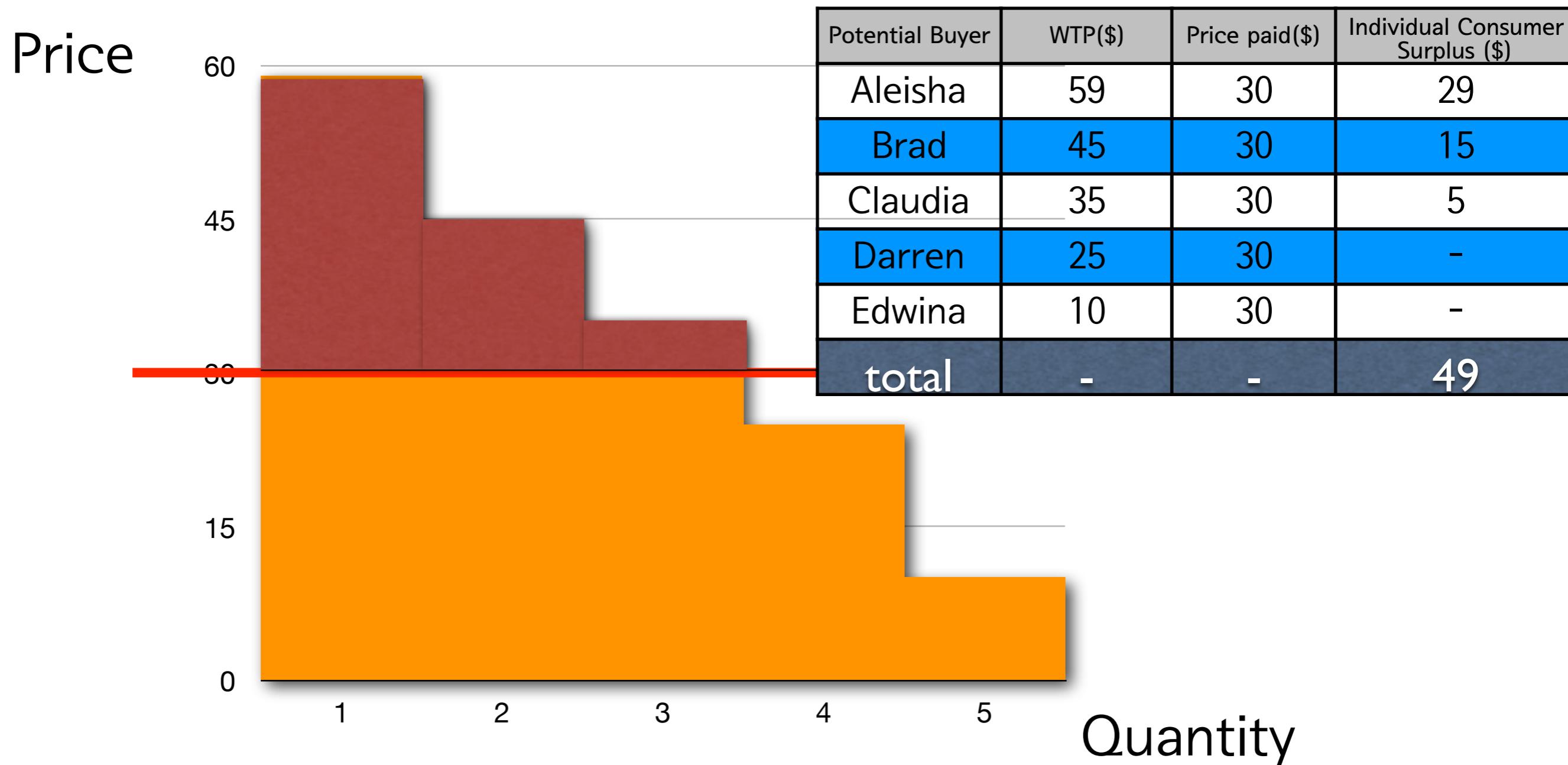
Consumer Surplus



Consumer Surplus



Consumer Surplus



When the Number of Consumers are very High

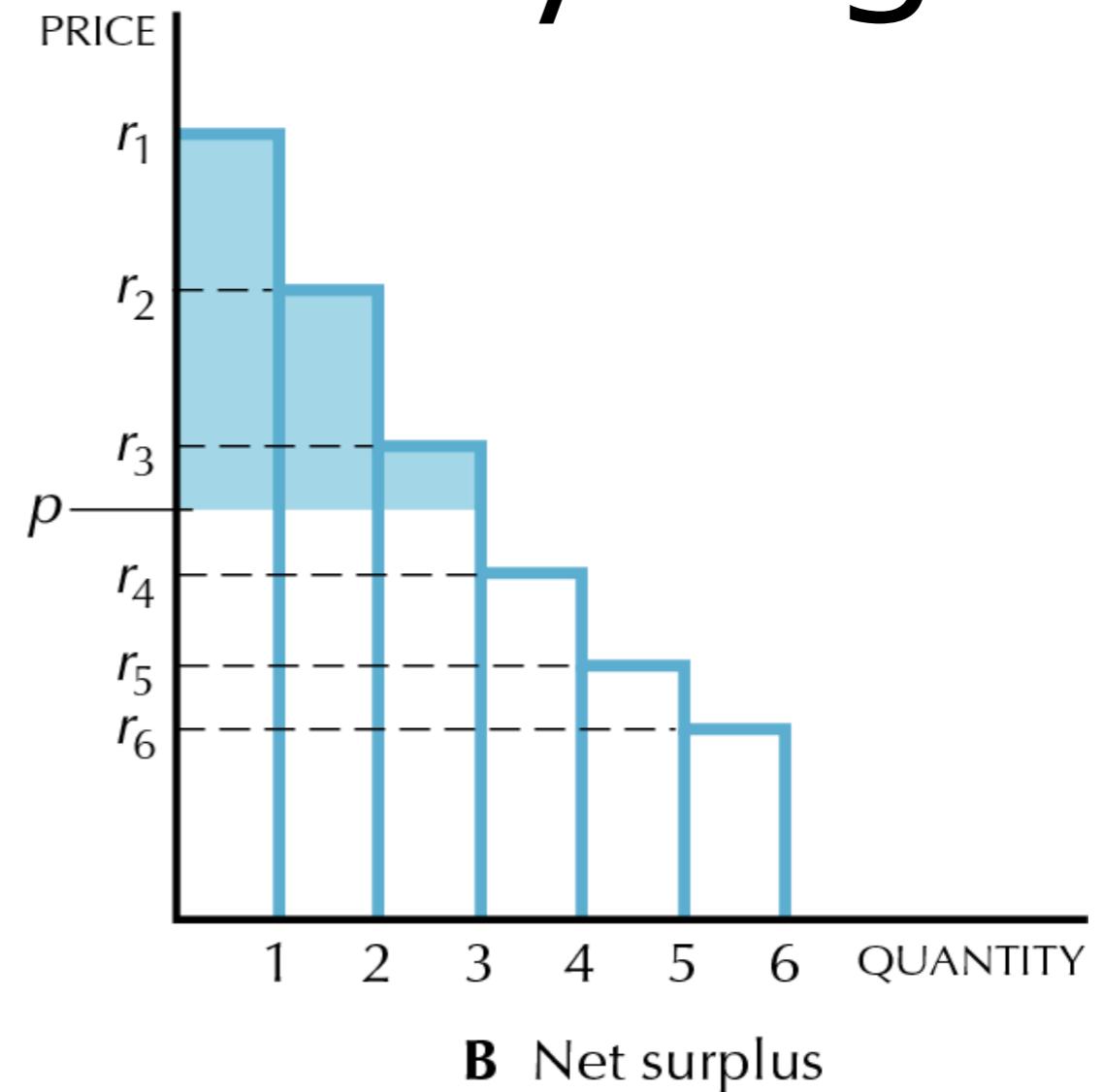
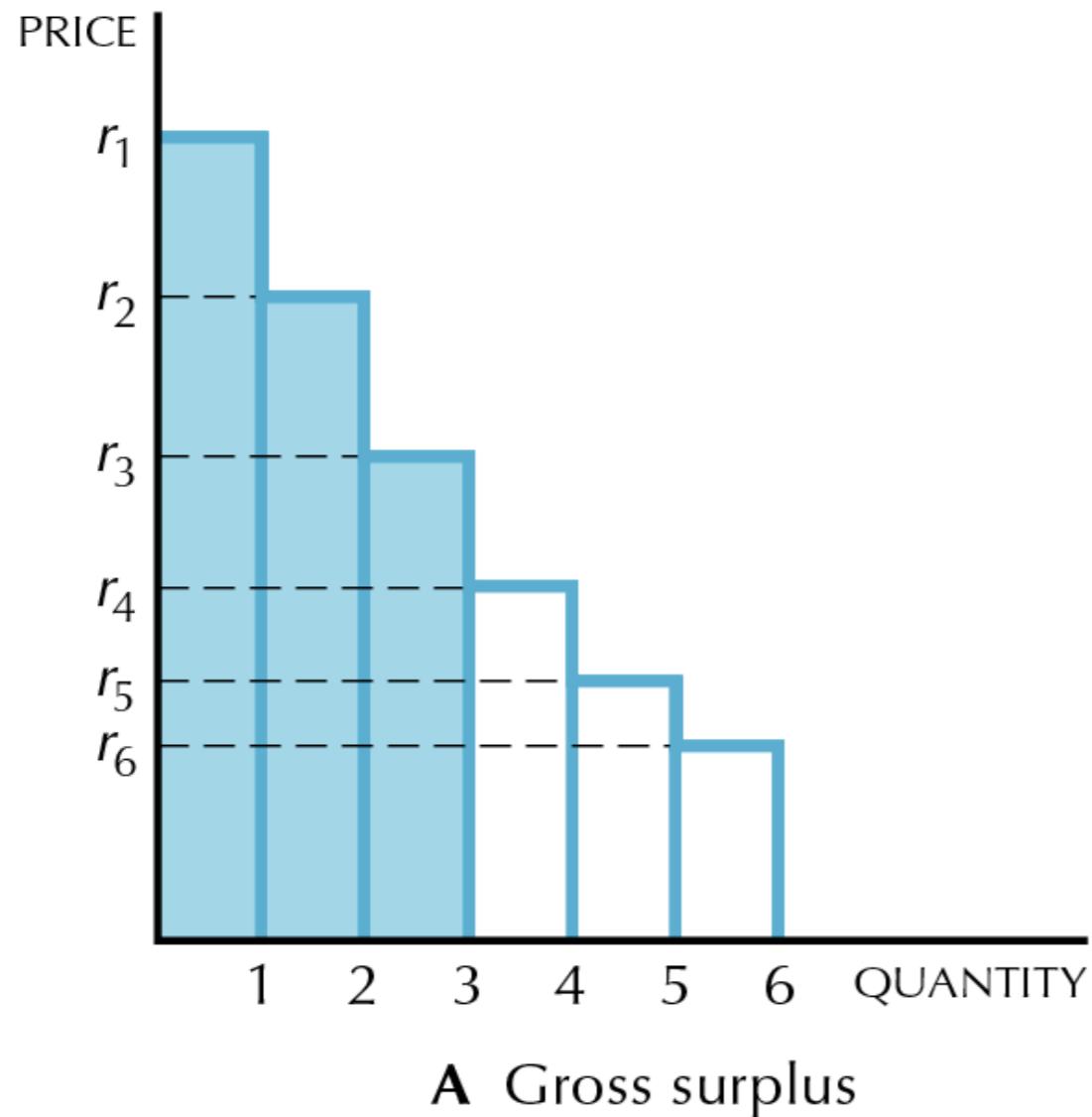
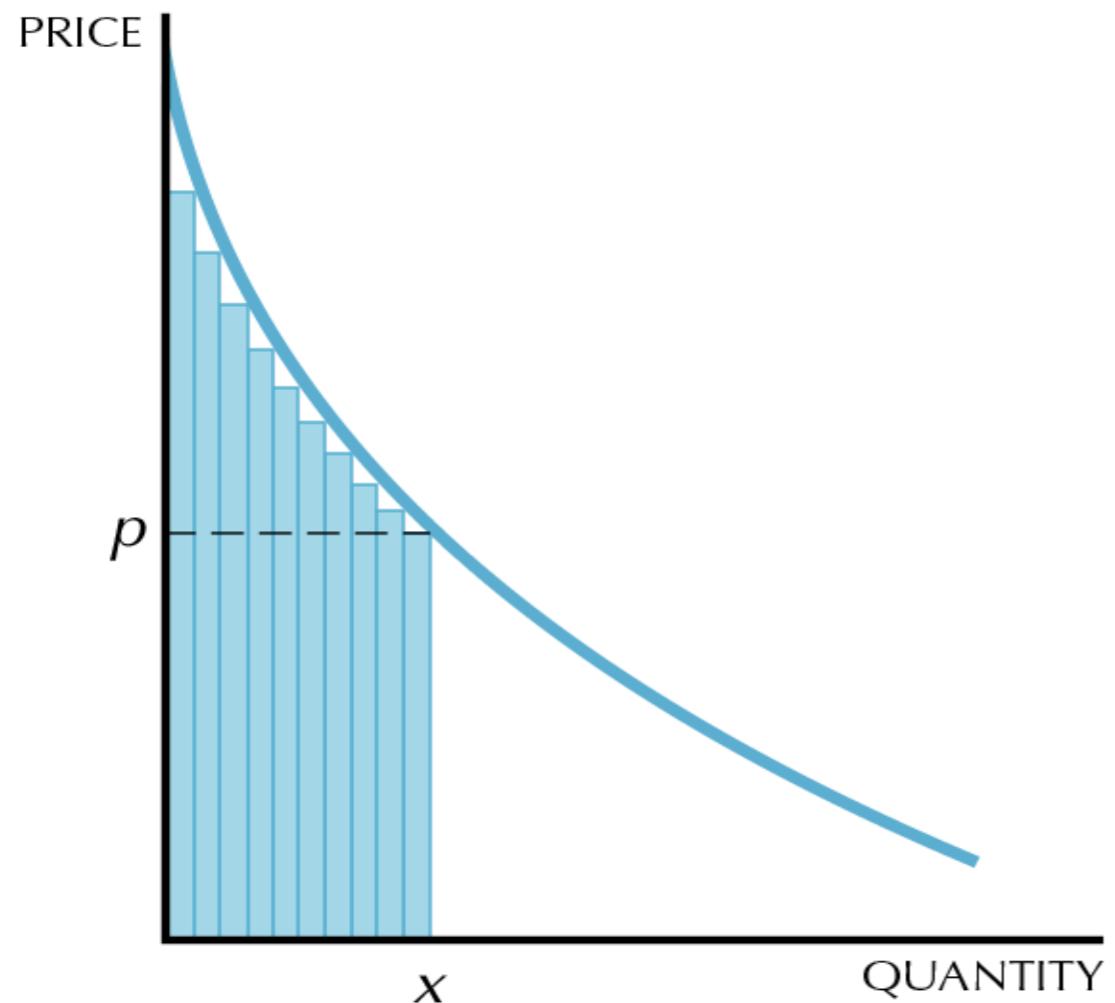
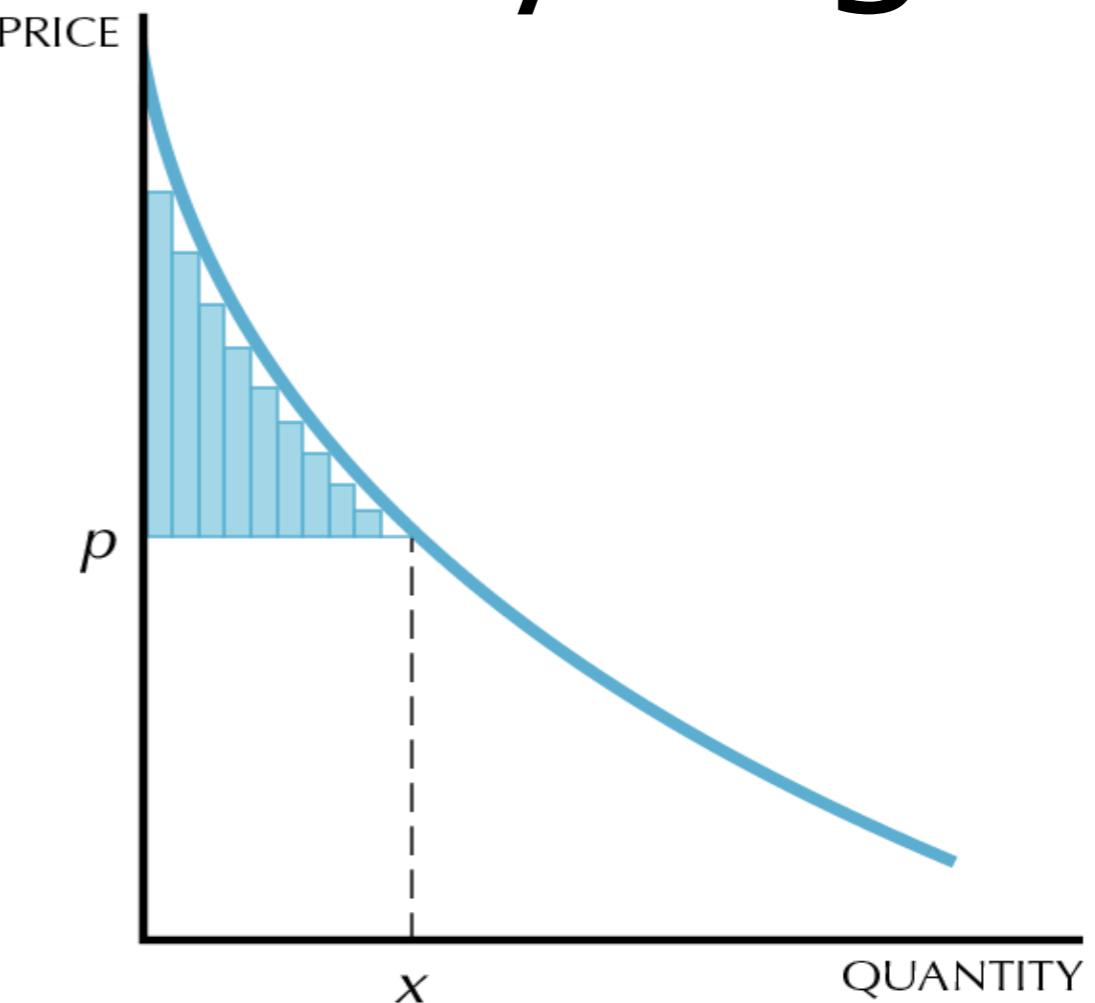


Figure 14.1 Reservation prices and consumer's surplus

When the Number of Consumers are very High



A Approximation to gross surplus



B Approximation to net surplus

Figure 14.2 Approximating a continuous demand

Consumer Surplus:

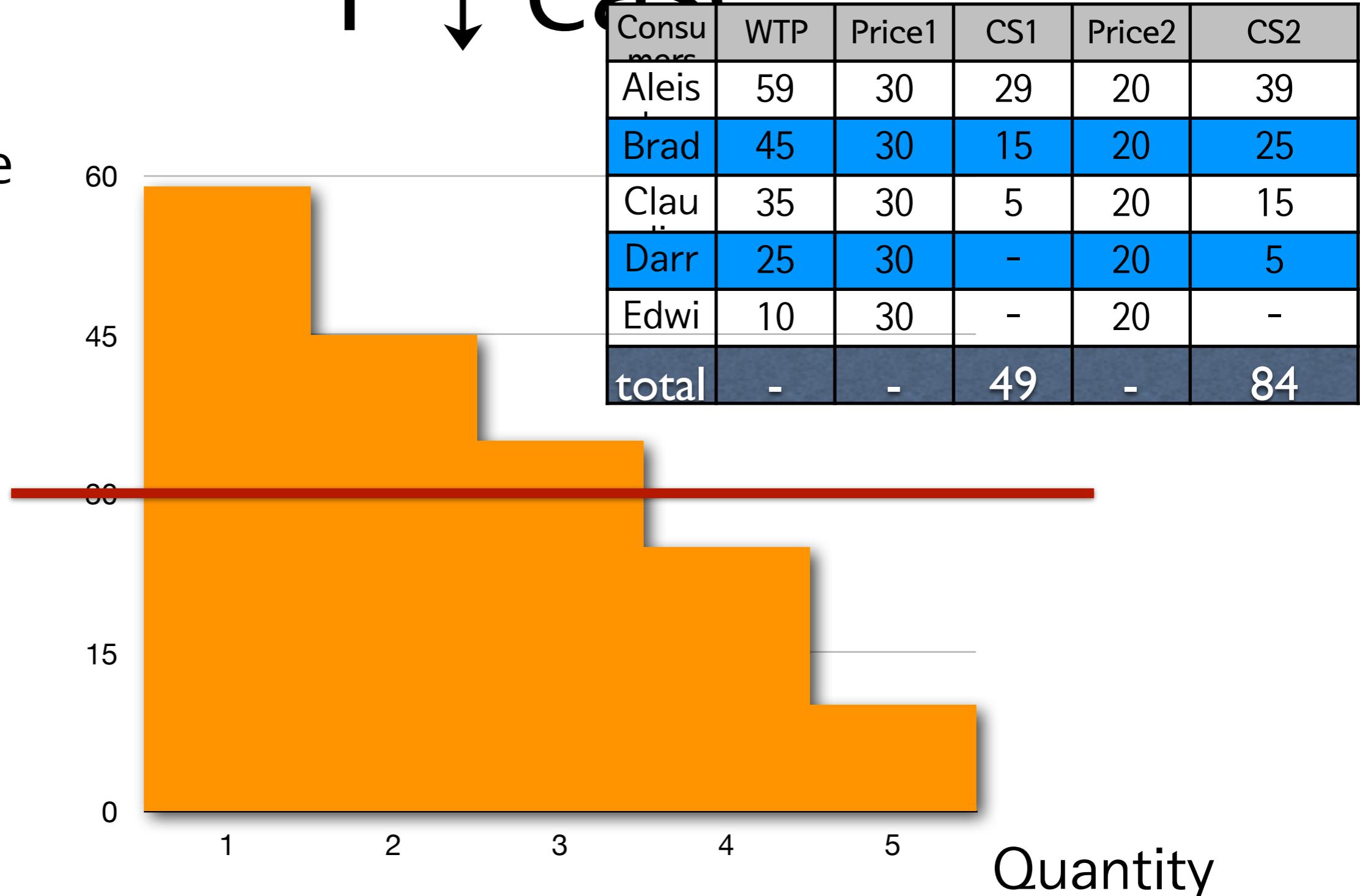
P ↓ case

Consu mers	WTP	Price1	CS1	Price2	CS2
Aleis	59	30	29	20	39
Brad	45	30	15	20	25
Clau	35	30	5	20	15
Darr	25	30	-	20	5
Edwi	10	30	-	20	-
total	-	-	49	-	84

Consumer Surplus:

P ↓ case

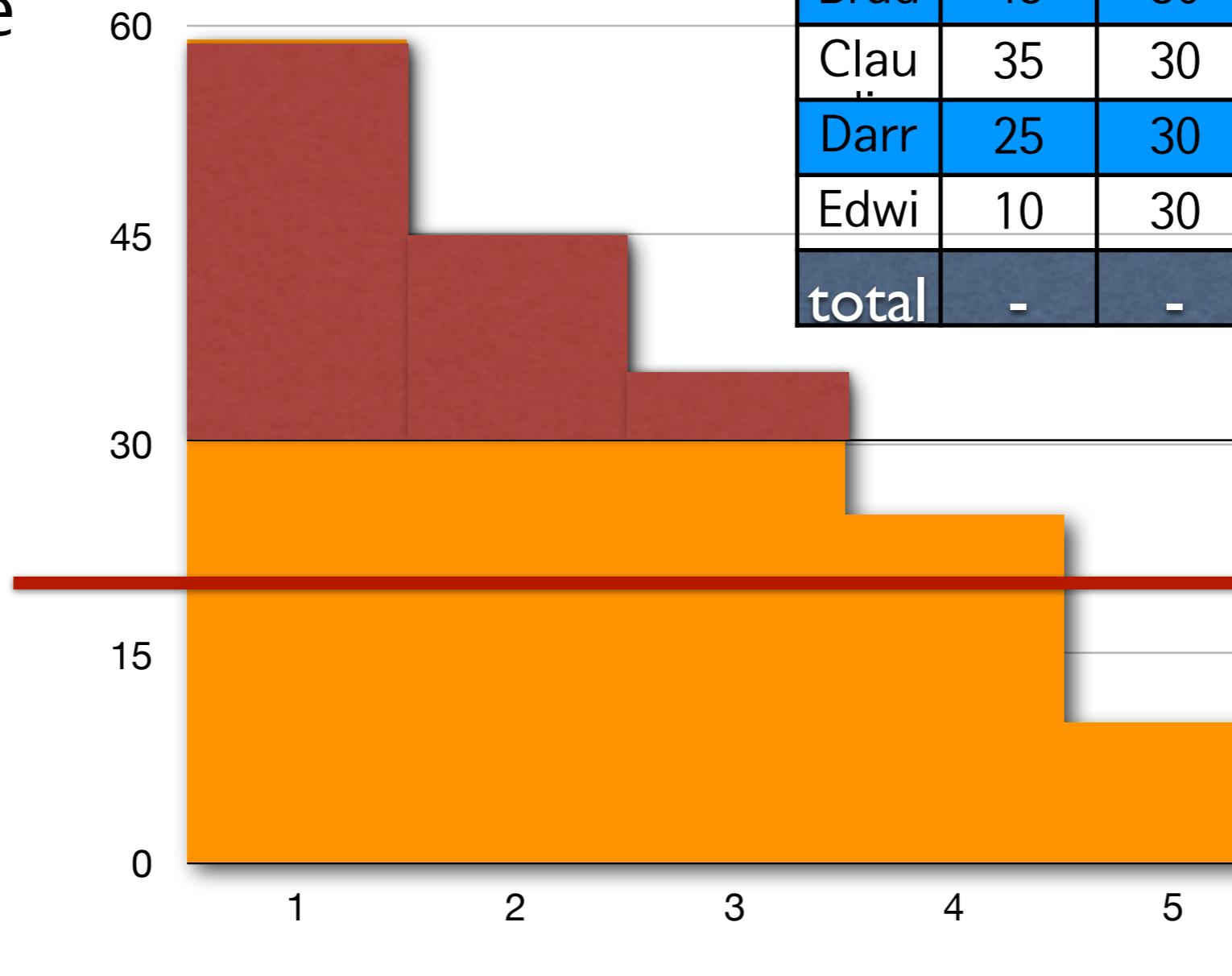
Price



Consumer Surplus:

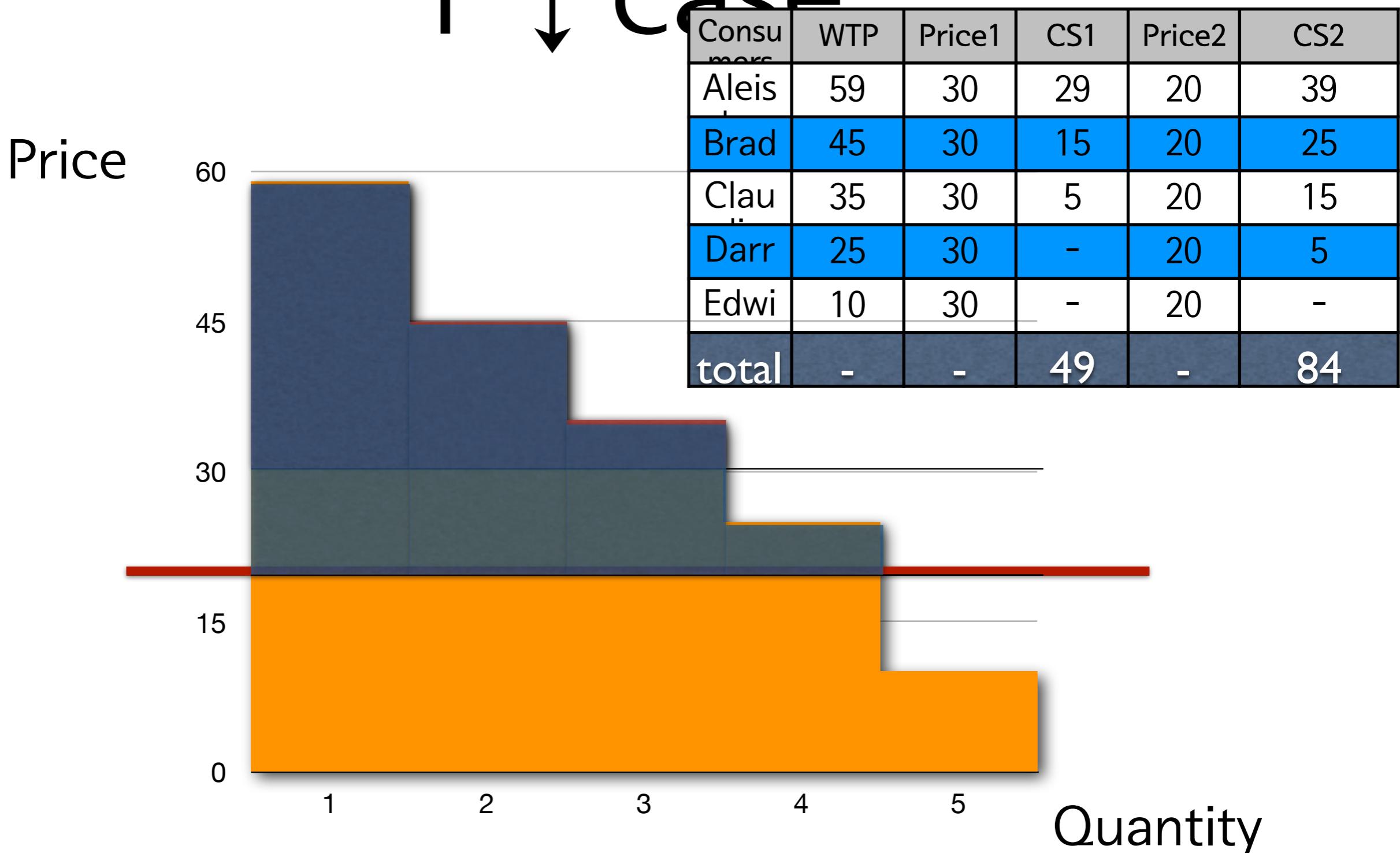
P ↓ case

Price



Consumer Surplus:

P ↓ case



Consumer Surplus:

