2. DEMAND AND SUPPLY

ECON1005 Principles of Economics I (Microeconomics)

1. DEMAND AND SUPPLY: A MODEL FOR COMPETITIVE MARKETS

- A **market** is a group of buyers and sellers trading a good or service, following specific rules and arrangements (i.e. *institutions*).

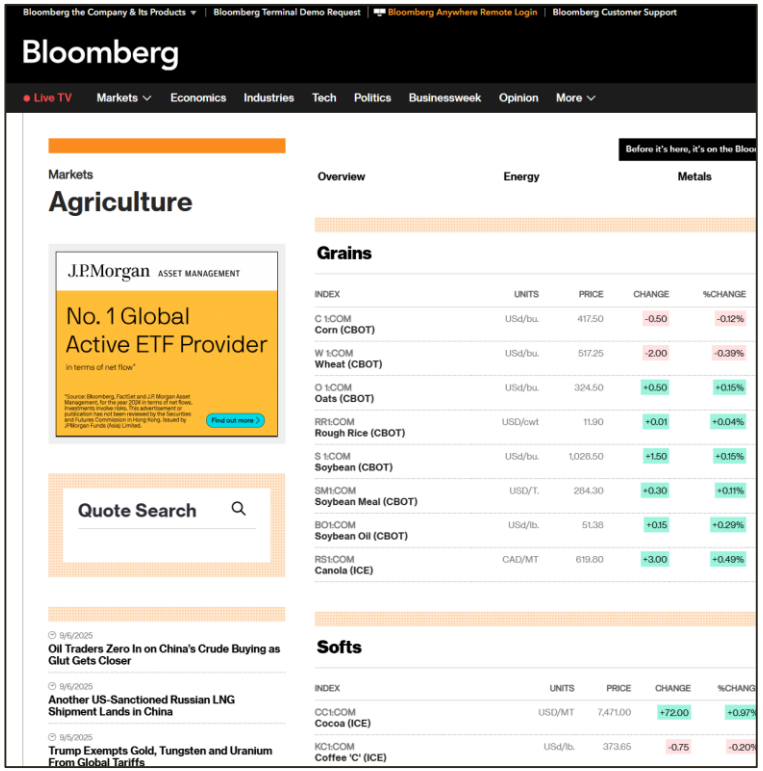
- The **demand and supply model** describes how consumers and producers interact and how price is determined in a *competitive market*.

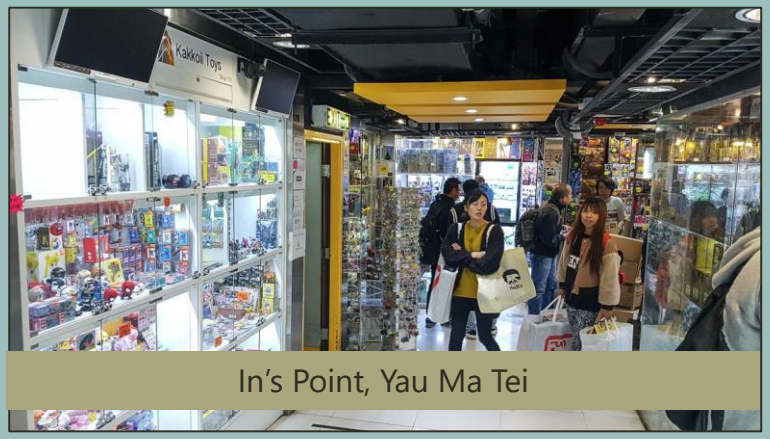
- A **competitive markets** (or perfectly competitive market or perfect competition) refers to a market with:
  - Large numbers of small buyers and sellers – price takers
  - Identical products
  - Perfect information
  - Free entry and exit
  - No transaction costs

- *Is perfect competition realistic?*

Why would economists study perfectly competitive markets that rarely exists in real world?

- Although few, if any, markets *are* perfectly competitive, MANY markets **come close**!
  - Commodities: Agriculture. Energy, Metals, …
  - Financial Trading: Stock, Currency, …
  - Local wholesale and retail: Seafood market, local wet markets, toys…
  - Online markets: Carousell HK, Taobao, eBay …
- The model for competitive markets is a useful approximation of how these actual markets work.





In's Point, Yau Ma Tei



Sam Shing Hui Seafood Market

2. DEMAND: HOW DO BUYERS BEHAVE?
2.1 *INDIVIDUAL* DEMAND

- The **quantity demanded** of a good is the amount of a good that an individual consumer is *willing* and *able* to buy over a given time period.

- To represent the relationship between the quantity demanded for a good and its many influencing factors, economists use an *individual* **demand function** :

$$Q^d = D(p, p_y, Y, \dots)$$

Ceteris Paribus (Other things remain constant)

- Graphically, a **demand curve** shows the relationship between the quantity demanded for a good and its price, *ceteris paribus*.
  - **Demand schedule**: the representation of the demand curve in table form.

- ***How would an increase in price affect the quantity demanded for a good?***
  - The **Law of Demand**: The lower the price, the greater the quantity demanded, *ceteris paribus* (all else remains unchanged).

Consumer A's demand for cola can be represented by the following demand schedule, demand function and demand curve equivalently:

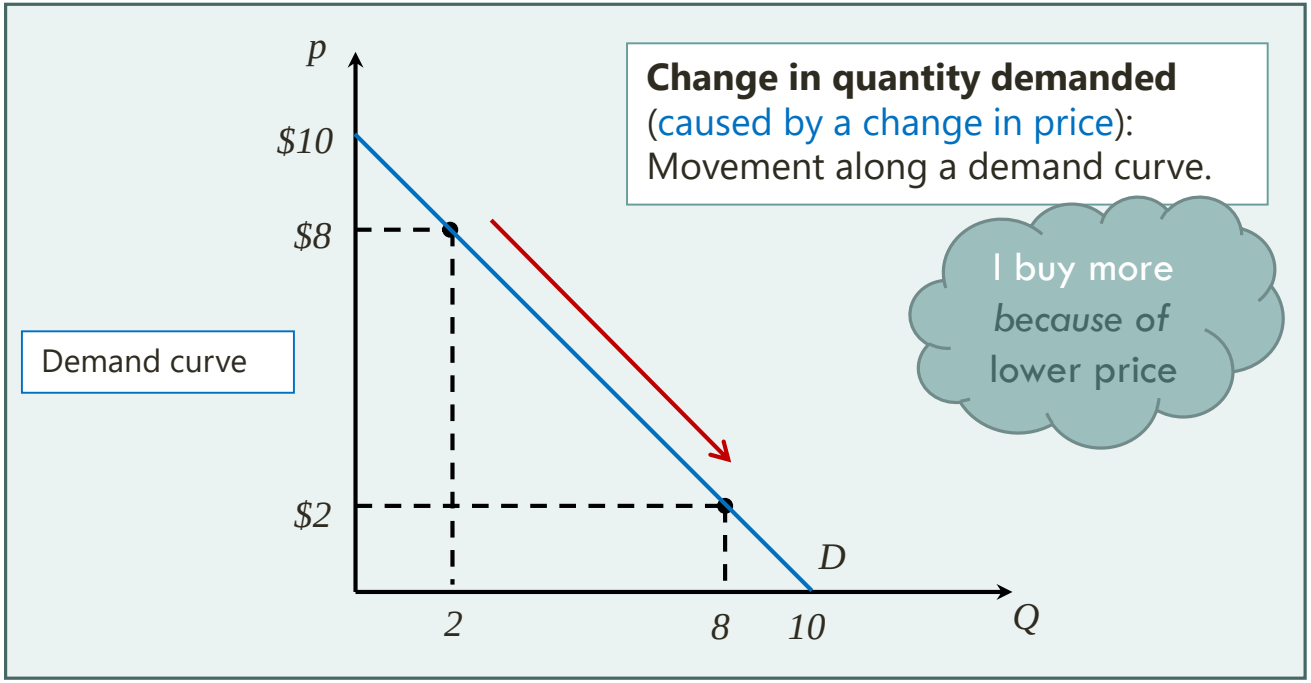
Price of cola per can ($)	Quantity of cola demanded per week
0	10
2	8
4	6
6	4
8	2
10	0

Demand schedule

Quantity demanded (at P = $4)

Demand function

$$Q^d = 10 - p$$



Other factors that affect the demand:

- Price of related goods.

APPLICATION:
NEW YORK'S CRACKDOWN ON AIRBNB



- New York City will soon **enforce strict new regulations limiting short-term rentals on platforms like Airbnb**.
- Hosts must register with the city to rent out their homes short-term.
  - Those who break the rules can be fined up to $5,000 (for repeat offenses)
  - Platforms (like Airbnb) can be fined up to $1,500 for illegal listings
- Thousands of Airbnb listings are expected to be removed.
- *Who suffers? Who benefits?*
  - Airbnb calls the new rules a "de facto ban," and some critics argue the city is bending to the lobbying of the hotel industry and locking out cheaper options for visitors.

(Source: New York City's Crackdown on Airbnb Is Starting. Here is What to Expect, *New York Times*, 5 September, 2023.)

Other factors that affect the demand:

- Price of related goods.
  - **Substitute**: Two goods are substitutes if they can be used in place of each other.
    - *How would an increase in price of its substitute affect the demand for a good?*

$$P_y \uparrow \; Q_y^d \downarrow \rightarrow Q_x^d \uparrow$$

  - **Complement**: Two goods are complements if they are often used together.
    - *How would an increase in price of its complement affect the demand for a good?*

$$P_y \uparrow \; Q_y^d \downarrow \rightarrow Q_x^d \downarrow$$

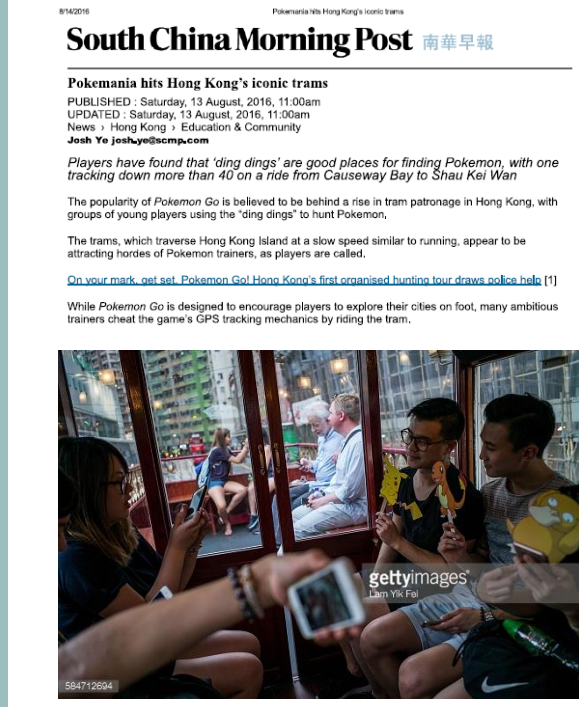


APPLICATION: POKEMON GO & TRANSPORTS . . .

- Tired from all the walking in ***Pokémon Go***?
- Some entrepreneurs offered **Uber-style rides**, for *Pokémon Go* players, charing US$25-35 per hour in cities like New York and Portland.
- In HK, players used **HK's iconic trams**, or **"ding ding"**, to catch *Pokémon*.
- During a 5-day *Pokémon Go* event in Tainan, Taiwan in 2018, 1.01 million visitors brought **NT1.5 billion (US$48 million) in business** to the local economy, about 6 – 8% of its usual annual tourism income!

What a "surprise" complement!

(Source: Taiwan hosts 2nd biggest Pokemon Go event in world, rakes in NT$1.5 billion, Taiwan News, 11 June 2018; Pokemania hits Hong Kong's iconic trams, *SCMP*, 13 August, 2016; Entrepreneurs are offering Uber-style rides for Pokemon Go players, www.gizmodo.com, 11 July, 2016.)



8/14/2016 Pokemania hits Hong Kong's iconic trams

South China Morning Post 南華早報

Pokemania hits Hong Kong's iconic trams

PUBLISHED : Saturday, 13 August, 2016, 11:00am
UPDATED : Saturday, 13 August, 2016, 11:00am
News › Hong Kong › Education & Community
Josh Ye josh_ye@scmp.com

Players have found that 'ding dings' are good places for finding Pokemon, with one tracking down more than 40 on a ride from Causeway Bay to Shau Kei Wan

The popularity of *Pokemon Go* is believed to be behind a rise in tram patronage in Hong Kong, with groups of young players using the "ding dings" to hunt Pokemon.

The trams, which traverse Hong Kong Island at a slow speed similar to running, appear to be attracting hordes of Pokemon trainers, as players are called.

On your mark, get set. Pokemon Go! Hong Kong's first organised hunting tour draws police help [1]

While *Pokemon Go* is designed to encourage players to explore their cities on foot, many ambitious trainers cheat the game's GPS tracking mechanics by riding the tram.





