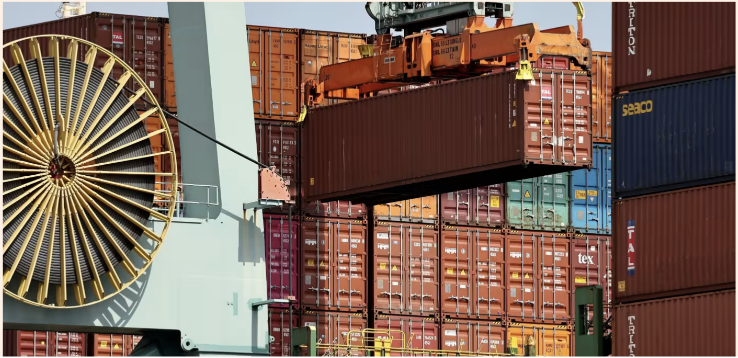
Economics of Globalization

Sciences Po Saint-Germain-en–Laye

Trade news of the week

Freight rates rise as companies plan for costly US port strike

Analysts say a stoppage from next week could cost the economy $5bn a day and raise prices for consumers



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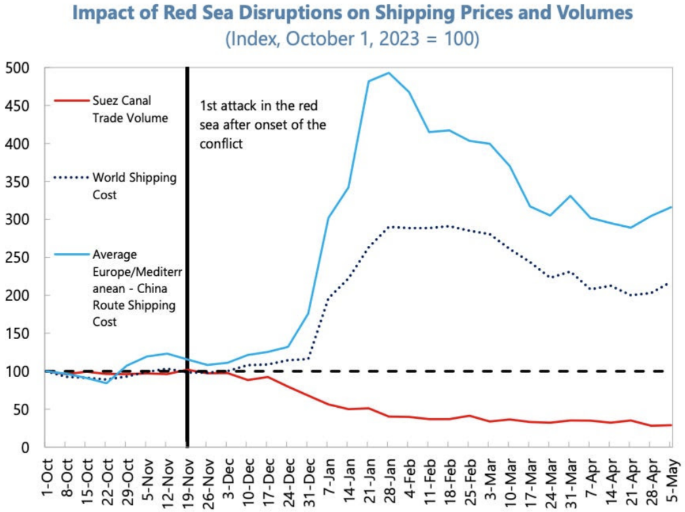

Last weeks

- We have studied the main trade models.
- Trade arises as the result of productivity differences (Ricardo) and endowment differences (HOS)
- Other important determinants such as increasing returns to scale.
- We have seen that trade creates **winners and losers**.

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- We have seen that trade creates **winners and losers**.
  - The owners of the abundant factor tend to win while the owners of the scarce factor tend to lose.

Last weeks

Paint makers say EU tariffs on Chinese imports risk bankrupting them

Industry pushes for rethink on anti-dumping measures against China's exports of titanium dioxide

Last weeks

> Protecting the TiO2 industry mattered for the European aerospace industry as it was vital to producing titanium metal used in aircraft, Tronox added.
>
> "We can't operate with capacity utilisation at 60 per cent," said Jeffrey Neuman, general counsel of Tronox. Protecting the industry through tariffs was "a fundamental industrial resilience question", he added.

This week

- As a result countries may want to regulate trade $\longrightarrow$ trade policy.
- A brief history of the world trade system.
- An empirical analysis of trade policy.
- A theoretical analysis of trade policy.

International Negotiations

- Negotiated agreements can help avoiding trade wars.
  - *e.g.* During trade negotiations, the U.S. agreed to refrain from imposing quotas on Japan in exchange of the removal of Japanese barriers against U.S. exports of agricultural and technology products.

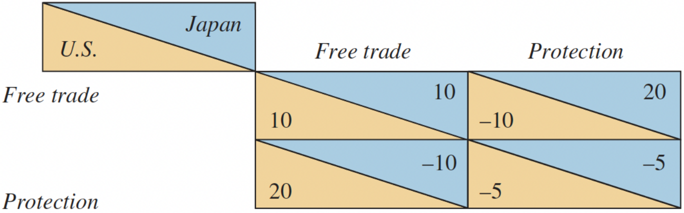
International Negotiations

An example with the Prisoners' Dilemma

- Game theory helps understanding the actions of agents based on the constraints they face and their beliefs about others' actions

- Game theory studies agents' strategic interactions.