P ↓ case

Price

Surplus:
49 → 84

60

45

30

15

0

1

2

3

4

5

Quantity

Consumers	WTP	Price1	CS1	Price2	CS2
Aleis	59	30	29	20	39
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Consumer Surplus:

P ↓ case

Price

Surplus:
49 → 84

P ↓ case

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Darr	25	30	-	20	5
Edwi	10	30	-	20	-
total	-	-	49	-	84

60

45

30

15

0

Increase in consumer
surplus to original buyers

1

2

3

4

5

Quantity

Consumer Surplus:

P ↓ case

Price

Surplus:
49 → 84

60

45

30

15

0

1

2

3

4

5

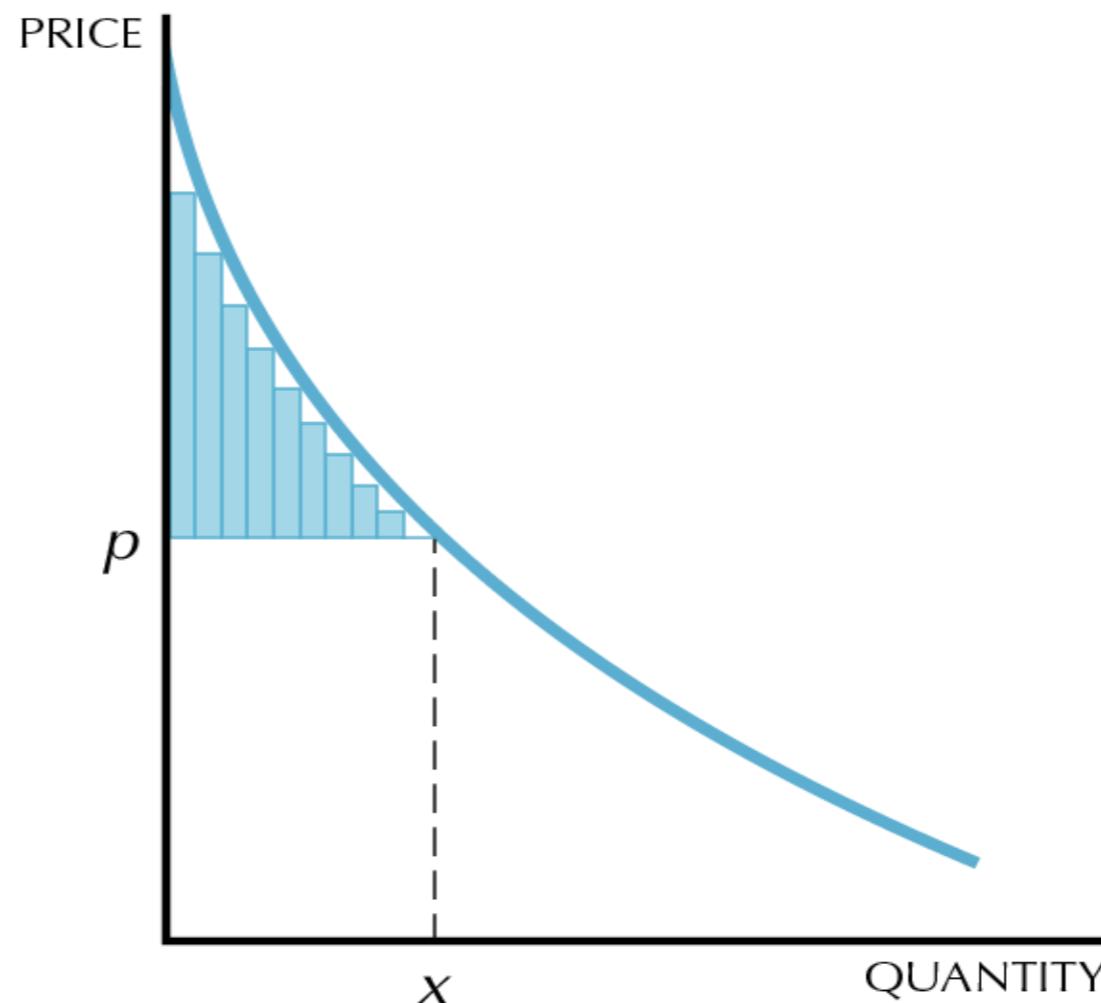
Quantity

Increase in consumer
surplus to original buyers

Consumer
surplus gained
by new buyers

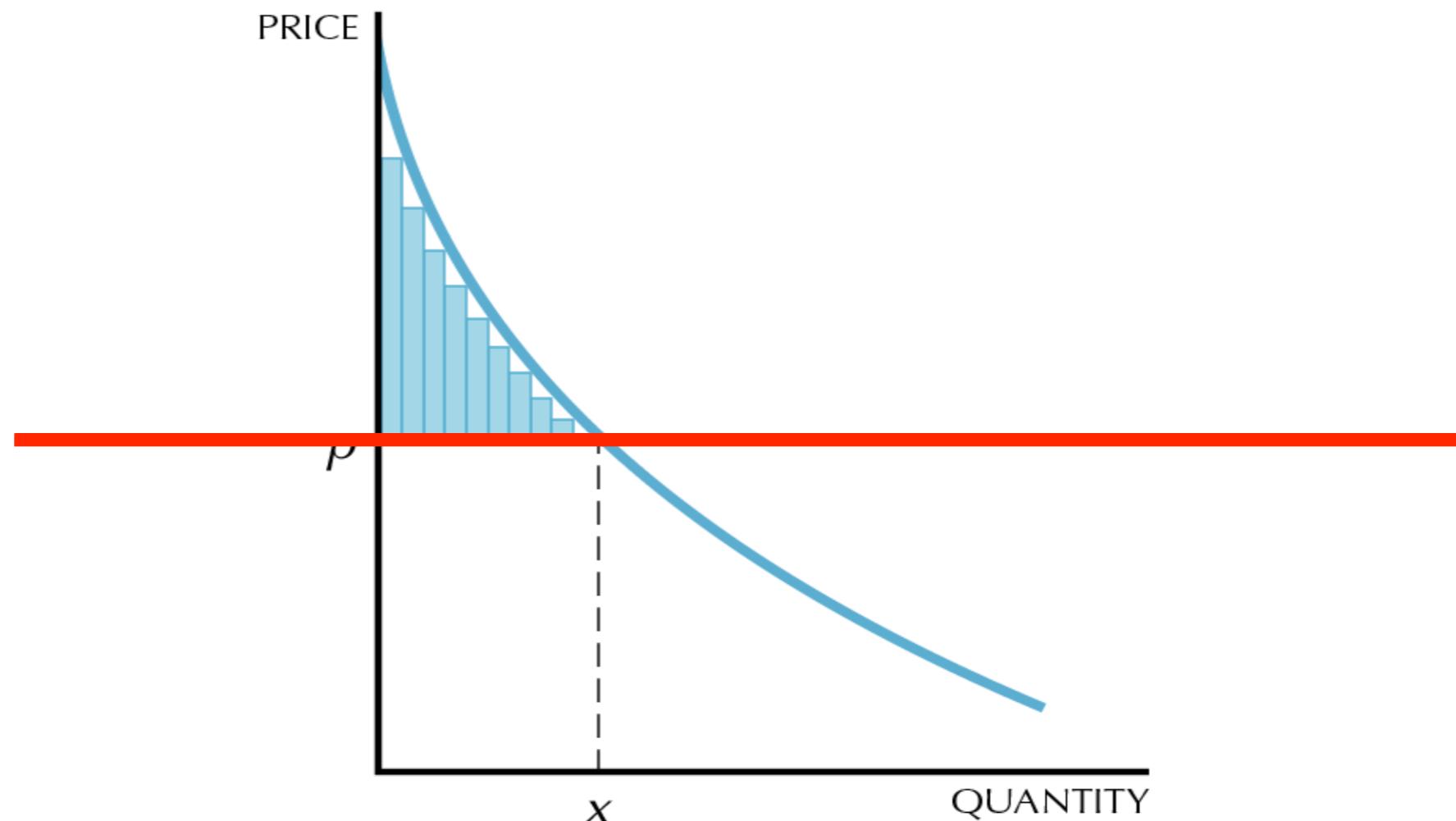
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When the Numbers of Consumers are High



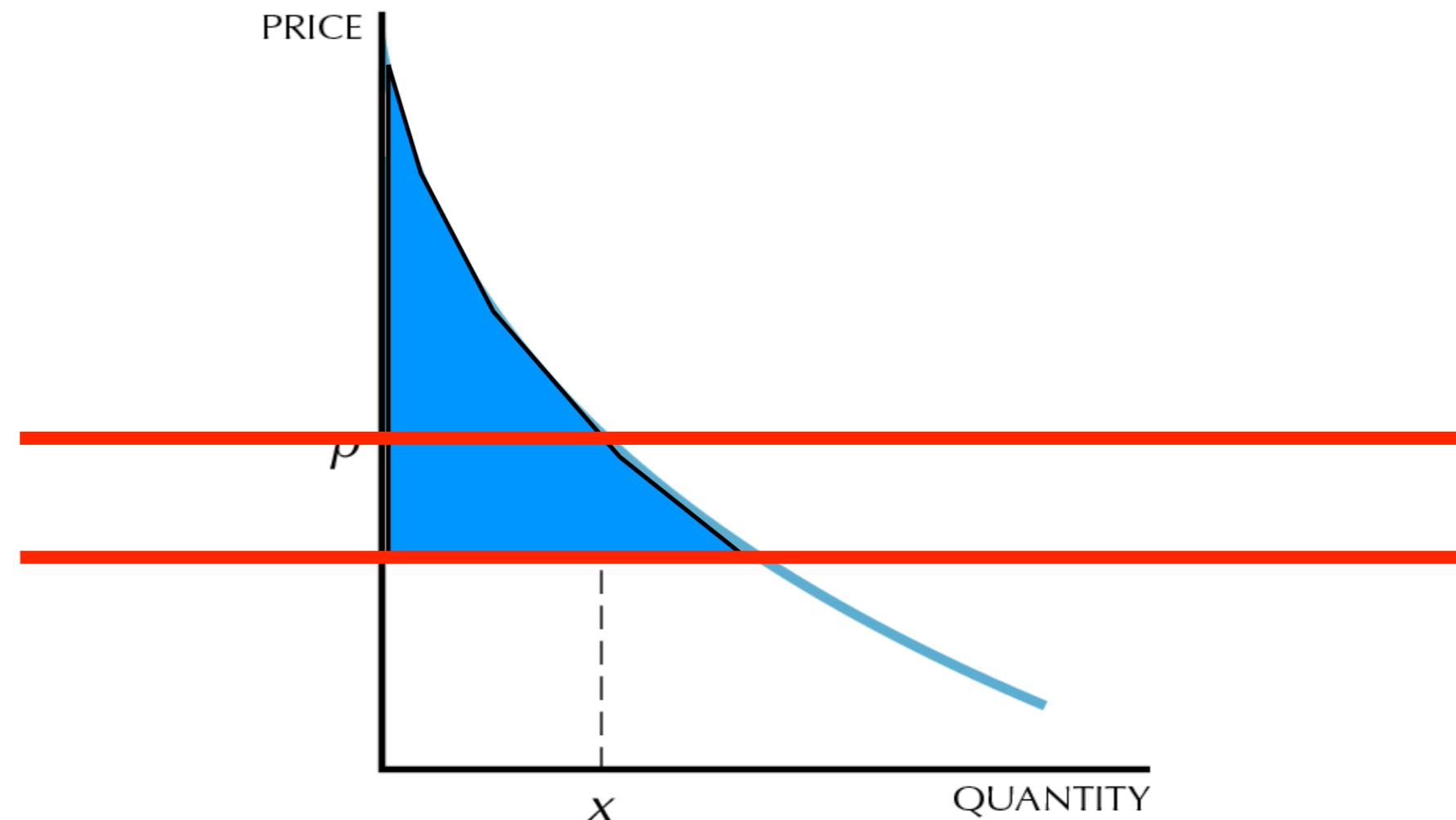
B Approximation to net surplus

When the Numbers of Consumers are High



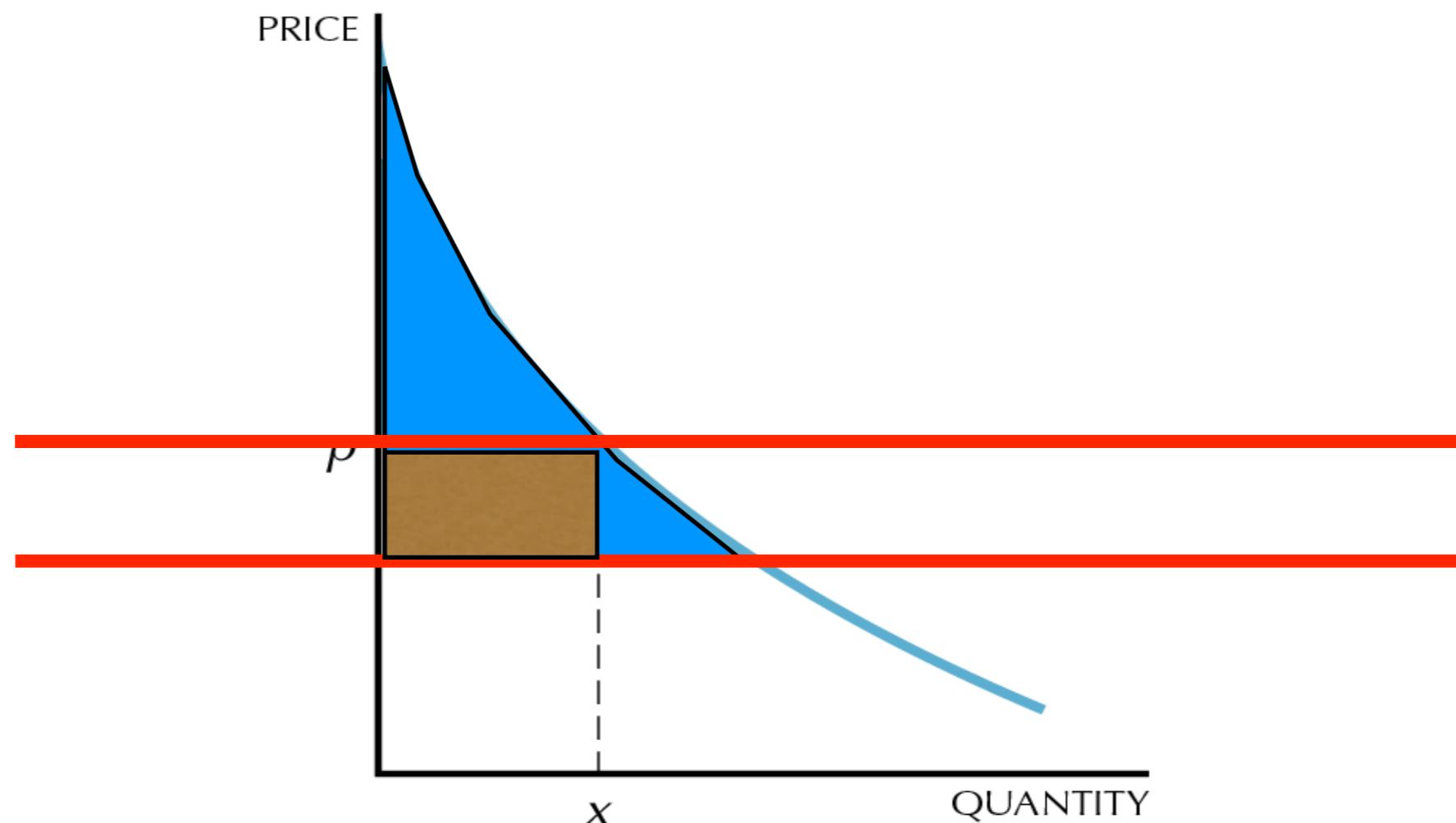
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When the Numbers of Consumers are High



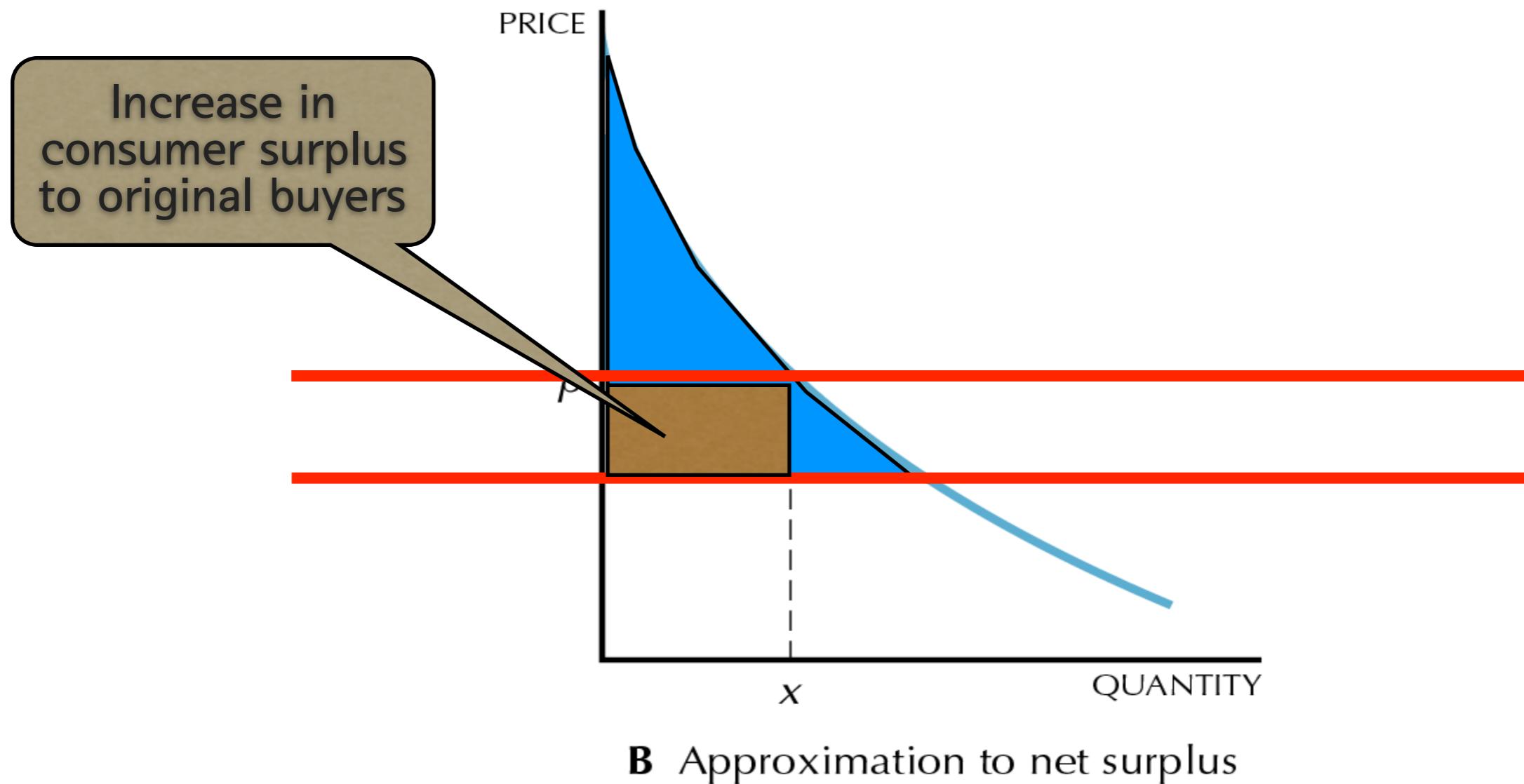
B Approximation to net surplus

When the Numbers of Consumers are High

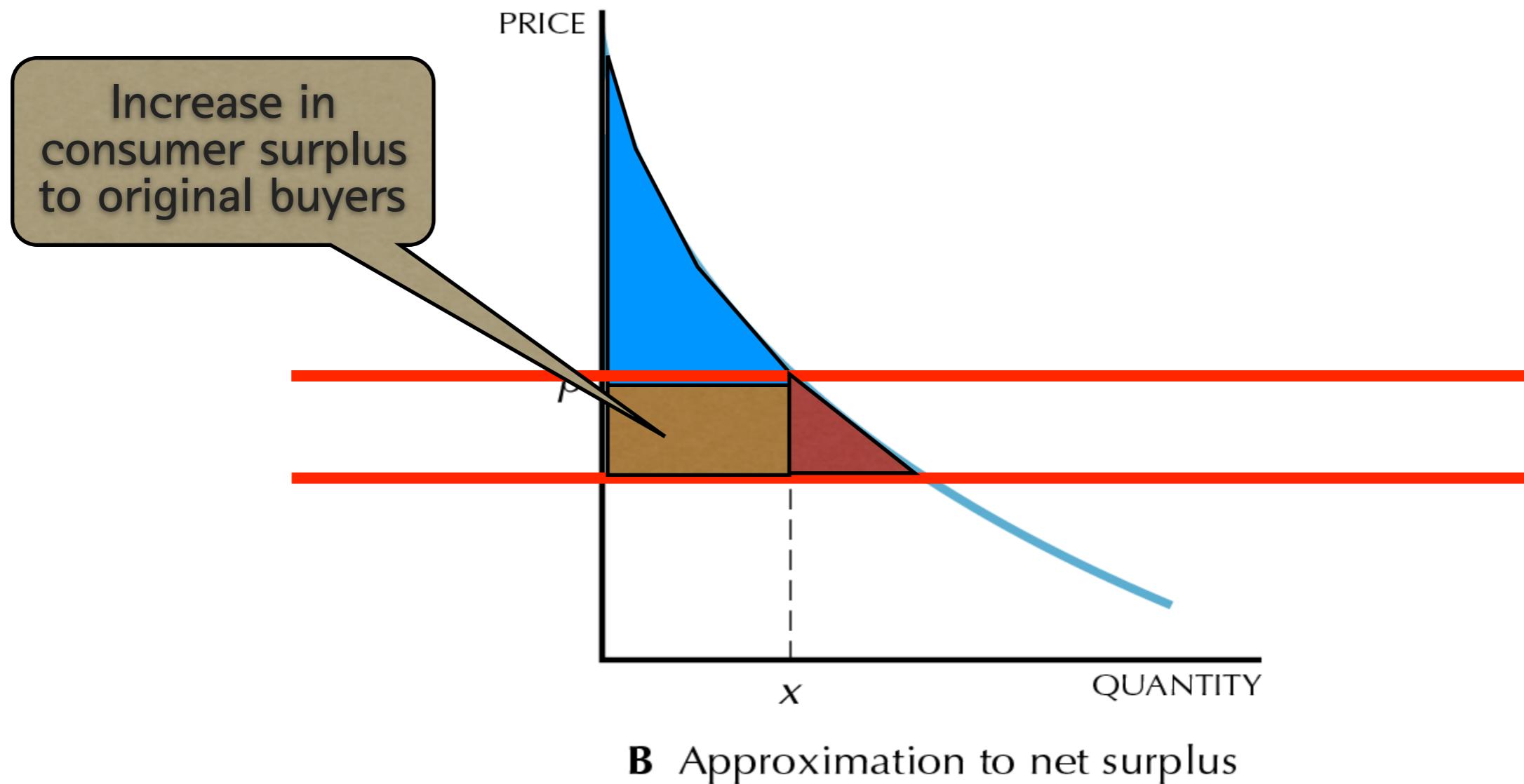


B Approximation to net surplus

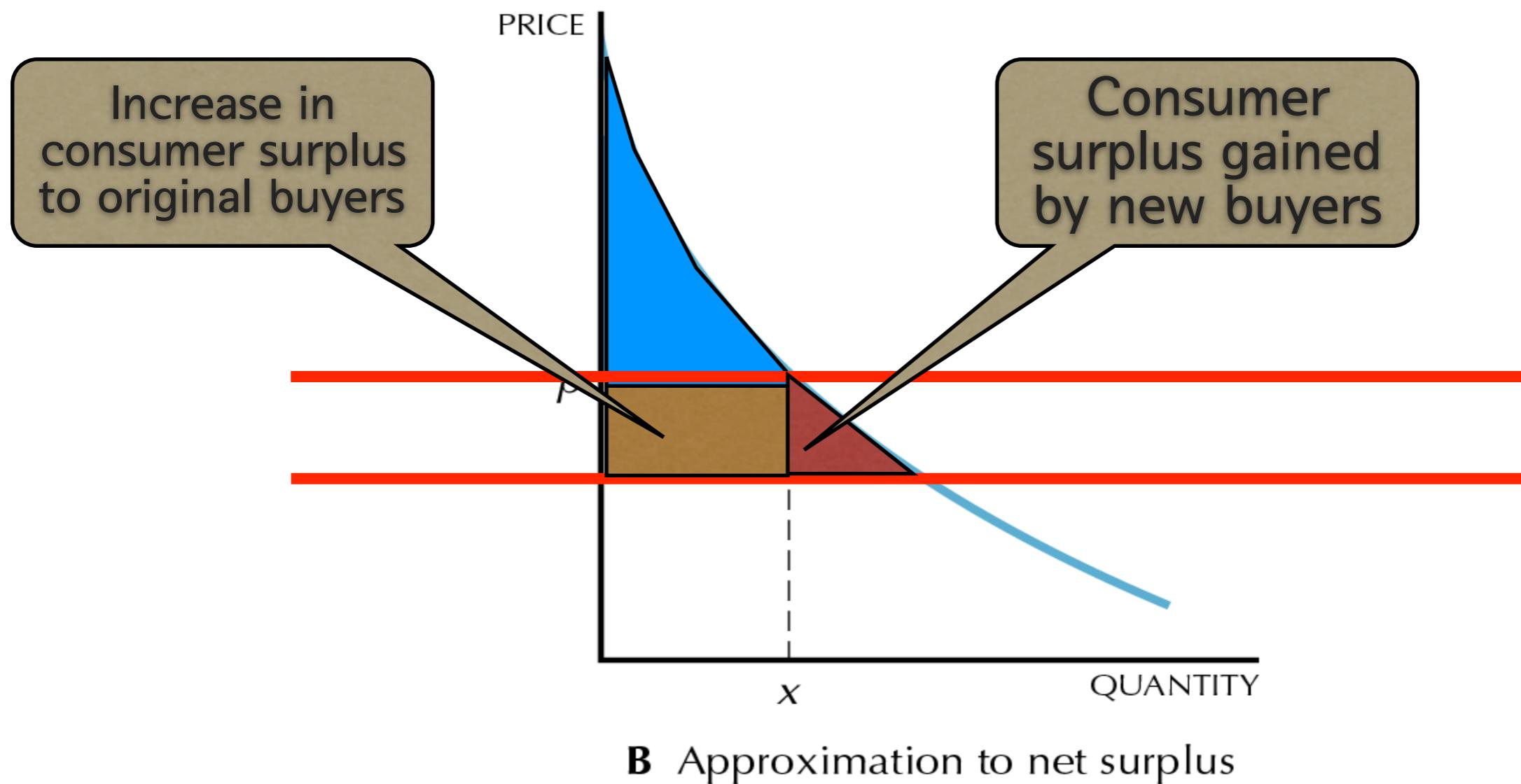
When the Numbers of Consumers are High



When the Numbers of Consumers are High



When the Numbers of Consumers are High



Producer Surplus

Cost and Producer Surplus

- Cost: The lowest price at which a potential seller is willing to sell
 - Other name: Willingness to Accept (WTA)
- Individual producer surplus: The net gain to an individual seller from selling a good
- Individual producer surplus := price received - cost
- Total producer surplus := total sum of the individual producer surplus

Cost Table of Potential Sellers

Potential Seller	Cost (\$)
Andrew	5
Betty	15
Carlos	25
Donna	35
Engelbert	45



Supply Schedule

Potential Seller	Cost (\$) (Marginal Cost)
Andrew	5
Betty	15
Carlos	25
Donna	35
Engelbert	45

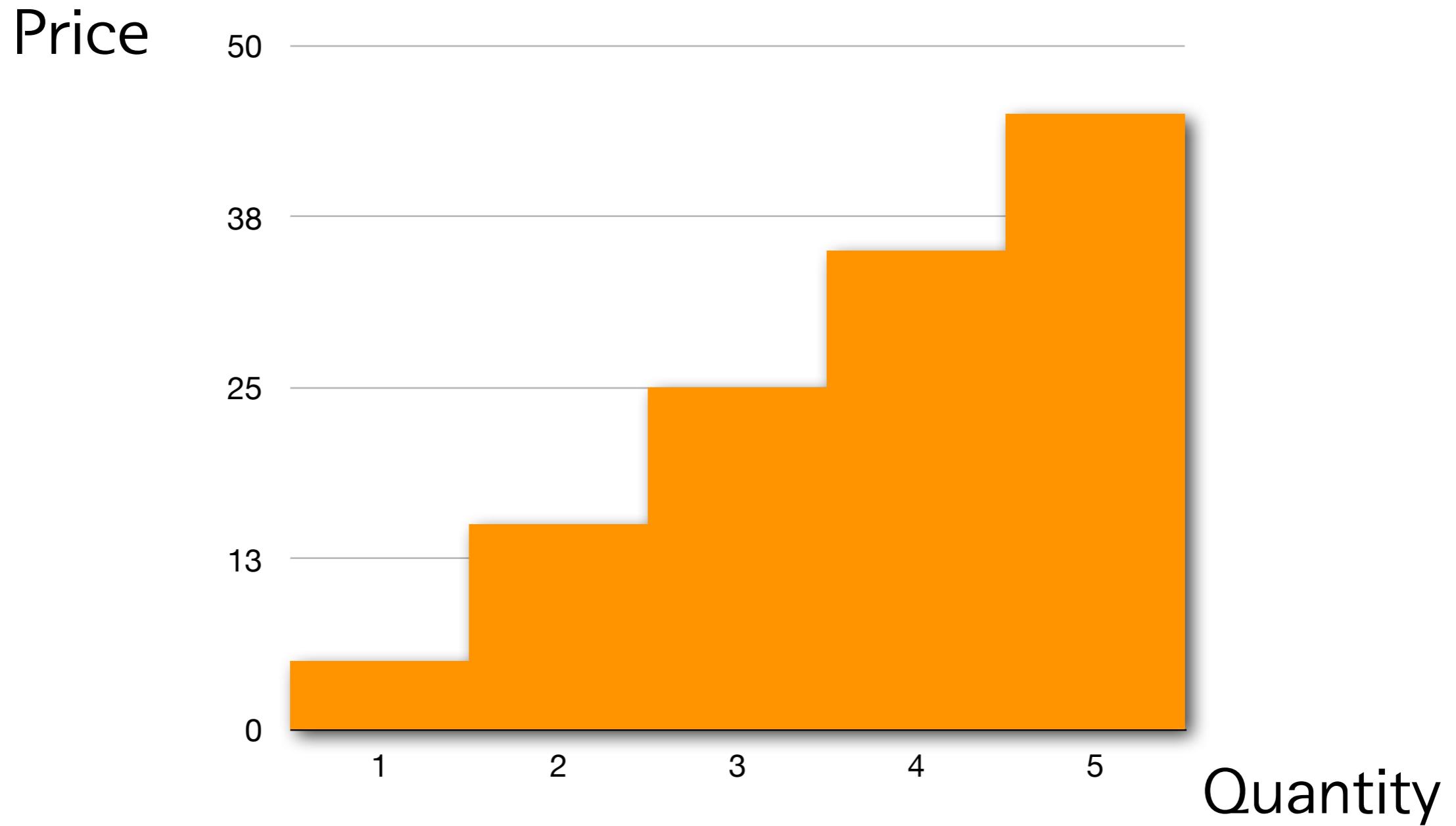
Price Received(\$)	Quantity Supplied (EA)
≥ 45	5
35~44	4
25~34	3
15~24	2
5~14	1
< 5	0