Other factors that affect the demand:

- Income and wealth.
  - *How would an increase in income (or wealth) affect the demand for a good?*
    - **Normal good**: A good that people demand more of as their income increases.
    - **Inferior good**: A good that people demand less of as their income increases.







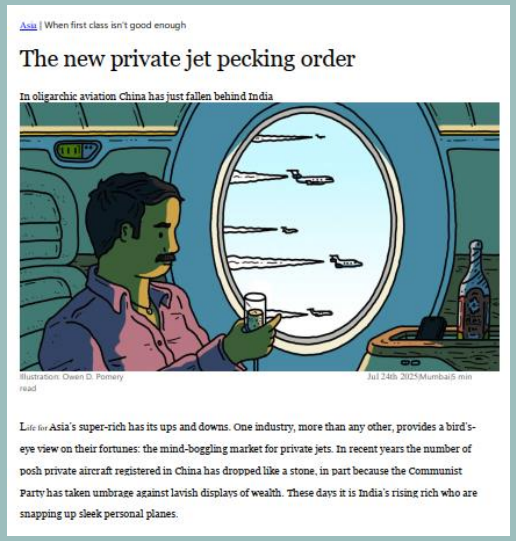
APPLICATION: INFINITE JETS

- The prices of **private jets** is between $3m and $100m, depending on their size, range and age. The annual running cost is between $1m and 1.5m (fuel, pilots, parking,…).
  - An example of a luxury good, a specific kind of normal good

- In **China**, private jet fleet **SHRUNK by 25%** (2021-24), down to 249 jets
  - **China lost nearly 1/3 of its billionaires since 2021**!
  - property crash and government anti-luxury crackdown.

- In **India**, private jet fleet **SOARED by 25%** (2020-24), now at 168 jets
  - Monthly private flights in India TRIPLED: now over 2400 per month
  - India's rich are buying fast!
  - **Booms in new millionaires**, not just mega-tycoons, also expanding to consumers from construction, jewellery, pharmaceuticals and education.

(Source: Infinite jets, *The Economist*, 26 July, 2025.)



Asia | When first class isn't good enough

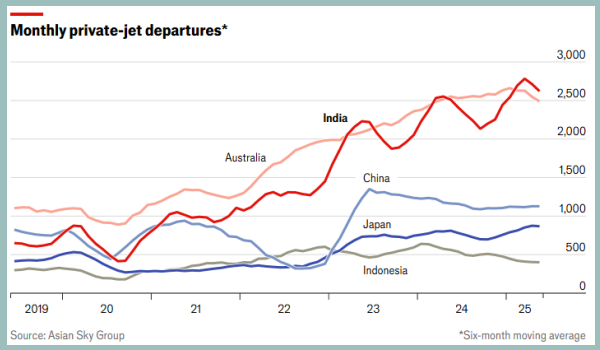
The new private jet pecking order

In oligarchic aviation China has just fallen behind India

Illustration: Owen D. Pomery

Jul 24th 2025|Mumbai|5 min read

Life for Asia's super-rich has its ups and downs. One industry, more than any other, provides a bird's-eye view on their fortunes: the mind-boggling market for private jets. In recent years the number of posh private aircraft registered in China has dropped like a stone, in part because the Communist Party has taken umbrage against lavish displays of wealth. These days it is India's rising rich who are snapping up sleek personal planes.



- Other factors that affect the demand:
  - Expected future price.
    - *If a consumer expects the price to rise next week, how would it affect the current demand for the good?*



Example: **Pop Mart's new mini Labubu dolls sell out almost instantly in China, US, Japan and South Korea**

"I'm going to sell the whole package. I'm not keeping the Labubus for myself," said Ms Wang, who has made more than US$7,000 buying and reselling Labubus and other Pop Mart toys over the past year.

(Source: *The Straits Times*, 29 August, 2025.)

  - Tastes or preferences.



Example: During the **COVID-19 pandemic**, demand for **Nintendo's Switch** console and **Animal Crossing video game** skyrocketed. The company's **profits surged more than 400%** in its fiscal first quarter ended June 30.

The company shipped more than 5.7 million Switch consoles in the quarter, up 166.6% year over year.

Nintendo's Animal Crossing: New Horizons video game for the Switch sold 10.6 million copies in the June quarter to reach 22.4 million lifetime sales.

(Source: *S&P Global*, 6 August, 2020).

  - Other factors.



Example: A Japanese manga artist, Tatsuki Ryo, predicted a mega-tsunami in Japan for July 5 2025 (**The Future I Saw**). As a result,

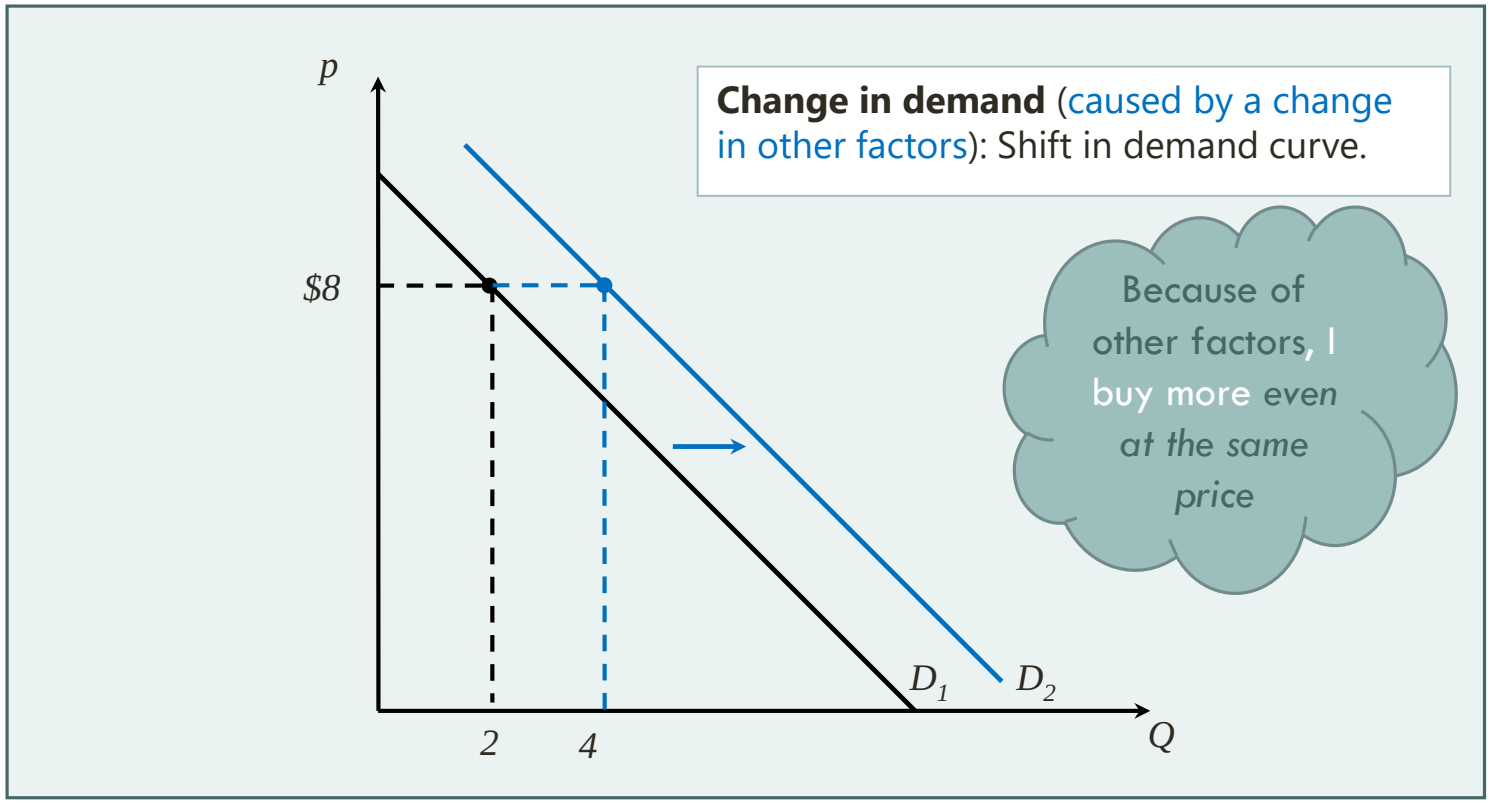
The **number of HK visitors going to Japan in June dropped by over one-third compared to the previous year**. Hong Kong Airlines suspended flight routes to Japan because demand fell so much.

