

ECONOMICS Lecture 19

Market Intervention Public Policies

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Topics

- Public Policy
 - Price Control
 - Quantity Limit
 - Int'l Trade Tariff



This lecture applies the demand and supply model to the area of public policy targeted at various market interventions, introduces the two basic policy instruments (price controls and quantity restrictions), and examines their policy effects and welfare outcomes.

What Do We Mean by “Public Policies”?

- A piece of legislation at any level
- Guidelines in procurement such as RFPs
- Program requirements
- Regulations that govern programs
- Cross-agency initiatives
- Mayoral or gubernatorial initiatives

https://ssir.org/articles/entry/making_public_policy_collective_impact_friendly

Public policy analysis requires students to understand tools and principles taught in political science as well as economics and to integrate that learning in order to pursue goals whose values are based in moral and political philosophy. In contrast, political science deals chiefly with the processes of political decision making, while economics focuses principally on efficient resource allocation. Philosophy seeks to provide a rational relationship between fundamental values and actions.

<https://publicpolicy.stanford.edu/about/what-public-policy-stanford>

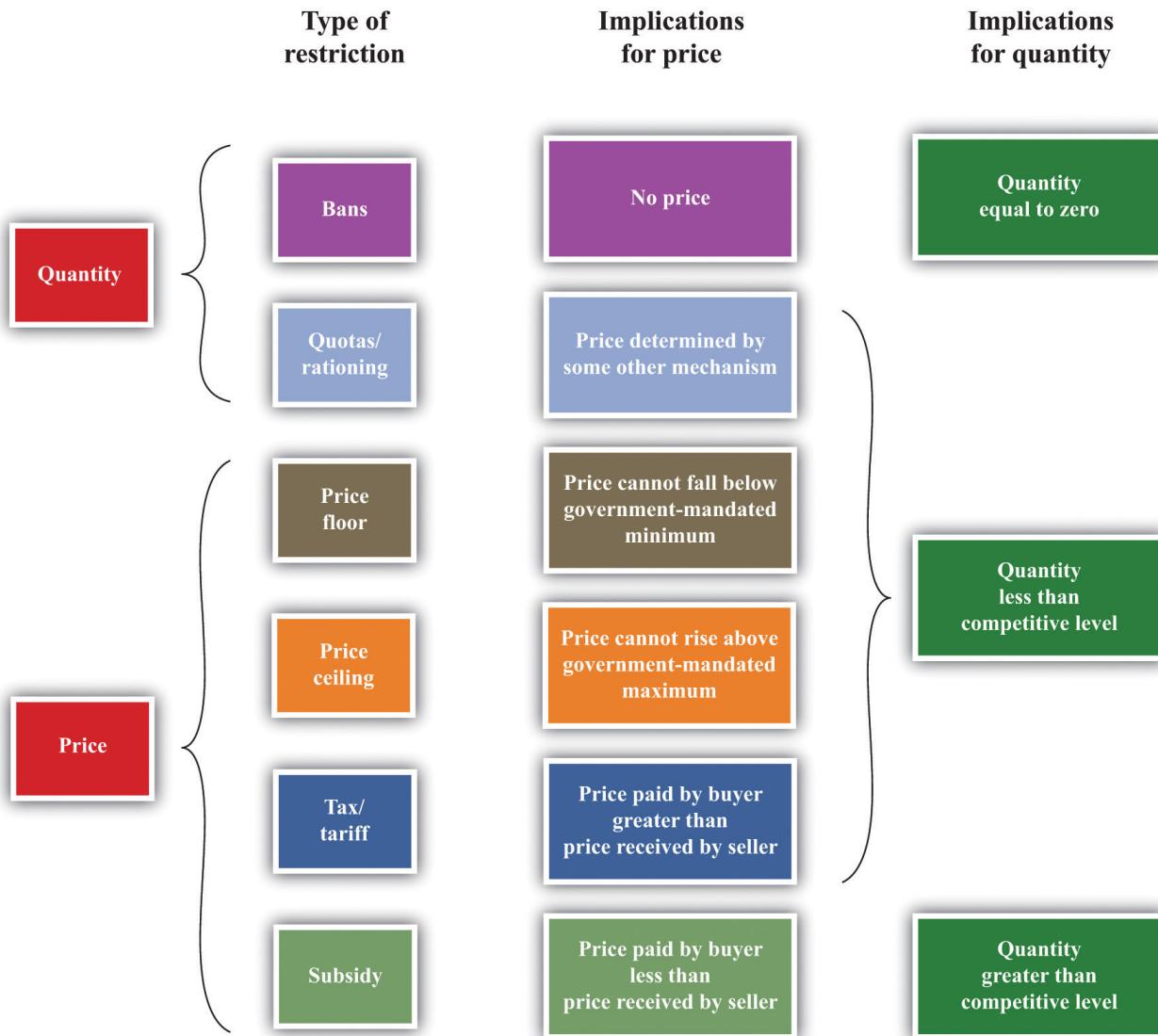
Public policy is best described as the broad area of government laws, regulations, court decisions, and local ordinances. Today, government affects all aspects of our lives. Everyone has a stake in the public policies enacted by federal, state, and local governments.

<https://www.mackinac.org/1542>

Market Economy and Public Policy

- It's true that most goods and services in a modern economy are provided by private businesses, but public policy—the collective decisions we make and enforce as a society—create the framework in which the private sector operates.
- When making public policy, groups act collectively—they do everything from declaring war to installing stoplights.
- Good public policy makes our lives better. It facilitates prosperity, empowers people, and builds stronger societies.
- A survey of the world history finds that many societies—comprising billions of people—have been unable to organize and govern themselves in a way that fully unlocks their potentials.

Government Market Interventions



Government Policy: Price Control

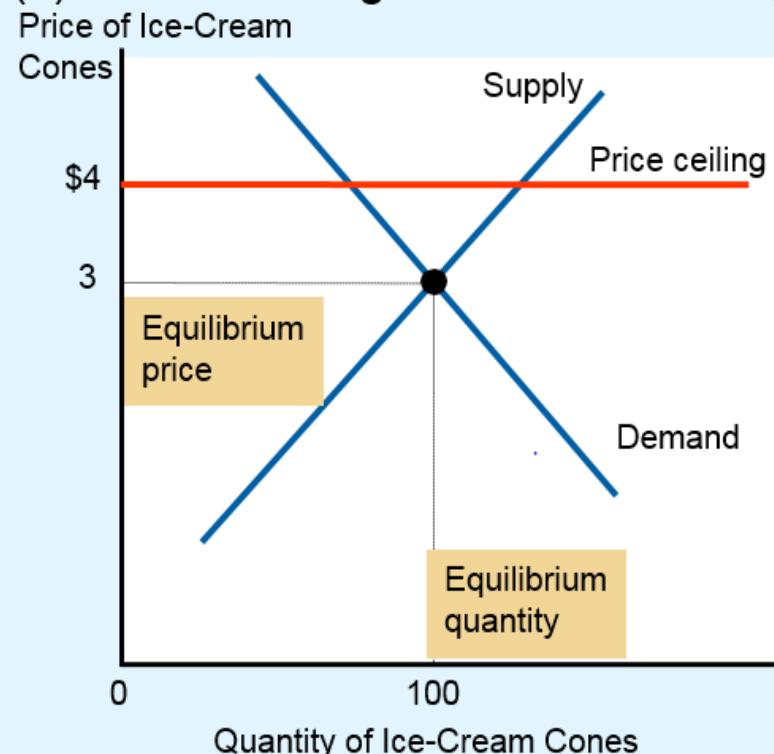
- **Price control** is the action to restrict the market price at certain level. Two general types of control are studied in this lecture.
- **Price ceiling** is the legal maximum on the price at which a good can be sold. Examples include gas price control and rent control.
- **Price floor** is the legal minimum on the price at which a good can be sold. Example includes minimum wage law.
- **Price support** is a combination of price floor and government purchase of any surplus in the market.
- **Taxation and subsidy** are also indirect price instruments that can affect equilibrium prices of goods and services in exchange.
- Questions: what would be the effects of government market control on the society? Would it help to improve market outcomes?

Government Policy: Quantity Control

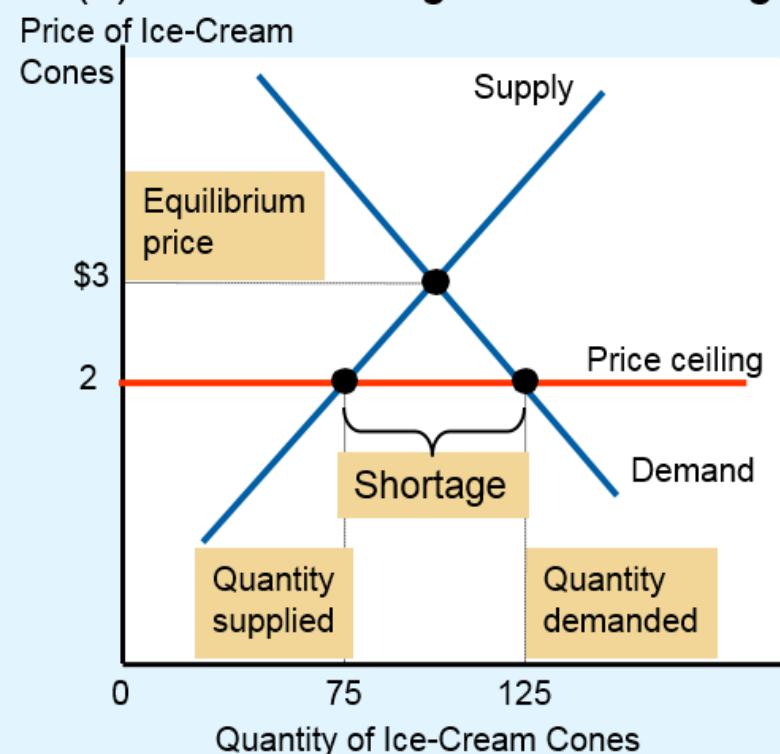
- **Quantity Control** is the restriction on the quantity of goods and services exchanged in the market place.
- **Closedown**: The most fundamental intervention in a market occurs when the government closes down trading completely—that is, the government simply says that it is illegal to trade certain goods or services.
- **Rationing**: the quantity available on the market is less than the equilibrium quantity because willing buyers and sellers are prevented from voluntary exchange.
- **License**: the right conferred by the government to supply a good.
- **Quota**: a publicly or jointly imposed restriction on the number of goods bought and sold. Quota used to be a common trade policy.

Markets with Price Ceiling

(a) A Price Ceiling That Is Not Binding



(b) A Price Ceiling That Is Binding

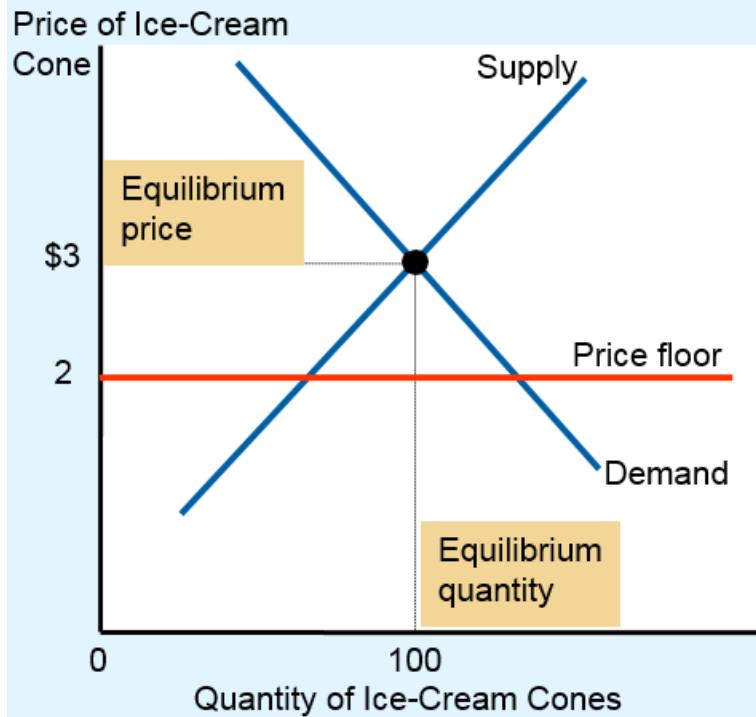


In panel (a), the government imposes a price ceiling of \$4. Because the price ceiling is above the equilibrium price of \$3, the price ceiling has no effect, and the market can reach the equilibrium of supply and demand. In this equilibrium, quantity supplied and quantity demanded both equal 100 cones.