Deriving Supply Curve

Price

Quantity

Deriving Supply Curve



Producer Surplus:

P=30\$ Case

Potential Seller	Cost (\$)	Price Received (\$)	Individual Producer Surplus (\$)
Andrew	5	30	25
Betty	15	30	15
Carlos	25	30	5
Donna	35	30	-
Engelbert	45	30	-
total	-	-	45

Producer Surplus:

P=30\$ Case

Potential Seller	Cost (\$)	Price Received (\$)	Individual Producer Surplus (\$)
Andrew	5	30	25
Betty	15	30	15
Carlos	25	30	5
Donna	35	30	-
Engelbert	45	30	-
total	-	-	45

Total
Producer
Surplus

Producer Surplus

Price

Potential Seller	Cost (\$)	Price Received	Individual Producer
Andrew	5	30	25
Betty	15	30	15
Carlos	25	30	5
Donna	35	30	-
Engelbert	45	30	-
total	-	-	45

Quantity

Producer Surplus

Price

50

40

30

20

10

0

1

2

3

4

5

Quantity

Potential Seller	Cost (\$)	Price Received	Individual Producer
Andrew	5	30	25
Betty	15	30	15
Carlos	25	30	5
Donna	35	30	-
Engelbert	45	30	-
total	-	-	45

Producer Surplus

Price

50

40

30

20

10

0

1

2

3

4

5

Quantity

Potential Seller	Cost (\$)	Price Received	Individual Producer
Andrew	5	30	25
Betty	15	30	15
Carlos	25	30	5
Donna	35	30	-
Engelbert	45	30	-
total	-	-	45

Producer Surplus

Price

50

40

30

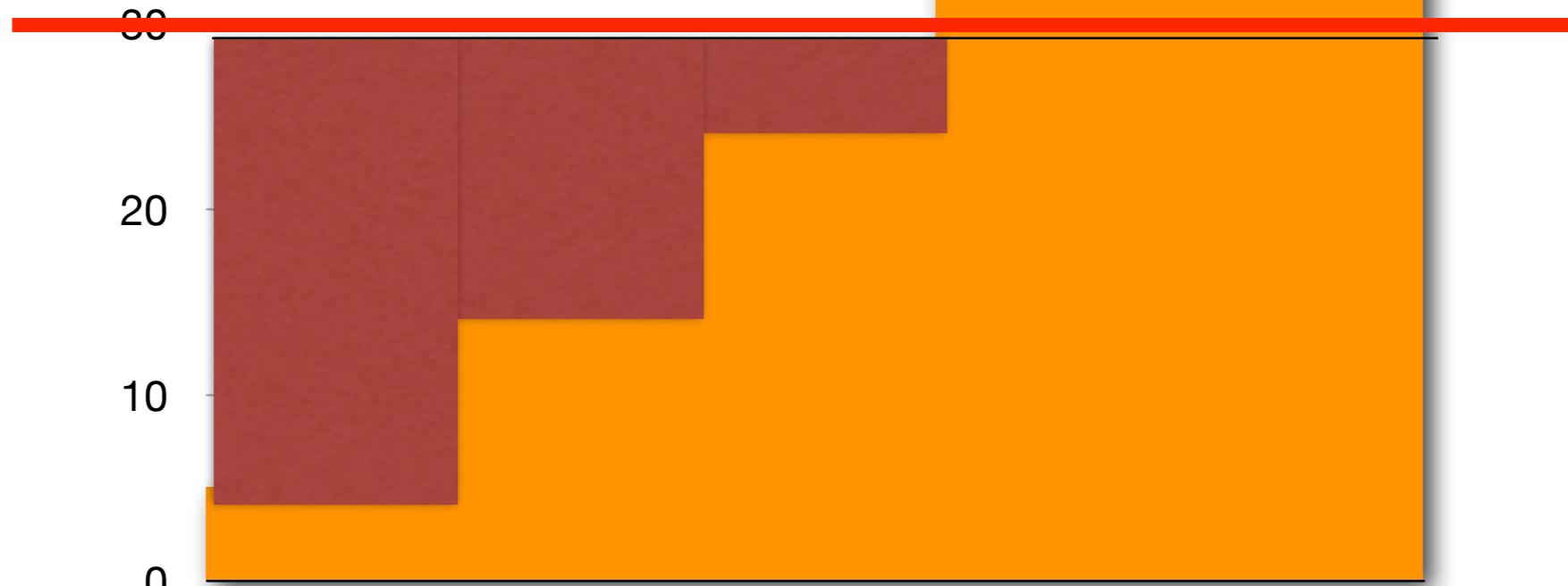
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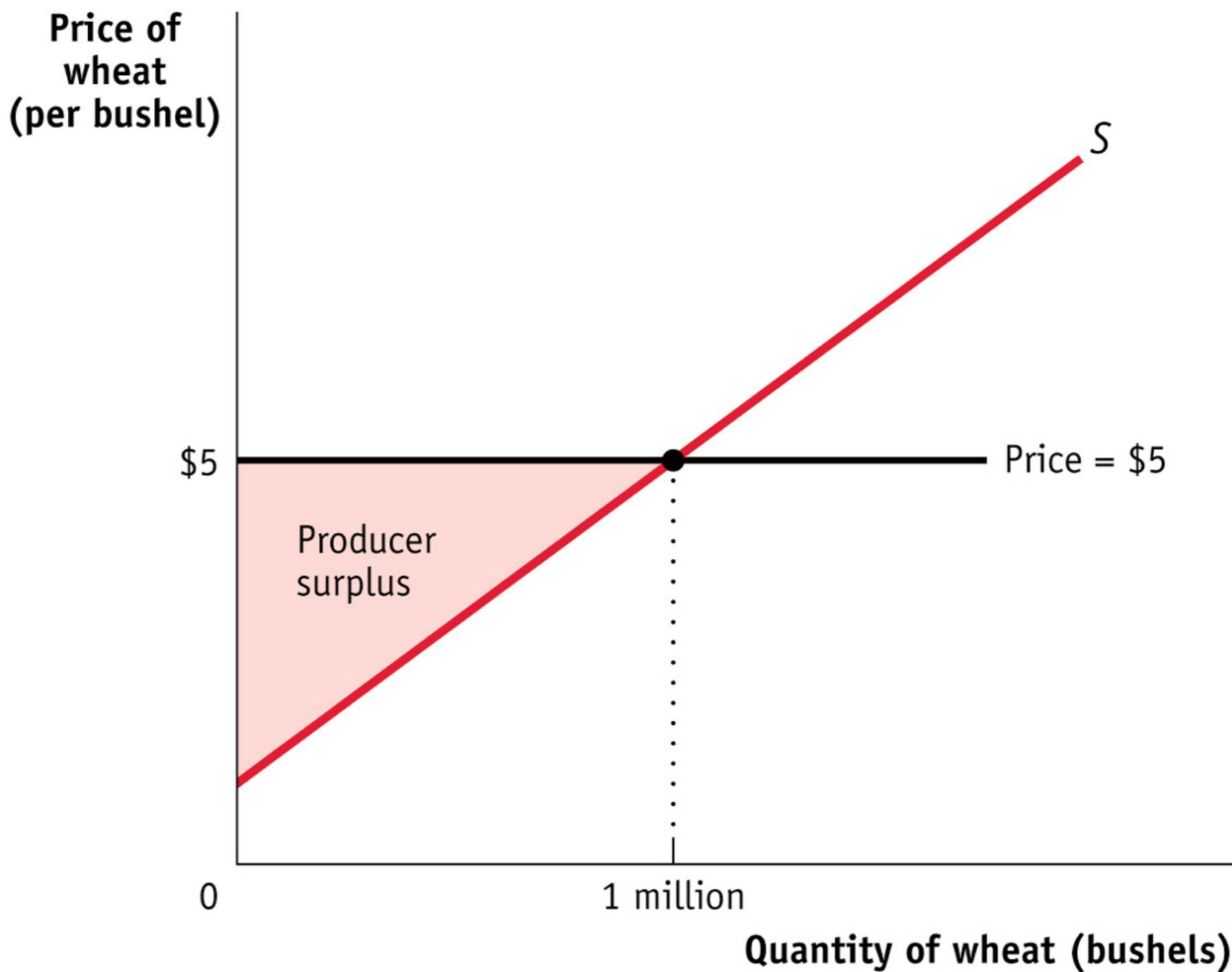
0

Quantity

Potential Seller	Cost (\$)	Price Received	Individual Producer
Andrew	5	30	25
Betty	15	30	15
Carlos	25	30	5
Donna	35	30	-
Engelbert	45	30	-
total	-	-	45



Massive Producers



Producer Surplus: $P \downarrow$

Producer Surp

Supplier	COST
Andre	5
Betty	15
Carlos	25
Donna	35
Engelb	45
total	-

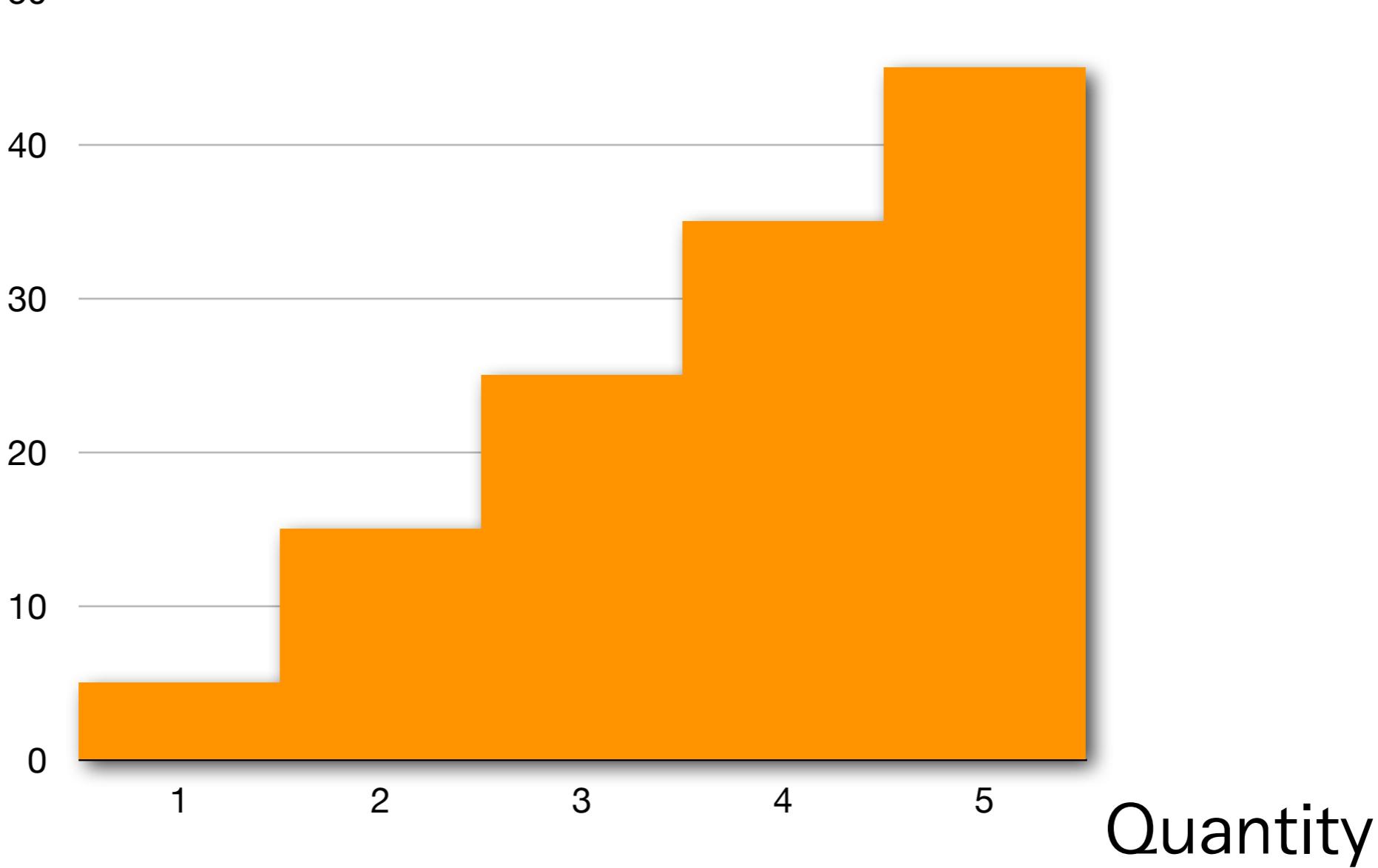
P ↓

Producer Surplus

Price

Supplier	COST
Andre	5
Betty	15
Carlos	25
Donna	35
Engelb	45
total	-

P ↓



Producer Surplus

Price

50

40

30

20

10

0

1

2

3

4

5

Quantity

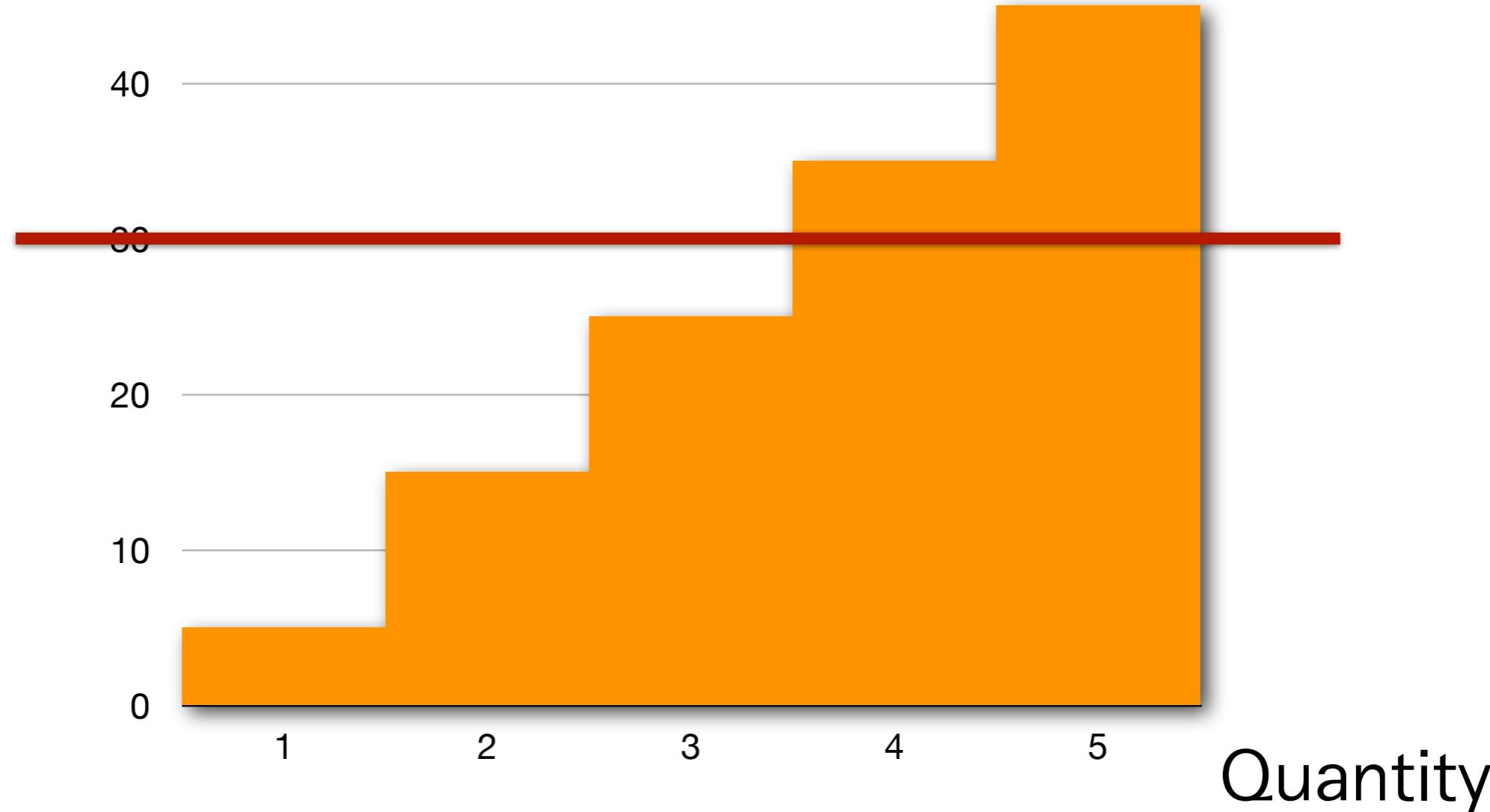
Supplier	COST	P1
Andre	5	30
Betty	15	30
Carlos	25	30
Donna	35	30
Engelb	45	30
total	-	-



Producer Surplus

Price

Supplier	COST	P1
Andre	5	30
Betty	15	30
Carlos	25	30
Donna	35	30
Engelb	45	30
total	-	-



Producer Surplus

Price

Supplier	COST	P1	S1
Andre	5	30	25
Betty	15	30	15
Carlos	25	30	5
Donna	35	30	-
Engelb	45	30	-
total	-	-	45

50

40

30

20

10

0

1

2

3

4

5

Quantity

Producer Surplus

Price

Supplier	COST	P1	S1
Andre	5	30	25
Betty	15	30	15
Carlos	25	30	5
Donna	35	30	-
Engelb	45	30	-
total	-	-	45

50

40

30

20

10

0

1

2

3

4

5

Quantity

Producer Surplus

Price

50

40

30

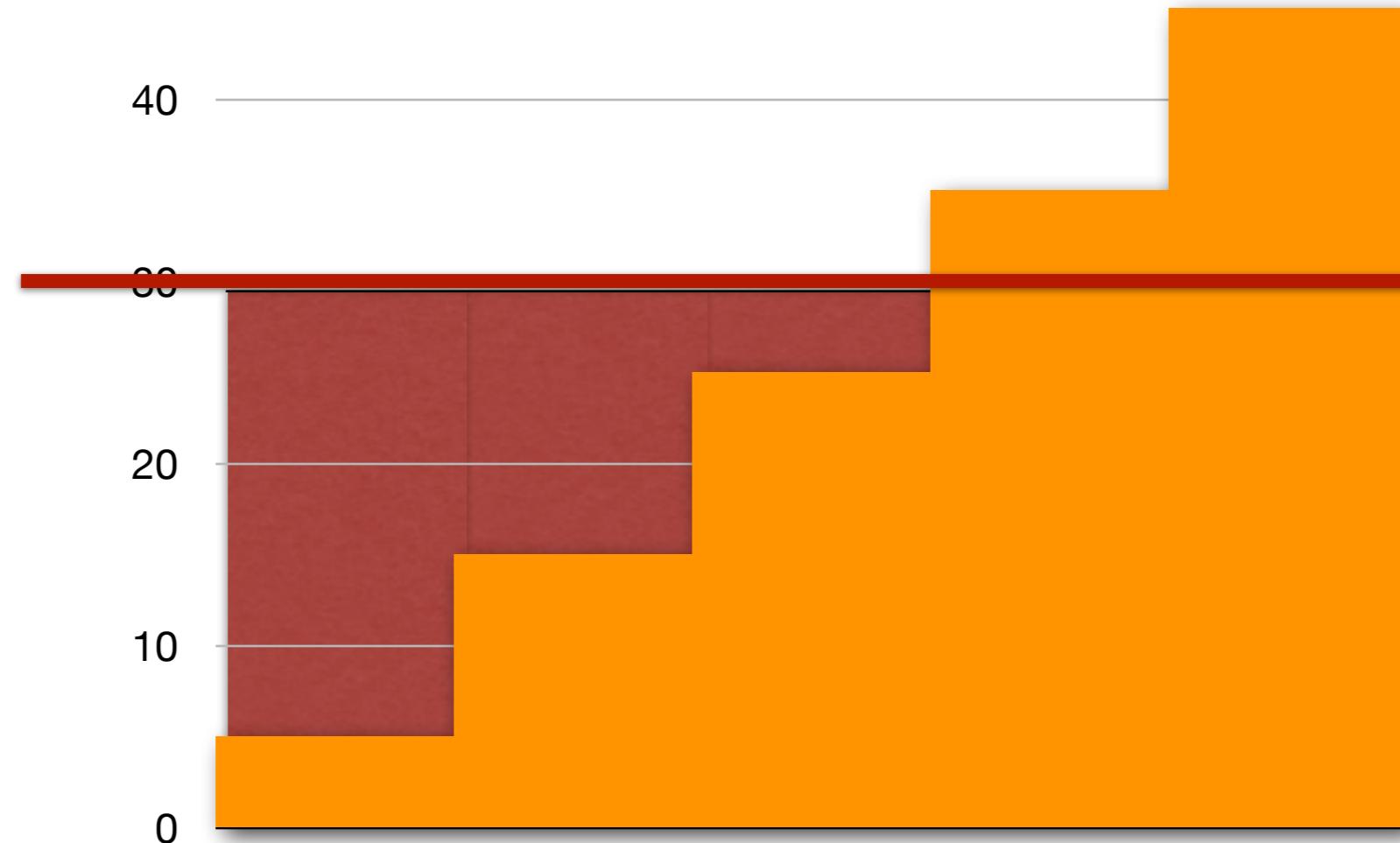
20

10

0

Quantity

Supplier	COST	P1	S1	P2
Andre	5	30	25	20
Betty	15	30	15	20
Carlos	25	30	5	20
Donna	35	30	-	20
Engelb	45	30	-	20
total	-	-	45	-



Producer Surplus

Price

50

40

30

20

10

0

1

2

3

4

5

Quantity

Supplier	COST	P1	S1	P2
Andre	5	30	25	20
Betty	15	30	15	20
Carlos	25	30	5	20
Donna	35	30	-	20
Engelb	45	30	-	20
total	-	-	45	-

Producer Surplus

Price

50

40

30

20

10

0

1

2

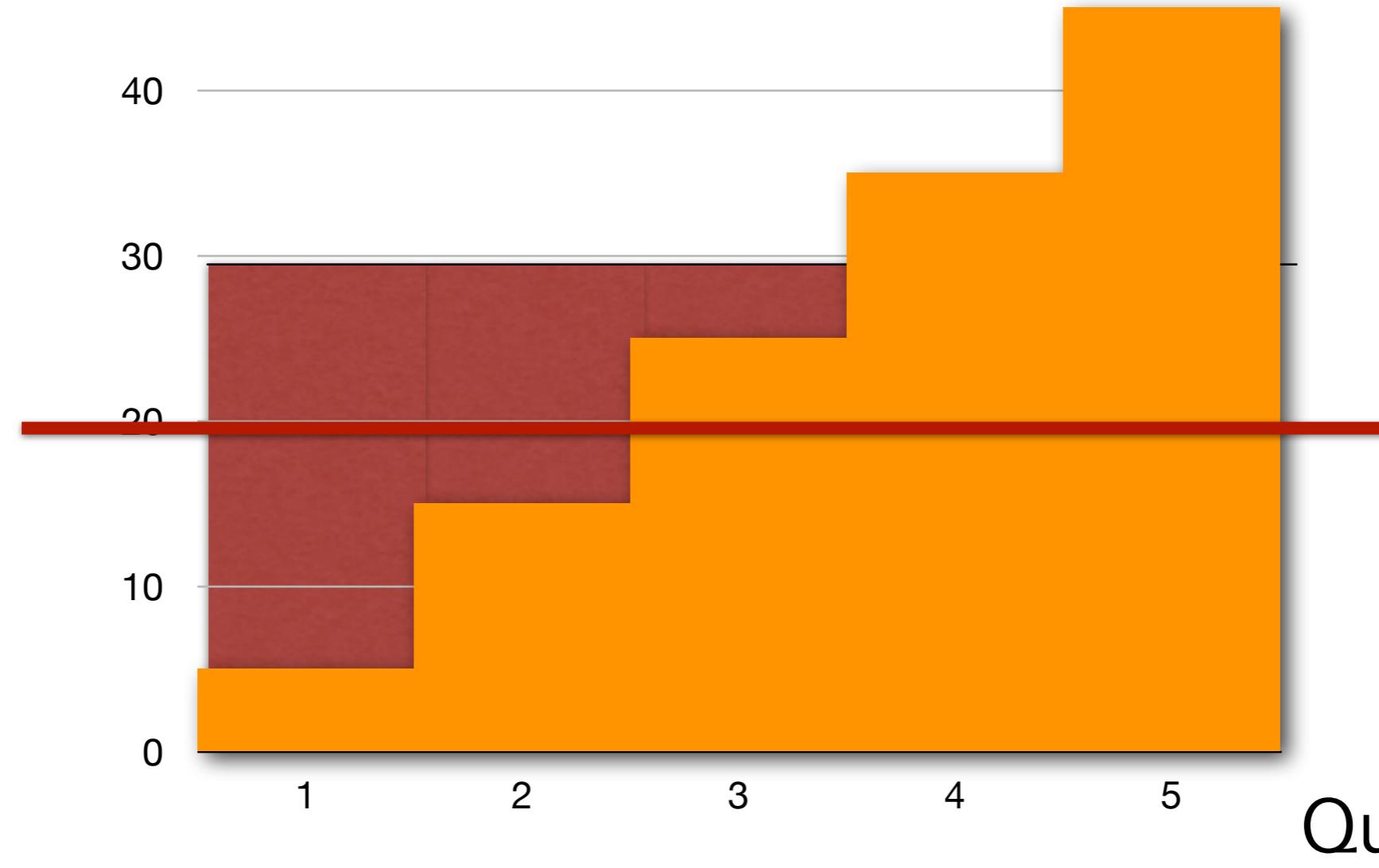
3

4

5

Quantity

Supplier	COST	P1	S1	P2	S2
Andre	5	30	25	20	15
Betty	15	30	15	20	5
Carlos	25	30	5	20	-
Donna	35	30	-	20	-
Engelb	45	30	-	20	-
total	-	-	45	-	20



Producer Surplus

Price

50

40

30

20

10

0

1

2

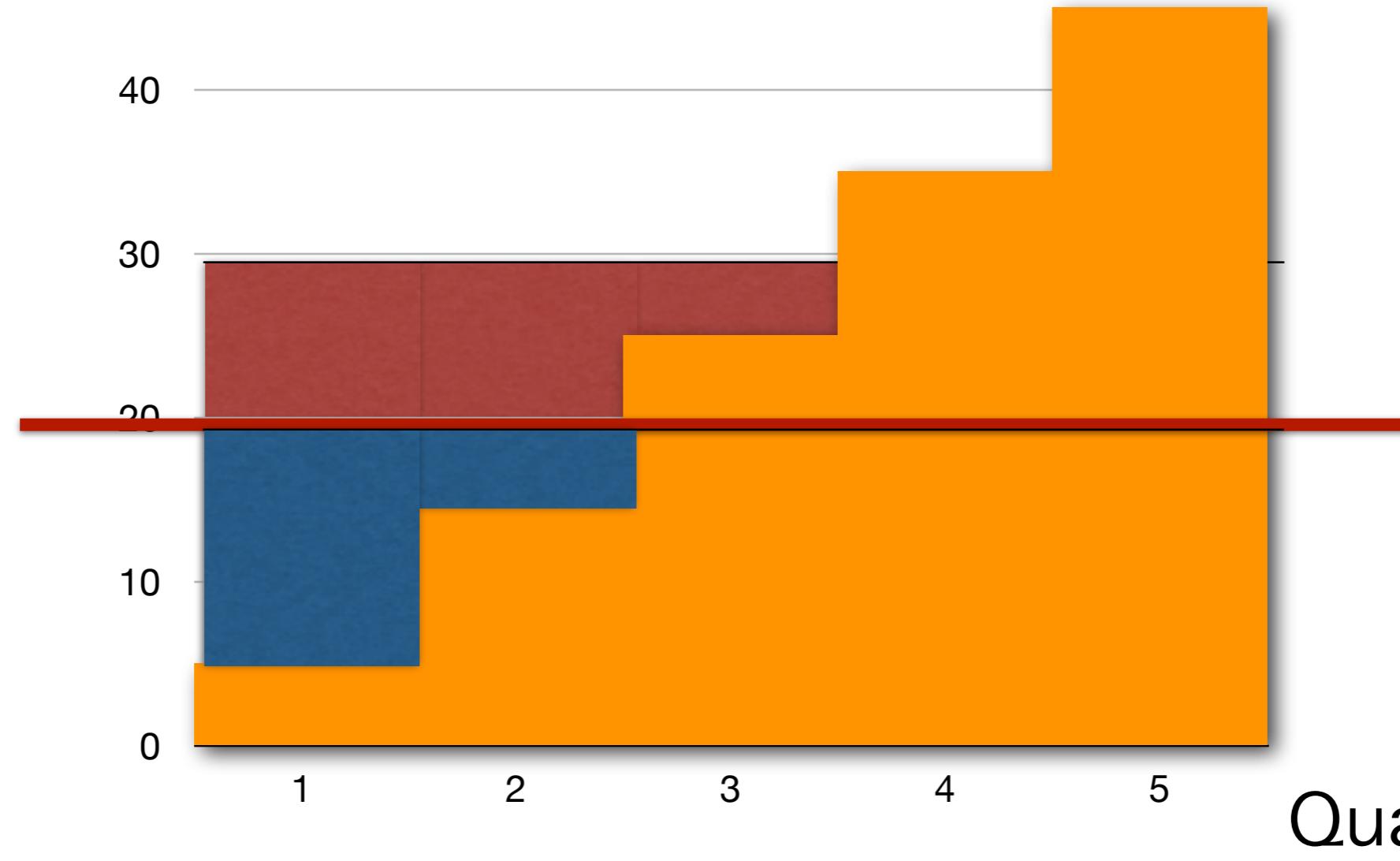
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5