Japan lost significant income: HK tourists spent HK$33bn (US$4 bn) there last year!

(Source: Very superstitious indeed, *The Economist*, 16 August, 2025).

2.1 *INDIVIDUAL* DEMAND

- Any change in the above "other factors (*non-own-price*)" will cause a change in demand that ***shift the demand curve*** (or change the demand schedule).



2.2 *MARKET* DEMAND

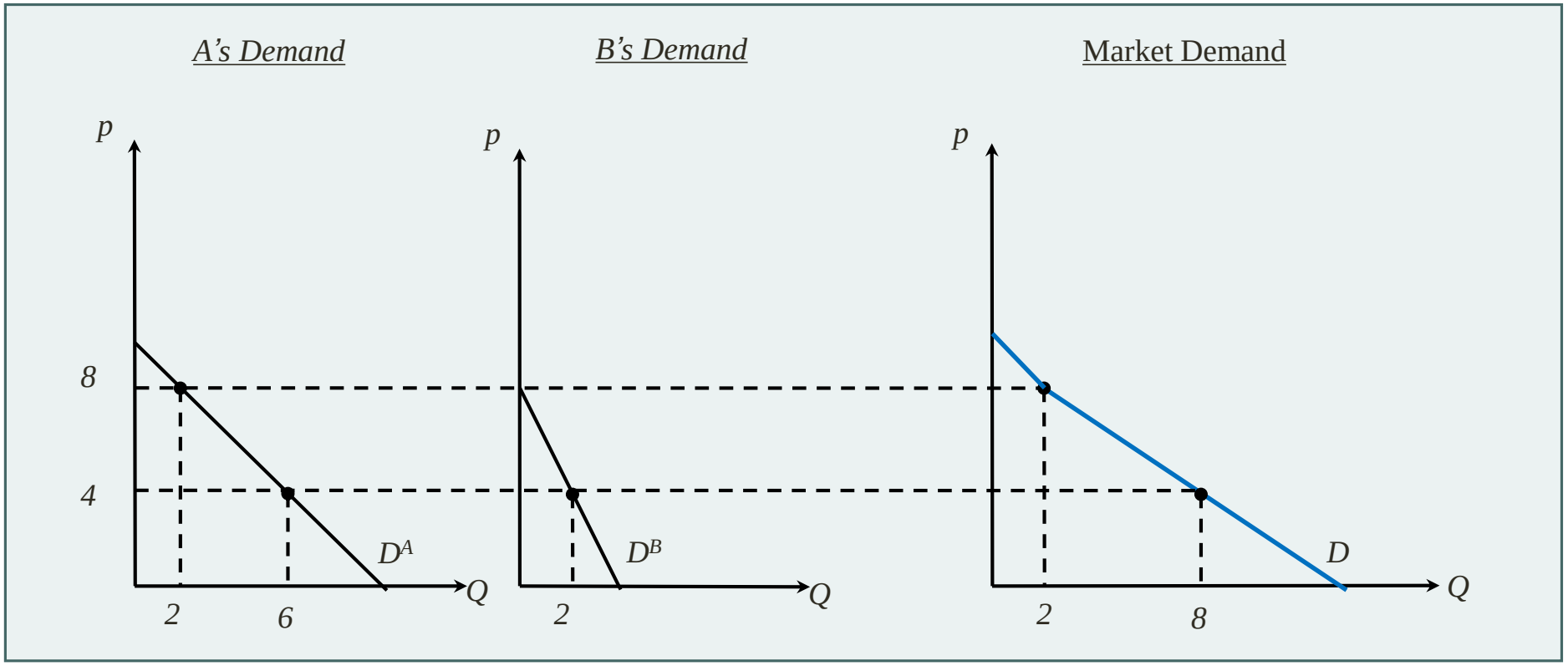
- The relationship between the total quantity demanded by *all* consumers and its price, ceteris paribus, is called the **market demand curve**.
  - Graphically, it is derived by ***horizontal summation*** of all individual demand curves in the market.

- Suppose there are only two consumers, consumer A and B, in the market, the market demand curve can be derived by horizontally summing the two individual demand curves.

Price of cola per can ($)	A's quantity of cola demanded per week		B's quantity of cola demanded per week		Market quantity of cola demanded per week
0	10	+	4	=	
2	8		3		
4	6		2		
6	4		1		
8	2		0		
10	0		0		

2.2 *MARKET* DEMAND

- Horizontal Summation:



- *How would an increase in the number of buyers affect the market demand curve?*

3. SUPPLY: HOW DO SELLERS BEHAVE?
3.1 *INDIVIDUAL* SUPPLY

Profit = Revenue - Cost

↑

Price x Quantity

- The **quantity supplied** of a good is the amount of a good that an individual firm is *willing* and *able* to sell over a given time period.