- **Nash Equilibrium**: Equilibrium when everyone is playing its best responses to the strategies of everyone else (does not necessarily exist or is unique).



The World Trade System

- We can date the beginning of the modern internationally coordinated tariff reduction to the 30'.
- 1930: Smoot-Hawley Act $\longrightarrow$ rise of U.S. tariffs on more than 20000 products.
- Triggered retaliatory responses.
- Reciprocal Trade Agreement Act in 1934 to counter the large rise in tariffs by bilateral negotiations.
  - Average duty on U.S. imports went from 59% in 1932 to 25% after WW2.
- In 1947, 23 countries began trade negotiations under the General Agreement on Tariff and Trade (GATT).
- In 1995, the WTO is created, creating a formal organization to manage GATT rules.

The World Trade System

- Binding is an important WTO rule: once a tariff rate is bound (almost all tariffs in developed countries and 3/4 in developping countries), a country cannot increase it any more.
- Most-favored-nation (MFN) rule: exporters from countries granted the most-favored nation status are guaranteed to pay tariff no higher than that of the nation that pays the lowest.
- Export subsidies are not allowed.

The World Trade System

- The WTO works with trade rounds: countries get together to negotiate tariff reductions.
  - Eight trade rounds since 1947.
  - Kennedy round (1967): large multilateral decrease in tariff except for some specified industries.
  - The Uruguay Round (1994) ended with the creation of the WTO, tariffs reduction (average tariff rate went from 6.3% to 3.9%) and liberalization of agricultural and textile trade, reforms of government procurement.
  - The Doha round (2001) broadening the scope of trade agreements, never led to an agreement.
  - WTO: adds rule for trade in services and introduces a dispute settlement procedure that can allow countries to retaliate.
    - Blocked by the U.S. since 2017.

The World Trade System

- Preferential Trading Agreements (PTA) are one important exception to WTO rules.
- Countries within a PTA have lower tariff within the PTA than outside of it.
- WTO rules agree when the tariff within the PTA is 0.

The World Trade System

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- Free trade agreement $\neq$ Customs Union.

The World Trade System

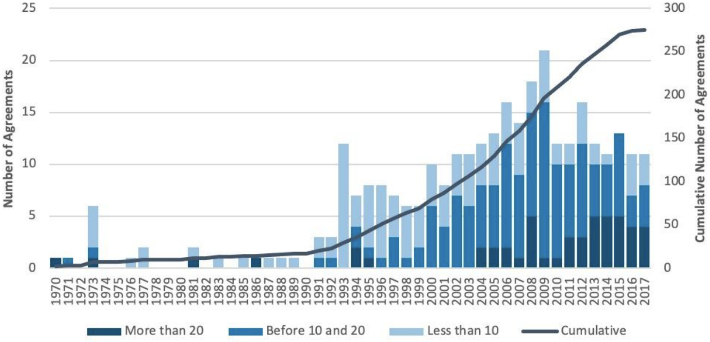
New Trade Agreements

- Standard agreements aim at reducing conventional barriers to trade: tariffs, quotas, *etc.*
- Deep trade agreement have an expanded scope. They target international economic law on top of multilateral trade rules.
- This includes agreements about international investment, labor, protection of intellectual property rights, environment.
- These agreements are generally seen as favoring corporate power.
  - *e.g.* Investor-States Dispute Settlements (ISDS) where foreign investors can pursue State when they change their regulation (in particular labor, environmental, health regulations).
  - Evidence of intense lobbying by large multinational firms.

