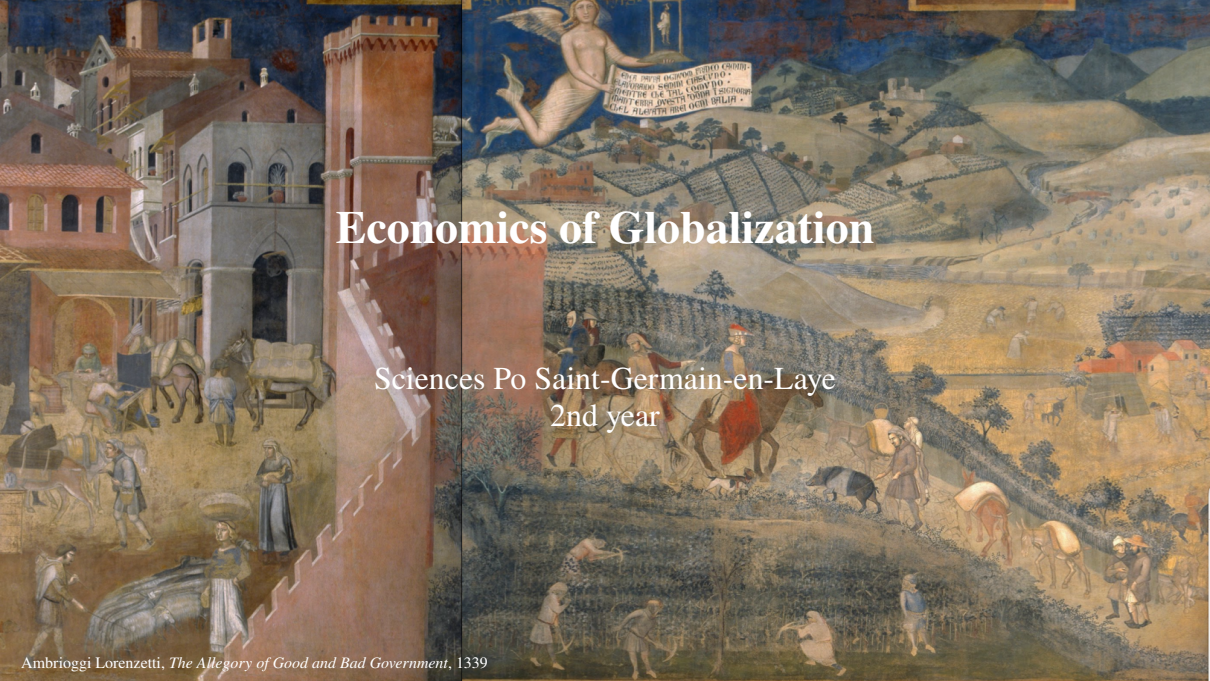
Economics of Globalization

Sciences Po Saint-Germain-en-Laye
2nd year



Ambrioggi Lorenzetti, *The Allegory of Good and Bad Government*, 1339

Last weeks

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

$\longrightarrow$ As a result countries may want to regulate trade $\longrightarrow$ trade policy.

From last year

Trump tariffs + Add to myFT

Donald Trump says US truck imports to face 25% tariff from November 1

Announcement comes on eve of talks in Washington with Canadian Prime Minister Mark Carney