- To represent the relationship between the quantity supplied for a good and its many influencing factors, economists use an *individual* **supply function** :

$$Q^s = S(p, p_{inputs}, A, \dots)$$

Ceteris Paribus (Other things remain constant)

- Graphically, a **supply curve** shows the relationship between the quantity supplied for a good and its price, *ceteris paribus*.
  - **Supply schedule**: the representation of the supply curve in table form.

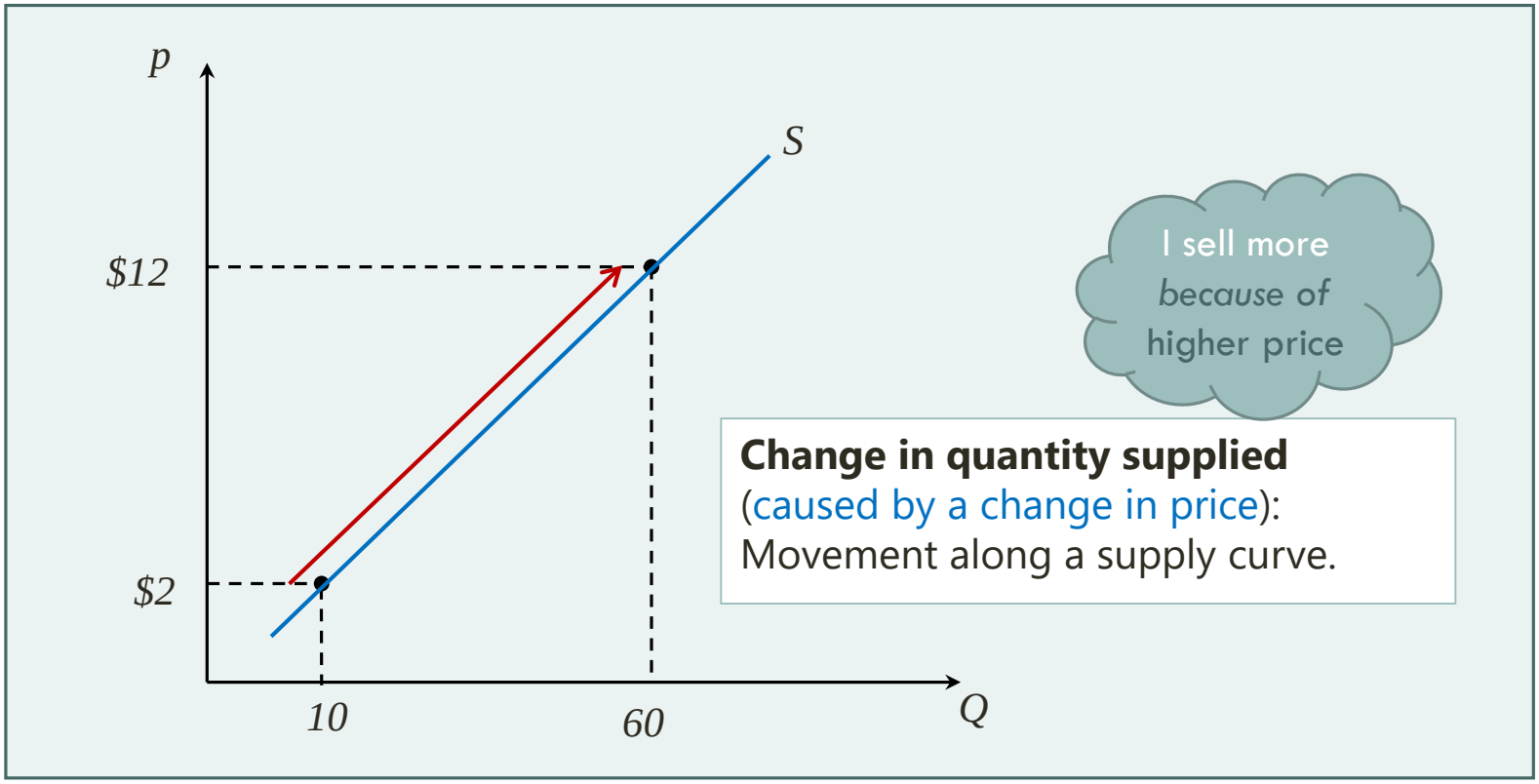
P = \$3, Q^s = 2

P = \$5, Q^s = 4

Unit	Unit Cost
1st	\$2
2nd	\$3
3rd	\$4
4th	\$5
5th	\$6

- ***How would an increase in price affect the quantity supplied of a good?***
  - The **Law of Supply**: In most cases, the higher the price, the greater the quantity supplied, *ceteris paribus* (all else remains unchanged).

3.1 *INDIVIDUAL* SUPPLY



3.1 *INDIVIDUAL* SUPPLY

Why would be a firm willing to produce more even at the same price?

Unit	Unit Cost
1st	$2
2nd	$3
3rd	$4
4th	$5
5th	$6

$P = \$4, Q^s = 3$

$P = \$4, Q^s = 4$

- Other factors that affect the supply:
  - Input prices (e.g. wages, price of raw materials,...)
    - *How would an increase in input prices affect the supply of a good?*
  - Price of related goods.
    - **Substitute in production**: Two goods are substitutes in production if they are produced using the same inputs (alternate goods or same goods in alternate markets).
      - *How would an increase in price of its production substitute affect the supply of a good?*



Call for action as wool flock and production hit 100-year lows

Sheep Central August 25, 2025

AUSTRALIA'S wool production is forecast to fall to levels not seen in more than 100 years, sparking calls for action from some industry figures.

From 1921 to 1924, greasy wool production fluctuated between 248.3 million kilograms to 290.4Mkgs.

Today, the Australian Wool Production Forecasting Committee said it has estimated 63 million sheep will be shorn in 2024/25 for 280.1 Mkgs of greasy wool, 11.8 percent lower than in 2023/24. The AWPFC's forecast for the 2025/26 season is 251.5 Mkgs greasy, down 10.2pc on the 2024/25 forecast.

Shorn sheep numbers are forecast to reduce by 8.1pc to 57.9 million by 2025/26, the lowest number of sheep shorn since 1904, when 56.8 million sheep were put across shearing boards nationally.

Example: **Australia wool production hit 100-year lows!**

"Fewer sheep are expected to be shorn in all states as producers take advantage of the current strong sheep meat prices," said Mr Hill, Chairman of the Australian Wool Production Forecast Committee.