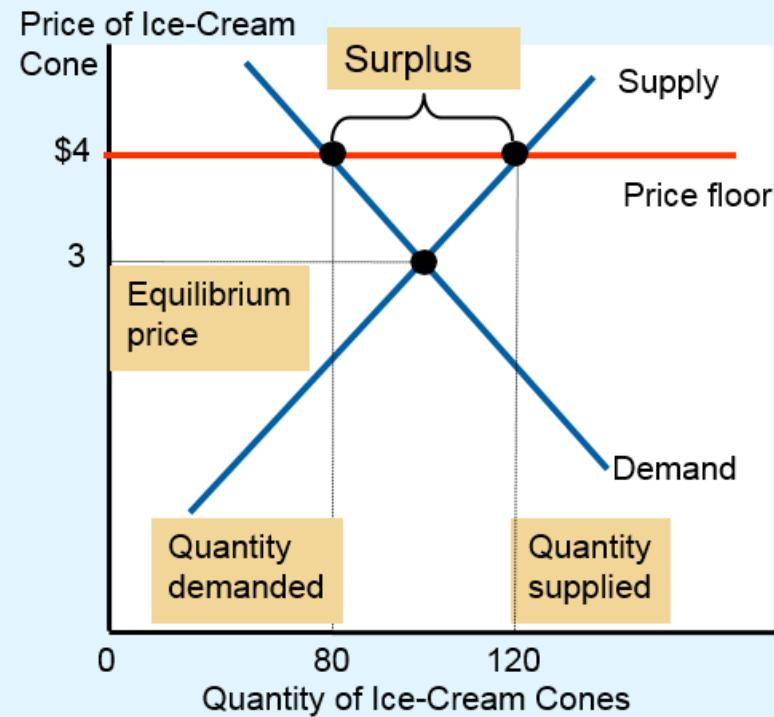
In panel (b), the government imposes a price ceiling of \$2. Because the price ceiling is below the equilibrium price of \$3, the market price equals \$2. At this price, 125 cones are demanded and only 75 are supplied, so there is a shortage of 50 cones.

Markets with Price Floors

(a) A Price Floor That Is Not Binding



(b) A Price Floor That Is Binding



In panel (a), the government imposes a price floor of \$2. Because this is below the equilibrium price of \$3, the price floor has no effect. The market price adjusts to balance supply and demand. At the equilibrium, quantity supplied and quantity demanded both equal 100 cones.

In panel (b), the government imposes a price floor of \$4, which is above the equilibrium price of \$3. Therefore, the market price equals \$4. Because 120 cones are supplied at this price and only 80 are demanded, there is a surplus of 40 cones.

The 1973 Oil Crisis

- The 1973 oil crisis began in October 1973 when the members of the Organization of Arab Petroleum Exporting Countries proclaimed an oil embargo. ... By the end of the embargo in March 1974, the price of oil had risen from US\$3 per barrel to nearly \$12 globally; US prices were significantly higher.
- OPEC raised the price of crude oil
 - Reduced the supply of gasoline
 - Long lines at gas stations
- What was responsible for the long gas lines?
 - OPEC: Shortage of gasoline
 - U.S. government regulations: Price ceiling on gasoline

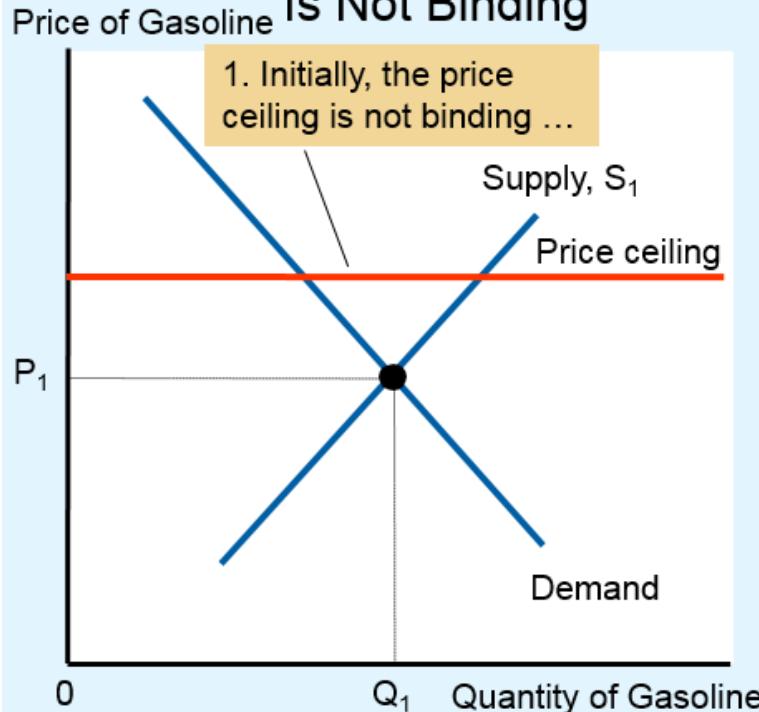
1973 Price Ceiling on Gasoline

- Before OPEC raised the price of crude oil
 - Equilibrium price was below the price ceiling
 - No effect on the market
- When the price of crude oil rose
 - Decrease in the supply of gasoline
 - Equilibrium price was above the price ceiling
 - Binding price ceiling: Severe shortage and rent dissipation
- Laws regulating the price of gasoline were repealed

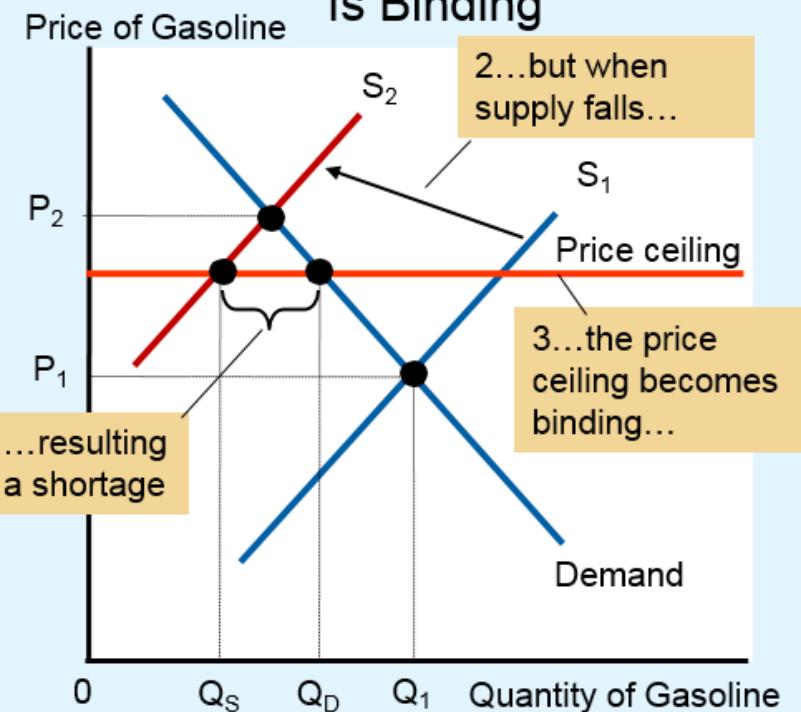


Price Ceiling: Gasoline Market

(a) The Price Ceiling On Gasoline Is Not Binding



(b) The Price Ceiling On Gasoline Is Binding



Panel (a) shows the gasoline market when the price ceiling is not binding because the equilibrium price, P_1 , is below the ceiling. Panel (b) shows the gasoline market after an increase in the price of crude oil (an input into making gasoline) shifts the supply curve to the left from S_1 to S_2 . In an unregulated market, the price would have risen from P_1 to P_2 . The price ceiling, however, prevents this from happening. At the binding price ceiling, consumers are willing to buy Q_D , but producers of gasoline are willing to sell only Q_S . The difference between quantity demanded and quantity supplied, $Q_D - Q_S$, measures the gasoline shortage.



U.S. Minimum Wage Updates, 2021



Minimum Wage: Price Floor

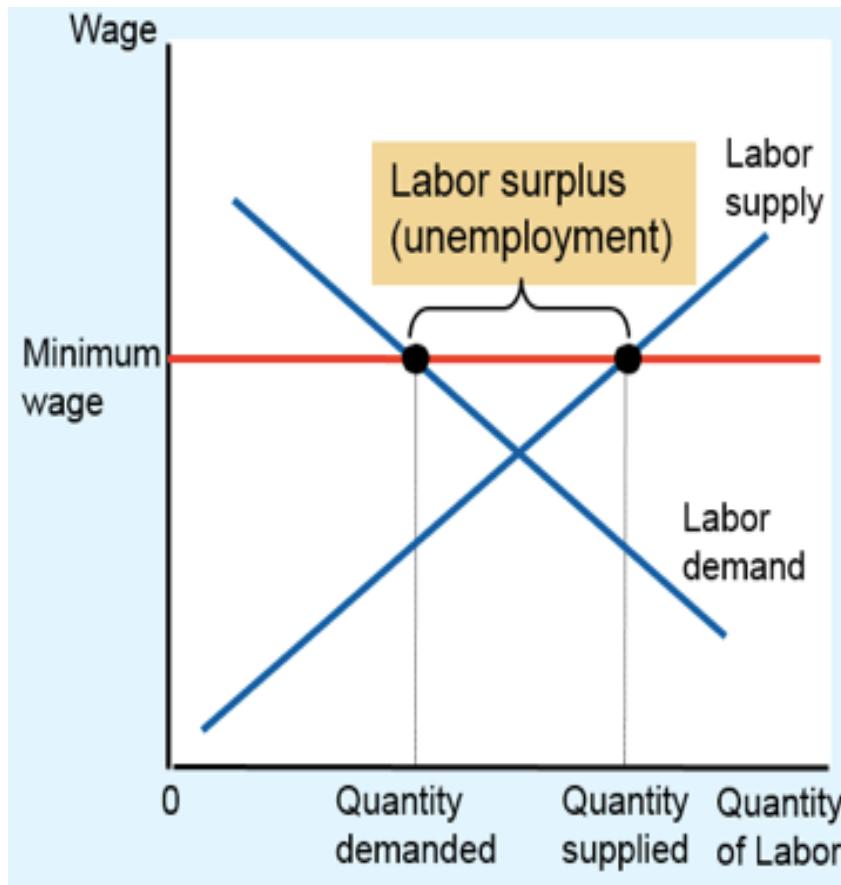
Why do most workers, some politicians and economists support minimum wage laws? How do minimum wage laws, and price floors in general, affect market outcomes?

- Not binding
 - Set below the equilibrium price
 - No effect on the market
- Binding constraint
 - Set above the equilibrium price: Surplus
 - Some sellers are unable to sell what they want
 - Rationing mechanisms: not desirable
- Can minimum wage laws protect poor workers' interest?
- Can minimum wage laws be effective in practice?

The U.S. Minimum Wage Laws

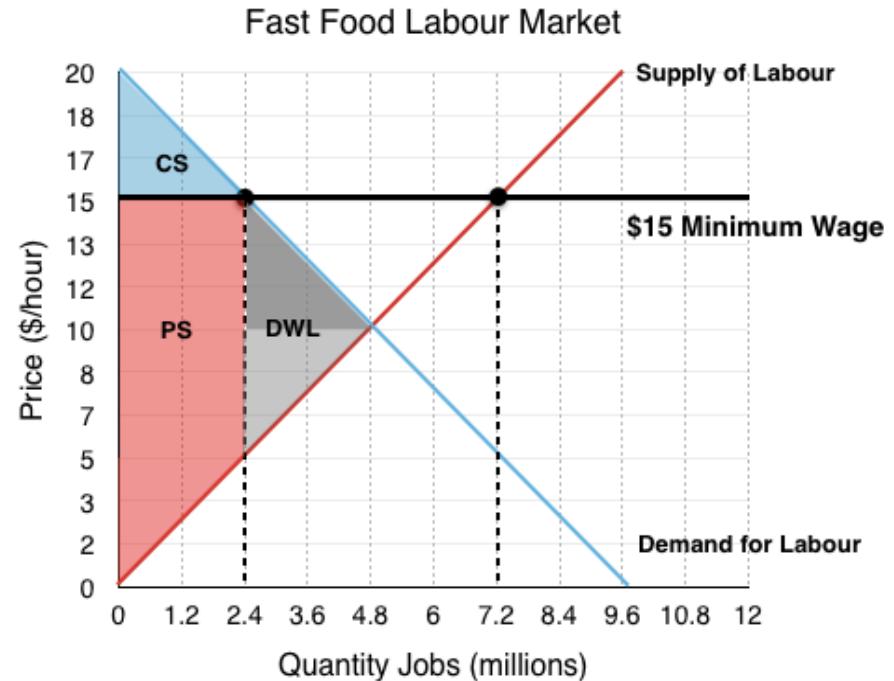
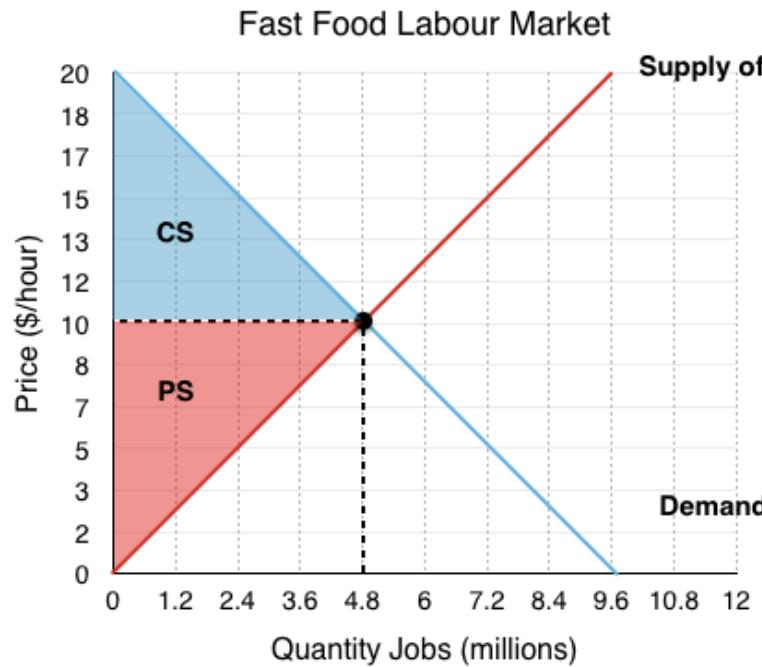
- The first minimum wage laws were introduced in 1894 by New Zealand, followed shortly after by Australia in 1896. The US joined the party later in 1938 when Franklin D. Roosevelt introduced the nation's first federal minimum wage.
- Minimum wage laws set legal minimums for the hourly wages paid to certain groups of workers. In the United States, amendments to the Fair Labor Standards Act have increased the federal minimum wage from \$0.25/hr in 1938 to \$5.15 in 1997, and \$7.25 in 2019.
- Most noneconomists believe that minimum wage laws protect workers from exploitation by employers and reduce poverty.
- Most economists believe that minimum wage laws cause unnecessary hardship for the very people they are supposed to help.