From yesterday

Electric vehicles + Add to myFT

UK business secretary weighs up tariffs on Chinese EVs

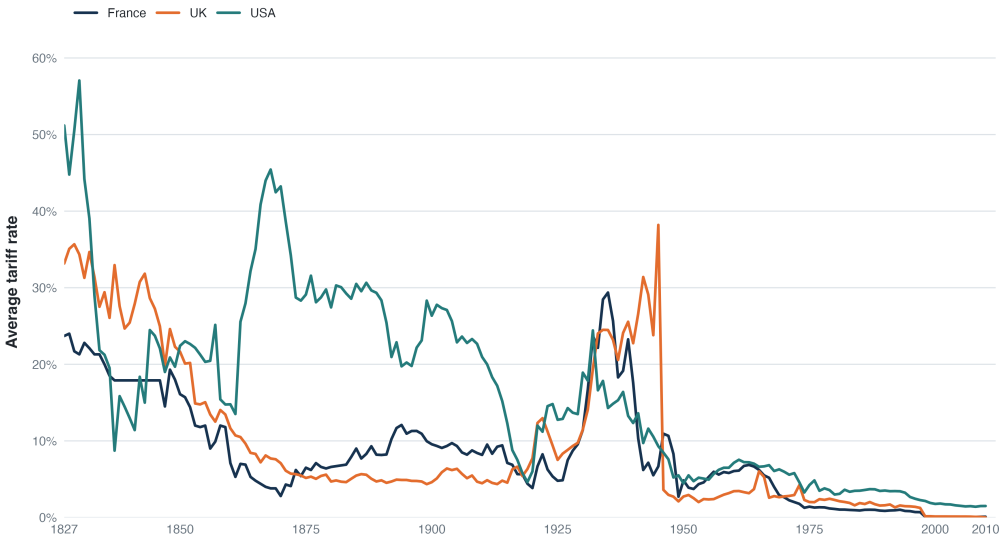
Jonathan Reynolds authorises officials to draw up package of potential levies that could be imposed



The World Trade System

- The modern history of tariff reduction begins in the 30' with the Smoot-Hawley Act.
  - Rise of U.S. tariffs on more than 20000 products to protect U.S. industries during the onset of the Great Recession.
  - Triggered retaliatory responses.
  - Reciprocal Trade Agreement Act in 1934 to counter the large rise in tariffs by bilateral negotiations.
    - Institution based on reciprocity: break the under-optimal Nash equilibrium of trade war.

  $\longrightarrow$ 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.



Customs duties as a share of total imports, 1827–2010. National tariff series from TRADHIST_v4 (Fouquin and Hugot, 2016)

The World Trade System

- The WTO established a framework for negociations, it does not define specific outcomes.
  - **Non discrimination** based on the Most-favored nation treatment.
  - **Reciprocity** to avoid free-riding.
  - **Binding commitments**: once a tariff rate is bound, a country cannot increase it any more without complications.
  - **Transparency** requirements and **dispute settlement** system to avoid trade wars (currently blocked by the U.S.).
  - Trade restrictions allowed for **safety reasons** (environment, public health, etc.).
- The WTO works with trade rounds where countries negotiate tariff reductions.

$\longrightarrow$ Eight trade rounds since 1947, Doha round opened since 2001.
- World trade system needs to be rebuilt.

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 allow for a PTA when there is no internal tariff.
  - EU, NAFTA, Mercosur, but also EU-Vietman, EU-Canada, EU-Singapore, and many others.

The tools of Trade Policy

- A tariff is a **tax** levied when a good is imported.
  - Specific tariffs: tax per unit (U.S. tax wheat at 0.7 cents per kg).
  - Ad valorem tariffs: percentage of good value (EU tax EV exports at 10%).
- Oldest form of trade policy and large source of income in pre–modern taxation system and in developping countries.
- Designed to protect specific domestic sectors by raising the prices of foreign goods.

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*.



Rare earths + Add to myFT

China unveils sweeping rare-earth export controls to protect 'national security'

Rules come ahead of expected meeting this month between Donald Trump and Xi Jinping

WORLD • EUROPE

Germany and France Are Proposing a New Weapon to Counter Flood of Chinese Goods

Europe's largest economies release blueprint to level global playing field on trade

By Bertrand Benoit and Kim Mackrael

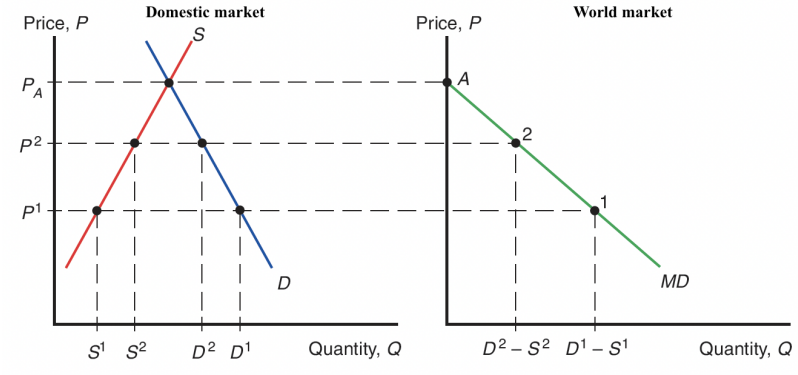
Theory of Trade Policy

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

- We study the consequences of a tariff on a good in a stylized model.
- 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