(Source: *Sheep Central*, 25 August, 2025.)

APPLICATION: FROM COLOURING IN TO CALLIGRAPHY


China | From colouring in to calligraphy

Savvy staff are moving from China's nurseries to its care homes

Last year there were 12m fewer pre-school pupils than in 2021

Photograph: Getty Images

Aug 3rd 2025|BEIJING|3 min read





Aging Population in China

- **12 million fewer** pre-school pupils in China since 2001!
- **360,000** pre-school teachers out of work (2021-2024)
- China's elderly population set to increase by **45 million** in 5 years

- As China's birth rate plunged, **nurseries closed**.
- Nursey teachers didn't just stay unemployed – they switched to elderly care homes, using similar skills (activities, crafts, care).
- Some nurseries even converted empty space into "elderly-care stations"

(Source: From classrooms to care homes, *The Economist*, 9 Aug, 2025.)

- Other factors that affect the supply:

  - Price of related goods.
    - **Substitute in production**: Two goods are substitutes in production if they are produced using the same inputs (alternate goods or same goods in alternate markets).
      - *How would an increase in price of its production substitute affect the supply of a good?*
    - **Joint supply**: Two goods are in joint supply if they are often produced together.
      - *How would an increase in price of another good in joint supply affect the supply of a good?*
  - Technology (i.e. more output with the same amount of inputs)
    - *How would a technological improvement affect the supply of a good?*
  - Expected future price.
    - *If a firm expects the price to rise next week, how would it affect the current supply for the good?*
  - Other factors (e.g. weather, …)



Example: Brazilian **beef and leather** companies fall short in tackling deforestation, a study finds.

(Source: *the Associated Press* , 12 November, 2024.)



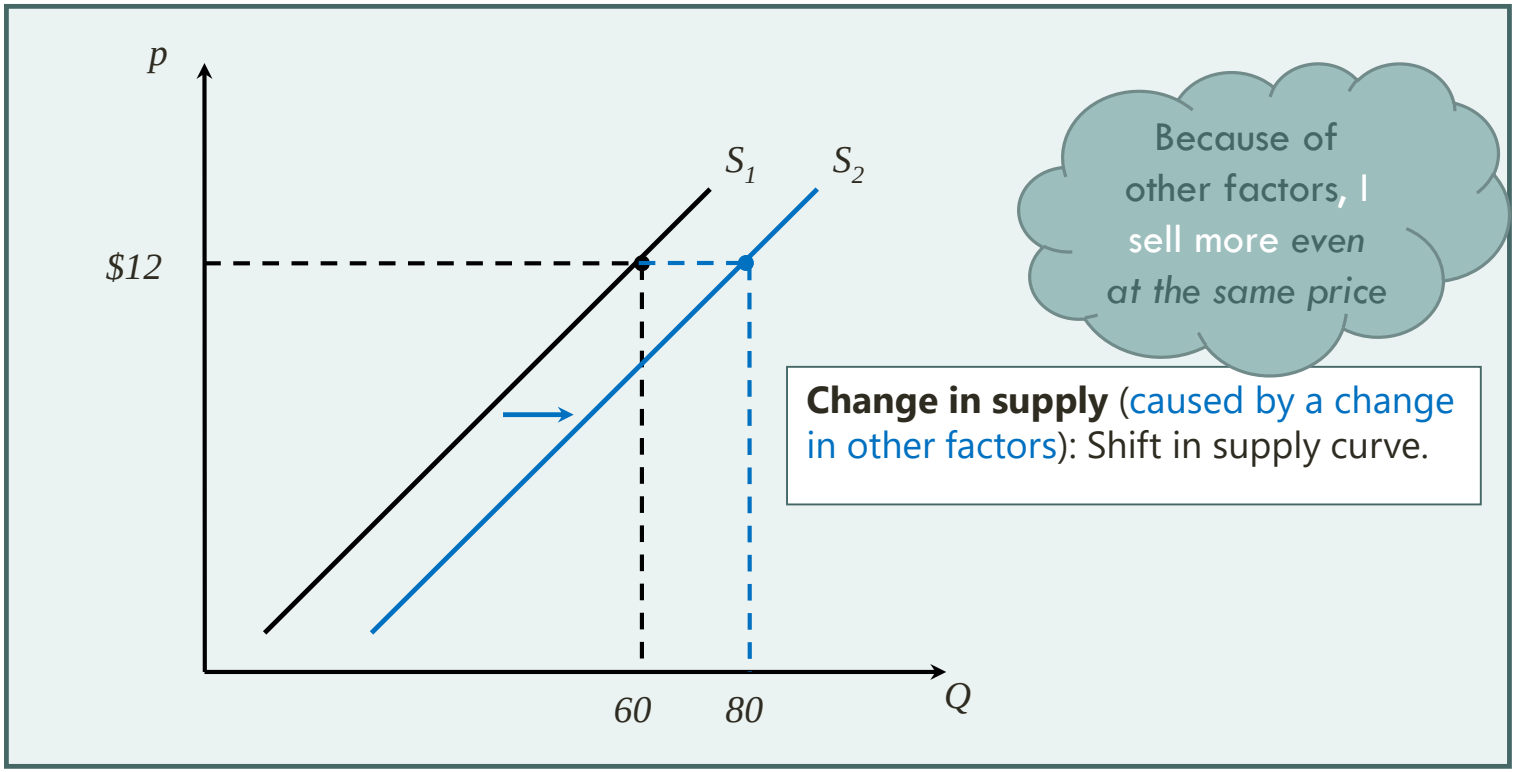
Example: In Animal Crossing game, players sell their fish/bug collected for funds



We buy fish/bugs at twice the normal prices

3.1 *INDIVIDUAL* SUPPLY

- Any change in the above "other factors (non-own-price)" will cause a change in supply that ***shift the supply curve***.