The World Trade System

New Trade Agreements

Figure 1 Number of policy areas covered in regional trade agreements, 1970-2017

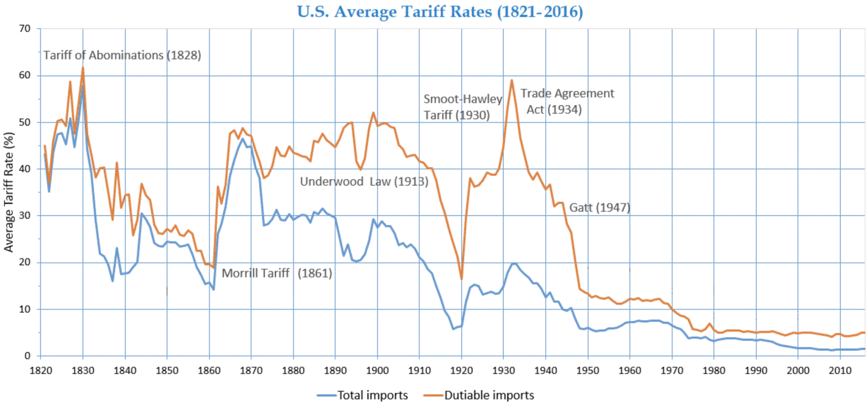


Source: Hofmann et al. (2017).

The tools of Trade Policy

- A tariff is a **tax** levied when a good is imported.
  - Specific tariffs: tax per unit.
  - Ad valorem tariffs: percentage of good value.
- Oldest form of trade policy and large source of income in pre–modern taxation system and in developping countries.
  - Trade liberalization tend to affect country's tax revenues and expenditures (Cagé and Gadenne, 2018).
- Designed to protect specific domestic sectors by raising the prices of foreign goods.
- *e.g.* Corn Laws (1773-1815) in the U.K. were designed to protect British agriculture.
- Protection of infant industries (List, 1841). Empirical evidence that it can work *e.g.* Napoleon blockades on Cotton Spinning, U.S. tariffs before 1945.

The tools of Trade Policy



Source: US Departement of Commerce, Bureau of the Census, Historical Statistics of the United States 1789-1945, U.S. International Trade Commission, dataweb.usitc.gov

The tools of Trade Policy

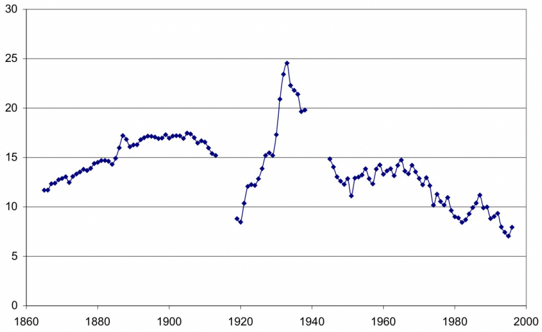


Figure: Unweighted average tariff: 1860-2000 (Clemens and Williamson, 2001)