Minimum Wages: Market Effects



- In the labor market, who are the supplier and demanders?
- The model shows the impact of a binding minimum wage. The minimum wage is set above the market equilibrium wage.
- Because the minimum wage is a price floor, it causes a surplus: The quantity of labor supplied exceeds the quantity demanded.
- What would be the model prediction on employment and workers' working hours?

Minimum Wages: Market Welfare



- The greater the gap between the minimum wage and equilibrium wage, the worse the unemployment of labor, including workers and working hours.
- Firms' welfare gets worse off; minimum wage workers' welfare is uncertain (why?); and the labor market as a whole suffers from DWL.



20190612 Rent Regulations in New York

www.nytimes.com/2019/06/12/nyregion/rent-regulation-laws-new-york.html

Rent Control Returns to New York

- New York Democrats want to "abolish rules that let building owners deregulate apartments and close loopholes that permit them to raise rents," the New York Times reports in June of 2019.

<https://www.nytimes.com/2019/06/11/nyregion/rent-protection-regulation.html?module=inline>

- Supporters even argued that “Housing is a human right!”
- *New York’s Affordable Housing Universal Rent Control Bills*



<https://www.youtube.com/watch?v=lDj8braXSd4>

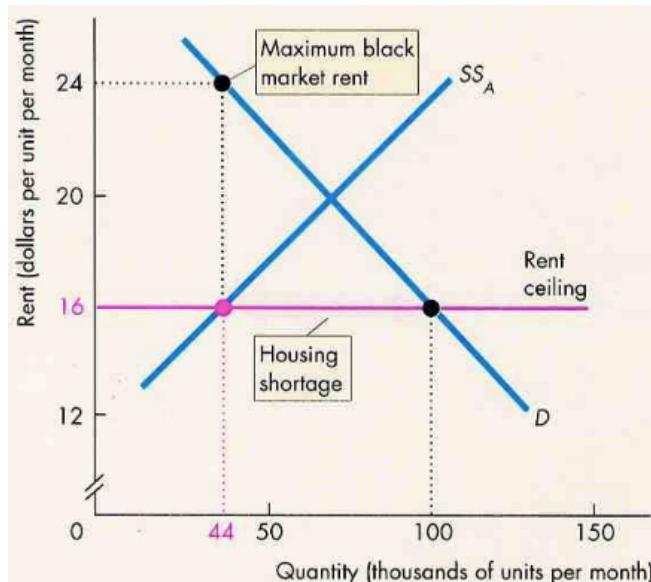
- The legislation would directly impact almost one million rent-regulated apartments in NYC, which account for more than 40 percent of the city’s rental stock, and allow other municipalities statewide beyond NYC and its suburbs to adopt their own regulations.
- Rent Regulations in New York: How They’ll Affect Tenants and Landlords. The changes would be sweeping, covering everything from security deposits to apartment upgrades.

<https://fee.org/articles/rent-control-returns-to-new-york/>

Rent Control as a Price Ceiling

Price ceiling: Rent control

- Government places a rent ceiling
- Goal: to make housing affordable
- Critique: Highly inefficient way to help the poor raise their standard of living



The 12 Most Expensive Rental Markets

March 2018, median asking rents

	One bedroom City	Price	From yr ago	Prior record	From prior record	Record month
1	San Francisco, CA	\$3,400	2.4%	\$3,670	-\$270 -7.4%	Oct-15
2	New York, NY	\$2,900	-1.4%	\$3,370	-\$470 -13.9%	Mar-16
3	San Jose, CA	\$2,470	9.3%	\$2,470	\$0 0.0%	Mar-18
4	Boston, MA	\$2,300	4.5%	\$2,400	-\$100 -4.2%	Oct-15
5	Los Angeles, CA	\$2,250	9.2%	\$2,300	-\$50 -2.2%	Dec-17
6	Washington, DC	\$2,130	4.4%	\$2,340	-\$210 -9.0%	Dec-17
7	Oakland, CA	\$2,130	2.9%	\$2,420	-\$290 -12.0%	Apr-16
8	Seattle, WA	\$1,890	4.4%	\$1,950	-\$60 -3.1%	Aug-17
9	San Diego, CA	\$1,800	13.9%	\$1,800	\$0 0.0%	Feb-18
10	Miami, FL	\$1,730	-3.9%	\$1,900	-\$170 -8.9%	Jun-16
11	Honolulu, HI	\$1,700	-4.5%	\$2,130	-\$430 -20.2%	Mar-15
12	Ft. Lauderdale	\$1,550	-1.3%	\$1,590	-\$40 -2.5%	Apr-17
13	Long Beach, CA	\$1,500	11.0%	\$1,570	-\$70 -4.5%	Feb-18
14	Chicago, IL	\$1,500	-15.3%	\$2,050	-\$550 -26.8%	Oct-15

Two bedroom

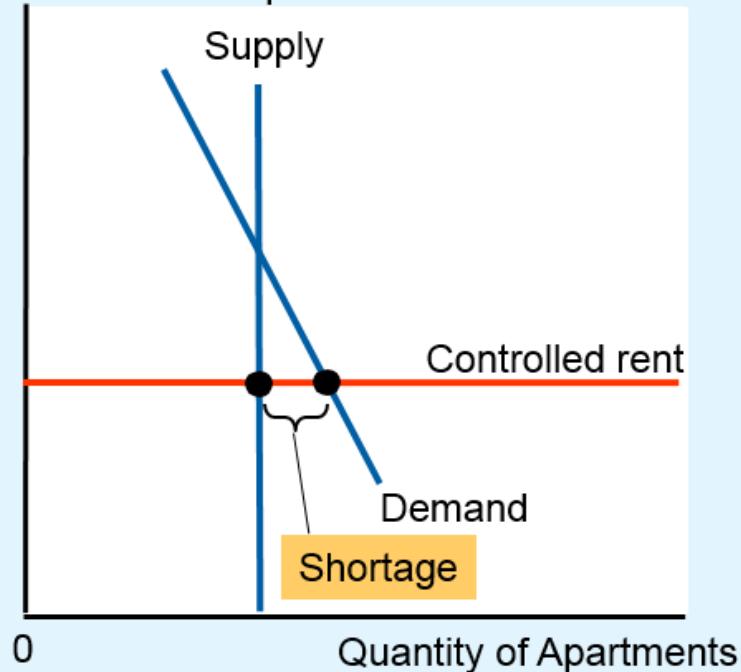
	City	Price	From yr ago	Prior record	From prior record	Record month
1	San Francisco, CA	\$4,510	1.8%	\$5,000	-\$490 -9.8%	Oct-15
2	New York, NY	\$3,500	0.3%	\$3,980	-\$480 -12.1%	Mar-16
3	Los Angeles, CA	\$3,200	8.5%	\$3,200	\$0 0.0%	Dec-17
4	San Jose, CA	\$2,940	4.3%	\$3,080	-\$140 -4.5%	Apr-16
5	Washington, DC	\$2,700	-6.9%	\$3,230	-\$530 -16.4%	Aug-17
6	Boston, MA	\$2,700	3.8%	\$2,800	-\$100 -3.6%	Jan-15
7	Seattle, WA	\$2,500	4.2%	\$2,650	-\$150 -5.7%	Apr-16
8	Oakland, CA	\$2,470	-3.1%	\$2,940	-\$470 -16.0%	Apr-16
9	Miami, FL	\$2,370	-5.2%	\$2,640	-\$270 -10.2%	Mar-16
10	San Diego, CA	\$2,320	5.5%	\$2,320	\$0 0.0%	Mar-17
11	Honolulu, HI	\$2,200	-7.9%	\$2,950	-\$750 -25.4%	Jan-15
12	Long Beach, CA	\$2,100	11.0%	\$2,100	\$0 0.0%	Mar-18
13	Ft Lauderdale	\$1,940	3.2%	\$1,980	-\$40 -2.0%	Mar-17
14	Chicago, IL	\$1,910	-15.5%	\$2,650	-\$740 -27.9%	Sep-15

Source of data: Zumper

Price Floor: Rent Control Effects

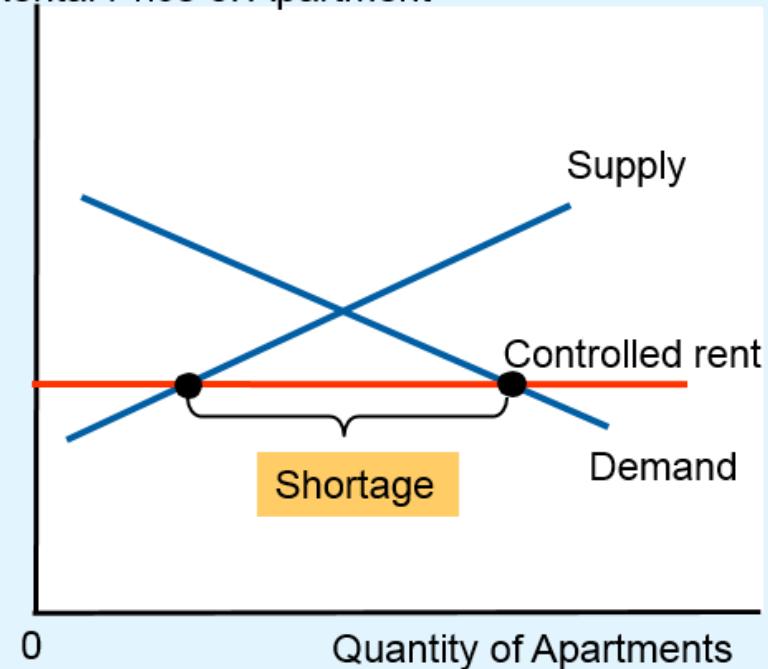
(a) Rent Control in the Short Run
(supply and demand are inelastic)

Rental Price of Apartment



(b) Rent Control in the Long Run
(supply and demand are elastic)

Rental Price of Apartment



Panel (a) shows the short-run effects of rent control: Because the supply and demand curves for apartments are relatively inelastic, the price ceiling imposed by a rent-control law causes only a small shortage of housing.

Panel (b) shows the long-run effects of rent control: Because the supply and demand curves for apartments are more elastic, rent control causes a large shortage.