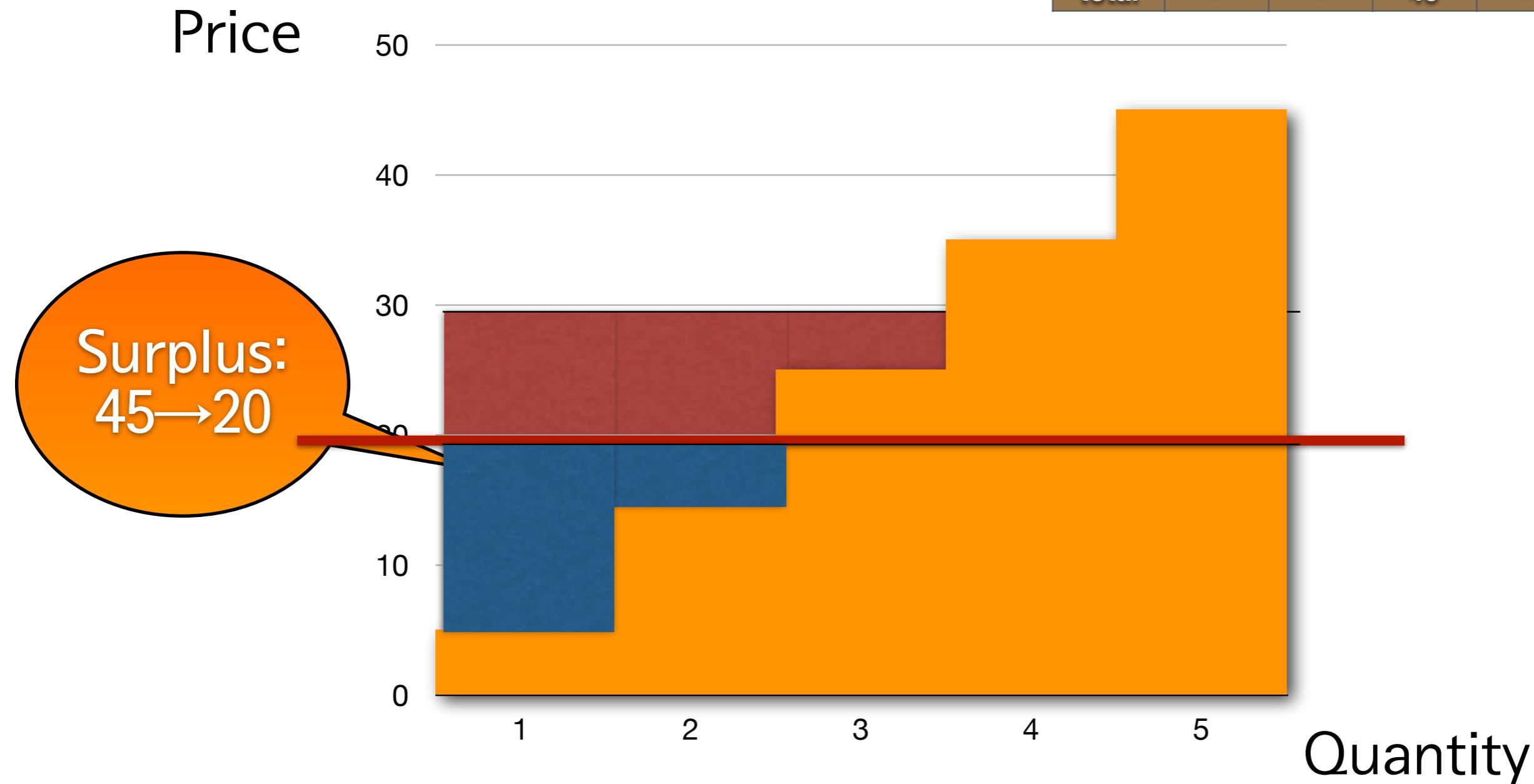
Quantity

Supplier	COST	P1	S1	P2	S2
Andre	5	30	25	20	15
Betty	15	30	15	20	5
Carlos	25	30	5	20	-
Donna	35	30	-	20	-
Engelb	45	30	-	20	-
total	-	-	45	-	20



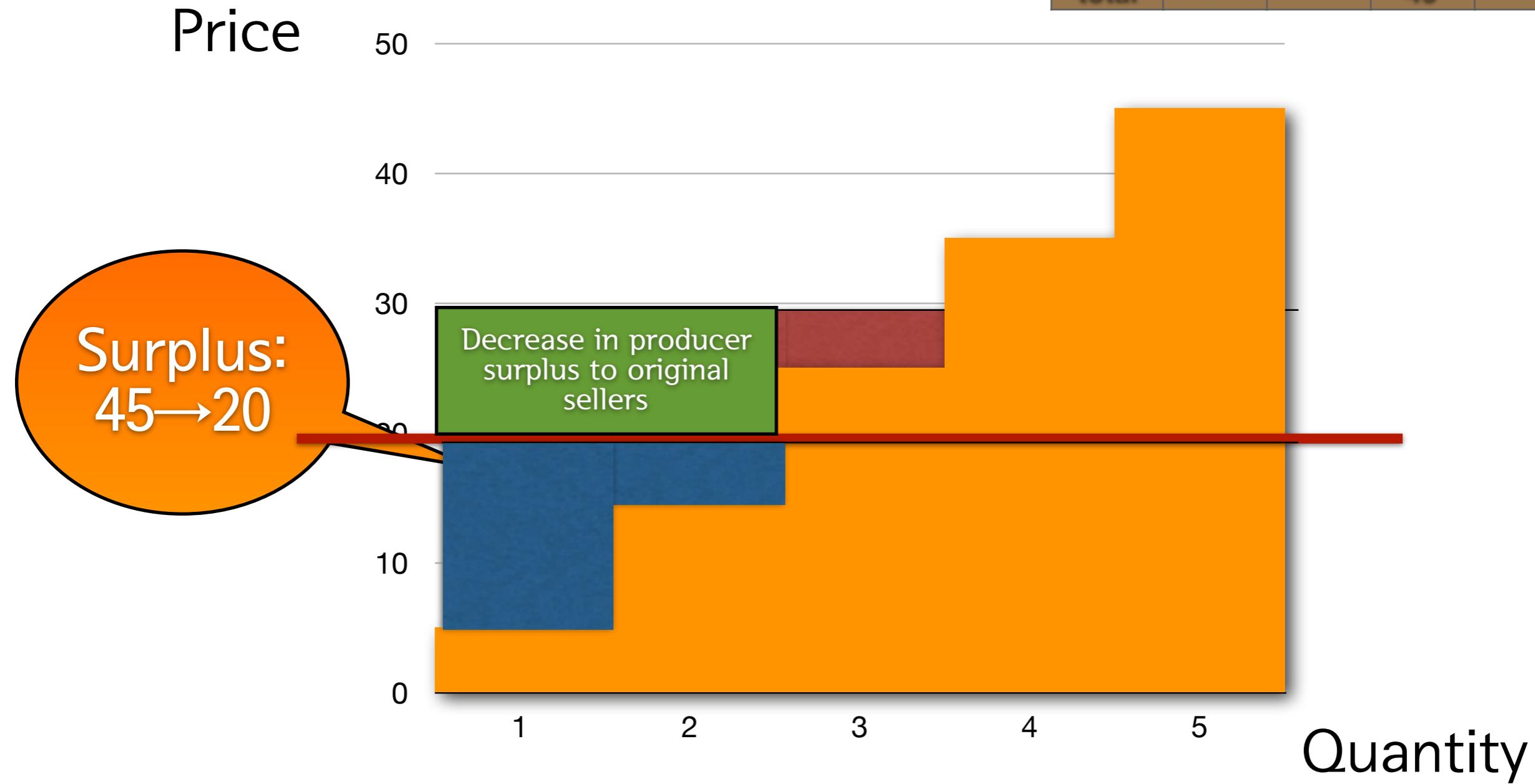
Producer Surplus

Supplier	COST	P1	S1	P2	S2
Andre	5	30	25	20	15
Betty	15	30	15	20	5
Carlos	25	30	5	20	-
Donna	35	30	-	20	-
Engelb	45	30	-	20	-
total	-	-	45	-	20



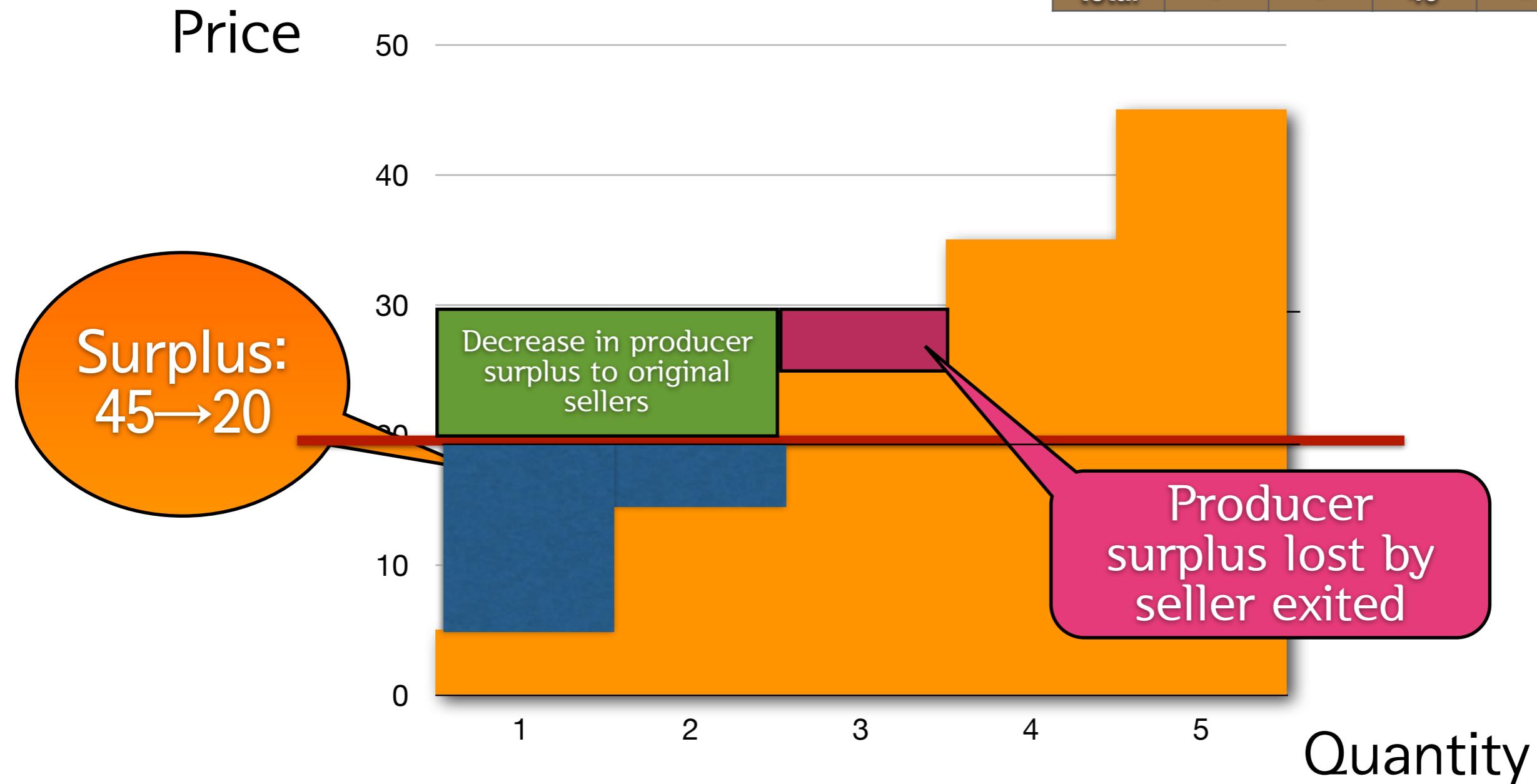
Producer Surplus

Supplier	COST	P1	S1	P2	S2
Andre	5	30	25	20	15
Betty	15	30	15	20	5
Carlos	25	30	5	20	-
Donna	35	30	-	20	-
Engelb	45	30	-	20	-
total	-	-	45	-	20

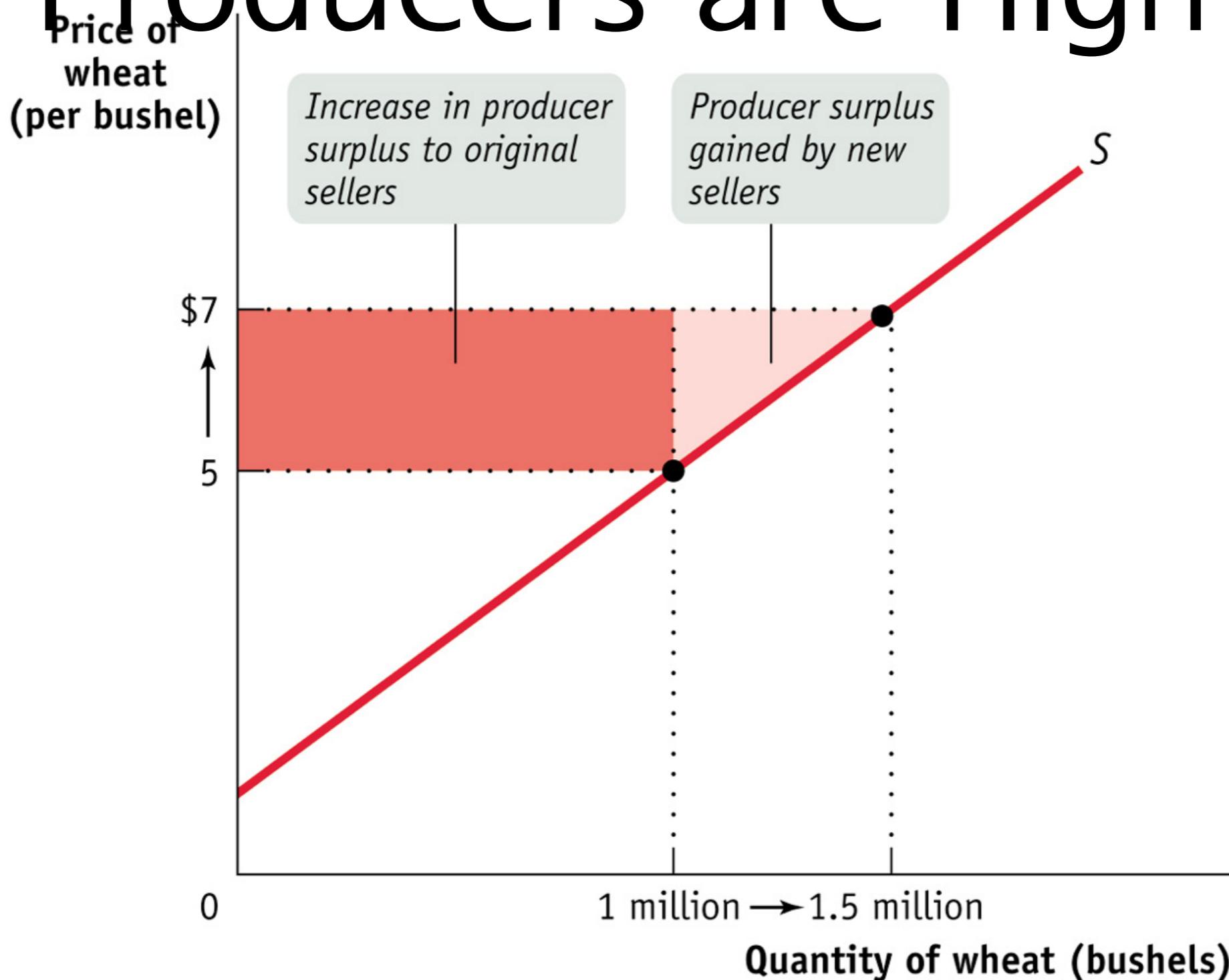


Producer Surp

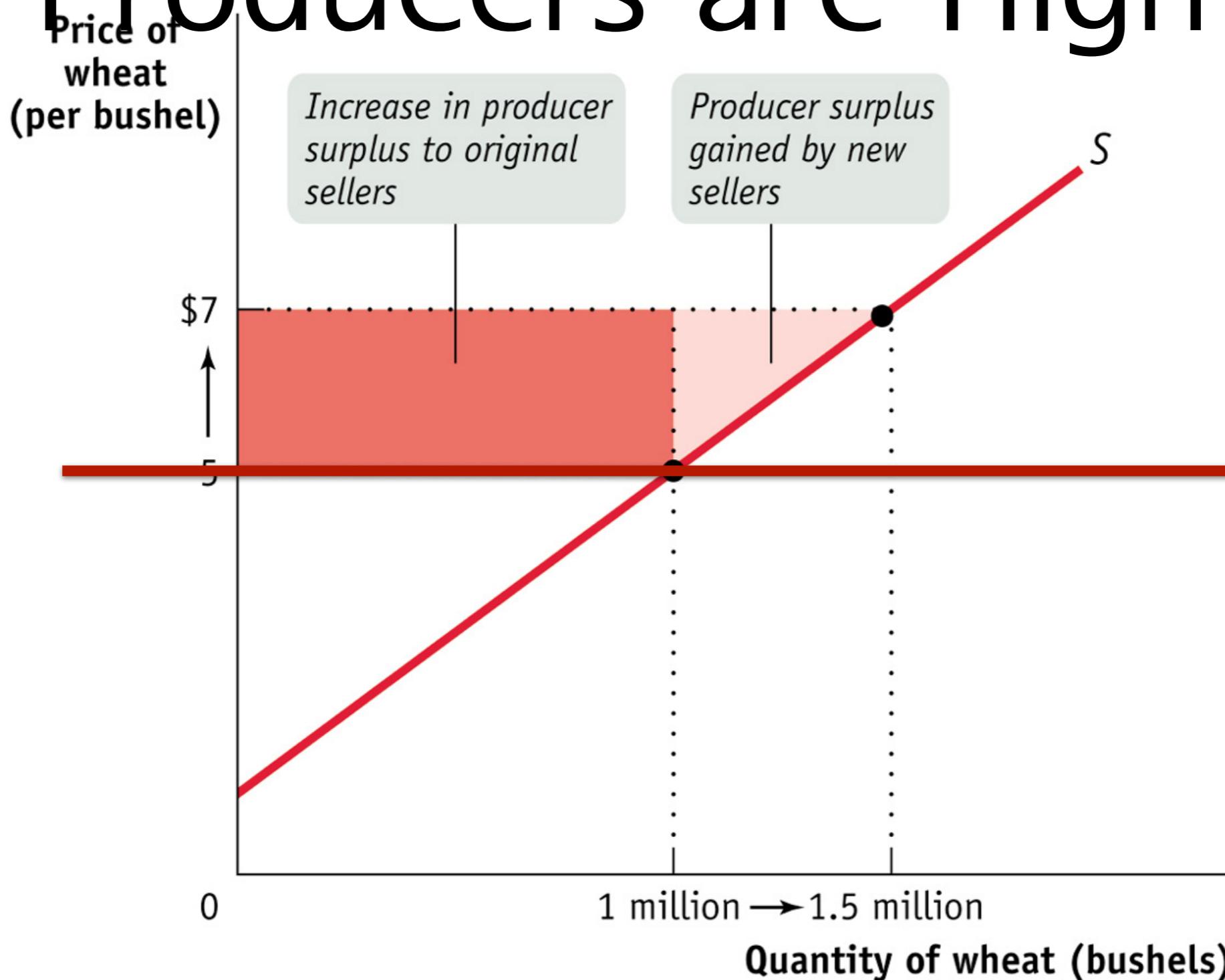
Supplier	COST	P1	S1	P2	S2
Andre	5	30	25	20	15
Betty	15	30	15	20	5
Carlos	25	30	5	20	-
Donna	35	30	-	20	-
Engelb	45	30	-	20	-
total	-	-	45	-	20



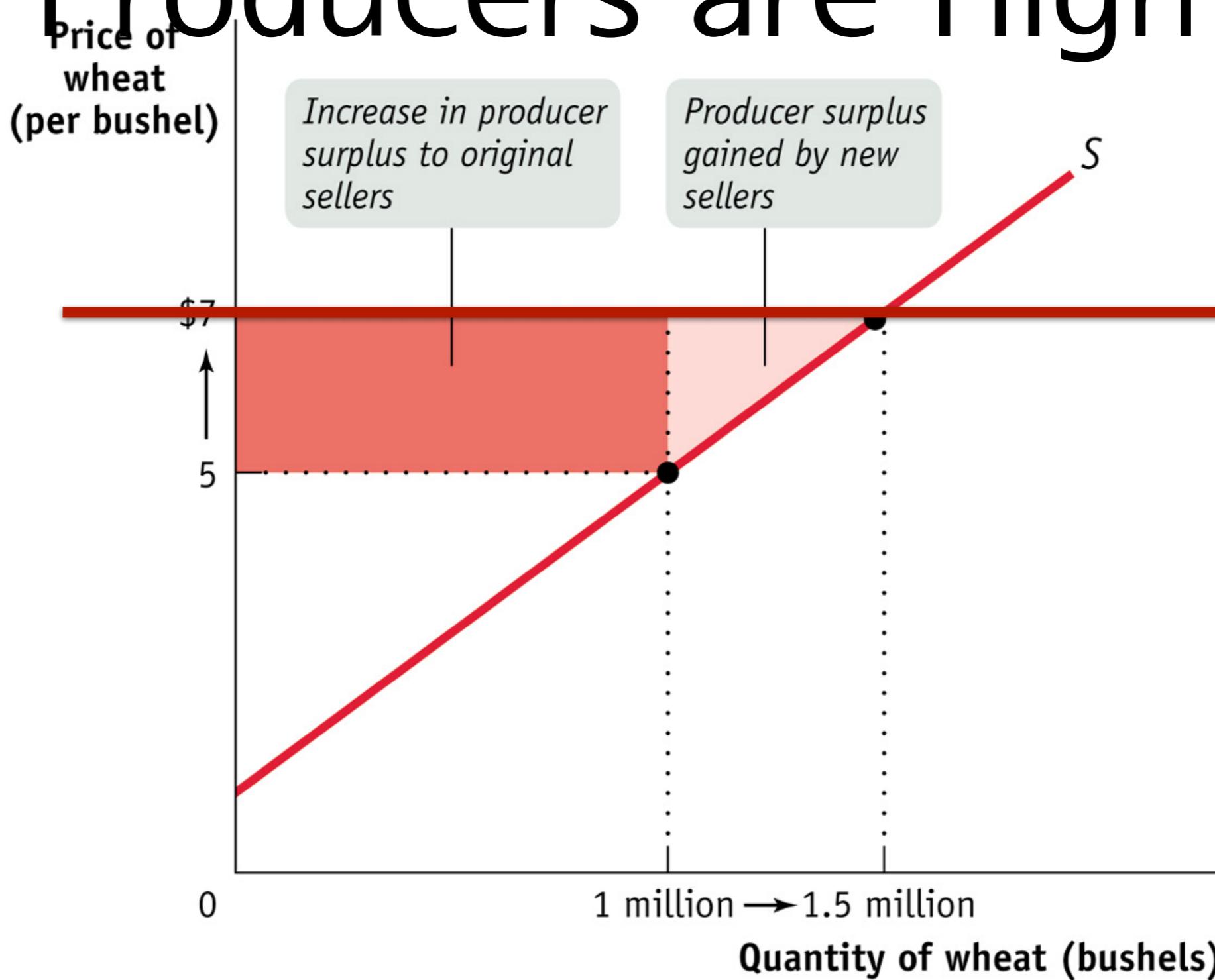
When the Number of Producers are High



When the Number of Producers are High



When the Number of Producers are High

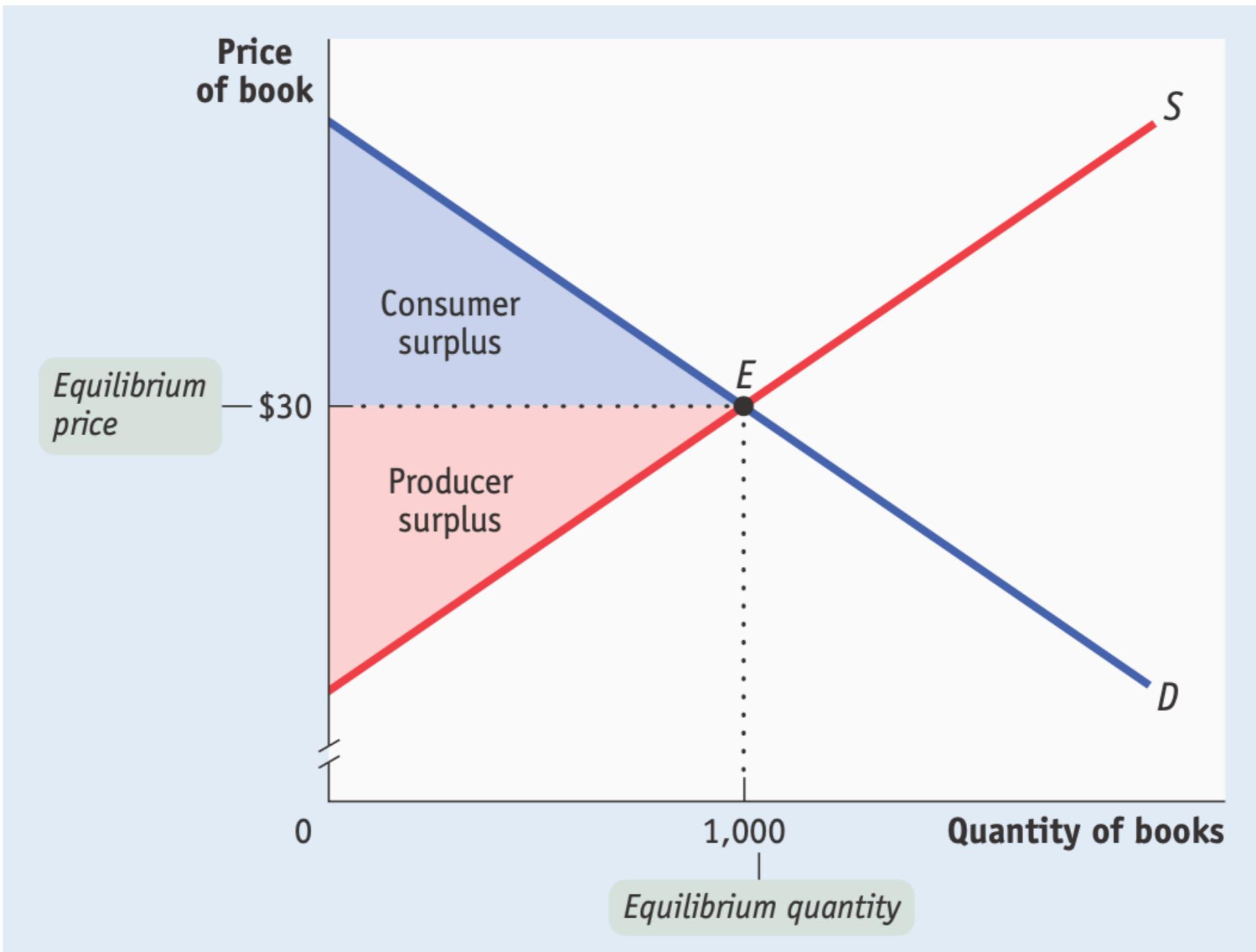


Synthesis: Social Surplus

Benefits from Trades

- Trade → consumer surplus, producer surplus
- Total Surplus (Social surplus) := Total Consumer Surplus + Total Producer Surplus

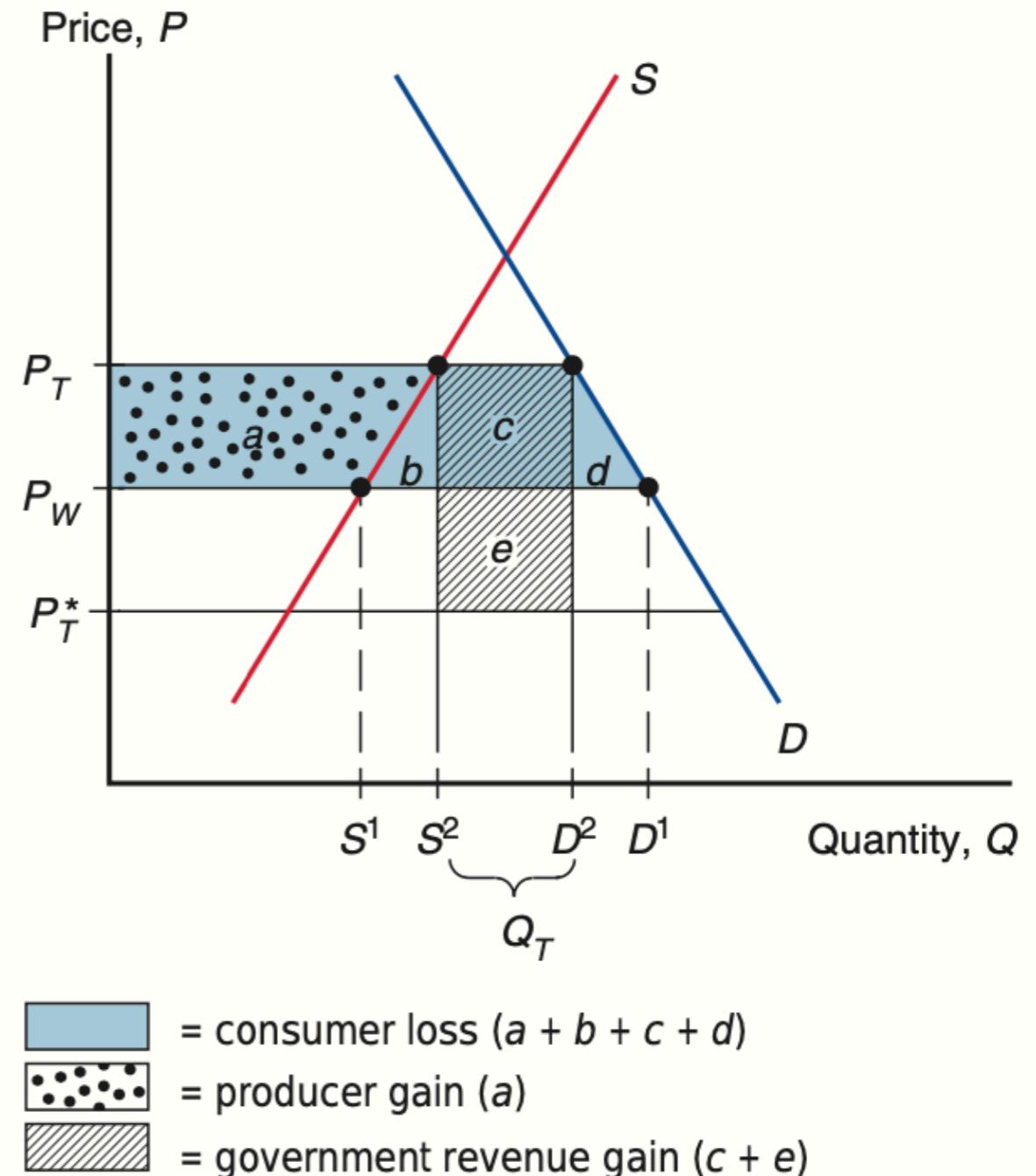
Total Surplus (Social Surplus)