The tools of Trade Policy

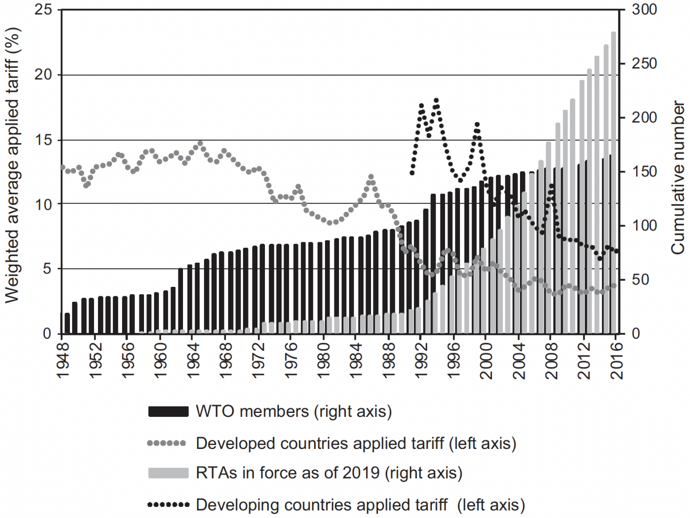


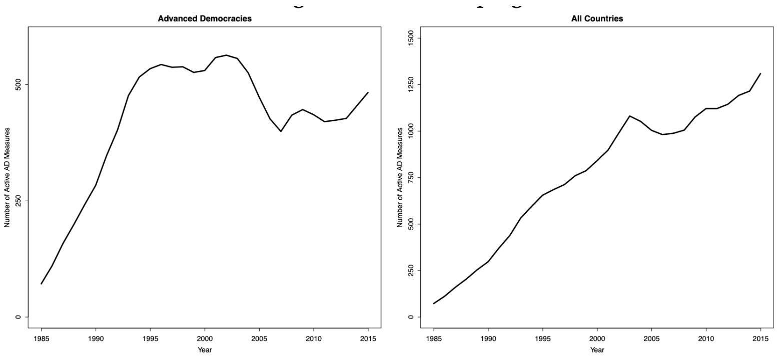
Figure 1.7

Tariffs and trade agreements, 1948–2016. *Note:* The figure plots tariffs

The tools of Trade Policy

- The importance of tariffs declined after WW2. It does not mean that it is the end of trade policy.
- Non-tariff barriers: import quotas, export subsidy, export restraints, technical barriers, custom delays, *etc.*
- Temporary trade barriers: the WTO allows some type of trade barriers:
  - Anti-dumping
  - Countervailing duty
  - Global safeguards
  - China-specific transitional safeguard.

The tools of Trade Policy



Source: Authors' elaboration based on data from the Temporary Trade Barriers Database (Bown 2016).
Note: The figure displays the number of active anti-dumping measures over time. The left panel considers only the sample of 23 advanced democracies; the right panel considers all countries in the database.

Colantone et al. (2022)

Theory of Trade Policy

Basic Tariff Analysis (Source: Krugman et al., 2018)

- Assume wheat is traded costlessly between 2 countries.
- Wheat industry is a competitive industry where the equilibrium is determined by the intersection of supply and demand.
- If prices differ between countries, trade will occur.
- Assume the price of wheat is higher in H than in F $\longrightarrow$ H imports wheat $\longrightarrow$ Prices in F increase, prices in H decrease until equalization across countries.
- We can construct the import demand curve and the export supply curve.

Theory of Trade Policy

Basic Tariff Analysis

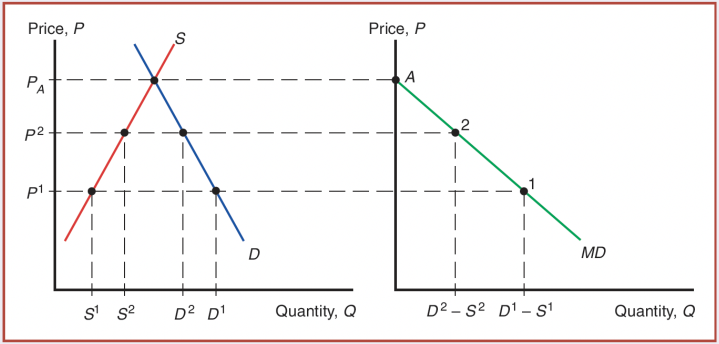


FIGURE 9-1

Deriving Home's Import Demand Curve

As the price of the good increases, Home consumers demand less, while Home producers supply more, so that the demand for imports declines.

Theory of Trade Policy

Basic Tariff Analysis

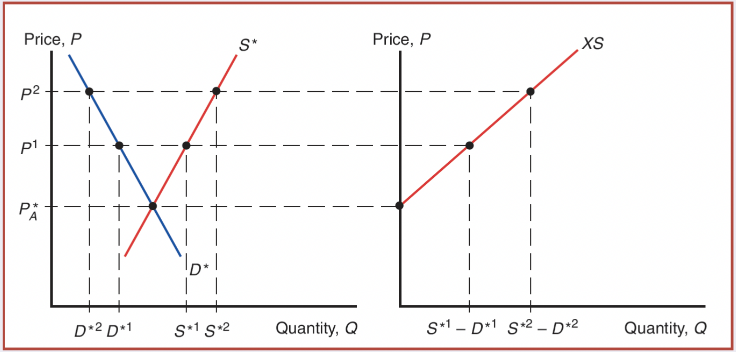


FIGURE 9-2

Deriving Foreign's Export Supply Curve

As the price of the good rises, Foreign producers supply more while Foreign consumers demand less, so that the supply available for export rises.