The Seen, Unseen, and Unintended

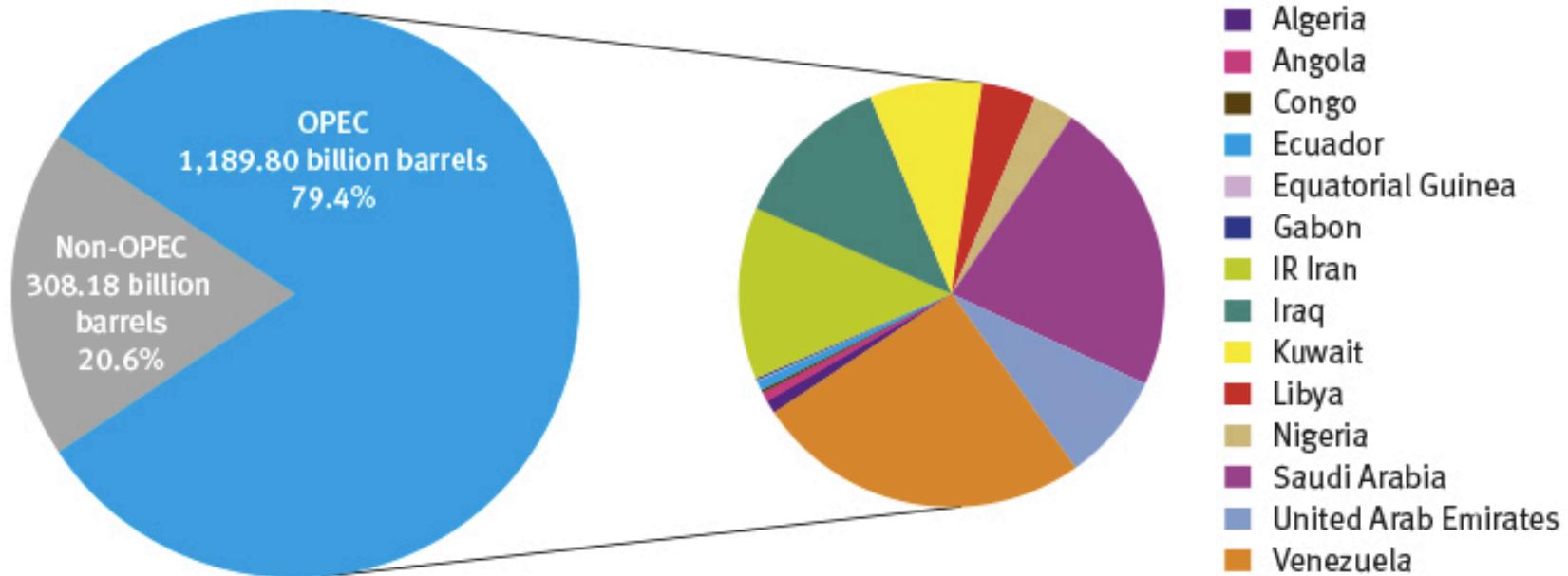
- **The seen:** in the short run, more tenants will look for living spaces; more landlords will be more selective based on their own criteria (discrimination); more conflicts between existing landlords and tenants, including hostility and legal disputes. Rent dissipation: stage one.
- **The unseen:** under rent control, even if statutory prices of housing are restricted below market-determined prices, the transaction costs of the housing market will raise. Property rights of the owners are violated.
- **The unintended consequences:** in the long run, there will be less affordable places for rent (converted for other purposes), quality of existing housing will deteriorate, the housing market condition and welfare will decline even more if the policy is binding and permanent. The government will end up providing affordable housing programs by itself: more DWL to the tax payers and the society. Stage over.

Organization of the Petroleum Exporting Countries



In accordance with its Statute, the mission of the Organization of the Petroleum Exporting Countries (OPEC) is to coordinate and unify the petroleum policies of its Member Countries and ensure the stabilization of oil markets in order to secure an efficient, economic and regular supply of petroleum to consumers, a steady income to producers and a fair return on capital for those investing in the petroleum industry.

OPEC Share of Oil Reserves 2018



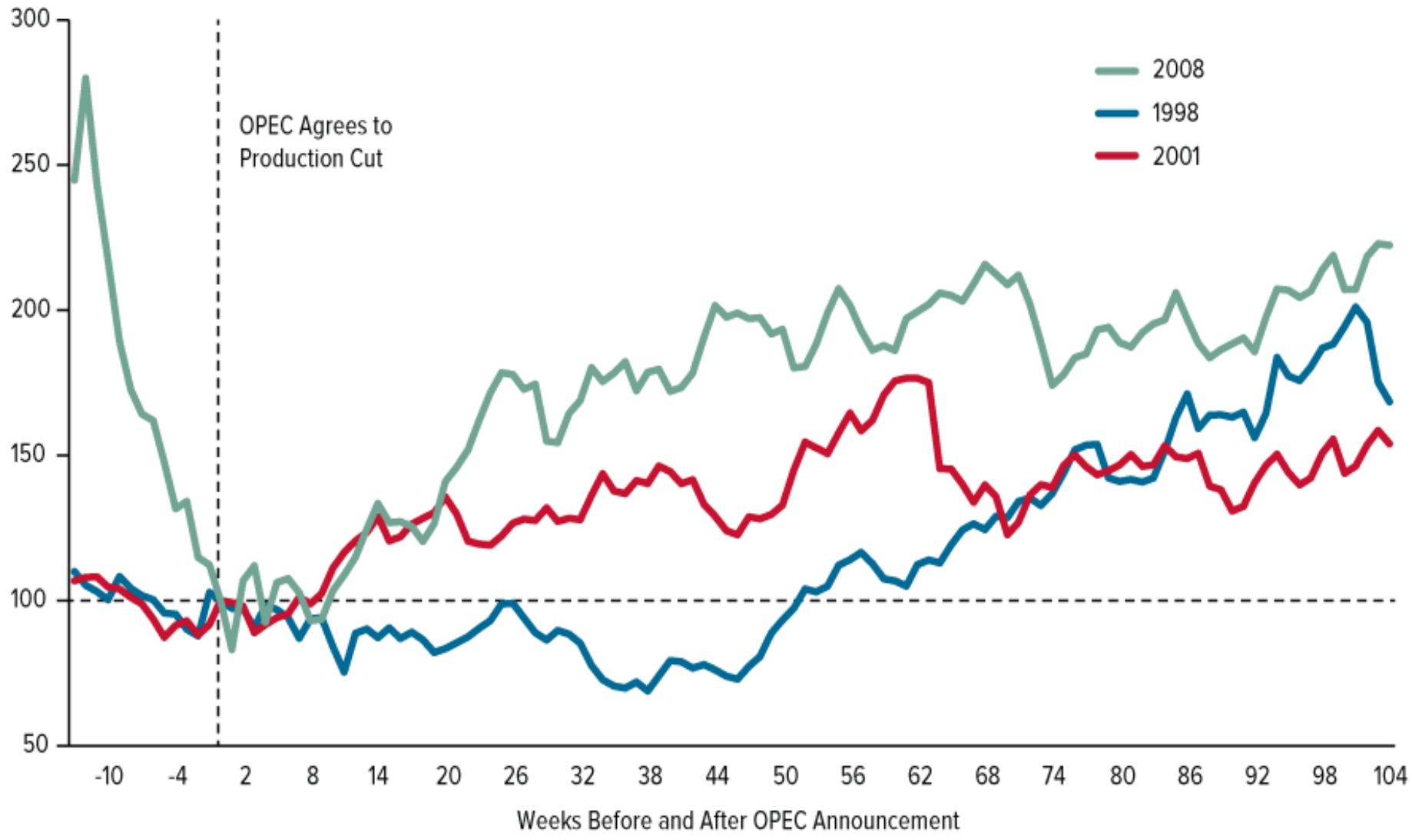
OPEC proven crude oil reserves, at end 2018 (billion barrels, OPEC share)

Venezuela	302.81	25.5%	Kuwait	101.50	8.5%	Algeria	12.20	1.0%	Gabon	2.00	0.2%
Saudi Arabia	267.03	22.4%	UAE	97.80	8.2%	Ecuador	8.27	0.7%	Equatorial Guinea	1.10	0.1%
IR Iran	155.60	13.1%	Libya	48.36	4.1%	Angola	8.16	0.7%			
Iraq	145.02	12.2%	Nigeria	36.97	3.1%	Congo	2.98	0.3%			

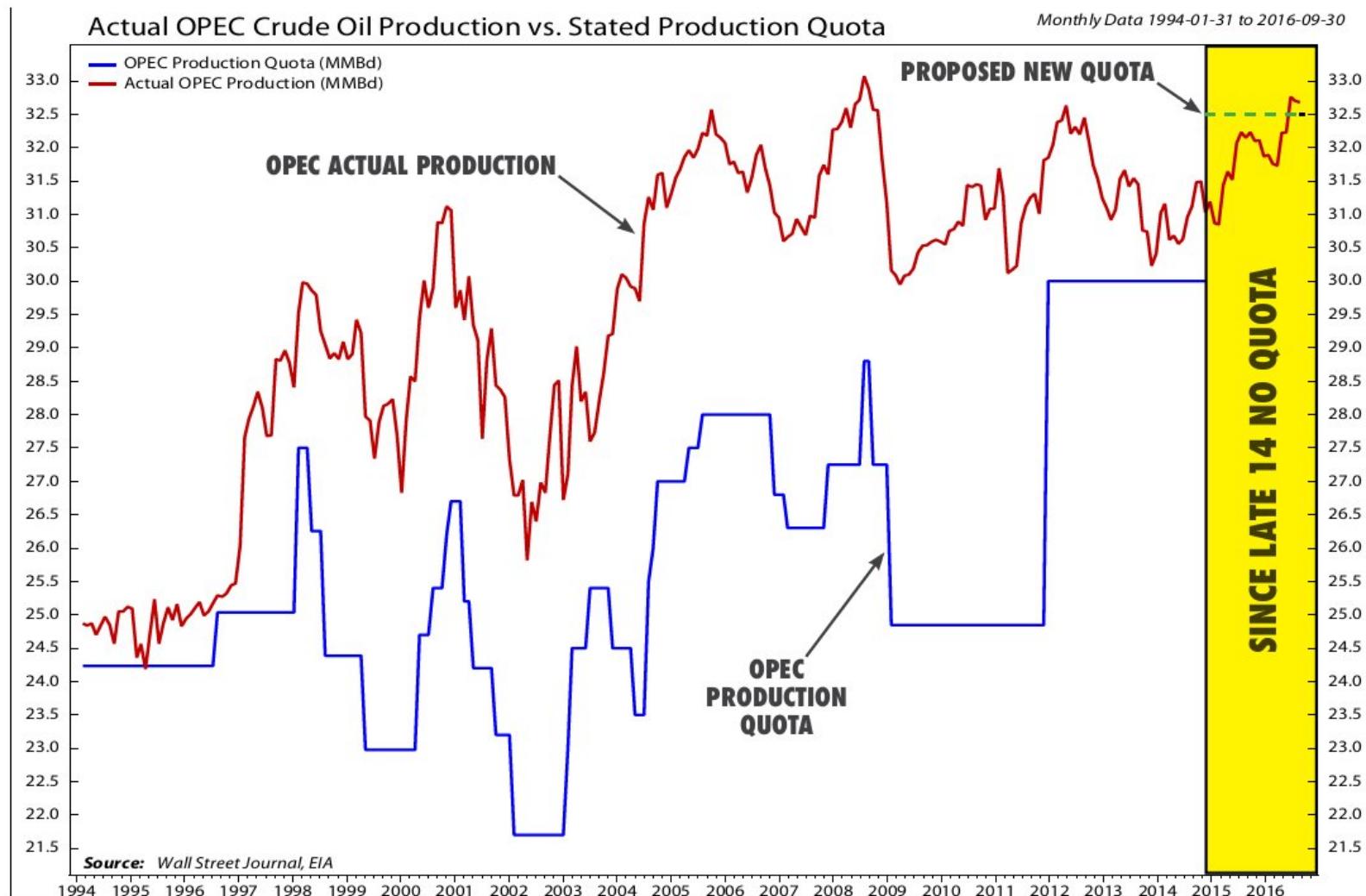
Source: OPEC Annual Statistical Bulletin 2019.