Application to Welfare Analysis of a Tariff

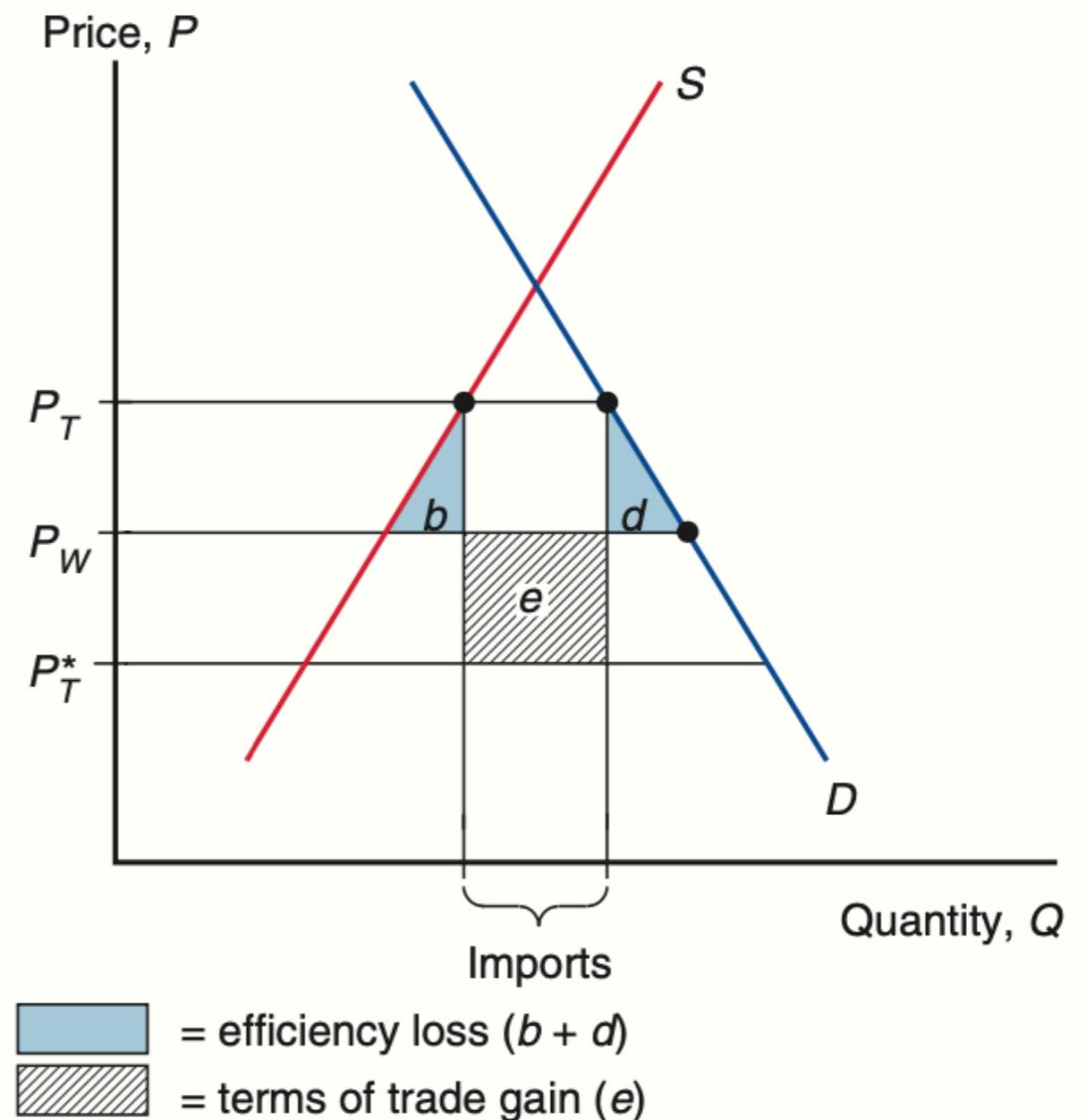
Costs and Benefits of a Tariff for the Importing Country

- Net cost of a tariff = [Consumer loss] - [Producer gain] - [Government revenue]
 $= [a+b+c+d] - a - [c+e] = b + d - e$
- b, d: efficiency loss
 - b: production distortion loss
 - d: consumption distortion loss
 - distorts by tariff
- e: terms of trade gain
 - lowered foreign export prices by tariff



Net Welfare Effects of a Tariff

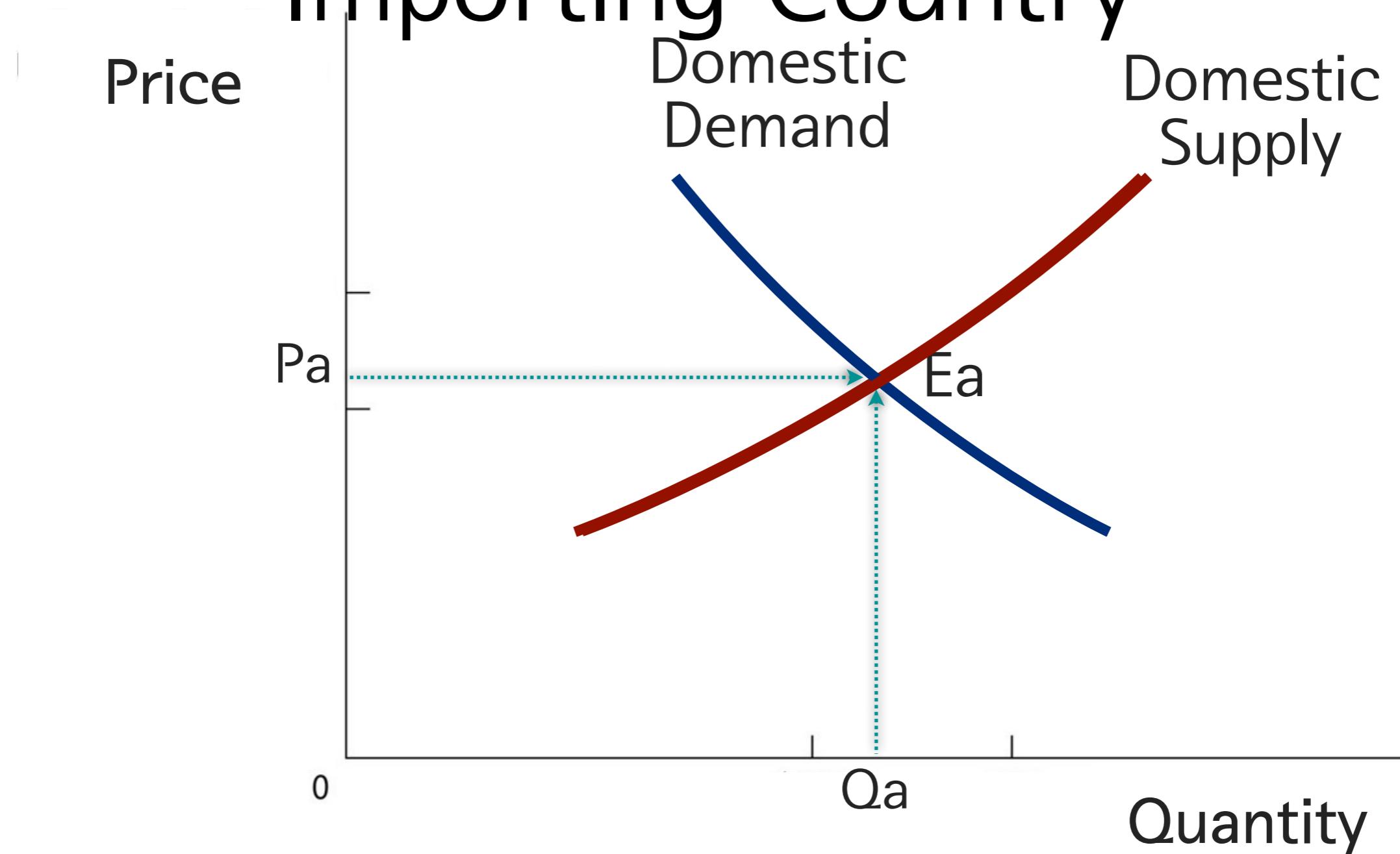
- Net Welfare depends on the size of b, d, and e



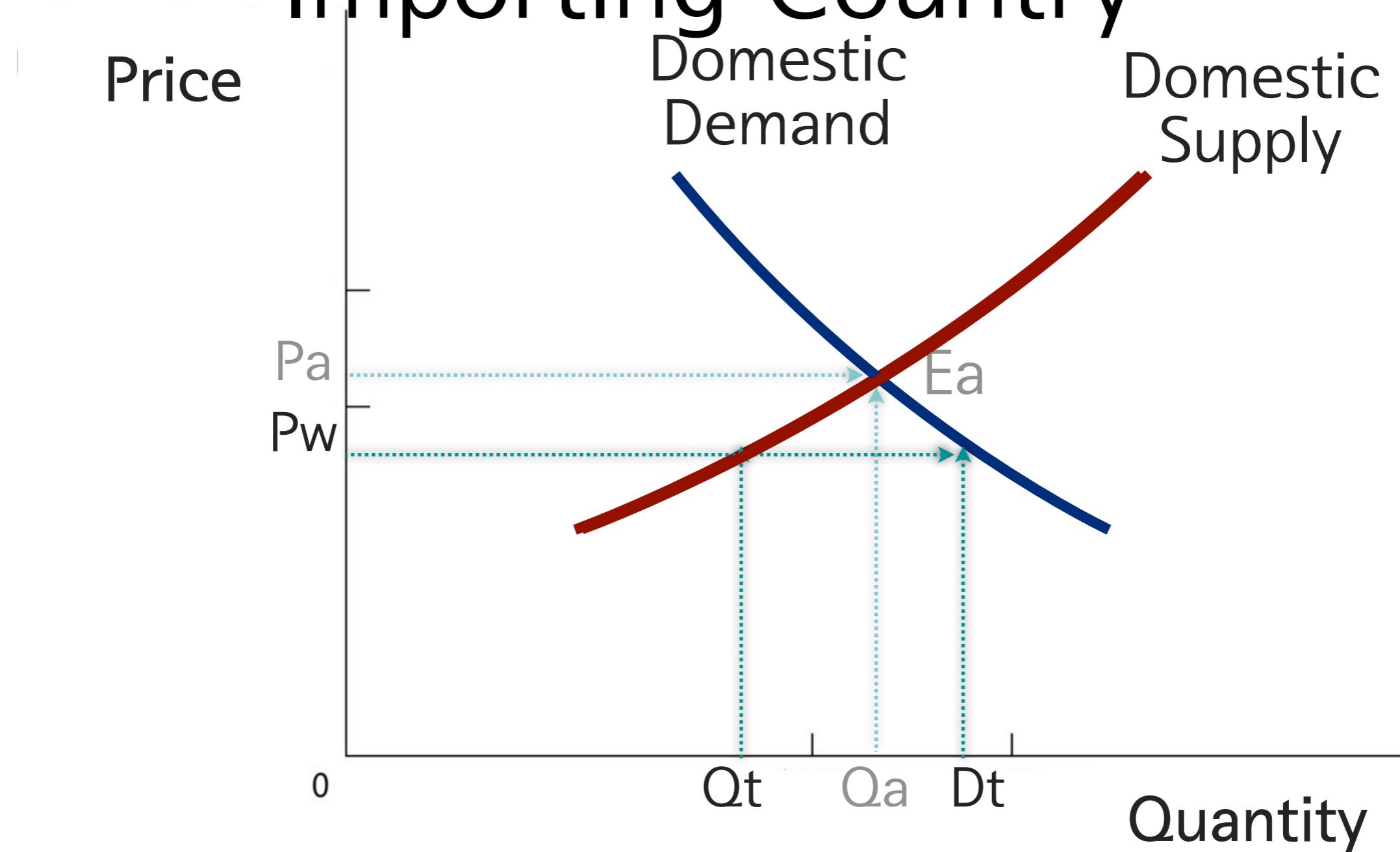
Appendix: Small Country Case

Small Country Case: Costs and Benefits of a Tariff for Importing Country

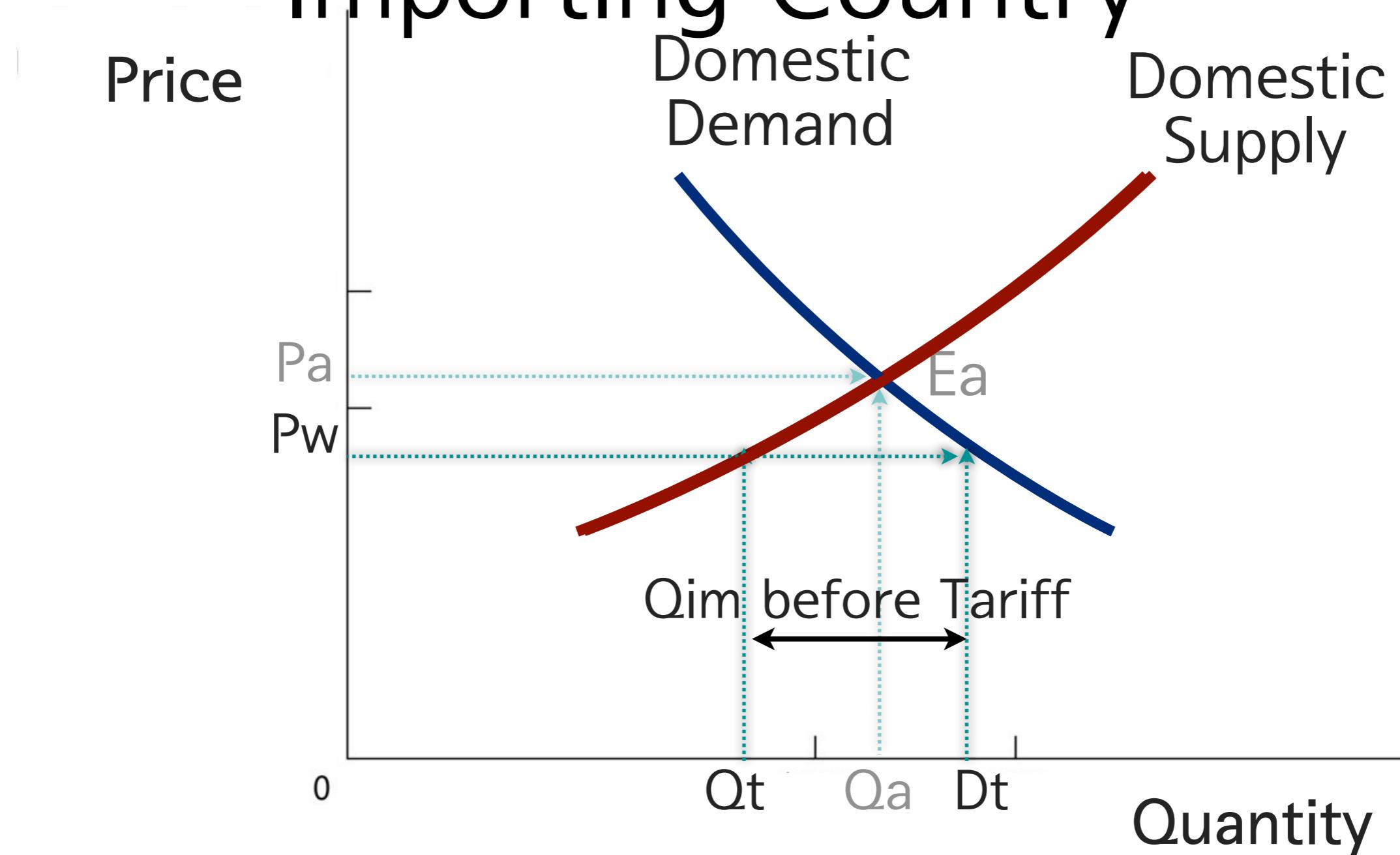
Small Country Case: Costs and Benefits of a Tariff for Importing Country



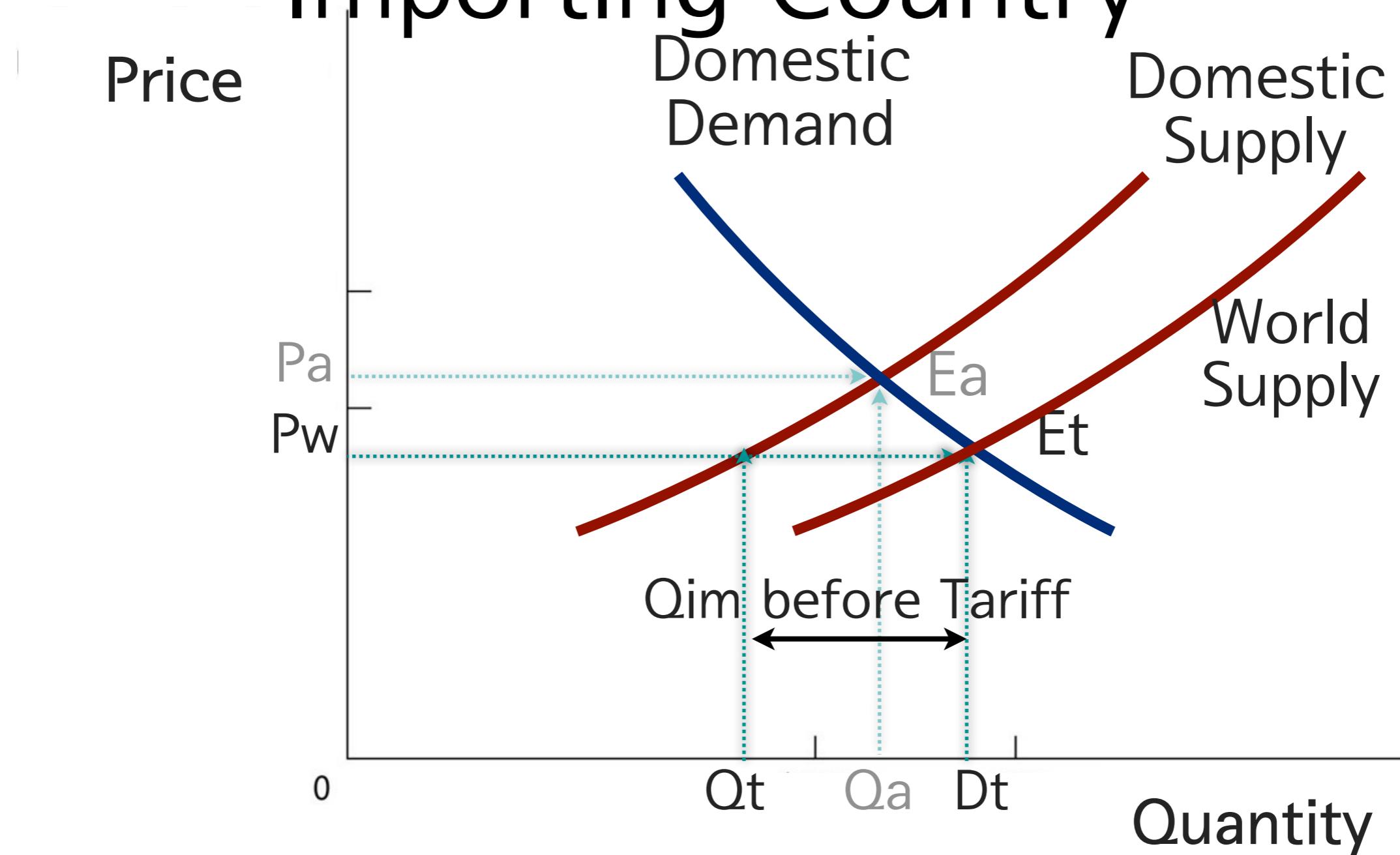
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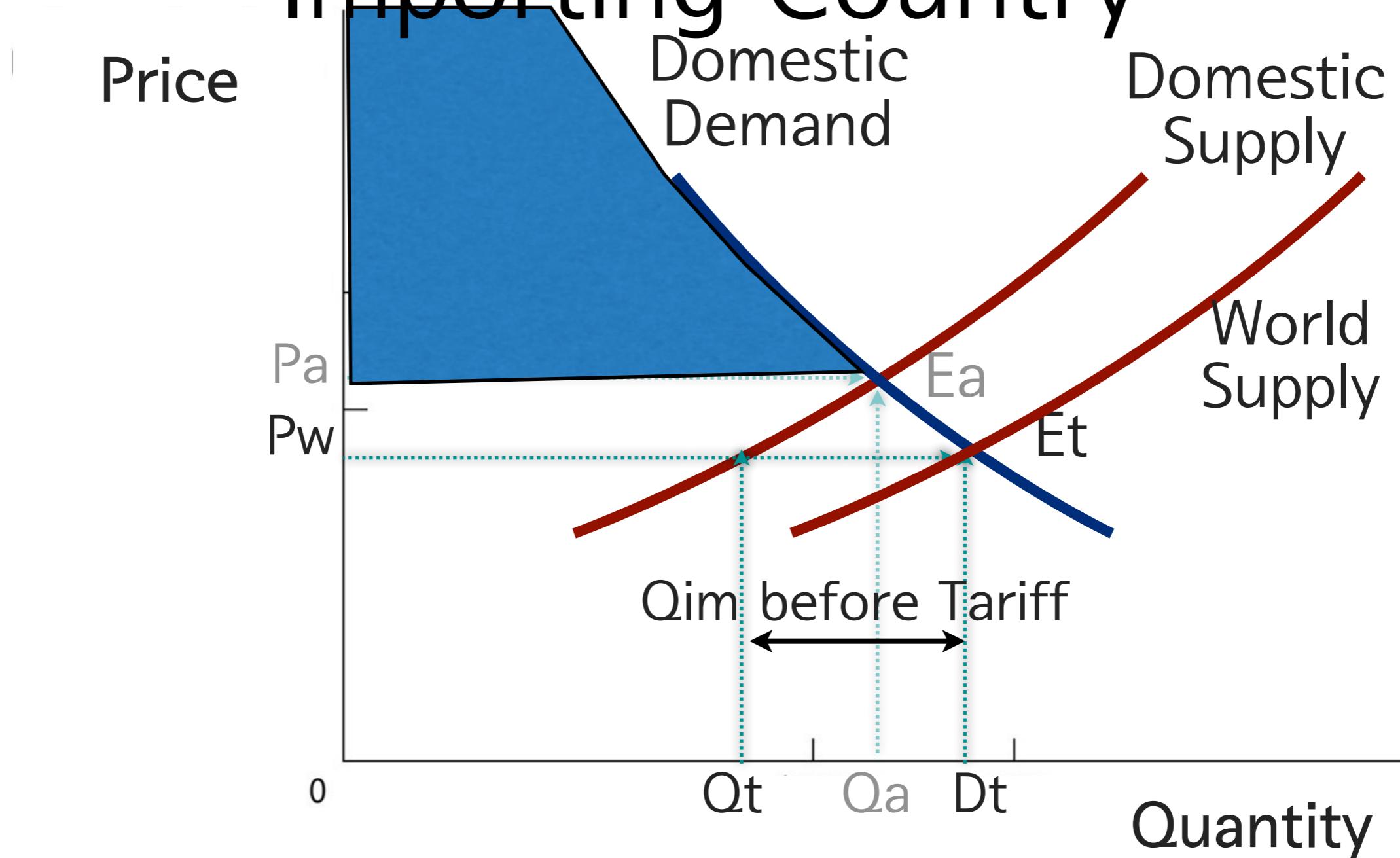
Small Country Case: Costs and Benefits of a Tariff for Importing Country



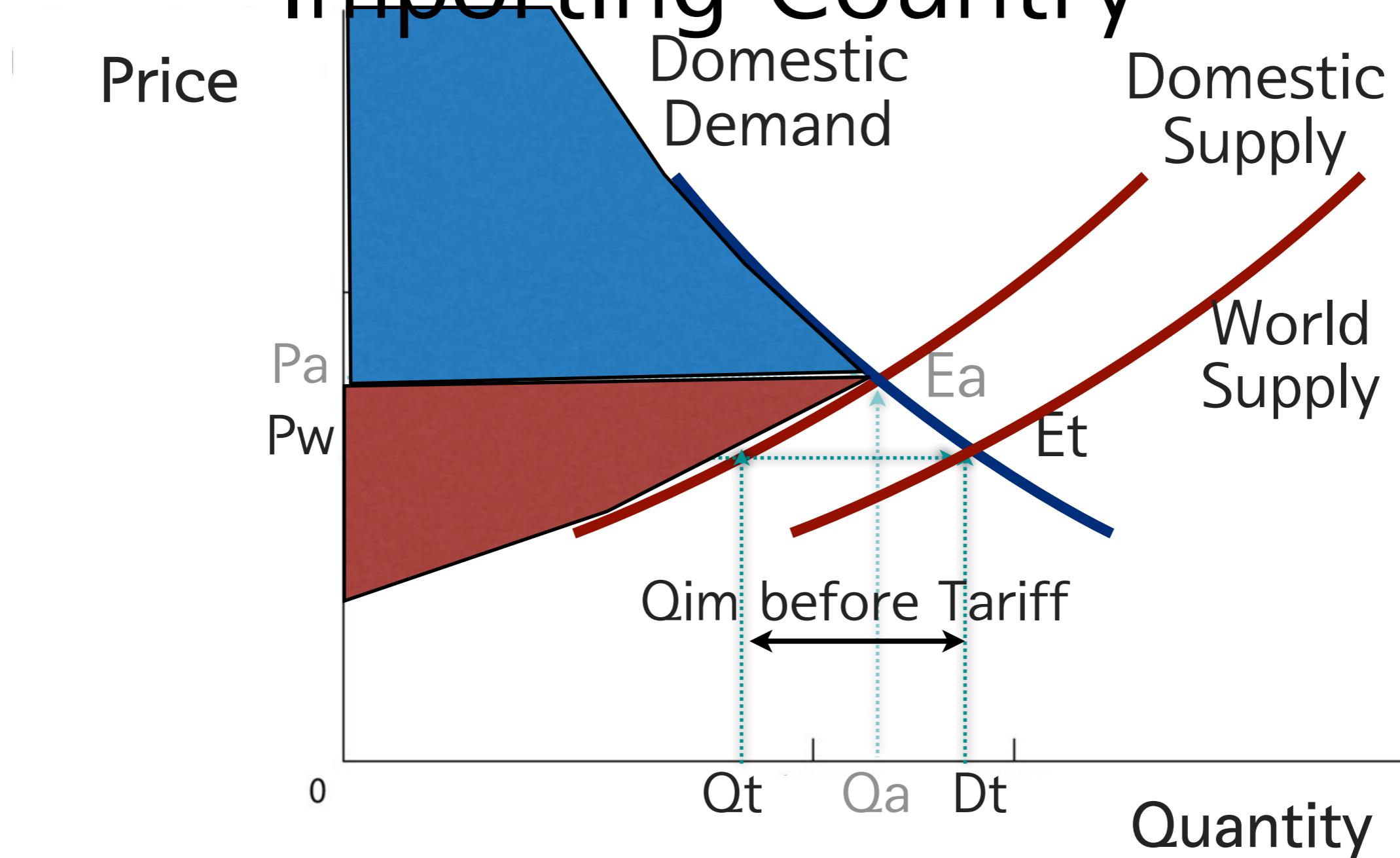
Small Country Case: Costs and Benefits of a Tariff for Importing Country



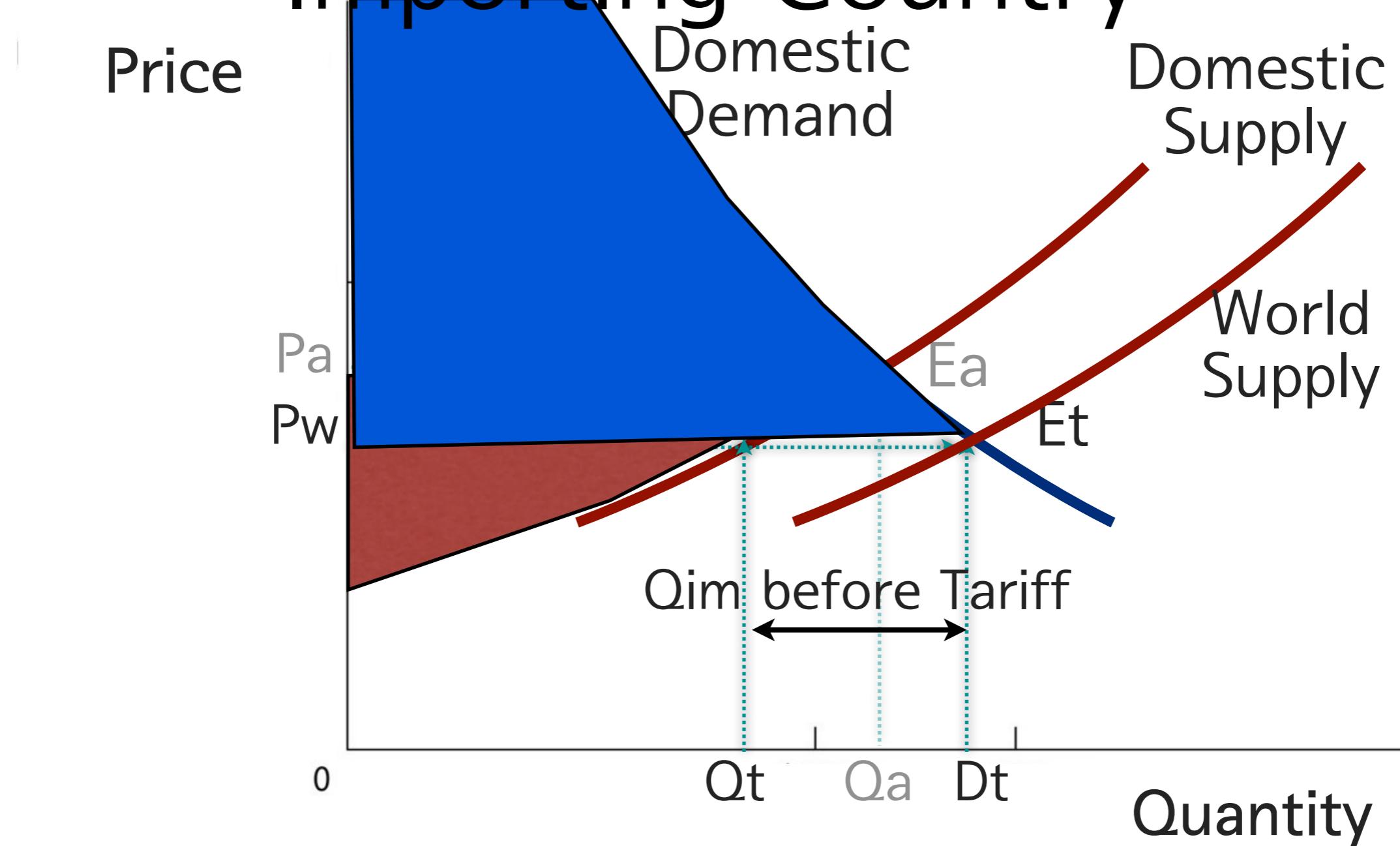
Small Country Case: Costs and Benefits of a Tariff for Importing Country