3.2 *MARKET* SUPPLY

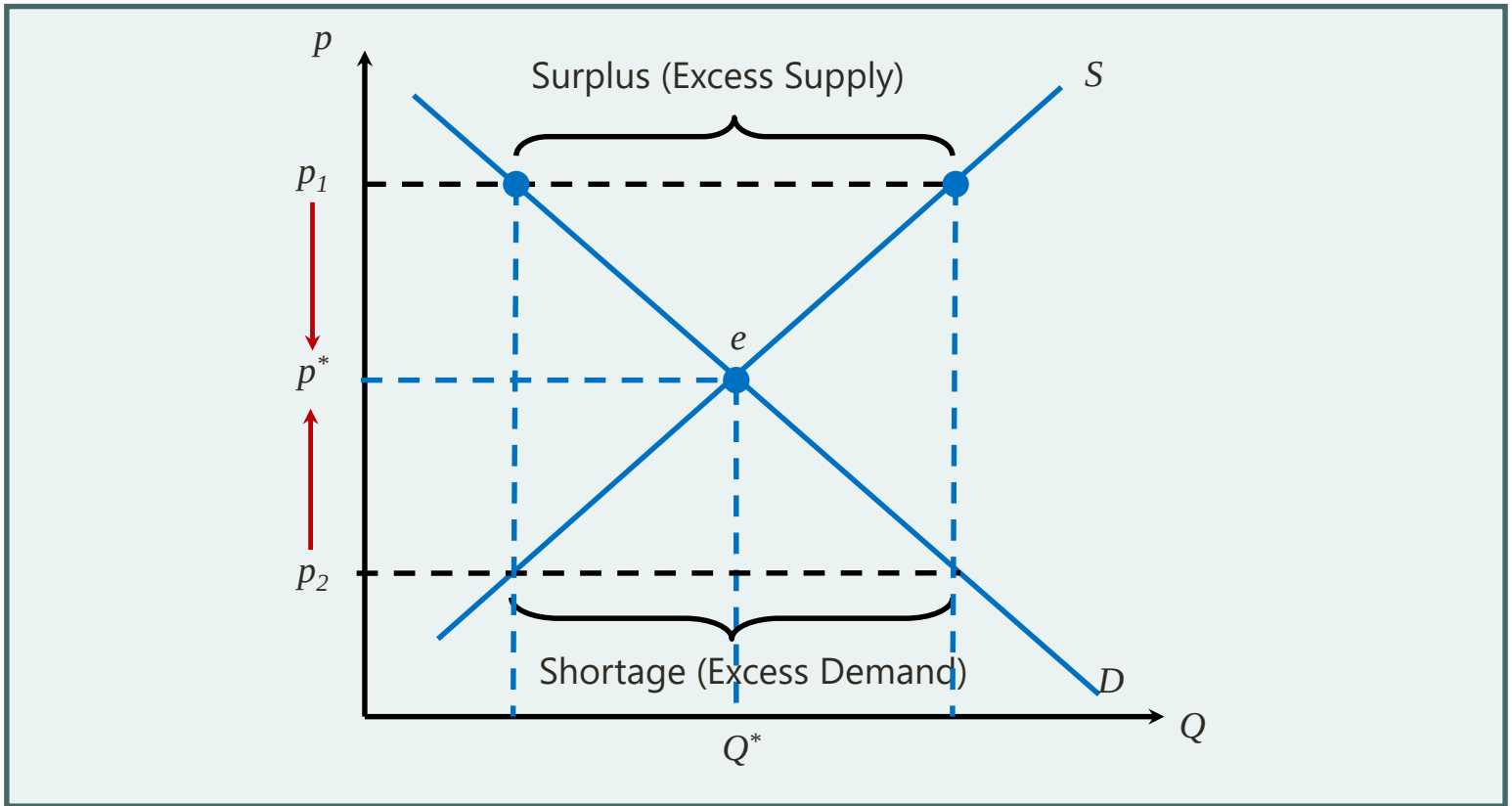
- The relationship between the total quantity supplied by *all* firms and its price, ceteris paribus, is called the **market supply curve**.
  - Graphically, it is derived by *horizontal summation* of all individual supply curves in the market.

- *How would an increase in the number of firms affect the market supply curve?*

4. MARKET EQUILIBRIUM

- **Equilibrium**: A situation in which there is no tendency for the market situation to change as long as the other variables remain unchanged.
- For the demand and supply model,

$$Q^d = Q^s$$



APPLICATION: FACE MASKS SHORTAGE

- Hong Kong faced **a shortage of face masks** during the COVID-19 outbreak.
- Long queue were spotted across the city.
- Mask prices soared, with some shops tripled the price.
  - HK$200 – 300 for a box of 50 surgical masks
  - HK$60 for an N95 mask.

(Source: *SCMP*, 24 Jan, 2020.)



Source: South China Morning Post, 24 Jan, 2020.

Hong Kong face mask prices soar as residents scramble to stock up amid Wuhan coronavirus fears

- Some pharmacies have tripled prices since cases were confirmed inside the city, residents told the Post
- Meanwhile, several district councils have approved funding to get masks in hands of city's poor and elderly

Kanis Leung and Alvin Lum
Published: 4:02pm, 24 Jan, 2020



Residents stock up on masks at a pharmacy in Mong Kok. Photo: K.Y. Cheng

4. MARKET EQUILIBRIUM (USING ALGEBRA)

The world demand and supply curves for crude oil in 2000 were approximately estimated (by Nicholson and Snyder) to be:

$$Q^d = 85 - 0.4p \quad \text{Demand function}$$

$$Q^s = 55 + 0.6p \quad \text{Supply function}$$

where p is the price of crude oil per barrel (measured in US$) and Q is the quantity of crude oil (measured in millions of barrels per day.

In equilibrium, $Q^d = Q^s$

$$85 - 0.4p^* = 55 + 0.6p^*$$

$$p^* = \$30$$

$$Q^* = 85 - 0.4(\$30) = 73$$

This solution is approximately what was observed in crude oil markets during the period 2000 – 2002 – price was about $30 per barrel, and about 70 – 75 million barrels were produced per day.

- *Does the crude oil price always stay at $30?*

APPLICATION: THE HORSESHOE CRABS BLOOD

- Every April in South California, hundreds of **horseshoe crabs** are caught. They, still alive, are strapped and drained of about a third of their blue-colored blood. Then they are returned to the ocean.
- ***A litre of their blood has increased to US$15,000 in recent years. Why?***