Oil Historically Rallied in the Two Years Following OPEC's Agreement to Cut Production

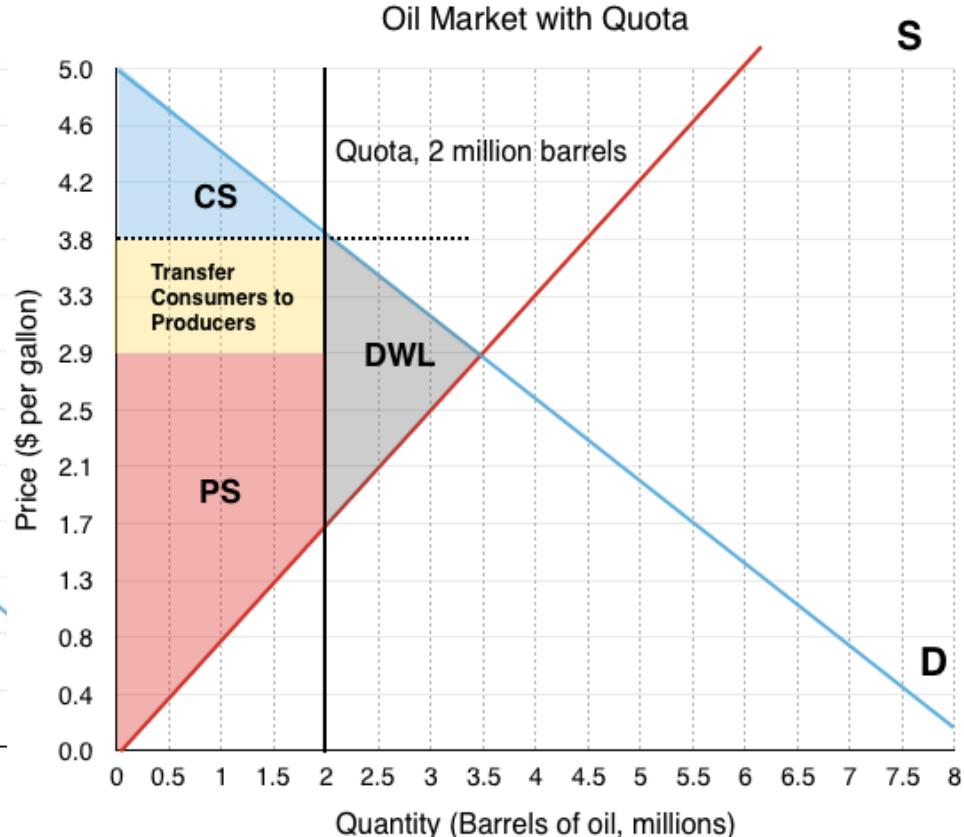
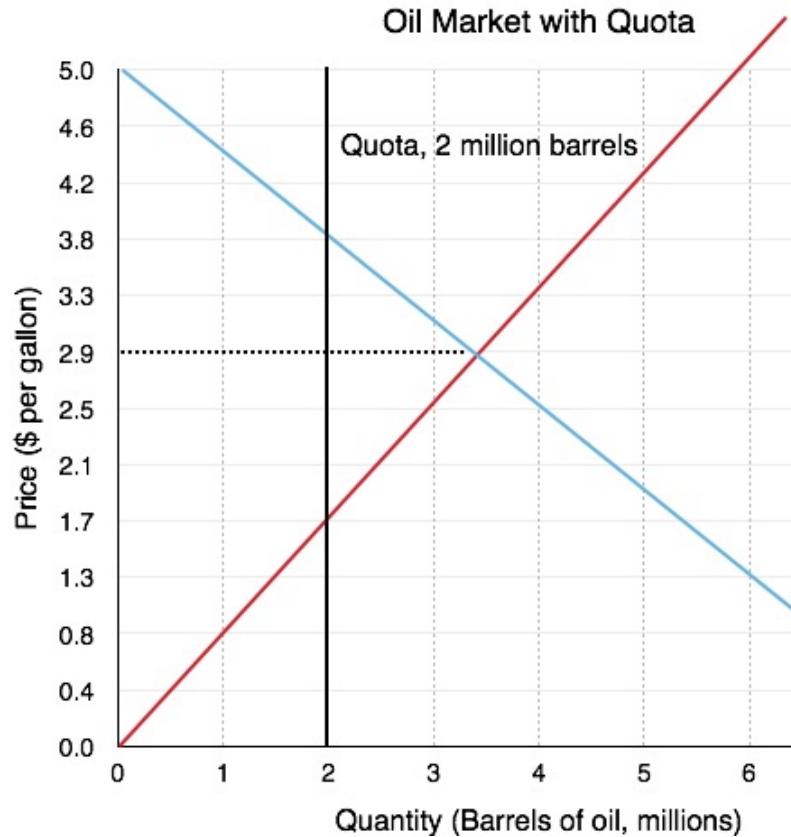
Prices Indexed at 100 on Day of Announcement



OPEC Oil Production Quota



Oil Market Quota and Welfare Loss

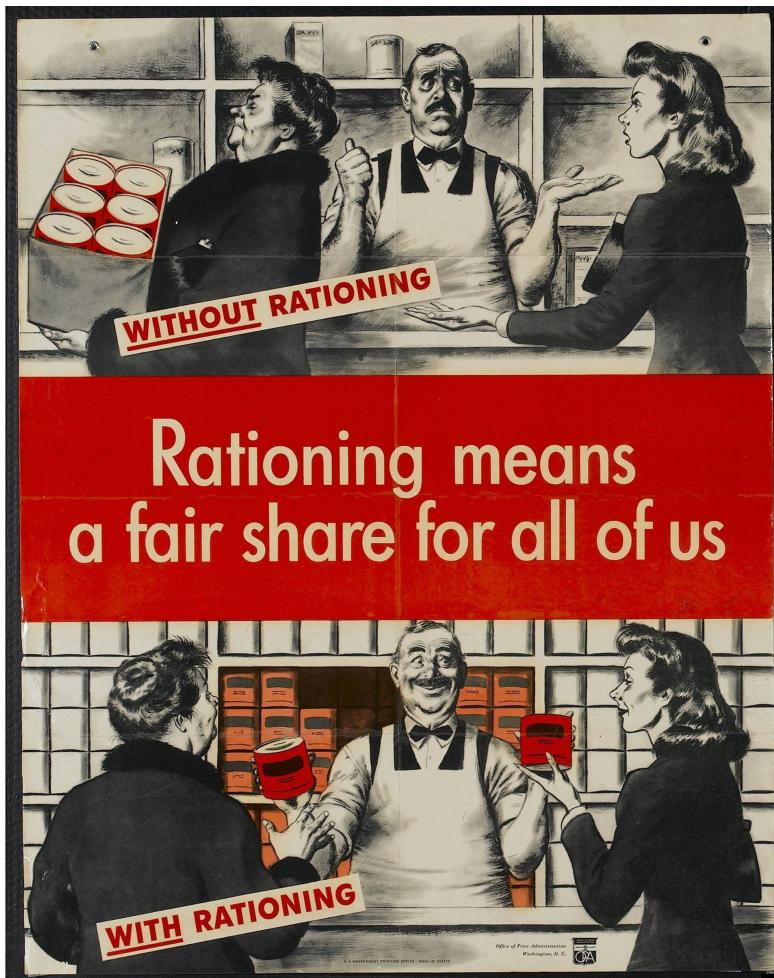


U.S. Rationing During World War II

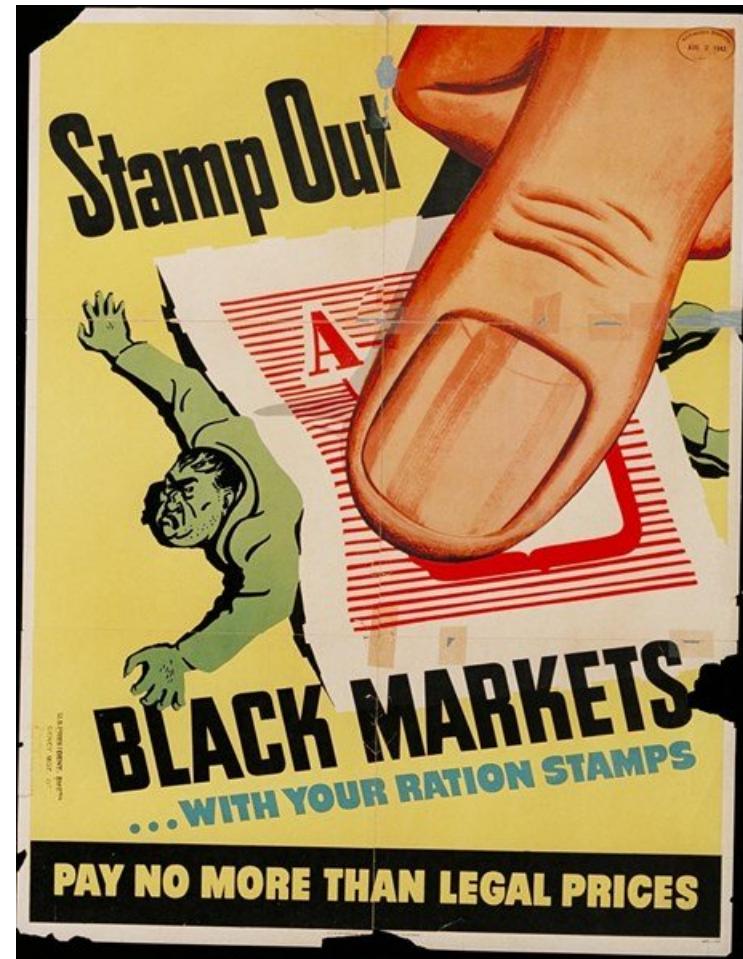
- As the U.S. mobilized for war after mid-1940, the gov's demands for munitions and related resources began to put pressure on certain markets, and soon prices began to rise.
- Rationing greatly increased the transaction costs of shopping for ordinary goods.
- Price controls and rationing created opportunities, however, for people willing to break the law. Active black markets developed all over the country.

Rationed products	Effective dates
Sugar	May 1942 to June 1947
Coffee	November 1942 to July 1943
Processed foods	March 1943 to August 1945
Meats, fats, canned fish, cheese, and canned milk	March 1943 to November 1945
Rubber footwear (six heavy-duty types)	October 1942 to September 1945
Shoes	February 1943 to October 1945
Fuel oil and kerosene	October 1942 to August 1945
Stoves	December 1942 to August 1945
Solid fuels (Pacific Northwest only)	September 1943 to August 1945
Tires	January 1942 to December 1945
Automobiles	February 1942 to October 1945
Gasoline (initially East Coast only)	May 1942 to August 1945
Bicycles	July 1942 to September 1944
Typewriters	March 1942 to April 1944