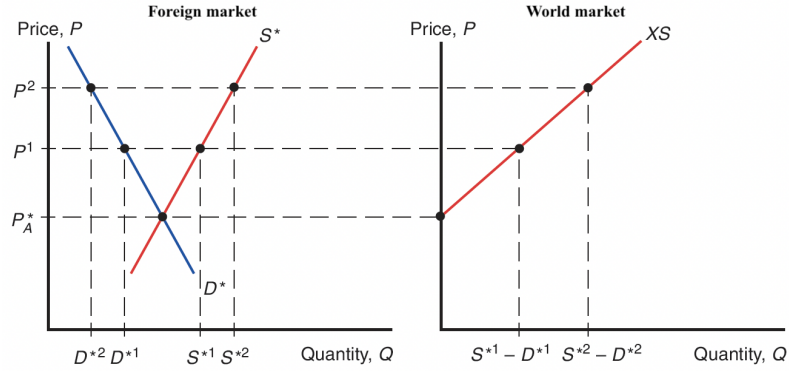
Basic Tariff Analysis: Home import demand curve



Import demand curve: as the price increase, home consumers demand less while home producers supply more, so that the demand for import decreases.

Theory of Trade Policy

Basic Tariff Analysis: Foreign export supply curve

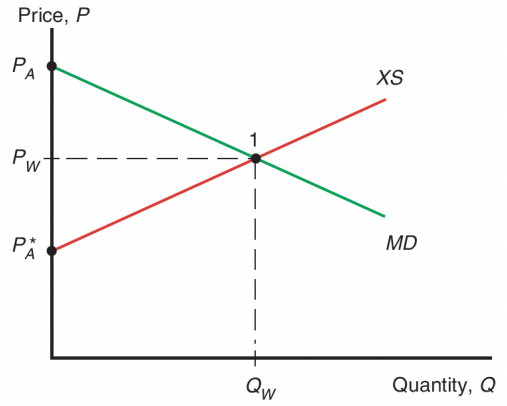


Export supply curve: as the price increase, foreign producers supply more while foreign consumers demand less, so that the export supply increases.

Theory of Trade Policy

Basic Tariff Analysis

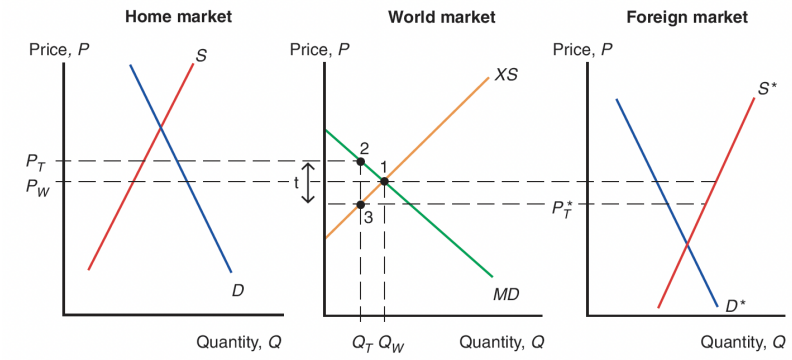
- The equilibrium world price is where home import demand equals foreign export supply.



- Now introduce a specific tariff of t$.
  - The price received by foreign producers is P_T^*
  - The price received by domestic consumers is $P_T = P_T^* + t$
- The equilibrium quantity should be consistent with these two different prices.
  - The supply at price P_T^* must equal the demand at price $P_T = P_T^* + t$

Theory of Trade Policy

Basic Tariff Analysis



A tariff raises the price in Home while lowering the price in Foreign. The volume of trade decreases. Home producers supply more, while Foreign producers supply less.