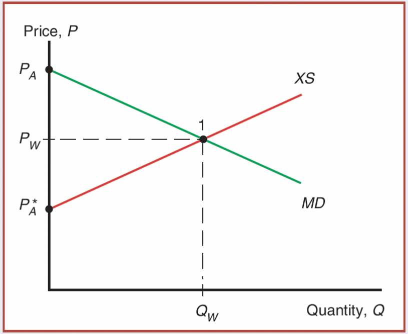
Theory of Trade Policy

Basic Tariff Analysis

FIGURE 9-3

World Equilibrium

The equilibrium world price is where Home import demand (*MD* curve) equals Foreign export supply (*XS* curve).



- Now introduce a specific tariff of t$.
- Exporters will be willing to export only if the price difference between H and F is larger than t.

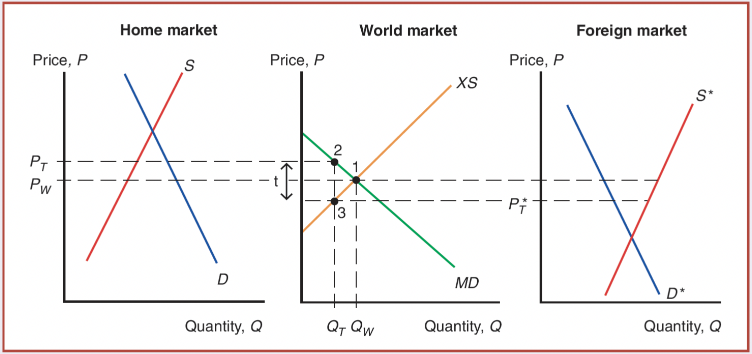


FIGURE 9-4

Effects of a Tariff

A tariff raises the price in Home while lowering the price in Foreign. The volume traded thus declines.

- After the introduction of the tariff, the quantity exchanged decreases compared to the free-trade equilibrium.
- The price in both countries is between the autarky price and the free-trade price.
- Importantly, note that the tariff is not fully passed-through to consumers: exporters' bear a part of the tariff by decreasing their price.
- Note that it is small in practice. It is even 0 in the case of a small country that cannot influence the world export price.
- The price of domestic producers is raised and the quantity imported decreases: domestic producers are protected from international competition.

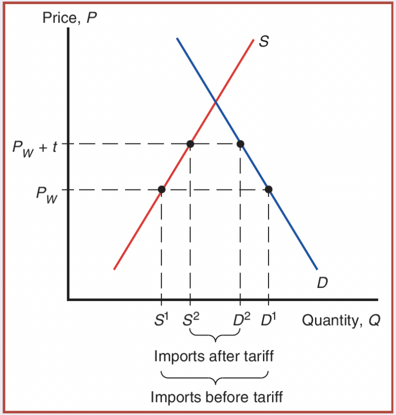
Theory of Trade Policy

Basic Tariff Analysis

FIGURE 9-5

A Tariff in a Small Country

When a country is small, a tariff it imposes cannot lower the foreign price of the good it imports. As a result, the price of the import rises from *PW* to *PW* + *t* and the quantity of imports demanded falls from $D_1 - S_1$ to $D_2 - S_2$.



Theory of Trade Policy

Basic Tariff Analysis

- We know the effect on prices and quantities, but what is the global effect on “welfare”?

- At first view, hard to say, there are both winners and losers
  - Producers gain by selling at a higher price.
  - Consumers lose by buying at a higher price.
  - Government gain by collecting tax revenues.

- We will try to quantify this to say whether the tariffs creates net gains.

- Careful: we are going to assume that 1$ is worth the same for the society point of view whoever it is allocated.
  - (This must not be the case! To deal with this, economists have imagined social welfare functions. Theories of justice deal with these questions.)