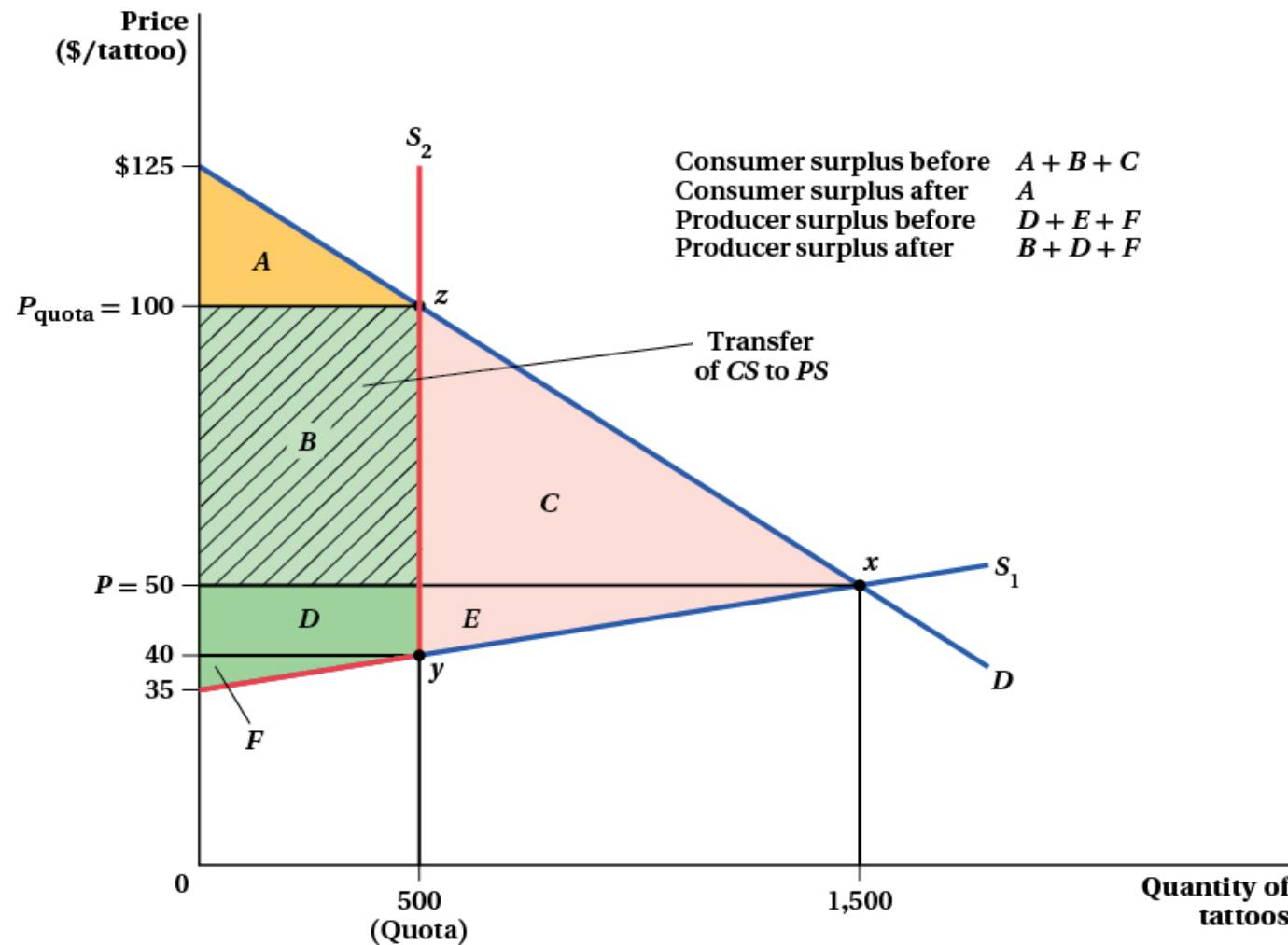
U.S. Rationing During World War II



U.S. Rationing During World War II



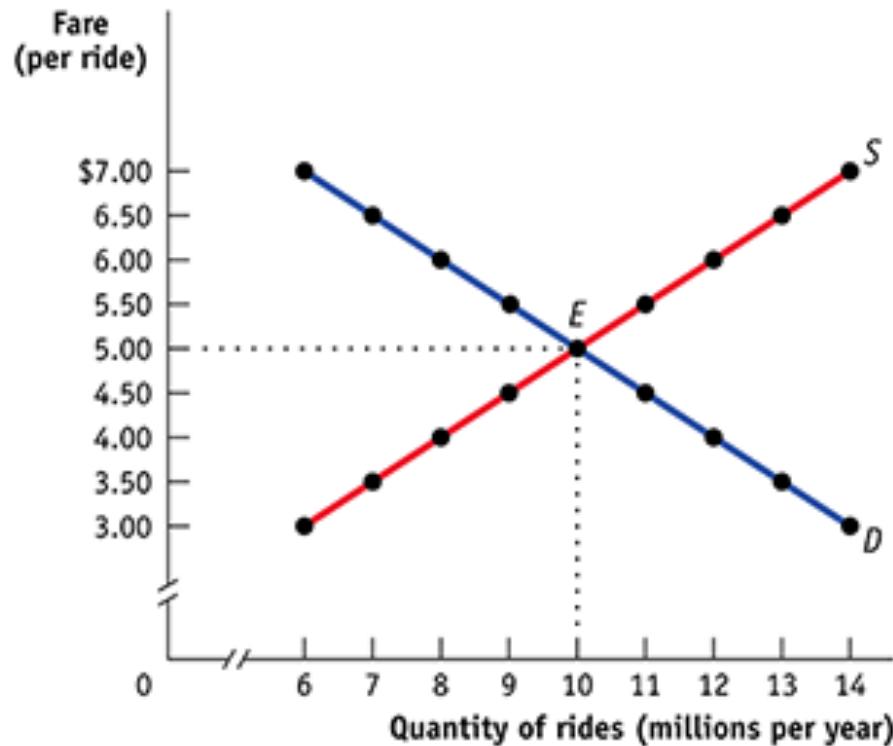
Quota: Welfare Analysis



New York City's Laws Create Shortages of Licensed Taxicabs and Housing



Market for Taxi Rides



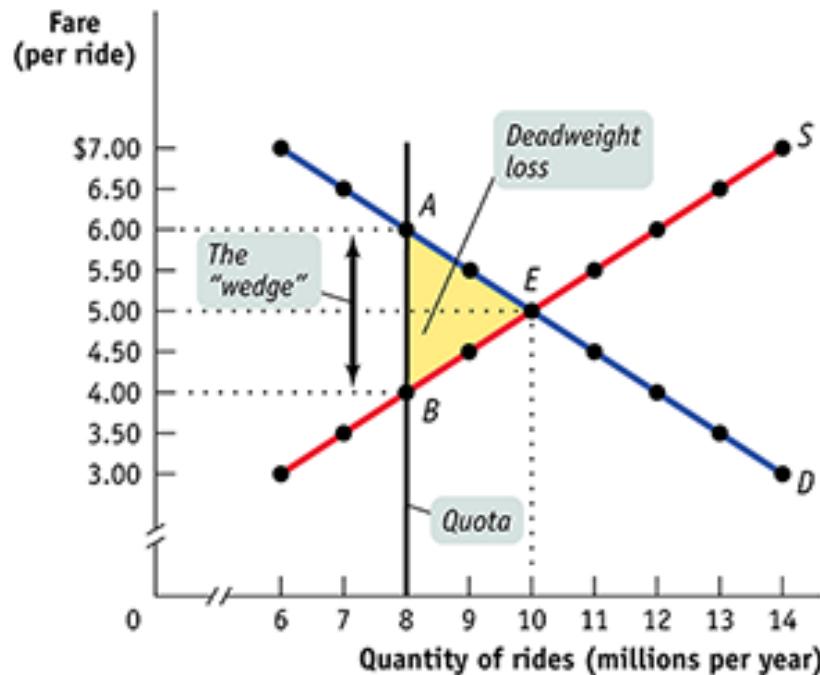
Fare (per ride)	Quantity of rides (millions per year)	
	Quantity demanded	Quantity supplied
\$7.00	6	14
6.50	7	13
6.00	8	12
5.50	9	11
5.00	10	10
4.50	11	9
4.00	12	8
3.50	13	7
3.00	14	6

FIGURE 5-8

Krugman/Wells, *Microeconomics*, 5e, © 2018 Worth Publishers

Without government intervention, the market reaches equilibrium with 10 million rides taken per year at a fare of \$5 per ride.

The Market for Taxi Rides with Quota



Fare (per ride)	Quantity of rides (millions per year)	
	Quantity demanded	Quantity supplied
\$7.00	6	14
6.50	7	13
6.00	8	12
5.50	9	11
5.00	10	10
4.50	11	9
4.00	12	8
3.50	13	7
3.00	14	6

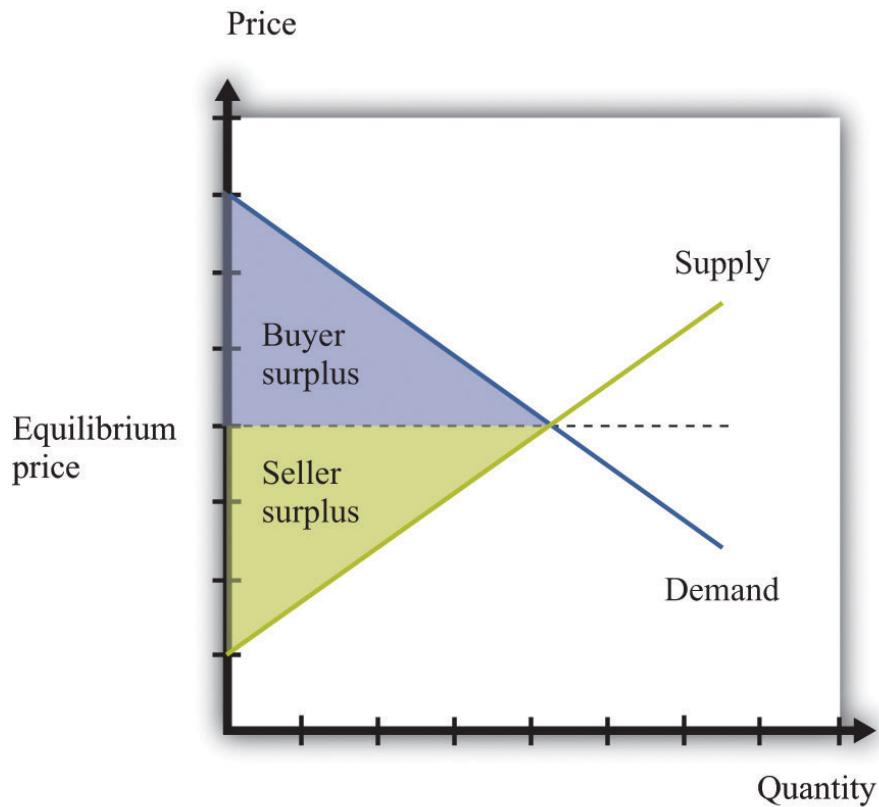
FIGURE 5-9
Krugman/Wells, Microeconomics, 5e, © 2018 Worth Publishers

Demand price: the price of a given quantity at which consumers will demand that quantity. Supply price: the price of a given quantity at which producers will supply that quantity. The **Quota Rent**: the difference between the demand price and the supply price at the quota limit. Equal to the market price of the license when the license is traded.

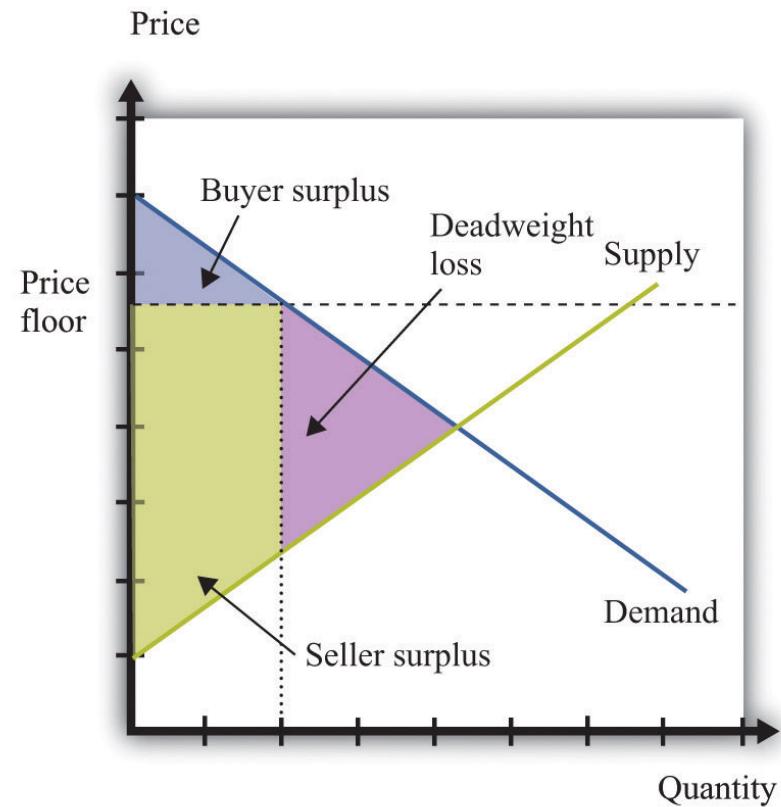
Summary: Price Control & Quota

- Price ceilings , floors and quotas all decrease the amount traded and therefore create deadweight loss.
- A price ceiling pushes the price of a good down; fewer sellers will want to sell. A price floor pushes the price of a good up; fewer buyers will want to buy. A quota reduces sales.
- If sellers don't want to sell as much as buyers want to buy, it's the sellers who determine the actual quantity sold, because buyers can't force unwilling sellers to sell and vice versa.
- Like price controls, quotas impose losses on society, in terms of deadweight loss, and create Incentives for illegal activities and black markets. Unlicensed cabs are a side effect of quantity controls... but also an opportunity for alternate models like Uber and Lyft.