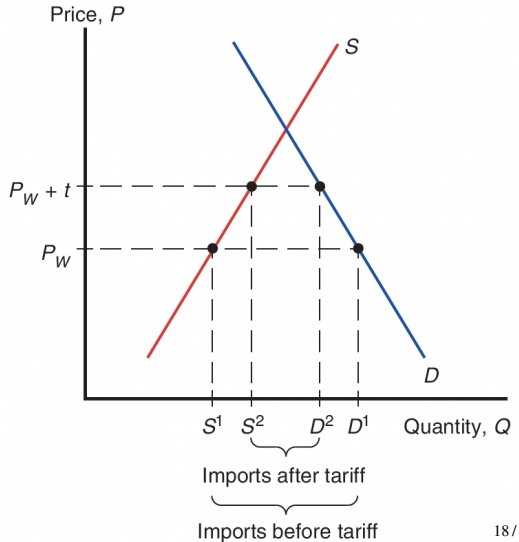
- After the introduction of the tariff, the quantity exchanged decreases compared to the free-trade equilibrium.
- The price in both countries is between the autarky price and the free-trade price.
- The price of domestic producers is raised and the quantity imported decreases: domestic producers are protected from international competition.

- The tariff is not fully passed-through to consumers: exporters' **bear a part of the tariff by decreasing their price.**
  - Producers prefer to decrease their price to counter the decrease in demand.
  - Works only for large countries that can influence the world price.
  - The economic incidence of the tariff (who ultimately pays the tax), is different from the legal incidence (who remits the cash to the tax authority).

Theory of Trade Policy

Basic Tariff Analysis

- Small countries do not lower the foreign price of the good it imports through tariffs.
- All the tariff is paid by domestic consumers.



Theory of Trade Policy

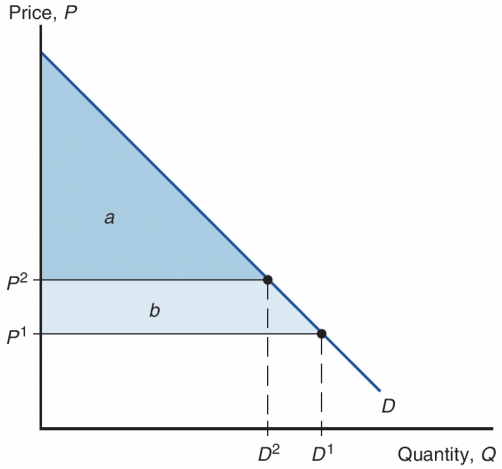
Basic Tariff Analysis

- 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
  - Consumers lose by buying at a higher price.
  - Producers gain by selling at a higher price.
  - Government gain by collecting tax revenues.
- Goal: quantify this to say whether the tariffs creates net gains.
- 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.)
- We also assume that trade protection only benefits producers, not workers (while consumers are also workers).

Theory of Trade Policy

Basic Tariff Analysis

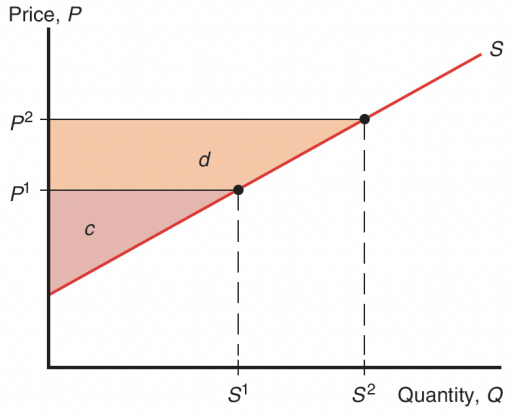
- Consumer surplus corresponds to the welfare derived by consumers when they buy a good.
- Consumer surplus is equal to the area above the demand curve.



Theory of Trade Policy

Basic Tariff Analysis

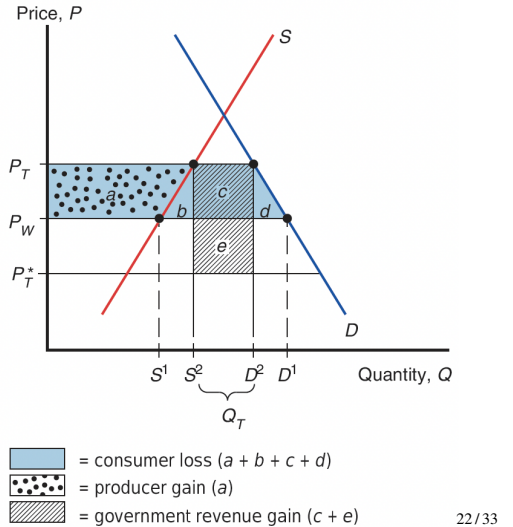
- Producer surplus corresponds to the welfare derived by producers when they sell a good $\longrightarrow$ their profits.
- Producer surplus is equal to the area above the supply curve and below the price.