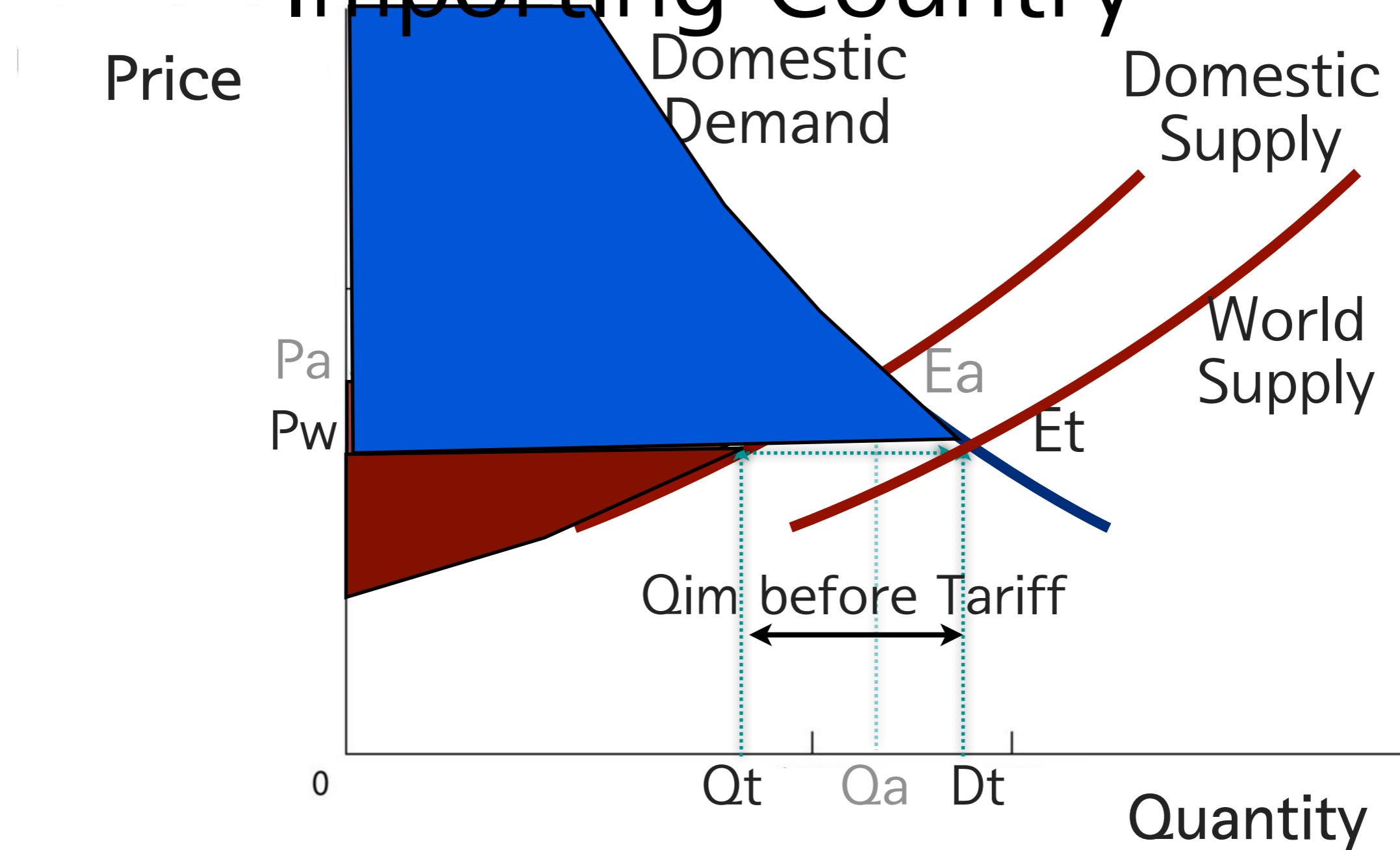
Small Country Case: Costs and Benefits of a Tariff for Importing Country



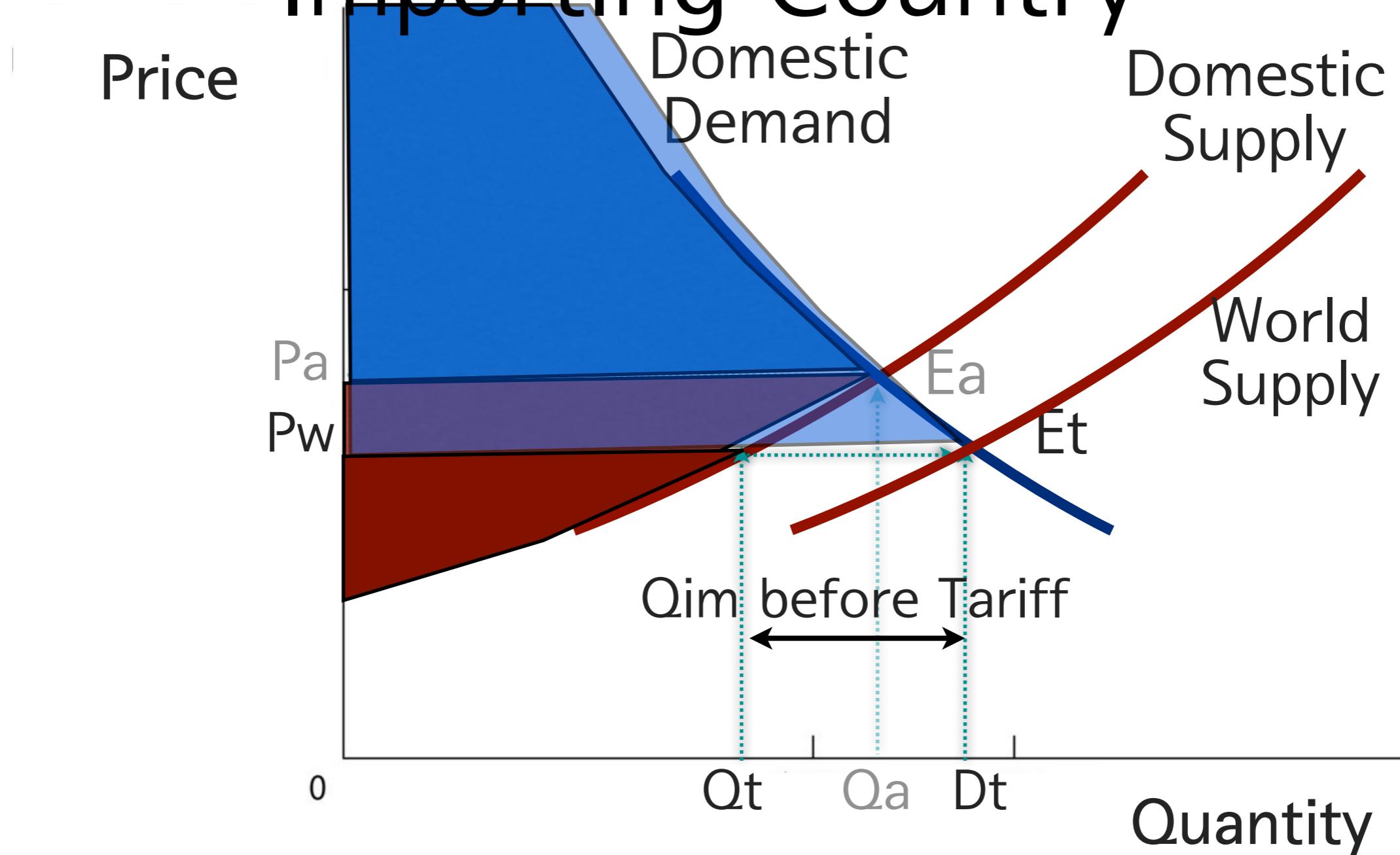
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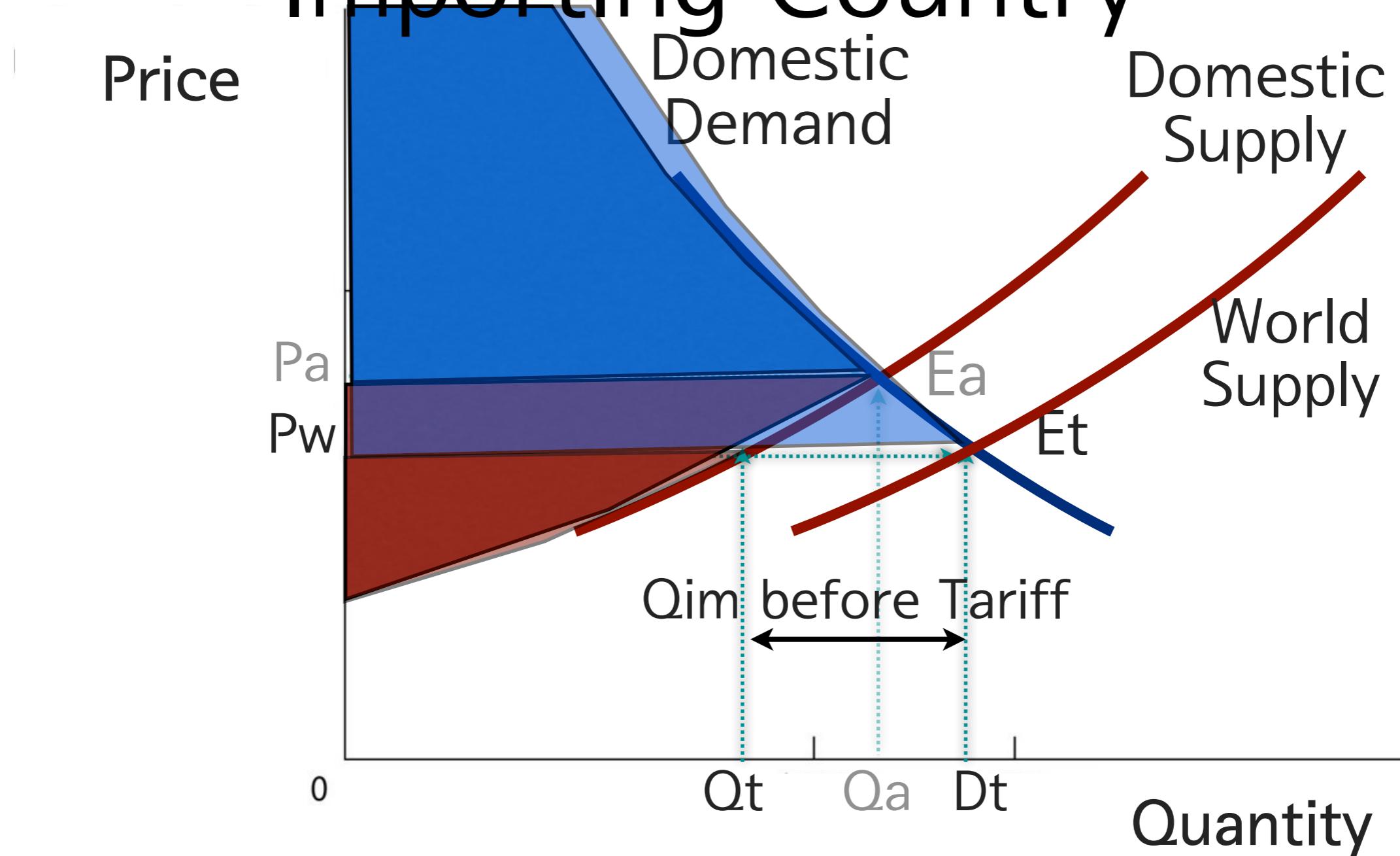
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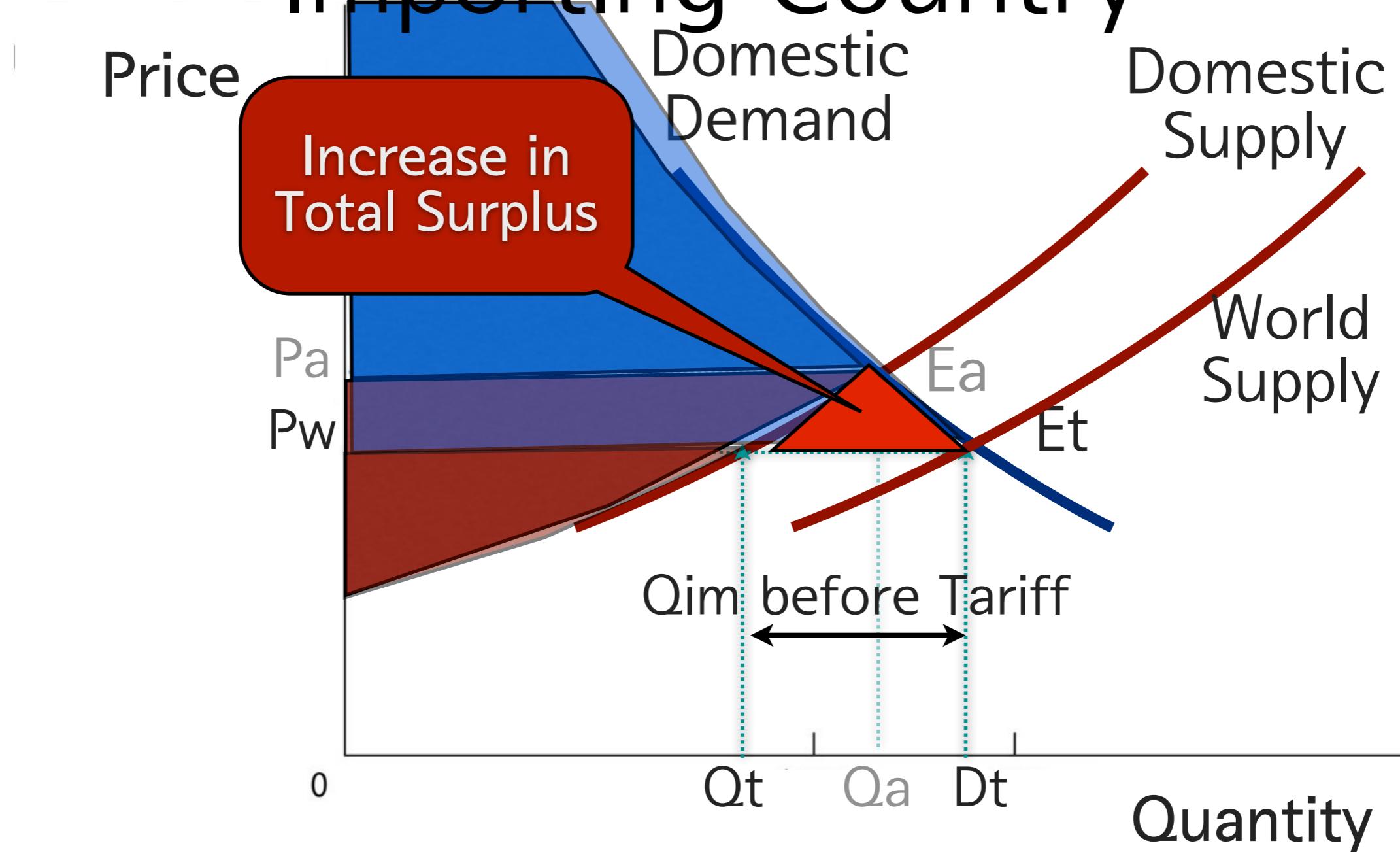
Small Country Case: Costs and Benefits of a Tariff for Importing Country



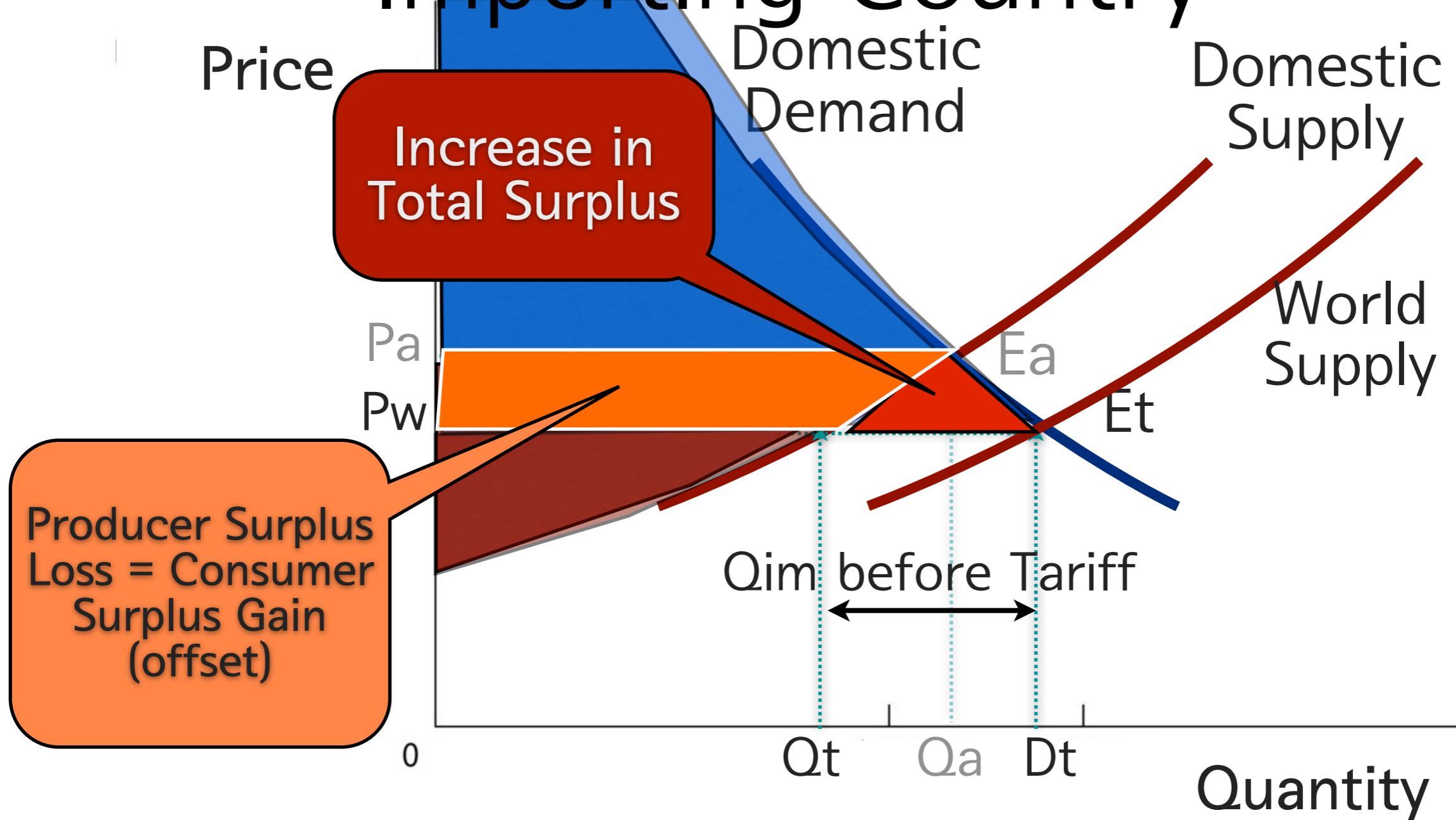
Small Country Case: Costs and Benefits of a Tariff for Importing Country



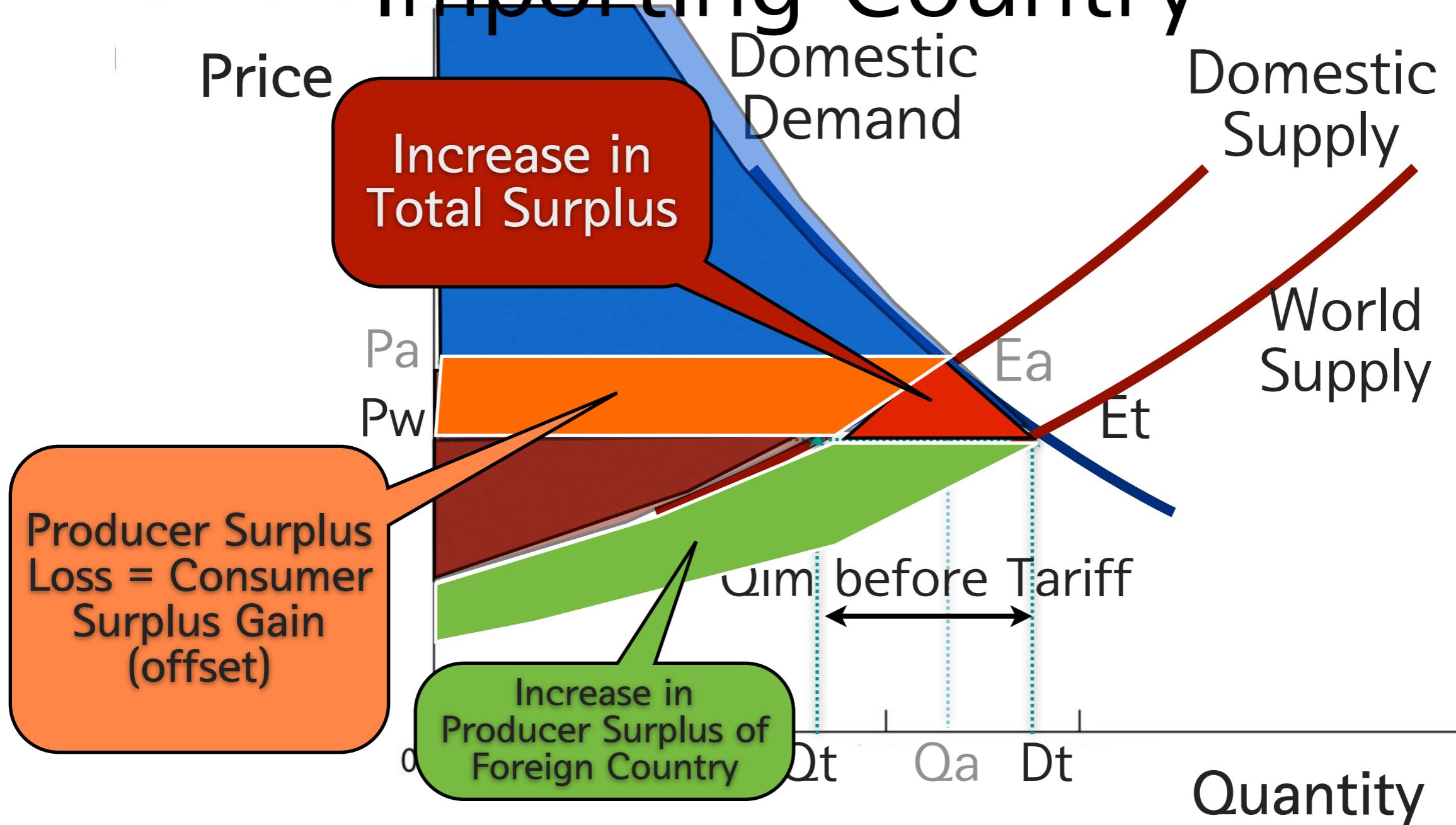
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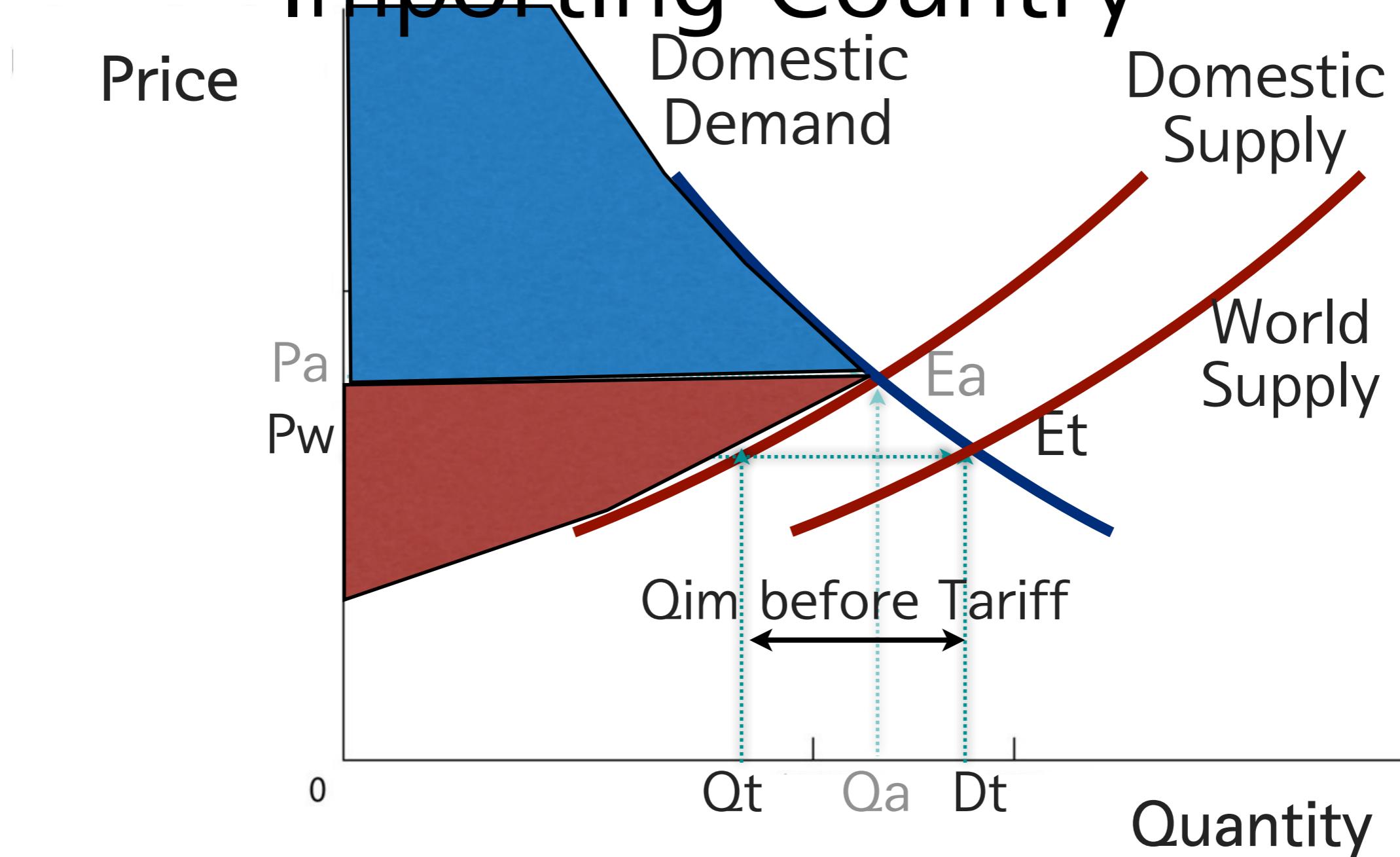
Small Country Case: Costs and Benefits of a Tariff for Importing Country



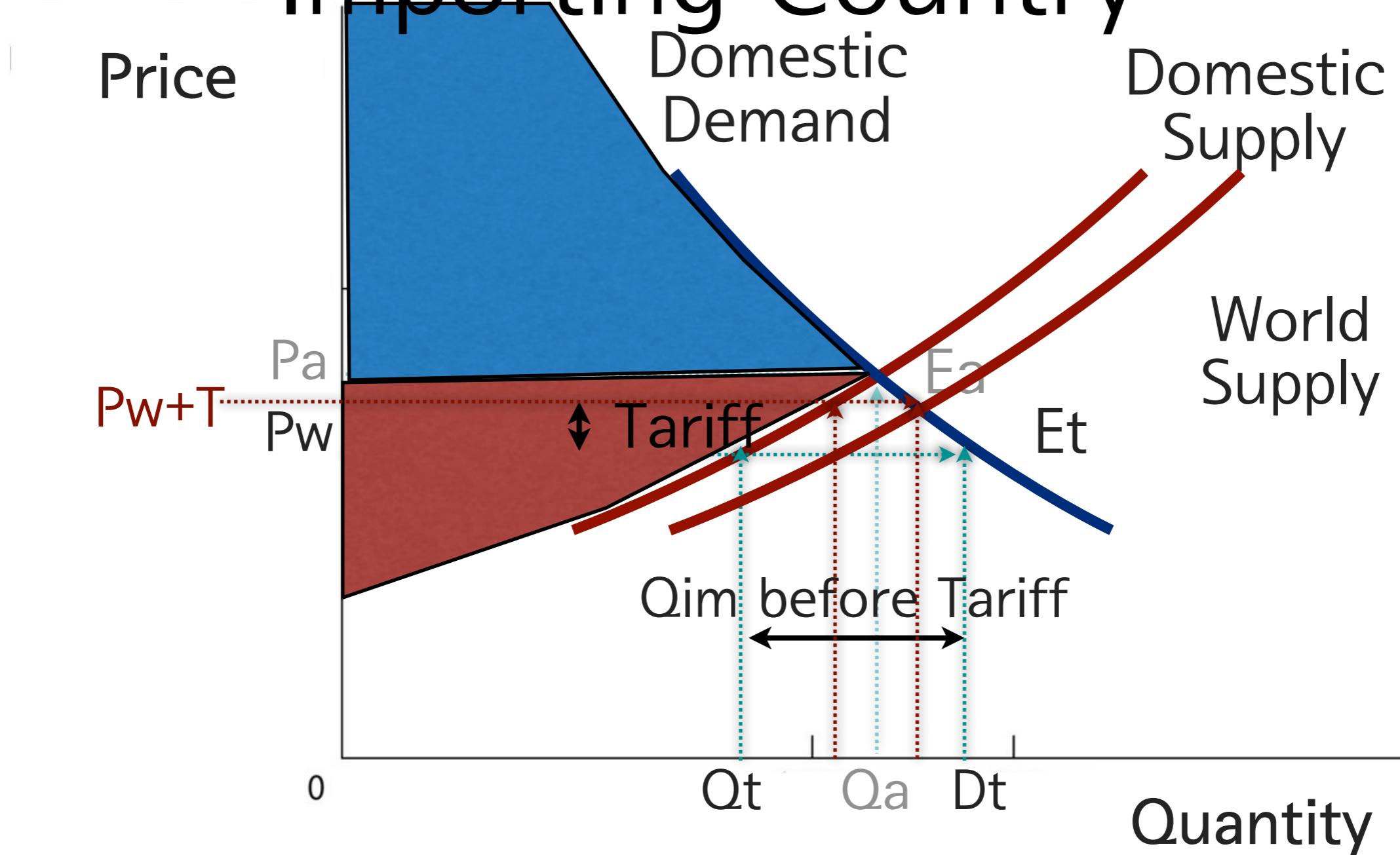
Small Country Case: Costs and Benefits of a Tariff for Importing Country