Price Floor and Market Welfare

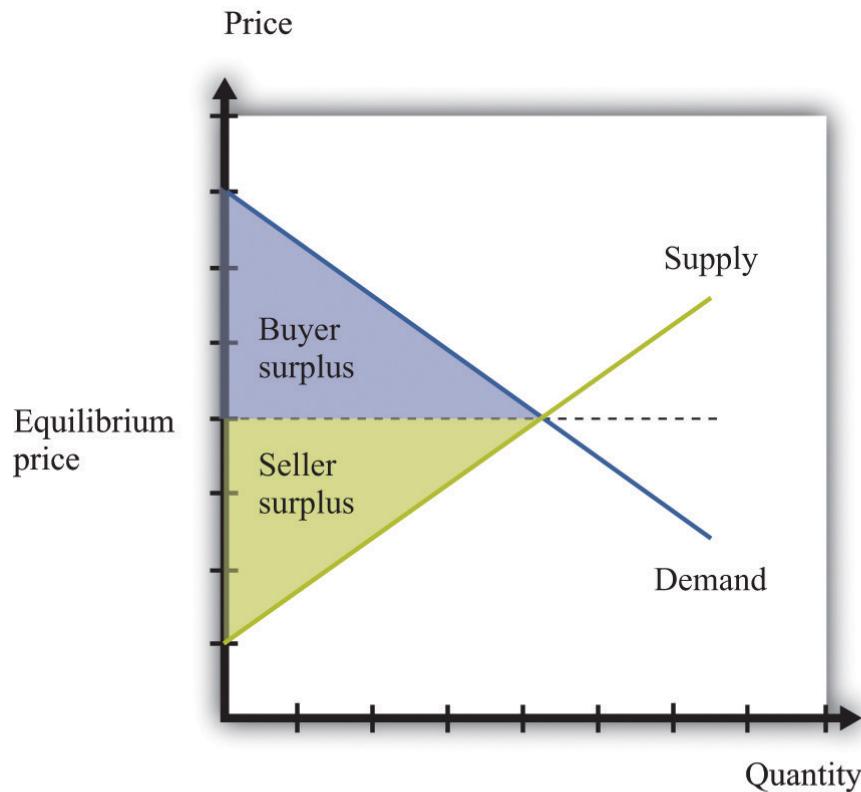


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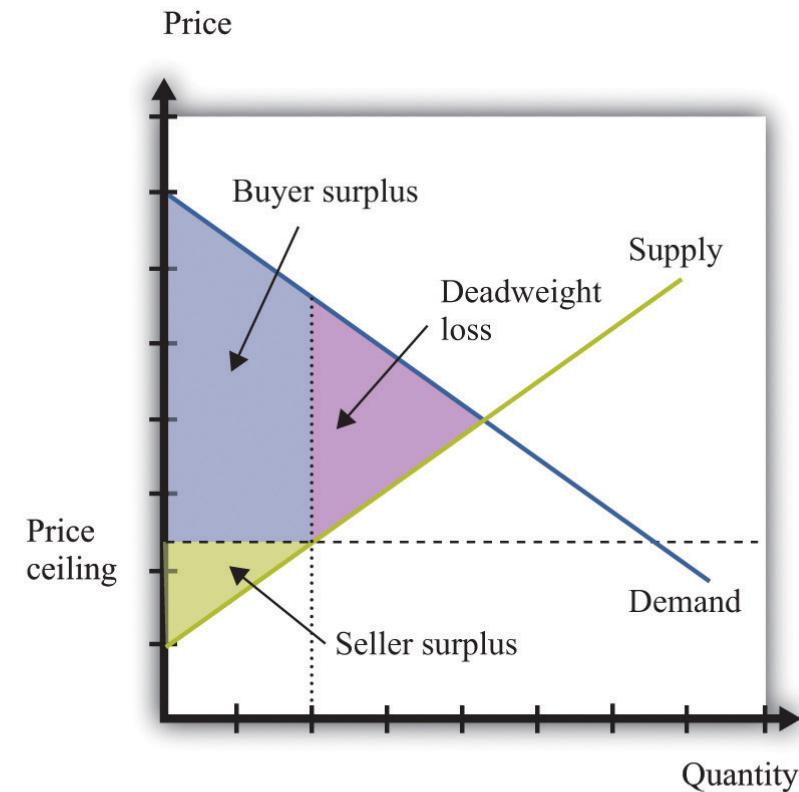


(b)

Price Ceiling and Market Welfare

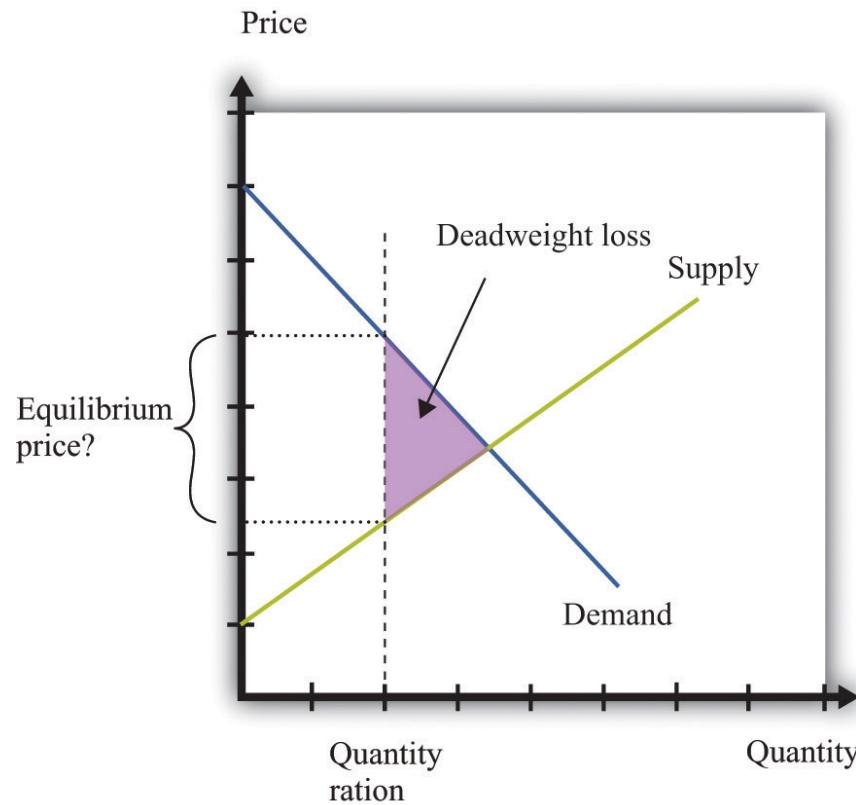


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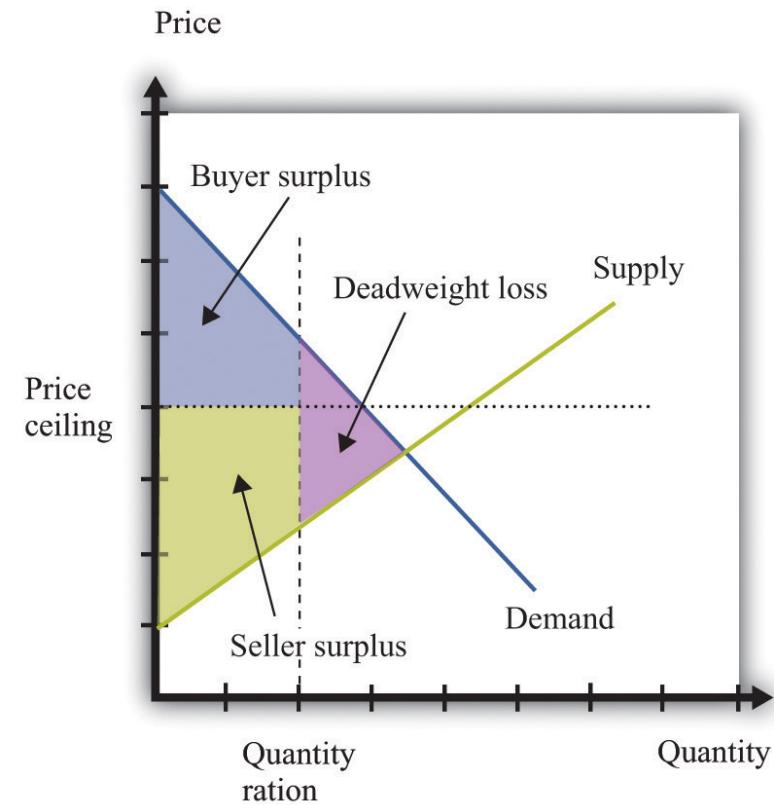


(b)

Quantity Control and Market Welfare

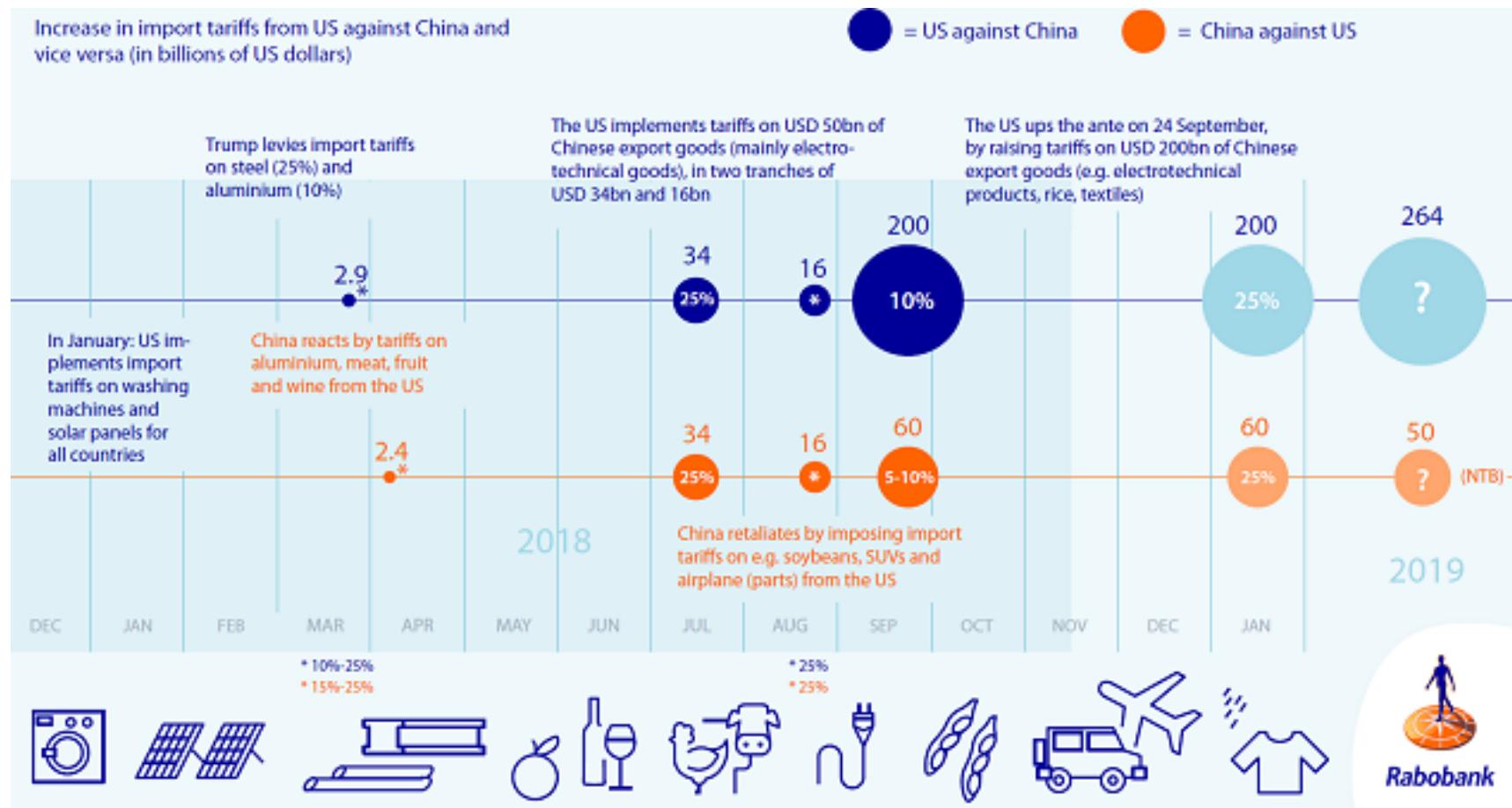


(a)

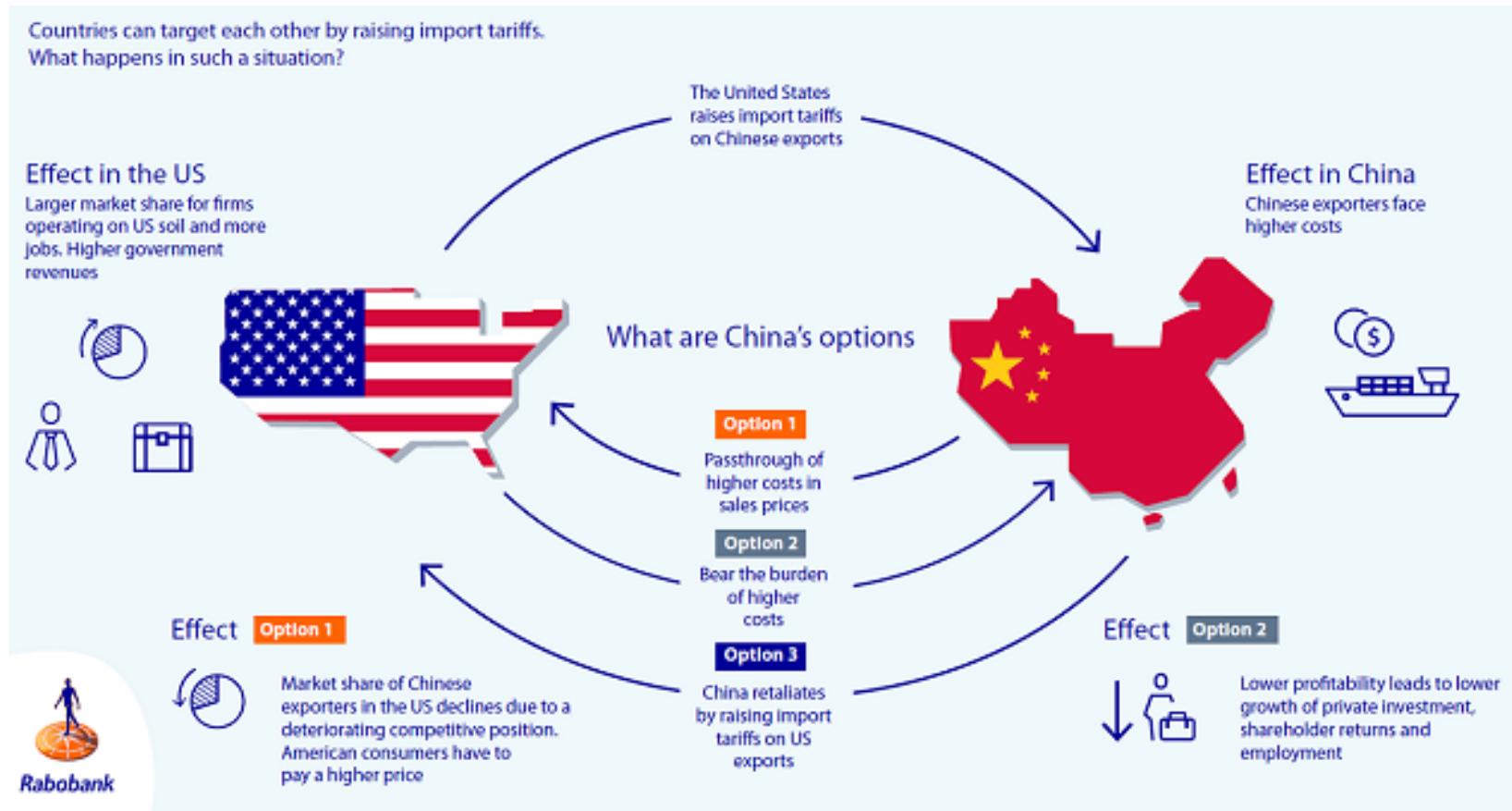


(b)