- This also assume that trade protection only benefits producers, not consumers (while consumers are also workers).

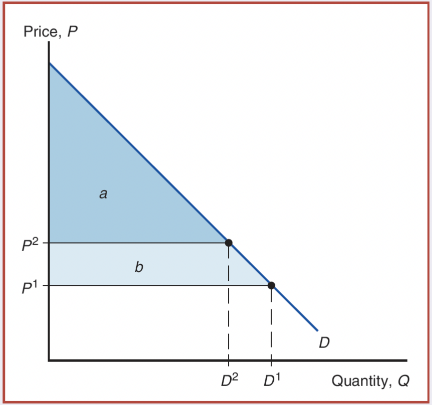
Theory of Trade Policy

Basic Tariff Analysis

FIGURE 9-7

Geometry of Consumer Surplus

Consumer surplus is equal to the area under the demand curve and above the price.



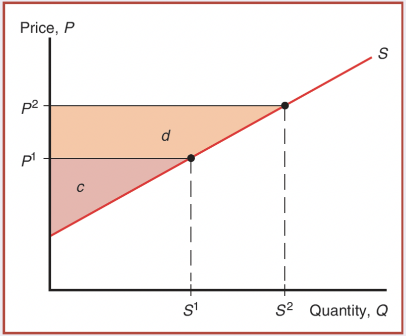
Theory of Trade Policy

Basic Tariff Analysis

FIGURE 9-8

Geometry of Producer Surplus

Producer surplus is equal to the area above the supply curve and below the price.



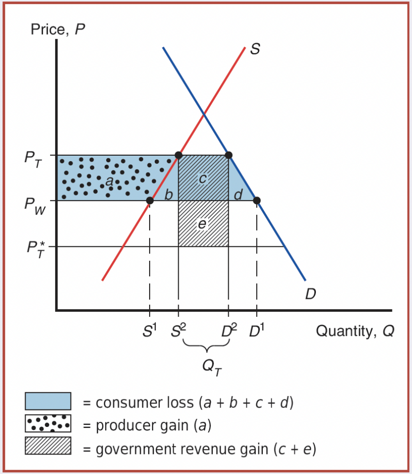
Theory of Trade Policy

Basic Tariff Analysis

FIGURE 9-9

Costs and Benefits of a Tariff for the Importing Country

The costs and benefits to different groups can be represented as sums of the five areas *a*, *b*, *c*, *d*, and *e*.



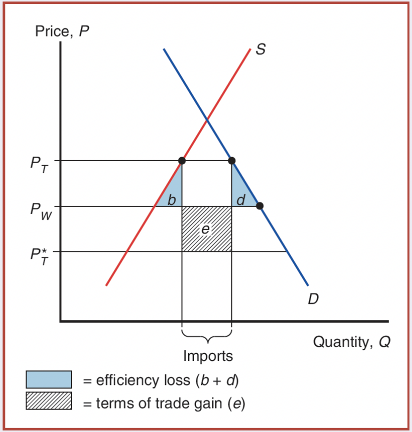
Theory of Trade Policy

Basic Tariff Analysis

FIGURE 9-10

Net Welfare Effects of a Tariff

The colored triangles represent efficiency losses, while the rectangle represents a terms of trade gain.



What if we look at a small country?

Theory of Trade Policy

Basic Tariff Analysis

What if we look at a small country?

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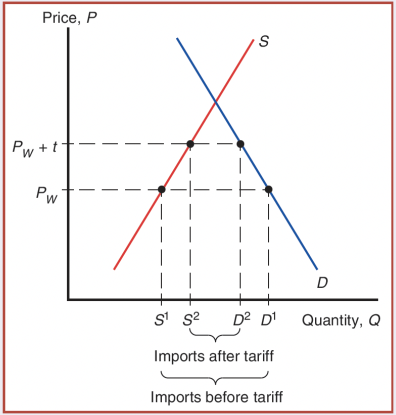


Theory of Trade Policy

Other trade policy tools

- Export subsidy.
- Import quota.
- Volontary export restraint.
- Local content requirements.