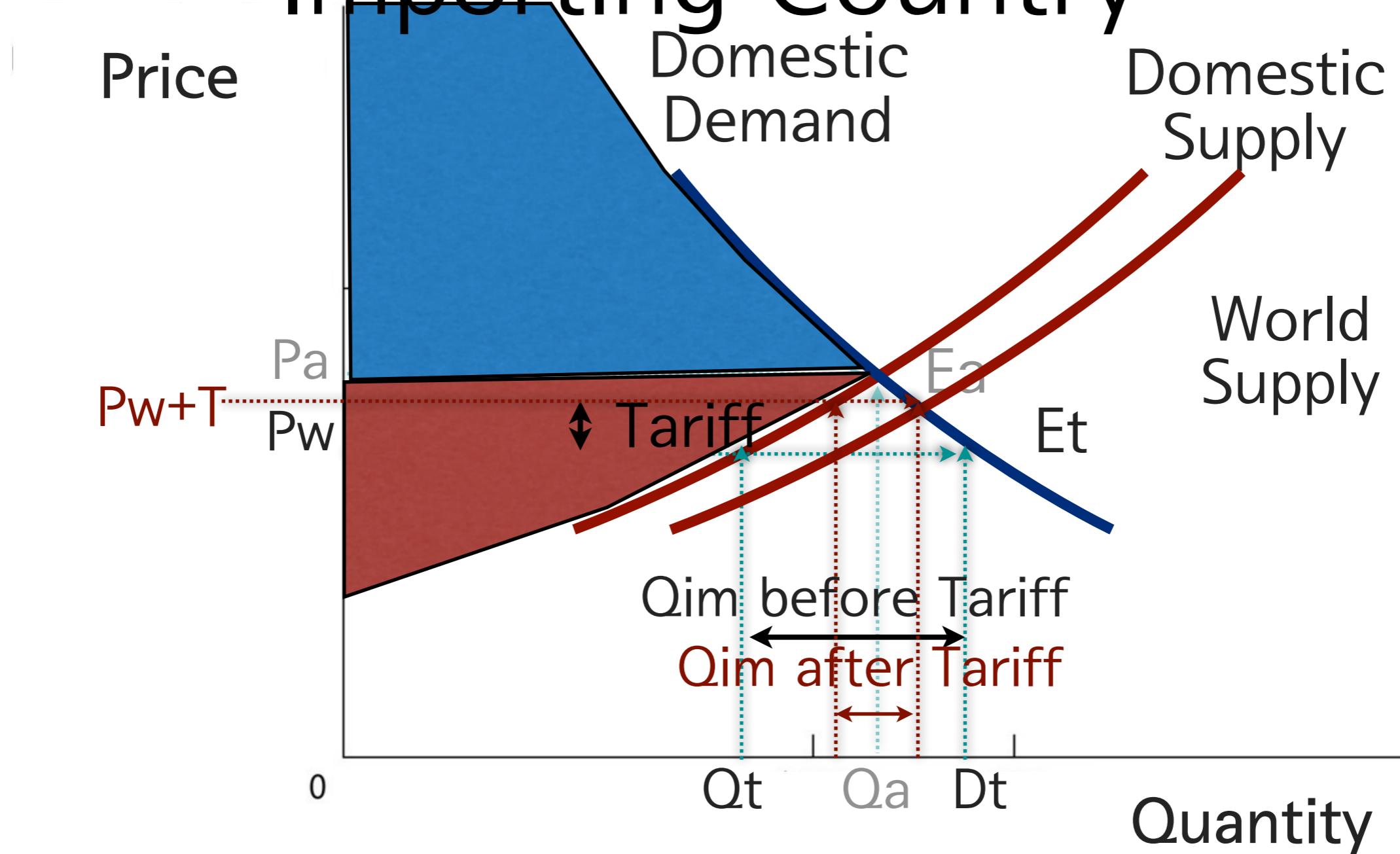
Small Country Case: Costs and Benefits of a Tariff for Importing Country



Small Country Case: Costs and Benefits of a Tariff for Importing Country

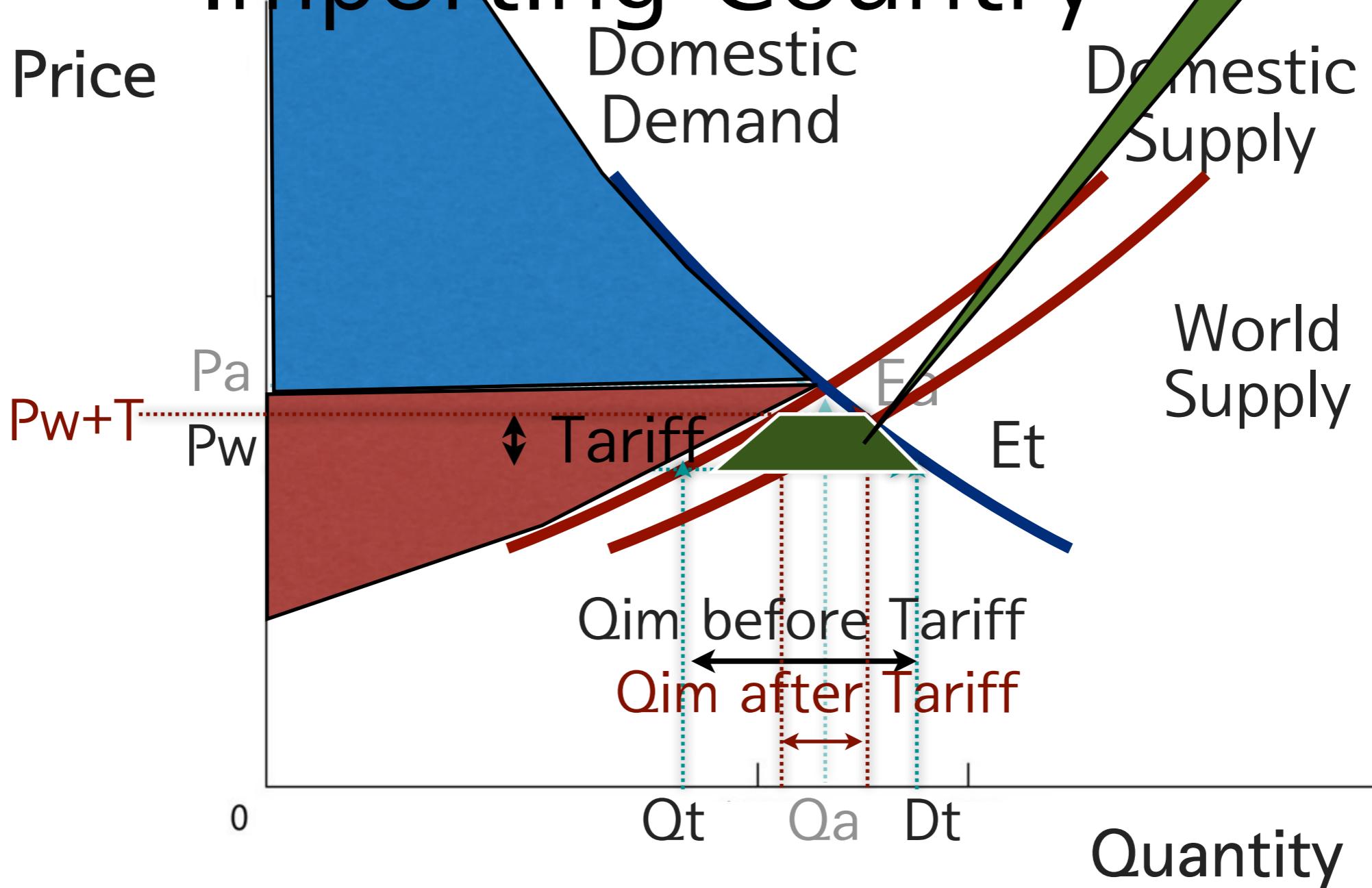


Small Country Case: Costs and Benefits of a Tariff for Importing Country



Small Country Case: Costs and Benefits of a Tariff

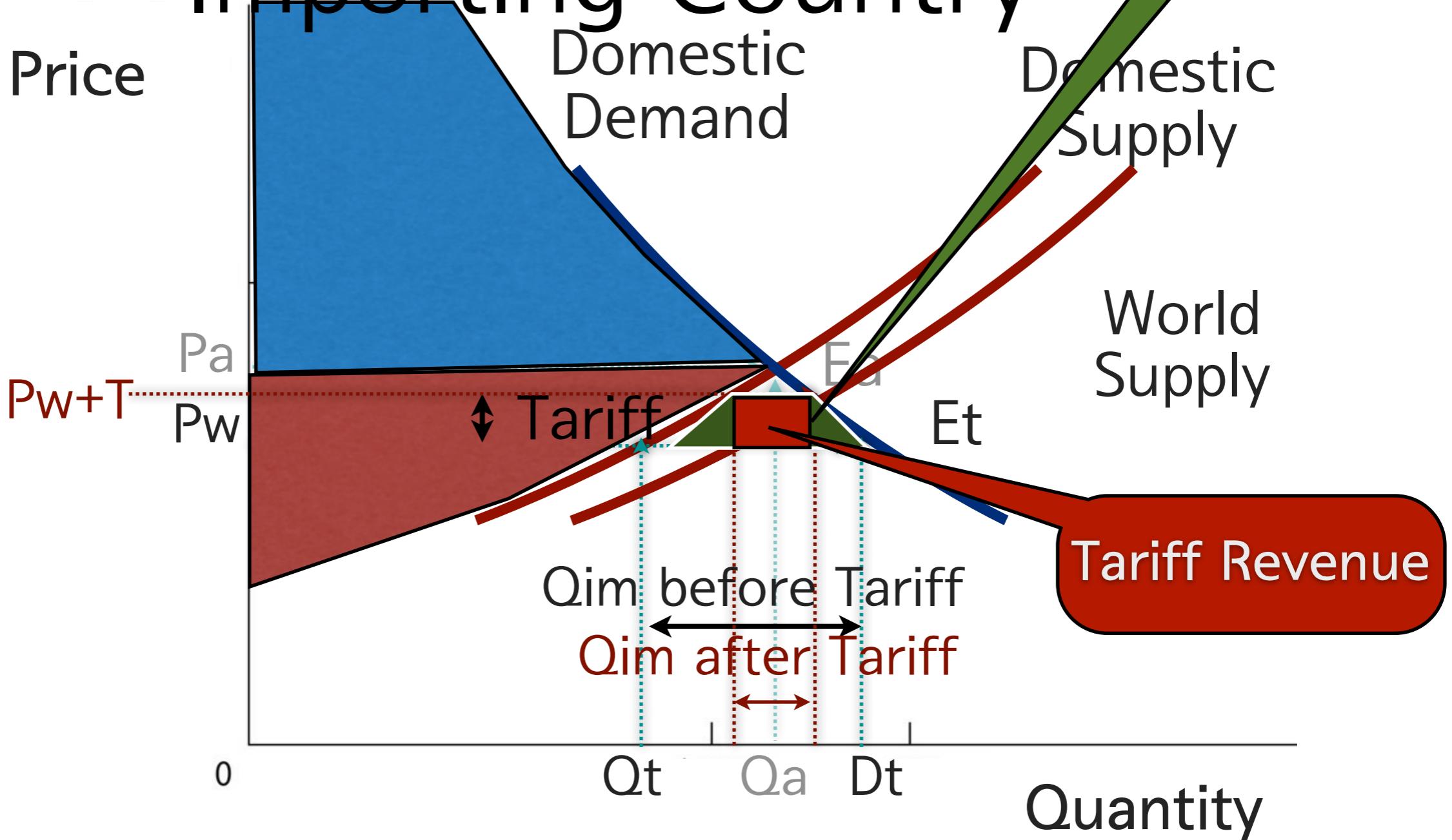
Importing Country



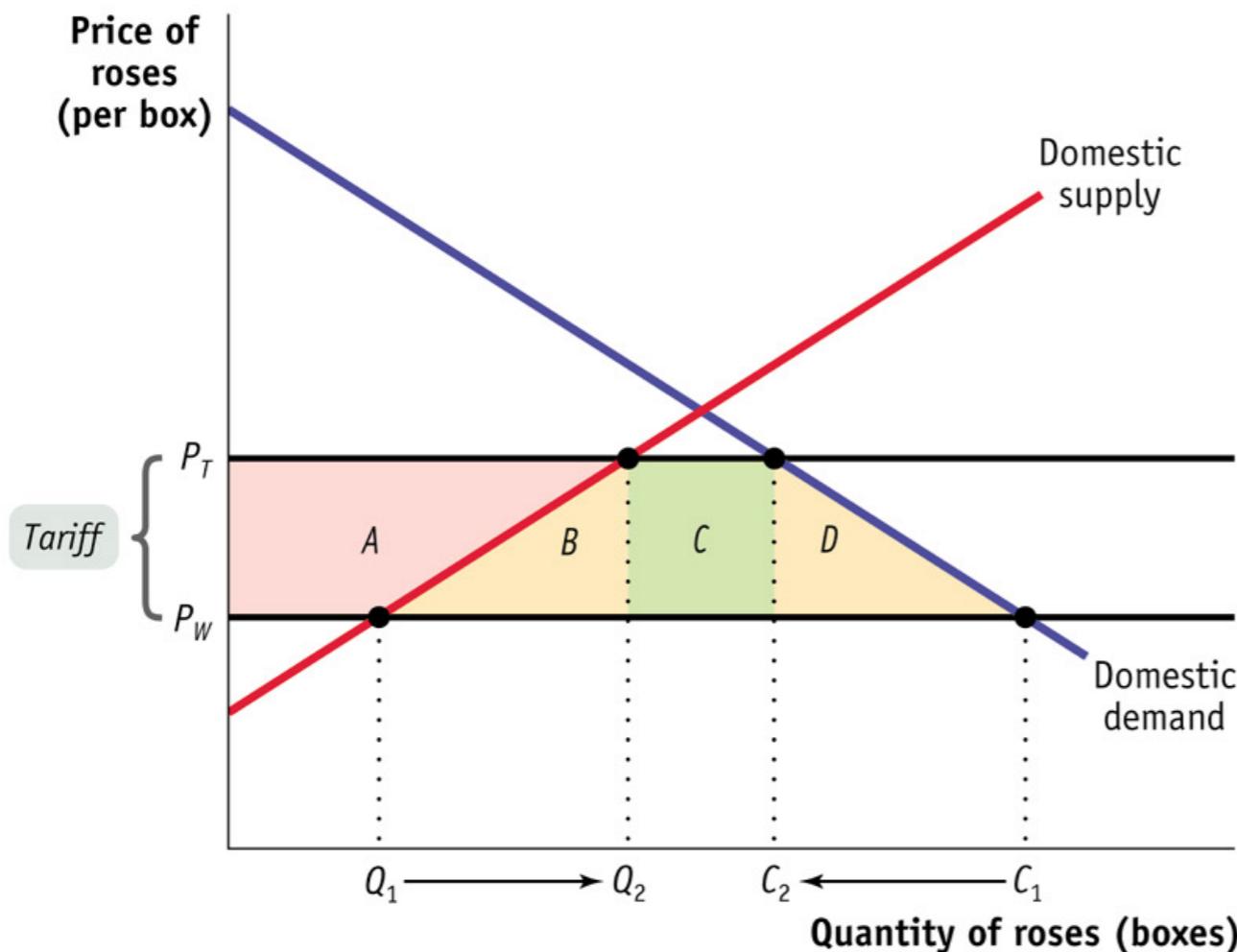
Loss in Total Surplus

Small Country Case: Costs and Benefits of a Tariff

Importing Country



Small Country Case



	Changes in surplus	
	Gain	Loss
Consumer surplus		$-(A + B + C + D)$
Producer surplus	A	
Government revenue	C	
Change in total surplus		$-(B + D)$

In small country, always loss > gain

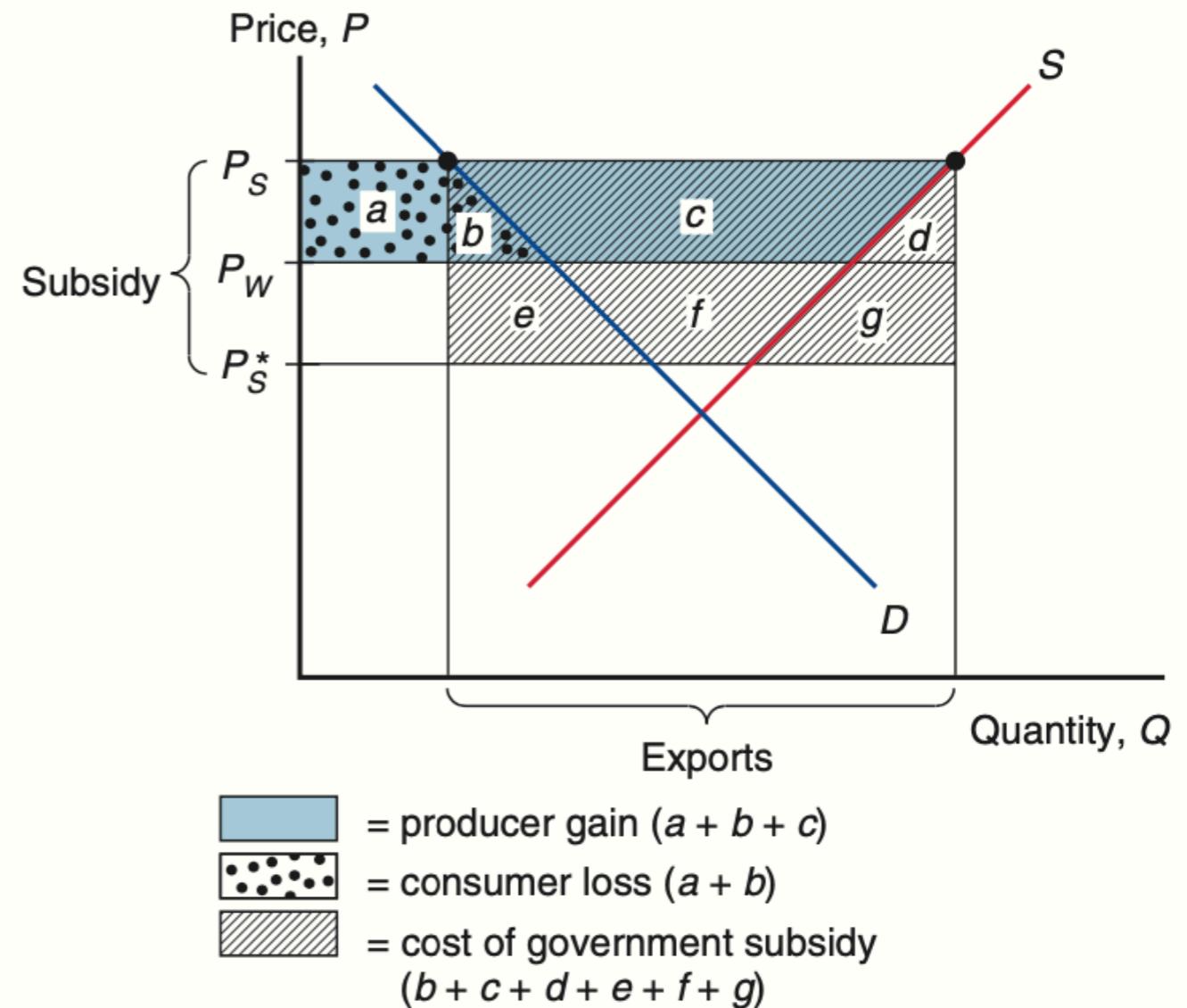
Other Instruments of Trade Policy

Instruments of Trade Policy

- Export Subsidies
- Import Quotas
- Voluntary Export Restraints
- Local Content Requirements
- Others
 - Export Credit Subsidies
 - National Procurement
 - Red-tape Barriers

Export Subsidies

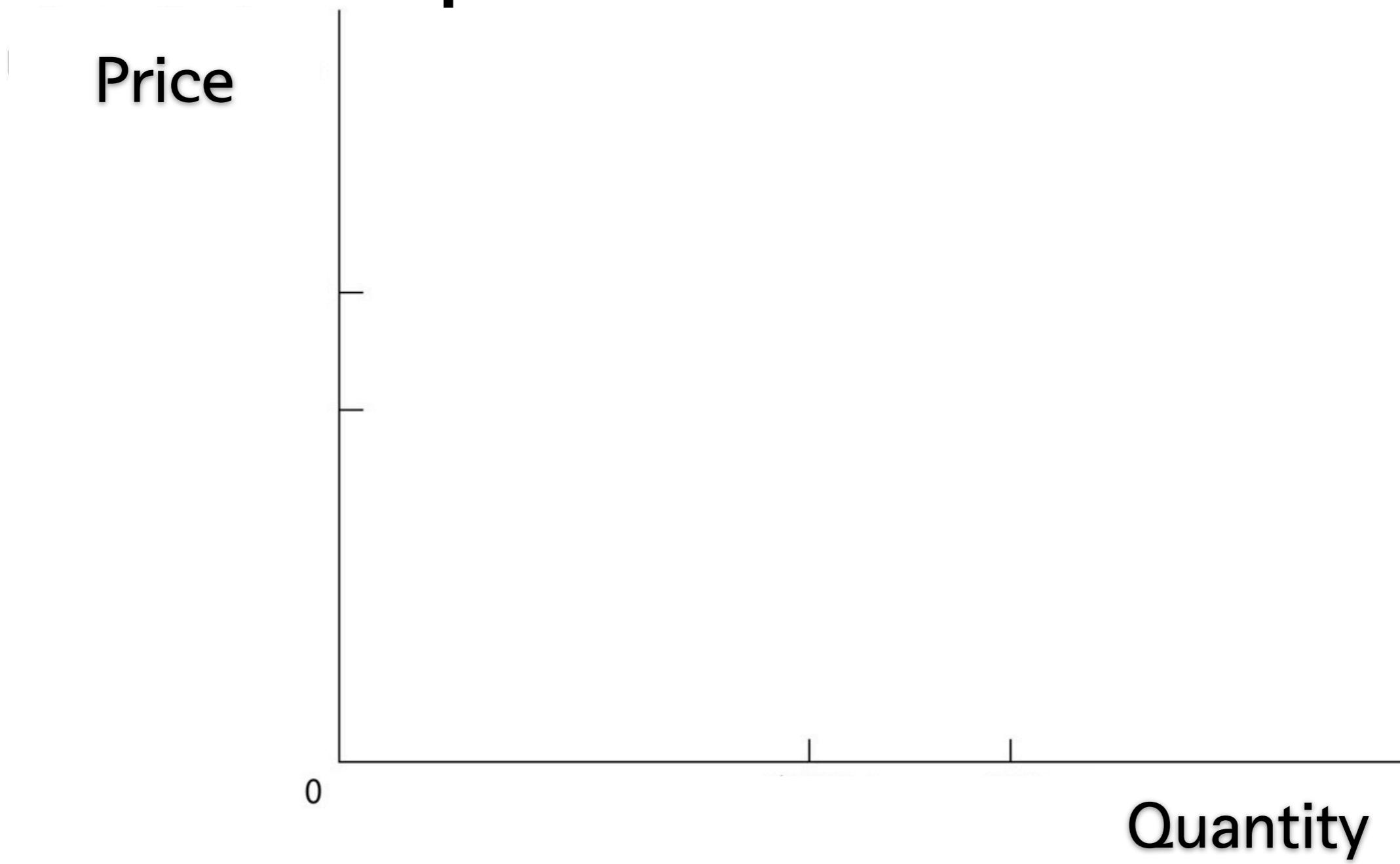
- A payment to a firm that ships a good abroad
- Negative tariff: Exactly the reverse of those of a tariff



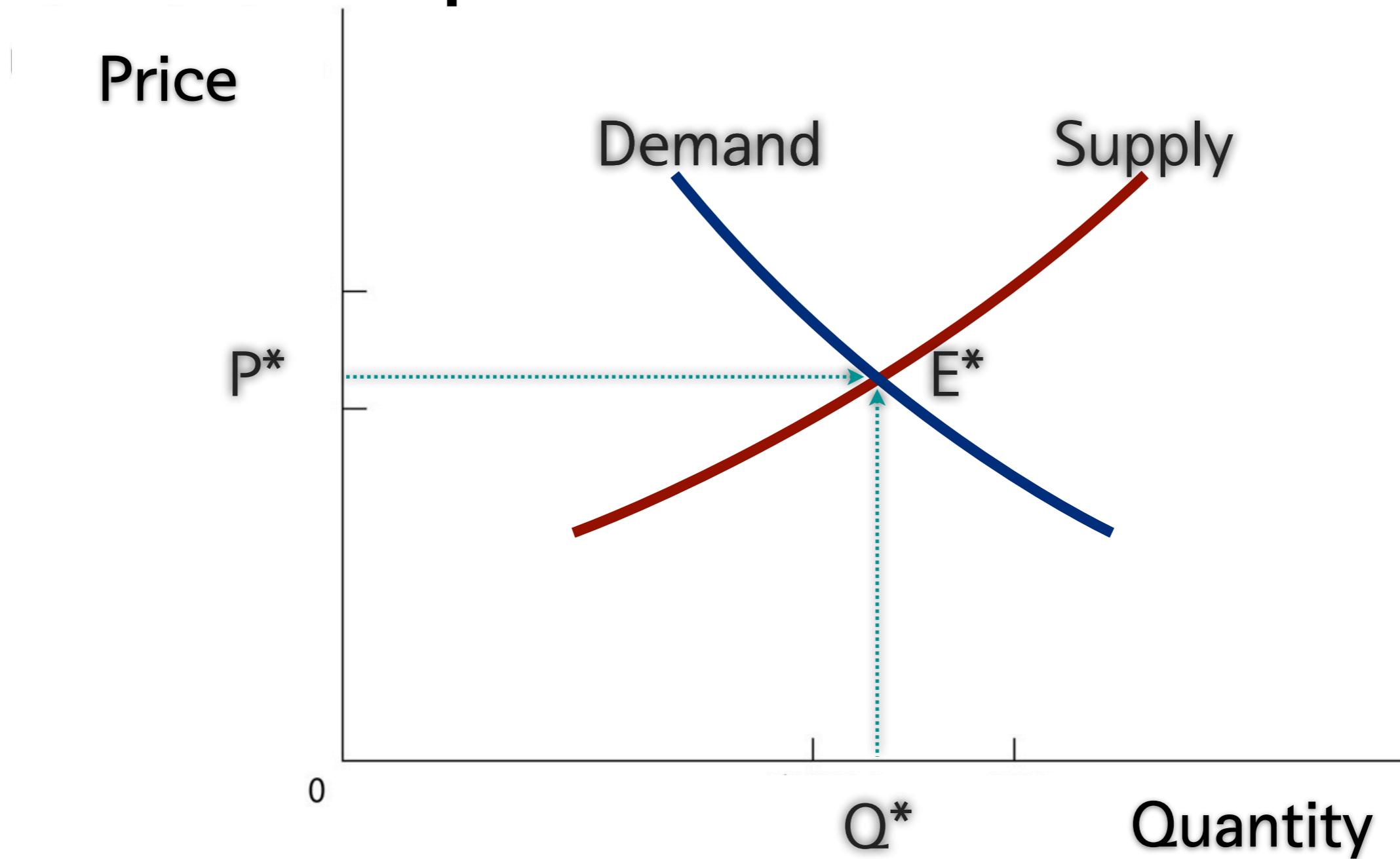
Import Quotas

- A direct restriction on the quantity of imported good
- Usually enforced by issuing licenses to importers
- Consequence: An import quota always raises the domestic price of the imported good.
- Quota rent: The profits received by the holders of import licenses