2018-2019 U.S.-China Trade War



Mechanisms behind the Trade War



What to Know About Trump's Trade Wars

1



Trump's trade wars were part of his strategy to create jobs and lower U.S. trade deficit

2



The trade wars started a global tariff on steel, a tariff on European cars, and tariffs on Chinese imports

3



These tariffs imposed by the U.S. caused global stock markets to fall

4



In retaliation, other countries formed trade agreements while excluding the United States

5



Domestically, Trump's trade wars caused job loss and prevented innovation

6



In the long term, trade wars hinder both American and international economic growth

Trump's Latest Trade War Escalation Will Push Average Tariffs on China Above 20 Percent

38.6%

If China were not a member of the WTO

Announced on August 1, 2019

Threatened scenario

27.8%

+6.3pp
Section 301

21.5%

+3.2pp
Section 301

18.3%

+5.9pp
Section 301

12.4%

+8.5pp
Section 301

3.1%

MFN tariff

+0.8pp

Other tariffs

2017

2018

Section 301: 10% tariff on \$200 billion; 25% tariff on \$50 billion

May 10, 2019

Section 301: 10% tariff on \$200 billion raised to 25%

September 1, 2019

Section 301: new 10% tariff on \$300 billion

Pending

Section 301: 10% tariff on \$300 billion raised to 25%; almost all US imports from China face 25% tariff

US-China trade war tariffs: An up-to-date chart

a. US-China tariff rates toward each other and rest of world (ROW)



b. Percent of US-China trade subject to tariffs



2018

February 7
US Section 201 tariffs on solar panels and washing machines

July 6
US Section 301 tariffs of 25% (\$34 billion, List 1) and China's retaliation (\$34 billion)

March 23
US Section 232 tariffs on steel and aluminum

August 23
US Section 301 tariffs of 25% (\$16 billion, List 2) and China's retaliation (\$34 billion)

April 2
China's retaliation to US Section 232 tariffs

September 24
US Section 301 tariffs of 10% (\$200 billion, List 3) and China's retaliation (\$60 billion)

May 1
China's MFN tariff cut on pharmaceuticals

November 1
China's MFN tariff cut on industrial goods

2019

January 1
China suspends retaliation against US autos and parts (Section 301) and reduces MFN tariff rates for 2019

July 1
China's MFN tariff cut on IT products

February 7
US Section 201 tariffs reduced on solar panels and washing machines in second year of policy

September 1
US Section 301 tariffs of 15% (subset of \$300 billion, List 4A) and China's retaliation on some US products (subset of \$75 billion)

June

US Section 301 tariffs (10% to 25% increase on List 3, effective June 15) and China's retaliation on some US products (subset of \$60 billion, effective June 1)

2020

January 1
China reduces MFN tariff rates for 2020

February 14
US Section 301 tariffs of 15% imposed on September 1, 2019 (List 4A) cut to 7.5%, and China's retaliatory tariffs imposed on September 1, 2019 cut in half

February 7
US Section 201 tariffs reduced on solar panels and washing machines in third year of policy

July 1
China's MFN tariffs cut on IT products

February 8
US Section 232 tariffs extended to imports that use aluminum and steel

2021

January 1
China reduces MFN tariff rates for 2021

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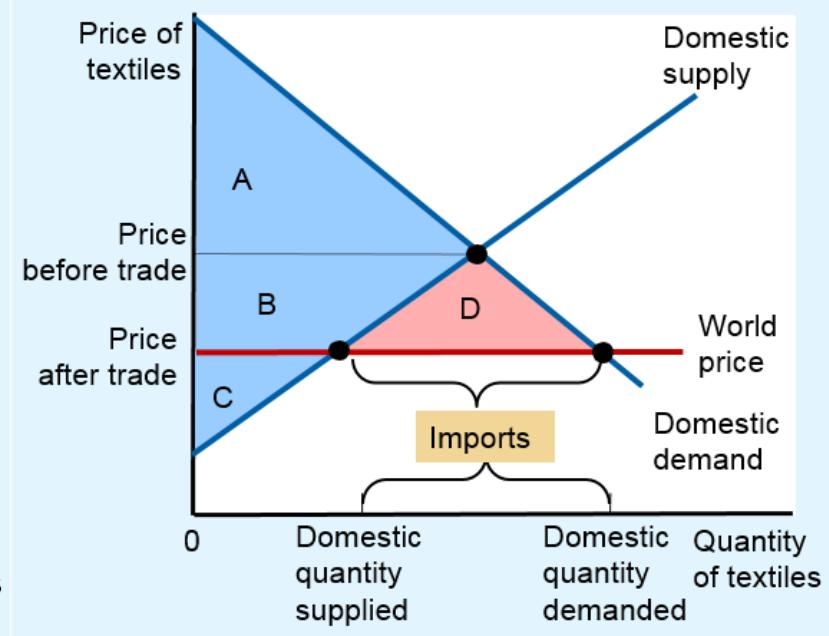
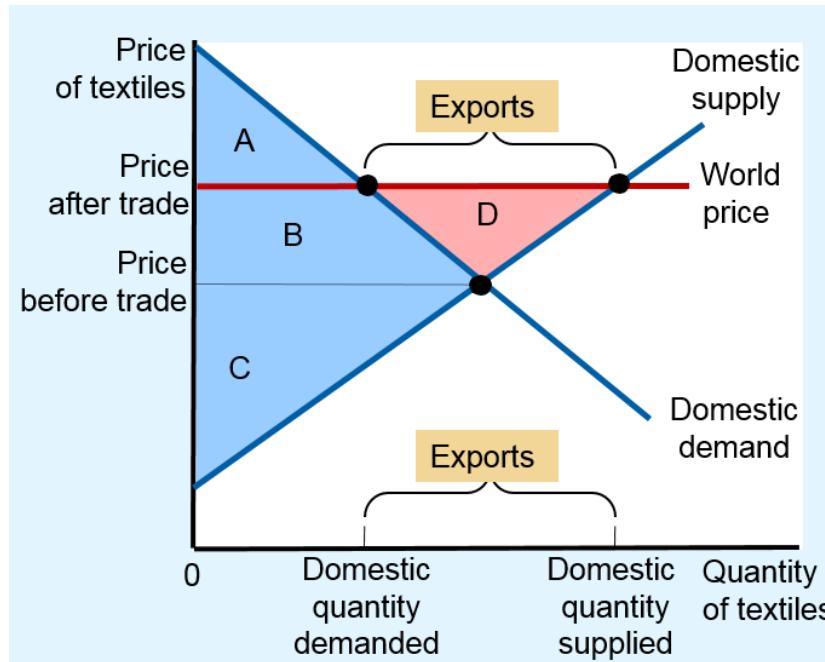
MFN = most favored nation

Note: Trade-weighted average tariffs computed from product-level (six-digit Harmonized System) tariff and trade data, weighted by exporting country's exports to the world in 2017.

Sources: Constructed by Chad P. Bown with data from Trade Map and Market Access Map (International Trade Centre, marketanalysis.intracen.org), China's Ministry of Finance's announcements, and USTR announcements.

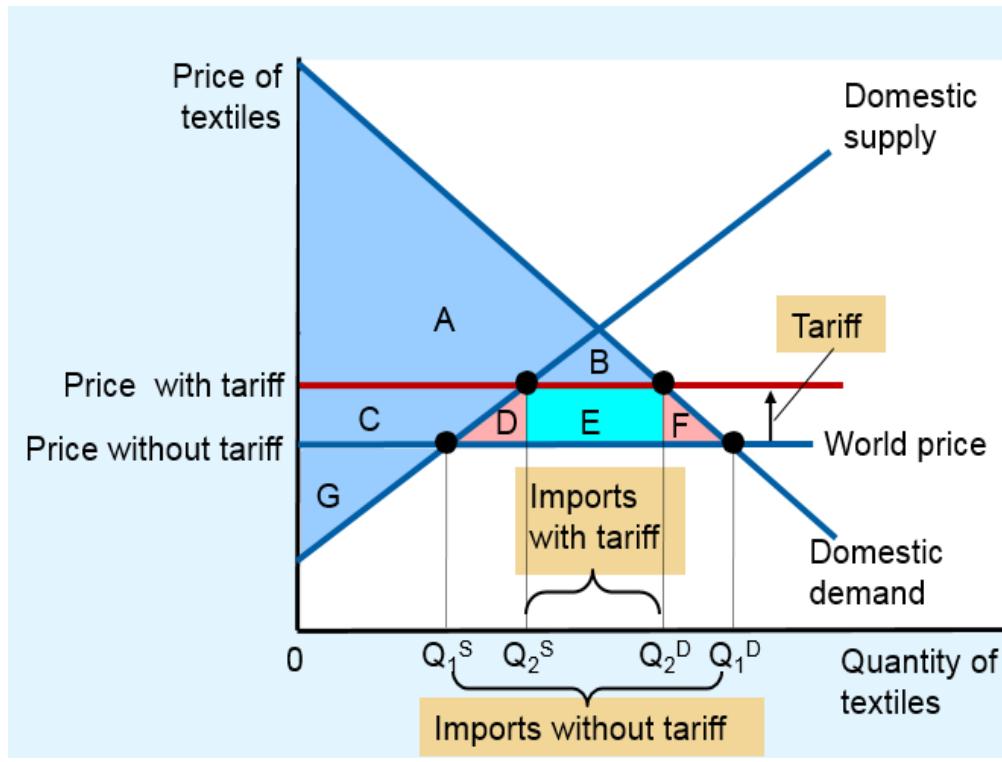
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International Free Trade Equilibrium



- Exporting country has a comparative advantage: $P^* < P_W$ & $Q_S > Q_D$
- Importing country has a comparative disadvantage: $P^* > P_W$ & $Q_D > Q_S$

Import Tariff: Welfare Effects



The market effects of a tariff:

- P rises by the size of the tariff
- Quantity demanded decreases
- Quantity supplied increases
- Quantity of imports falls
- Domestic sellers are better off due to higher P and Q_S
- Domestic buyers are worse off (higher P and lower Q_D)
- Government collect tariff
- Resource allocation is overall distorted and less efficient as opposed to the free trade case

A tariff, a tax on imports, reduces the quantity of imports and moves a market closer to the equilibrium that would exist without trade. Total surplus falls by an amount equal to area D + F. These two triangles represent the deadweight loss from the tariff. The area D + F shows the fall in total surplus and represents the deadweight loss of the tariff.

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- [2] Pindyck & Rubinfeld, Microeconomics, 9th edition. Pearson.
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- [8] The Two-Price System: U.S. Rationing During World War II
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Lecture Videos

[1] MRU Principles of Microeconomics - Price Controls 

<https://mru.org/courses/principles-economics-microeconomics/price-controls-definition-nixon>

<https://mru.org/courses/principles-economics-microeconomics/price-floor-example-minimum-wage>

[2] MRU Principles of Microeconomics - Tariffs and Protectionism 14:50 

<https://mru.org/courses/principles-economics-microeconomics/price-controls-definition-nixon>

[3] MRU Principles of Microeconomics – Taxes and Subsidies 

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