Theory of Trade Policy

Basic Tariff Analysis

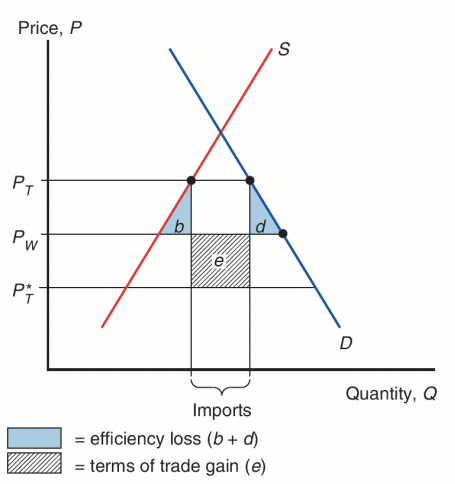
- This figure puts together consumer surplus and producer surplus.
- There is a third agent: the governement.
  - Collects the tariff which is equal to the difference between the foreign producer price (P_T^*) and the domestic price (P_T).
  - Tariff revenues = $(P_T - P_T^*) \times Q_T$, with Q_T the quantity imported i.e. the difference between domestic supply and domestic demand.



Theory of Trade Policy

Basic Tariff Analysis

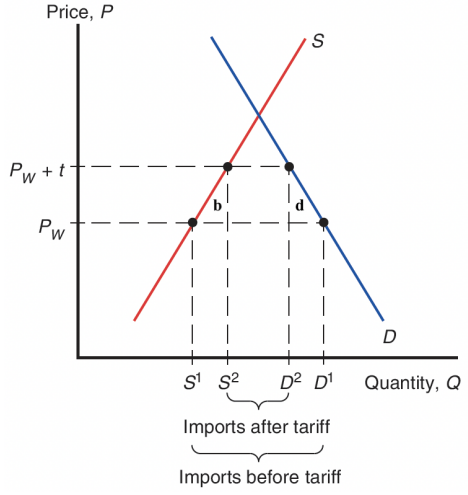
- This figure shows the net effect of the tariff.
- Efficiency losses: domestic producers produce "too much" and consumers consume "too little" with respect to the optimum.
- Terms of trade gains: gains due to the fact that the foreign producer partly pays the tax.



Theory of Trade Policy

Basic Tariff Analysis : Small country case

- In small countries, all the tax is paid by domestic consumers.
- The tariff generates net losses because $e = 0$.



Theory of Trade Policy

Tariff on an intermediate input.

- Current globalization is characterized by the importance of global value chains (GVCs).
- Most trade is about intermediates inputs.
  - $\approx$ one-third of trade is between related parties.
  - $\approx$ 1/2 of trade is in intermediates and $\approx$ 1/4 is in capital goods.
- In this context, tariff is not anymore a tool for redistributing between producers and consumers, but also affects producers negatively.

Tariff on an intermediate input.

Trump tariffs + Add to myFT

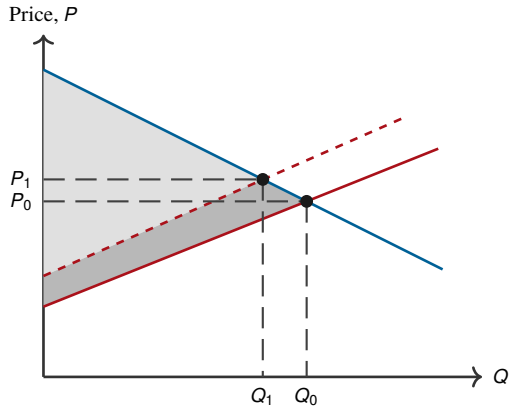
‘This is existential’: Donald Trump’s tariffs drive US car sector into turmoil

Michigan’s ‘Big Three’ carmakers forecast a combined $7bn tariff-related hit to earnings in 2025