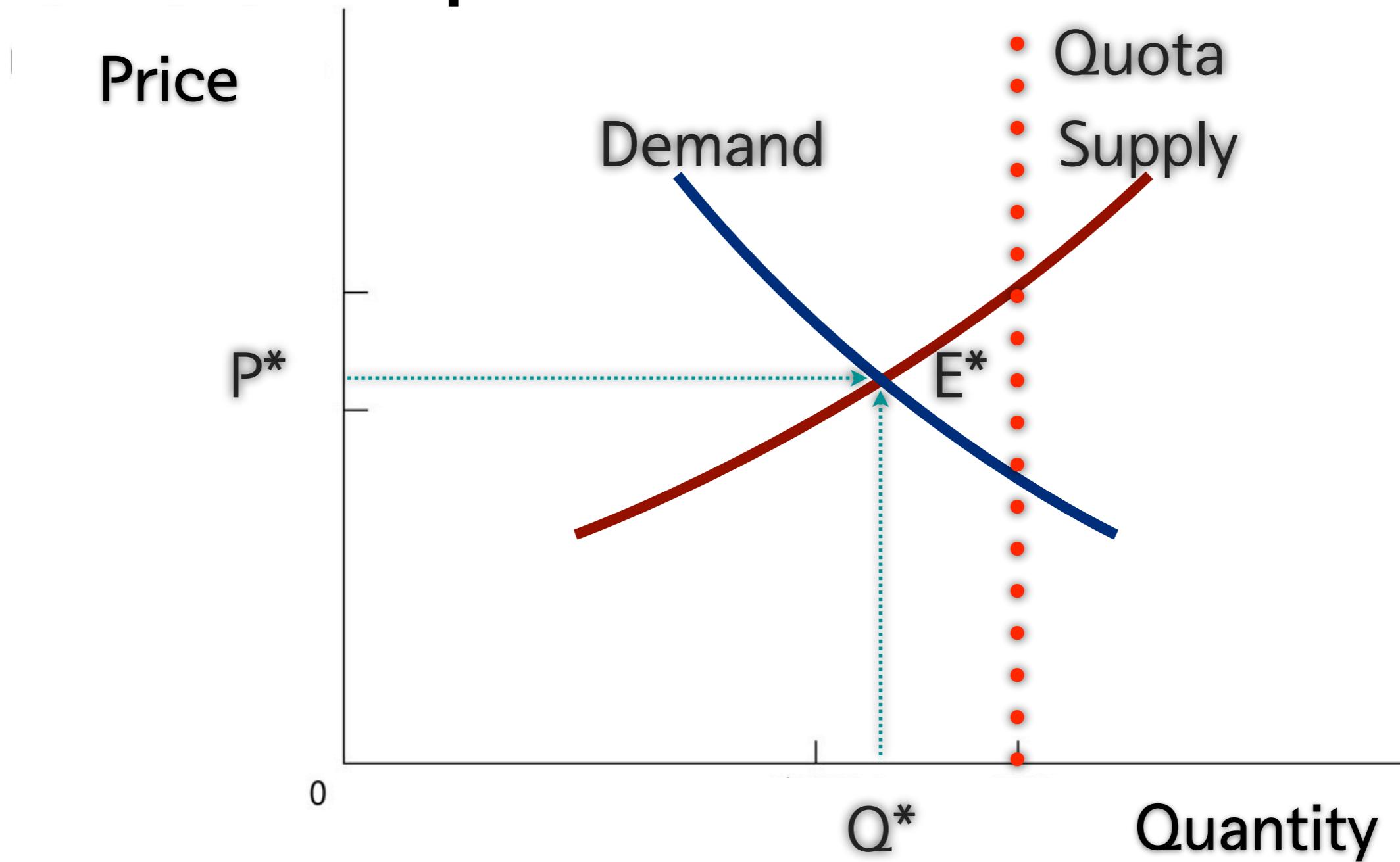
Import Quota: Graphical Representation



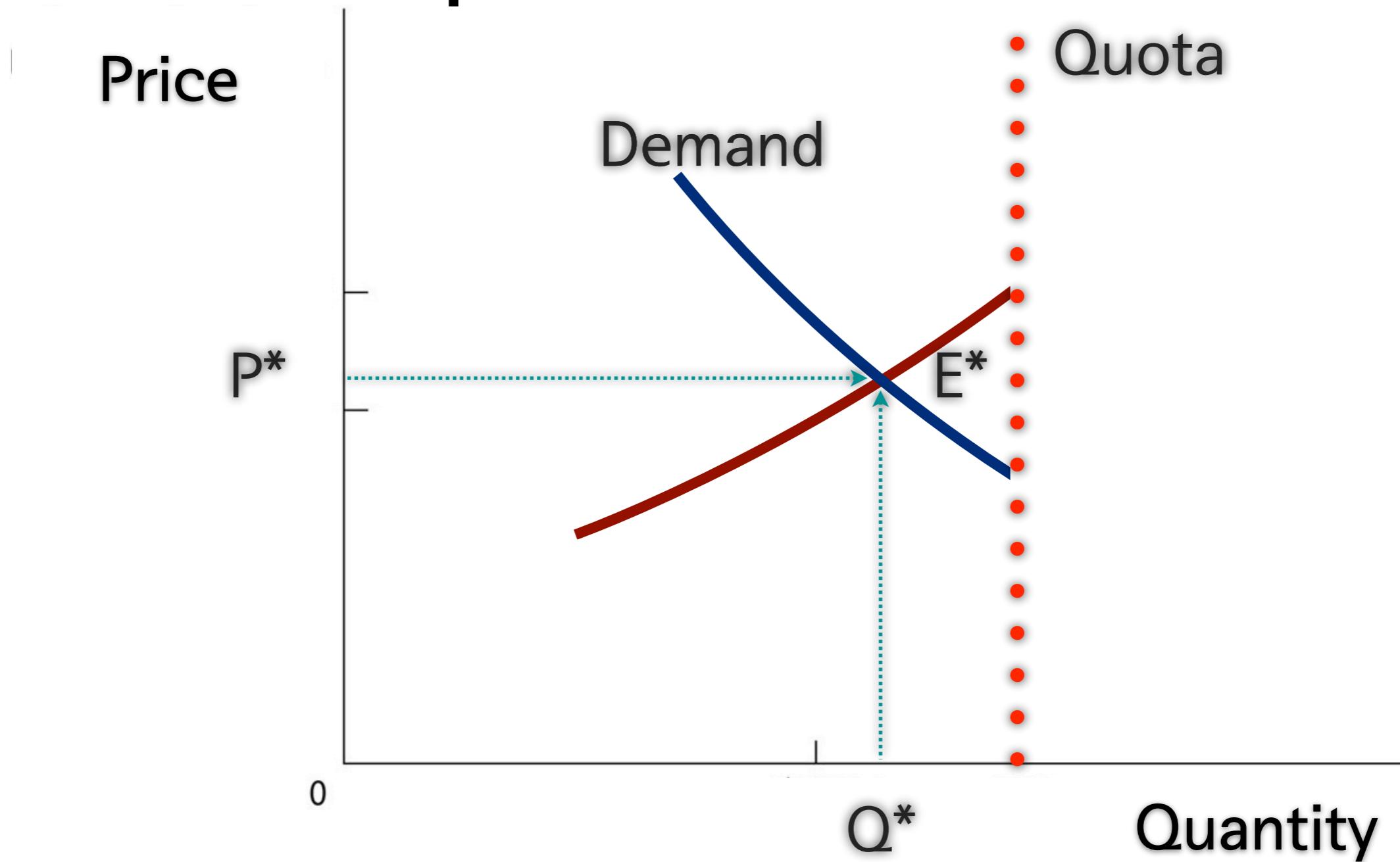
Import Quota: Graphical Representation



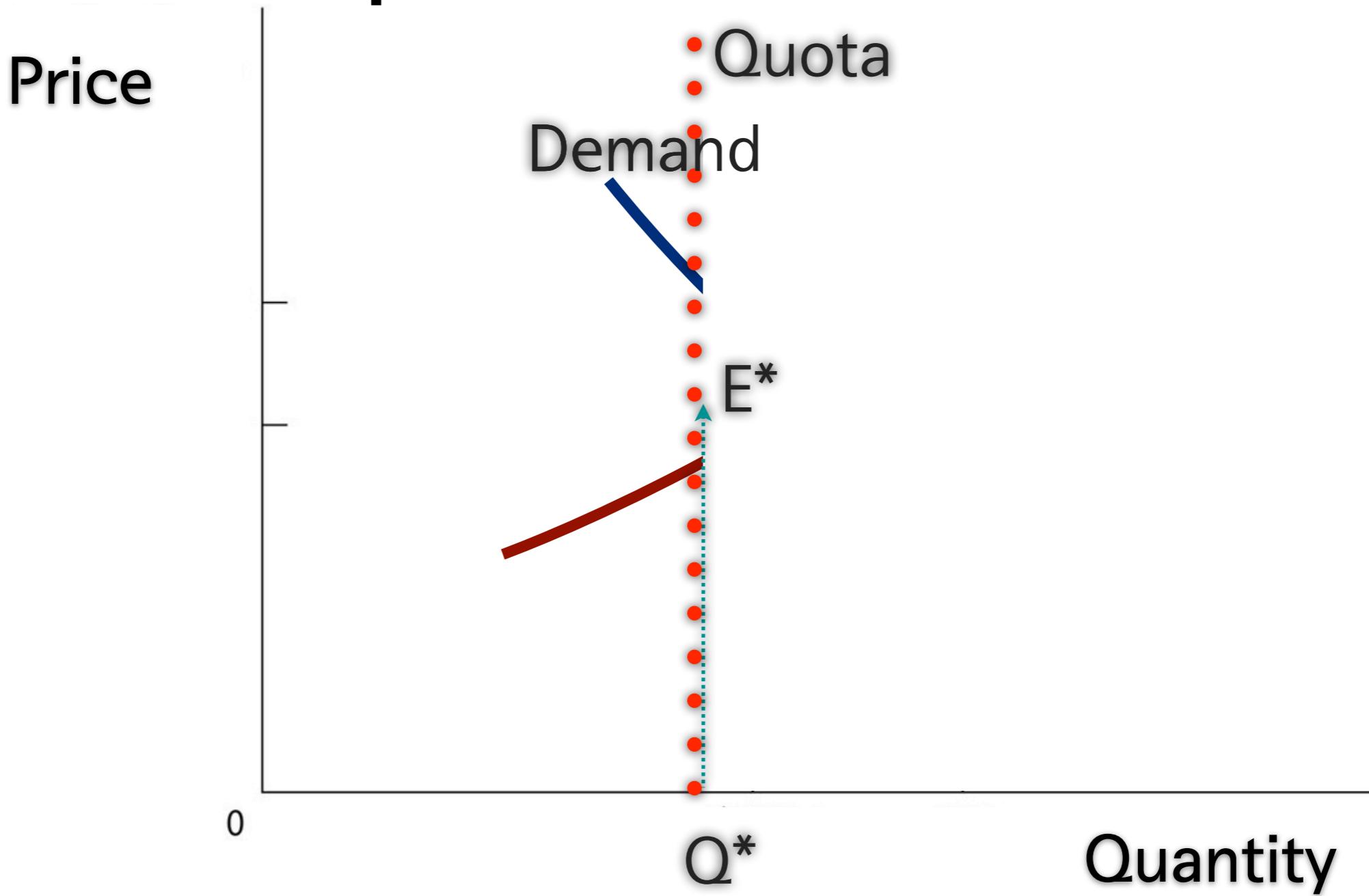
Import Quota: Graphical Representation



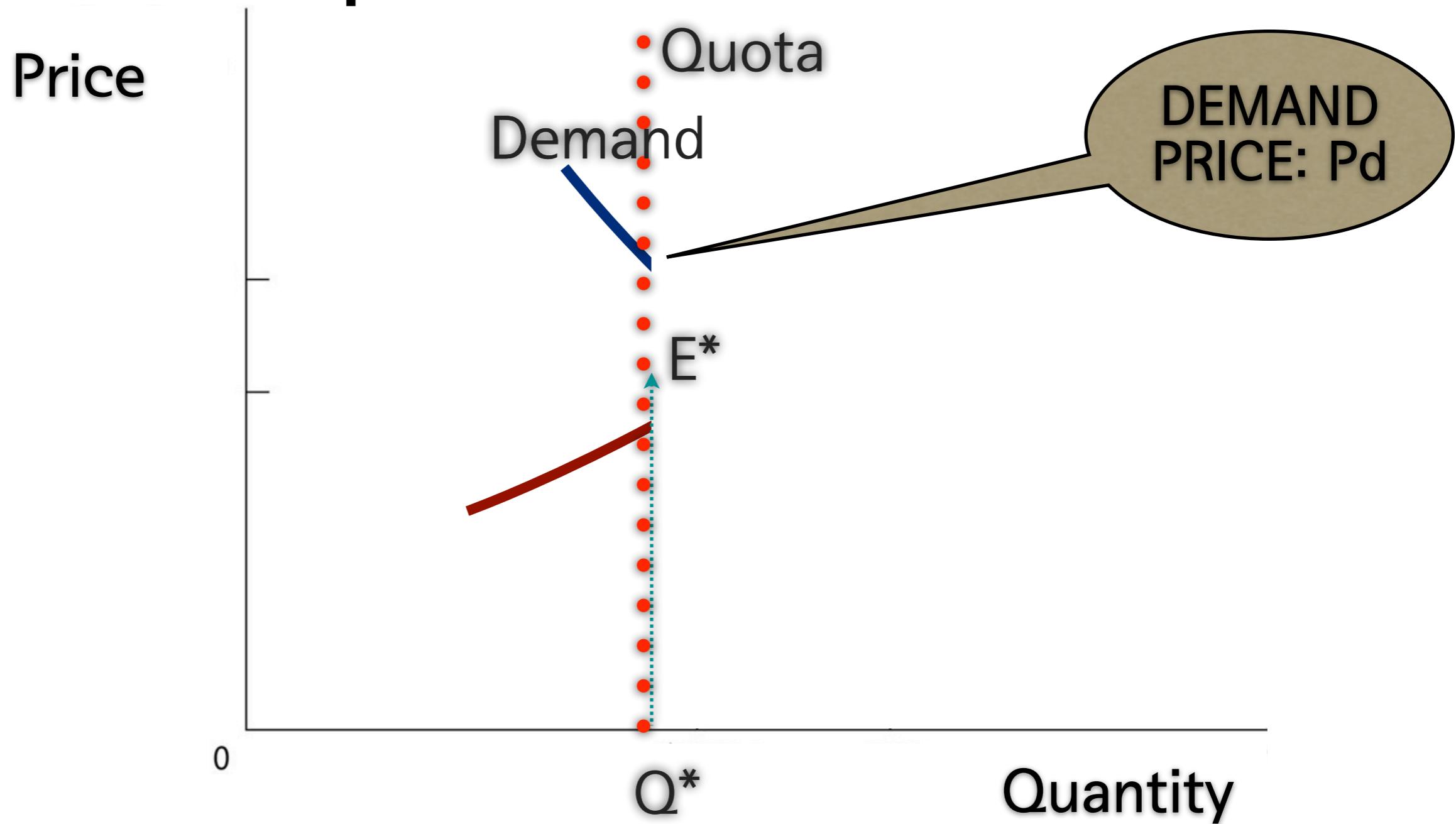
Import Quota: Graphical Representation



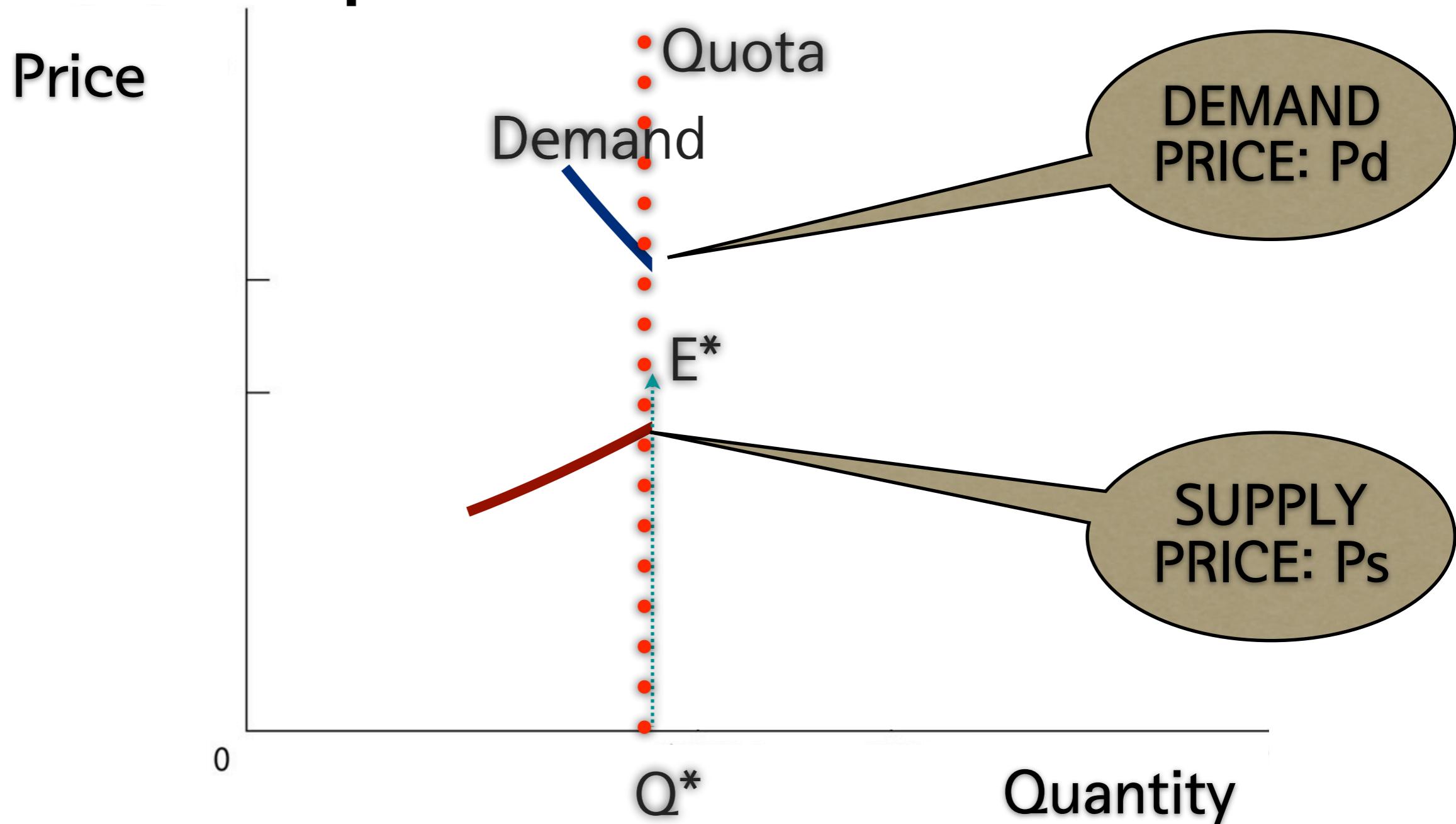
Import Quota: Graphical Representation



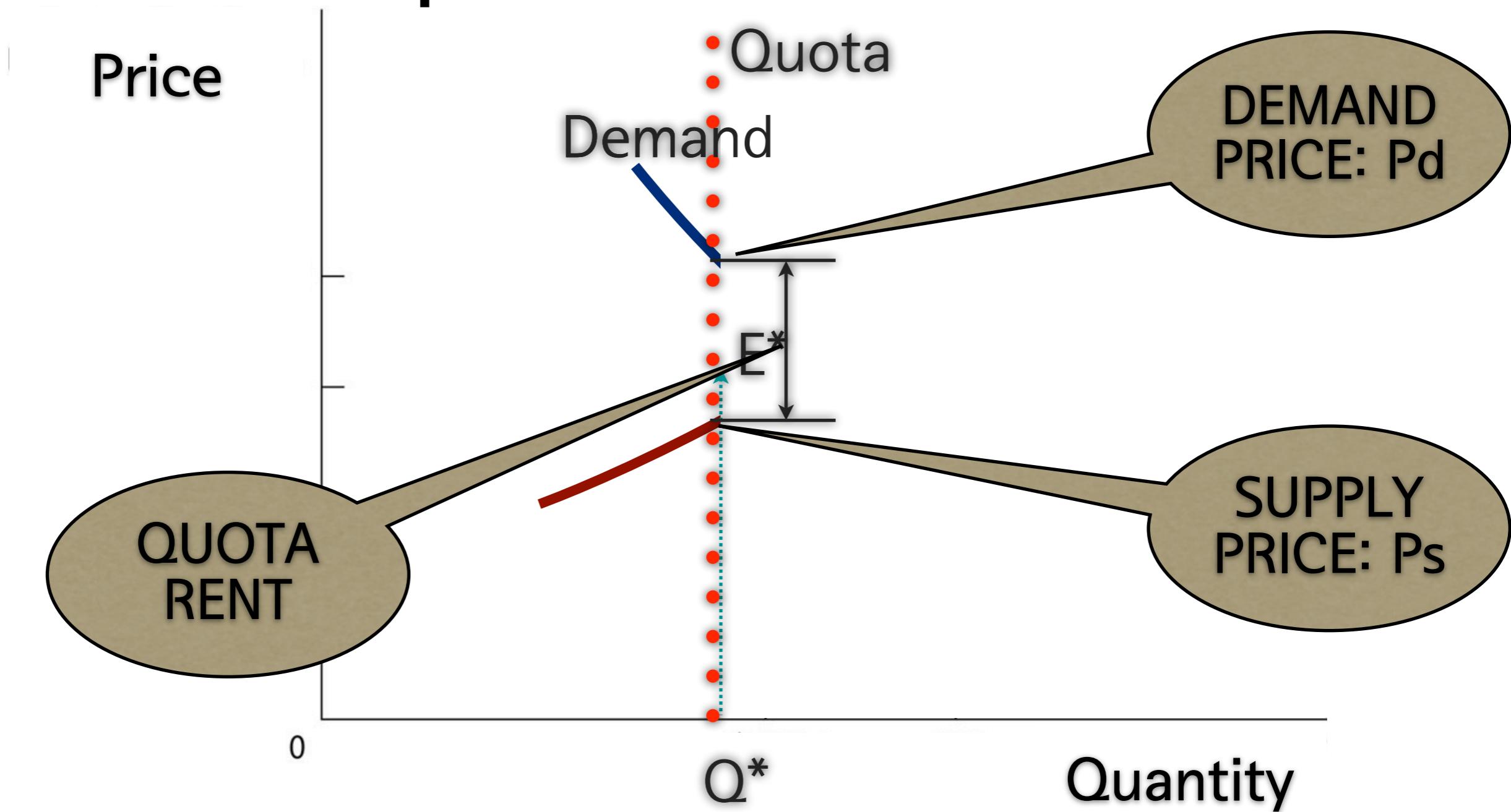
Import Quota: Graphical Representation



Import Quota: Graphical Representation



Import Quota: Graphical Representation



Voluntary Export Restraints

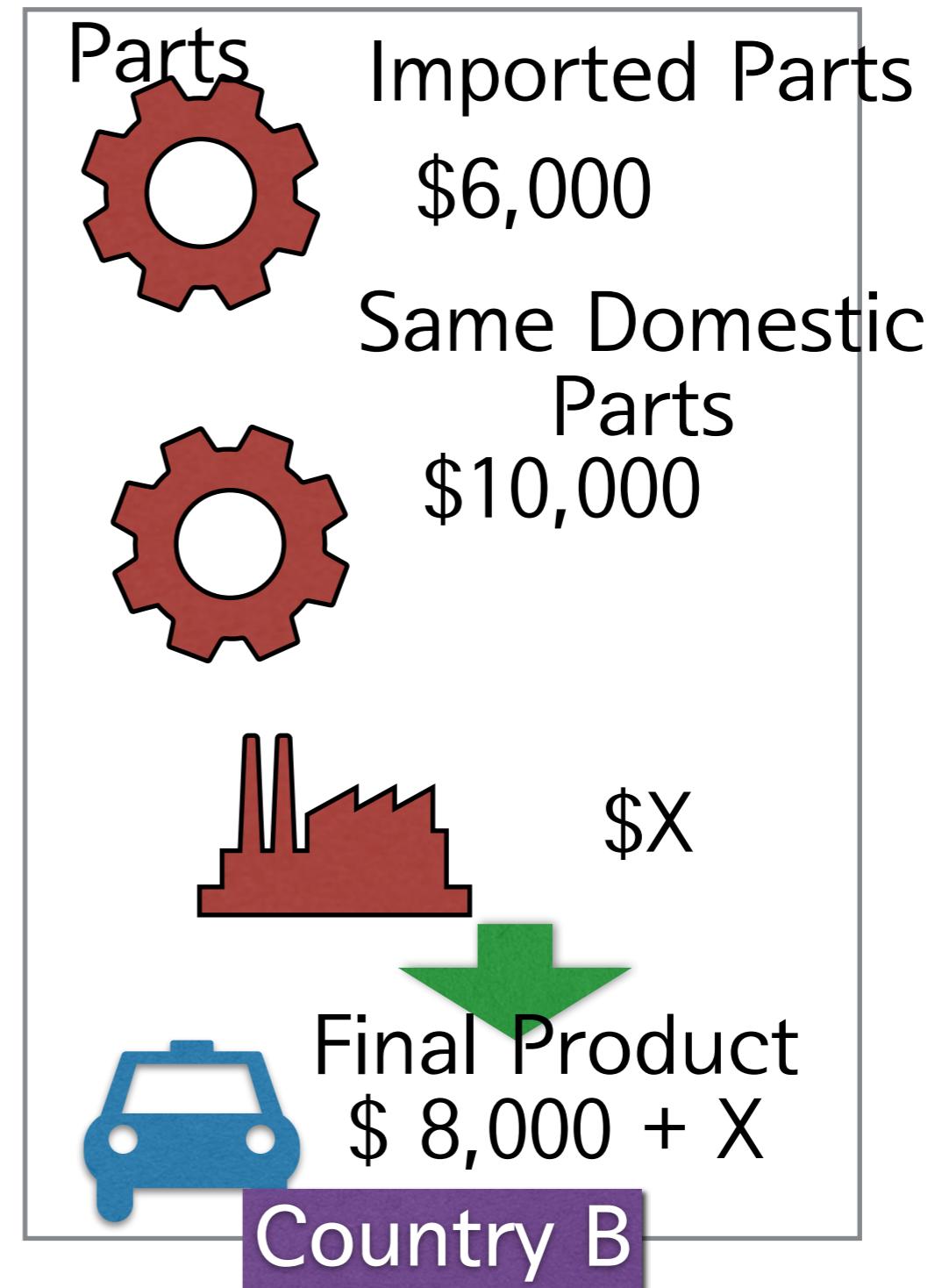
- A quota on trade imposed from the exporting country's side (instead of the importer's)
- A variant on the import quota
 - Other name: Voluntary restraint agreement
- Generally imposed at the request of the importer
- If exporter agree to the request, VER runs.
- Licenses are assigned to foreign governments
 - Very costly (to importer): quota rents goes to the exporters.

Local Content Requirements

- A regulation that requires some specified fraction of a final good to be produced domestically
- Does not place a strict limit on imports
- Effective price of inputs to the firm is an average of the price of imported & domestically produced inputs
- No government revenue, no quota rents
- Net increased price is passed on to consumers

Hypothetical Example

- If the assembly firms are required to use 50% of domestic parts,
 - The cost of parts =
 $0.5 \times \$6,000 + 0.5 \times \$10,000 = \$8,000$



Other Trade Policy Instruments

- Export Credit Subsidies:
 - A kind of an export subsidy takes the form of a subsidized loan
- National Procurement:
 - Purchase by the government
- Red-tape barriers:
 - Twisting normal health, safety, and customs procedures in order to place obstacles in the way of trade

The Effects of Trade Policy: A Summary

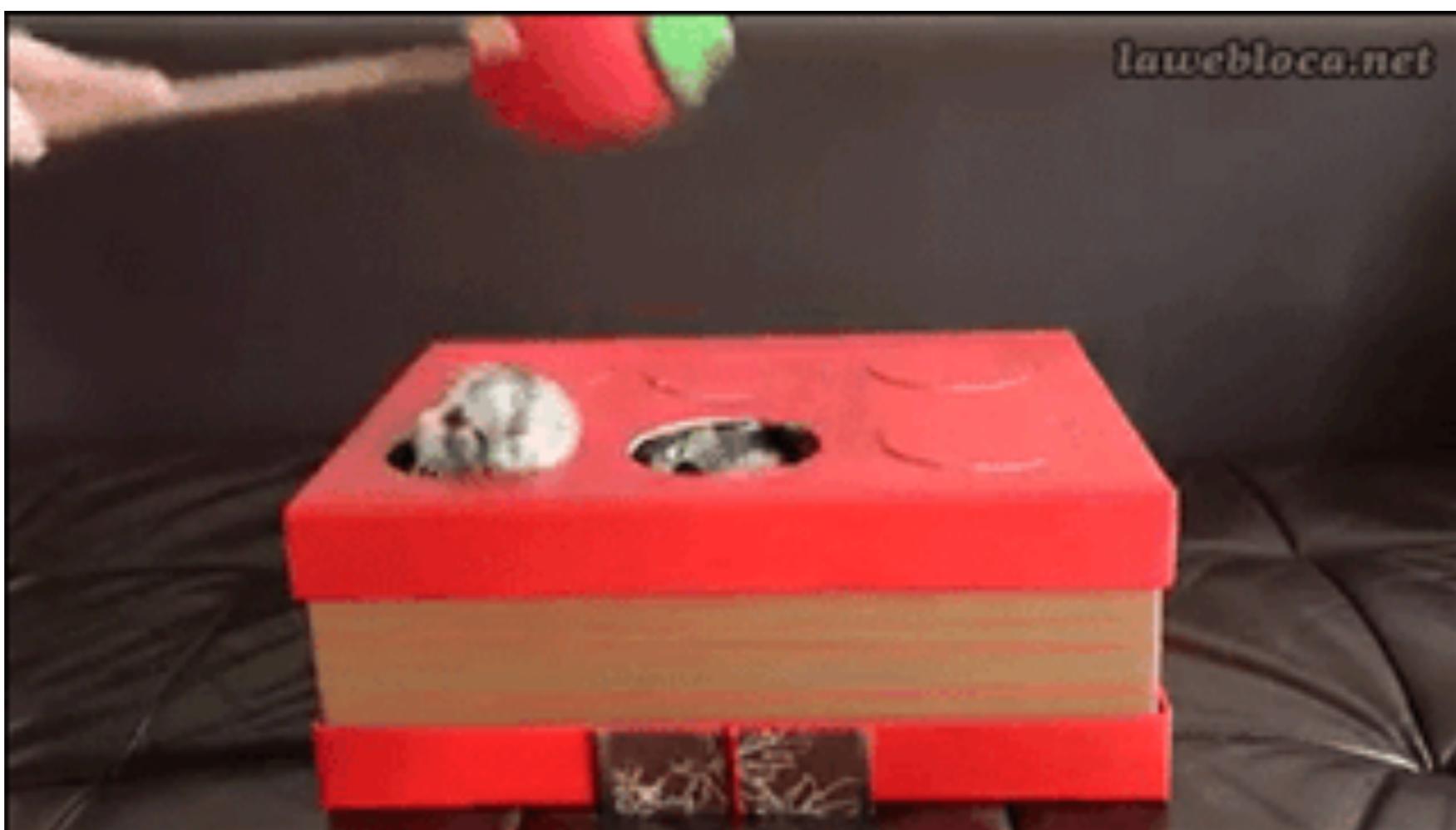
Effects of Trade Policies: A Summary

Effects of Alternative Trade Policies				
Policy	Tariff	Export Subsidy	Import Quota	Voluntary Export Restraint
Producer surplus	Increases	Increases	Increases	Increases
Consumer surplus	Falls	Falls	Falls	Falls
Government revenue	Increases	Falls (government spending rises)	No change (rents to license holders)	No change (rents to foreigners)
Overall national welfare	Ambiguous (falls for small country)	Falls	Ambiguous (falls for small country)	Falls

Next Topic

- Tariffs and Import Quotas in the Presence of Monopoly
- Krugman et al. Chapter 9

Thank you!



Thank you!