Theory of Trade Policy

Basic Tariff Analysis

TABLE 9-1 Effects of Alternative Trade Policies

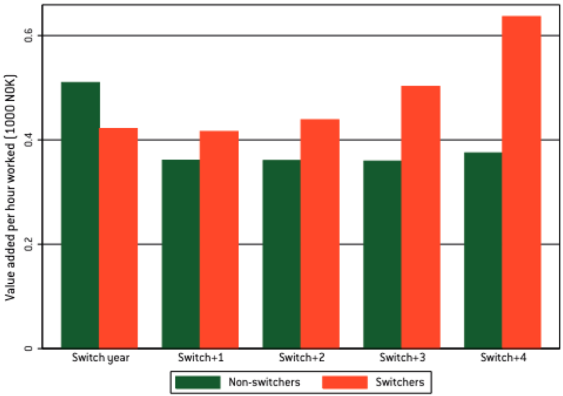
Policy	Tariff	Export Subsidy	Import Quota	Voluntary Export Restraint
Producer surplus	Increases	Increases	Increases	Increases
Consumer surplus	Falls	Falls	Falls	Falls
Government revenue	Increases	Falls (government spending rises)	No change (rents to license holders)	No change (rents to foreigners)
Overall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

Argument for free trade

- First argument is about efficiency, as we have seen in the cost-benefit analysis of tariffs.
  - Tariffs distort the incentives of producers and consumers, affecting welfare
- Trade protection potentially limits gains from economies of scale.
- By limiting competition, trade protection also tends to increase prices.
- Trade can have dynamic and cumulative gains.
  - Push learning and innovation, increasing productivity in the long run.
    - e.g. increase of firm productivity by 7% in Canada after the U.S.-Canada FTA.
    - But decrease of employment by 12% in the most exposed industries.

Argument for free trade

Figure 7: Compared performance in labour productivity – Export (Norway)



Source: EFIM.

Source: Mayer and Ottaviano, 2007

Argument against free trade

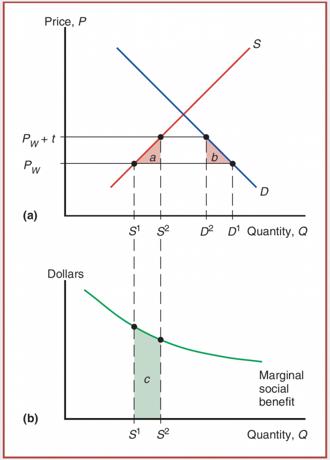
- From the cost-benefit analysis: for a large country, able to affect the prices of foreign exporters, a tariff lowers the price of imports: terms of trade effect of tariffs
- Overall, there might be a positive effect of tariffs, especially for low levels of tariffs.
  - There could be a positive optimal tariff rate.
  - Holds only for large economies.
  - Might trigger retaliatory responses.
- Free trade create unemployment in absence of quick and costless relocation of workers across occupations and industries (e.g. U.S.-Canada FTA, the China shock, etc.).
  - There might be larger social benefits to protect an industry than costs.
  - **Second-best theory**: ideally free trade would be better, but because there is an imperfect reallocation, protection can increase welfare.

Argument against free trade

FIGURE 10-3

The Domestic Market Failure Argument for a Tariff

If production of a good yields extra social benefits [measured in panel (*b*) by area c] not captured as producer surplus, a tariff can increase welfare.



Argument against free trade

- The gain from lowering trade barriers becomes relatively lower than the induced redistribution.
    - The distributional consequences of trade are more and more important compared to the ”increasing size of the pie”.
    - Increase in welfare from NAFTA estimated very small (+0.08% in the U.S.).
- Compensation is hard to achieve.
- Large loss of tax revenues can affect countries’ policies.
    - Tariffs are an important source of revenues in developing countries.
    - Cagé and Gadenne (2018): 40% of developing countries experience a fall in total tax revenues that last more than 10 years after trade liberalization. Same for expenditures $\longrightarrow$ lower provision of public goods.