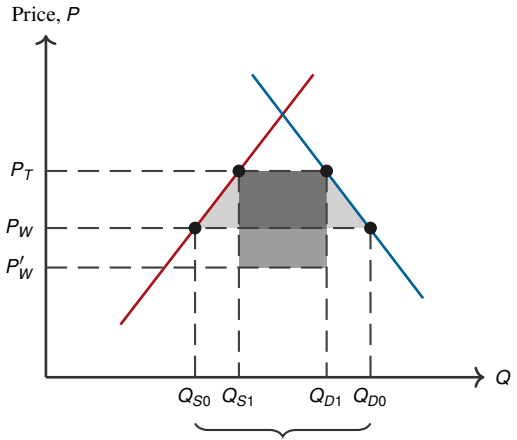
Tariff on an intermediate input.

- When tariffs hit intermediates goods, supply becomes steeper.
- For a given quantity, producers ask a higher price because costs are higher.
- In equilibrium there are less quantities traded by domestic suppliers ($\neq$ tariff on consumption goods), at a higher price.
- The tariff generates net losses in sectors using the good as intermediate.

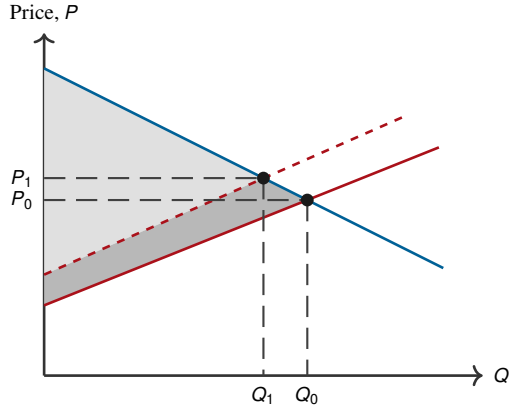


Tariffs and welfare

Effect on the protected industry



Effect on other industries (good used as an intermediate input)

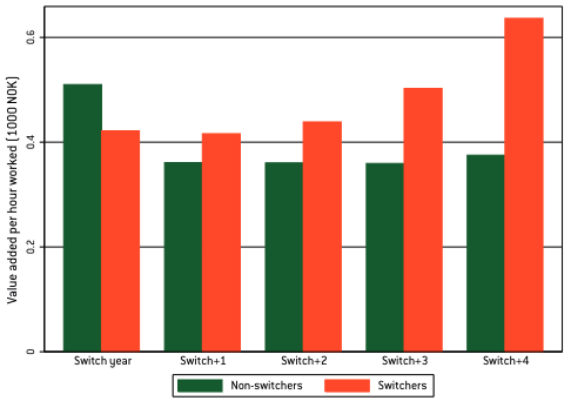


Argument for free trade

- Efficiency:
  - 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.
  - Trade protection affects the costs of capital equipment and decreases the capital stock in the long-run.

Argument for free trade

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



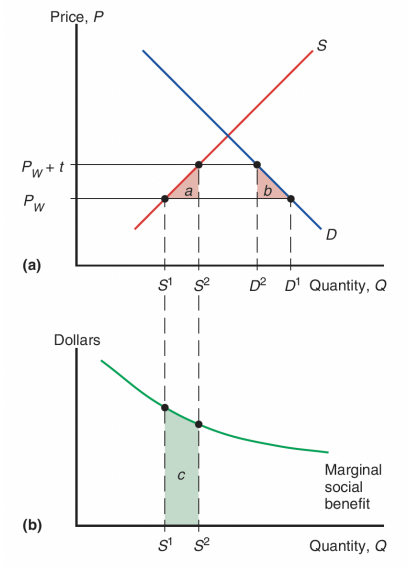
Source: EFIM.

Source: Mayer and Ottaviano, 2007

Argument against free trade

- For a large country, a tariff lowers the price of imports and might increase welfare.
  - Room for a positive optimal tariff rate.
  - Holds only for large economies.
  - Might trigger retaliatory responses $\longrightarrow$ a country does not take decisions in isolation: in a globalized world, it affects other countries' decisiosn and might have unintended consequences.
- Free trade creates unemployment in absence of quick and costless relocation of workers across occupations and industries (e.g. NAFTA, 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



Argument against free trade

- As time goes, the gains 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.