Source: The Economist

United States | Horseshoe crabs

In America, crab blood remains vital for drug- and vaccine-making

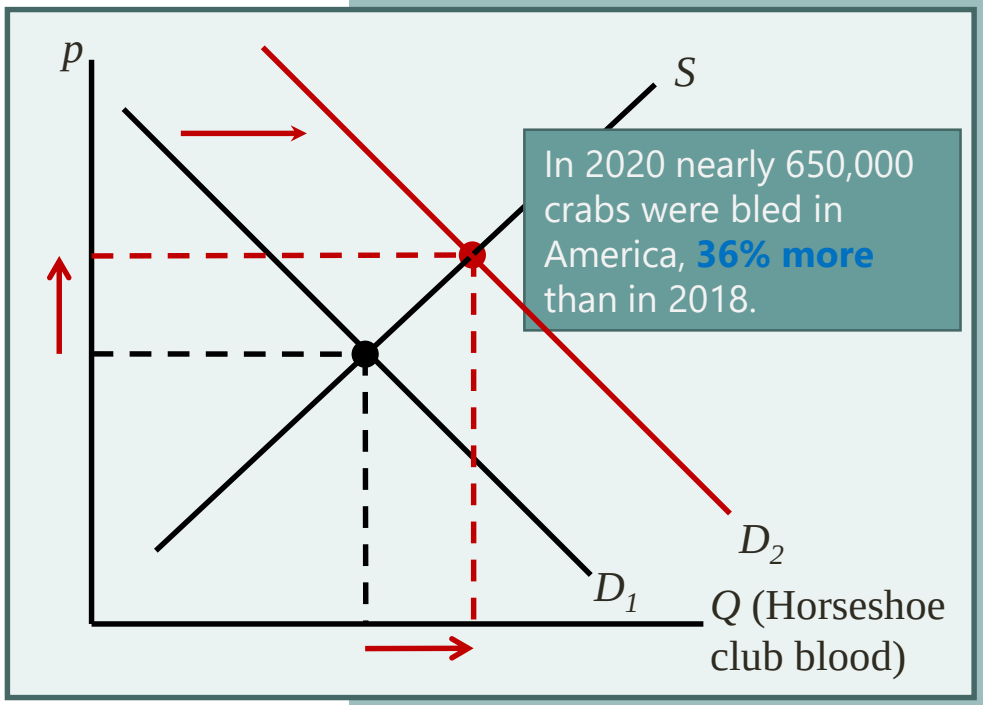
Most rich countries have already shifted to synthetic alternatives

ocean. This liquid is vital for America's biomedical industry. A litre of it goes for as much as $15,000.

Parts of modern medicine have been unusually reliant on the horseshoe crab. Its blood is the only known natural source of limulus amebocyte lysate (lal), an extract that detects endotoxin, a nasty and sometimes fatal bacterium. Drug firms use it to ensure the safety of medicines and implanted devices, including antibiotics, anti-cancer drugs, heart stents, insulin and vaccines. The immune cells in the crab's blood clot around toxic bacteria, giving a visual signal of unwanted contamination.

(Source: A rapacity for carapaces, *The Economist*, September 1st, 2022.)

- This America's biomedical industry uses the blood, the only known natural source of LAL, to test the safety of medicines and vaccines.
- As COVID vaccines ramped up, demand for the blue crab blood skyrocketed!
- Conservationists estimate that between 5% and 30% of crabs die after blood collection, threatening wild populations. Delaware Bay crab numbers down by 90% in 15 years.
- Europe, China & Japan have switched to a synthetic alternative known as rFA, which was created by cloning crab DNA – no crabs needed! Why isn't US switching faster?
  - rFC use is rising globally; US FDA approved its use in some cases but industry is slow to adopt!



APPLICATION: CALIFORNIA'S COMING BACON CRUNCH

- Bringing home the **bacon** is about to get harder in California. Why?
  - California passed a new law (Proposition 12) banning meat and eggs from animals kept in small cages – even for products imported into the state.
  - While other industries (e.g. egg, veal) adjusted more easily, the pork industry struggles to meet the new rules: pigs now need 24 sq. ft., not the usual 14 sq. ft. crates.
  - **This rule is part of a wider push for animal welfare – freeing animals from tight cages.**

(Source: California's coming bacon crunch, *The Economist*, Aug 21st, 2021.)



Source: The Economist, August 21st, 2021.

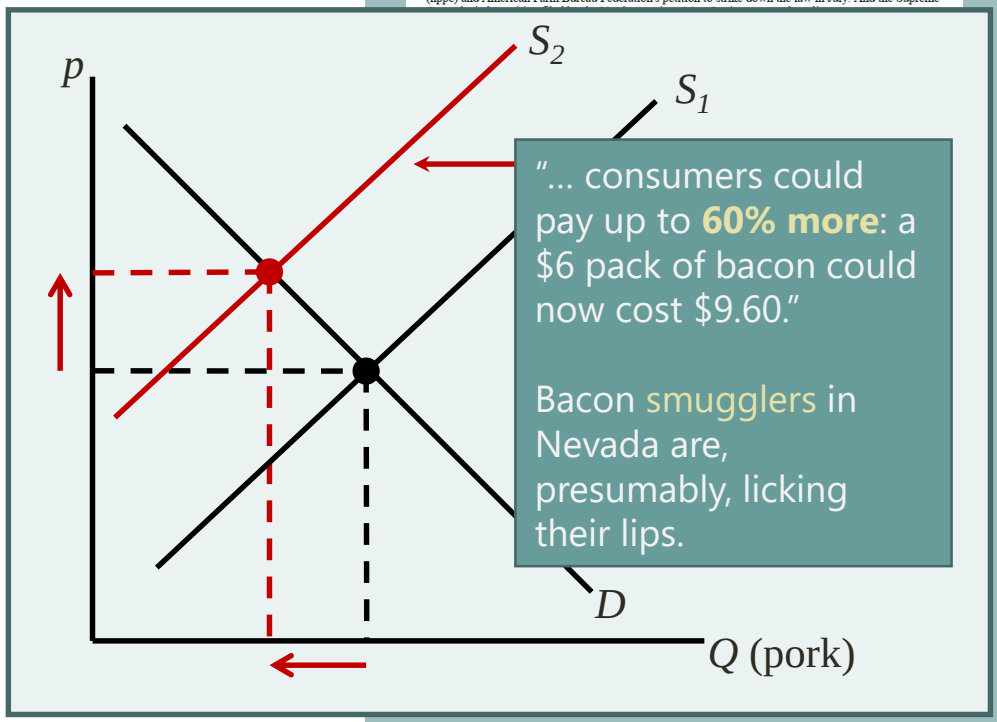
Hog tied

California's coming bacon crunch

Animal welfare regulations will push up the price of pork

California's law is the most impactful on the pork industry. As the largest consumer of pig products, 116m kilos per year (about 15% of all produced in America), California's standards have weight elsewhere.

The industry is, naturally, claiming that the law is unconstitutional. So far, challenges have been unsuccessful. The us Court of Appeals for the Ninth Circuit declined the National Pork Producers Council (nppc) and American Farm Bureau Federation's petition to strike down the law in July. And the Supreme



APPLICATION: PADDY PROBLEMS

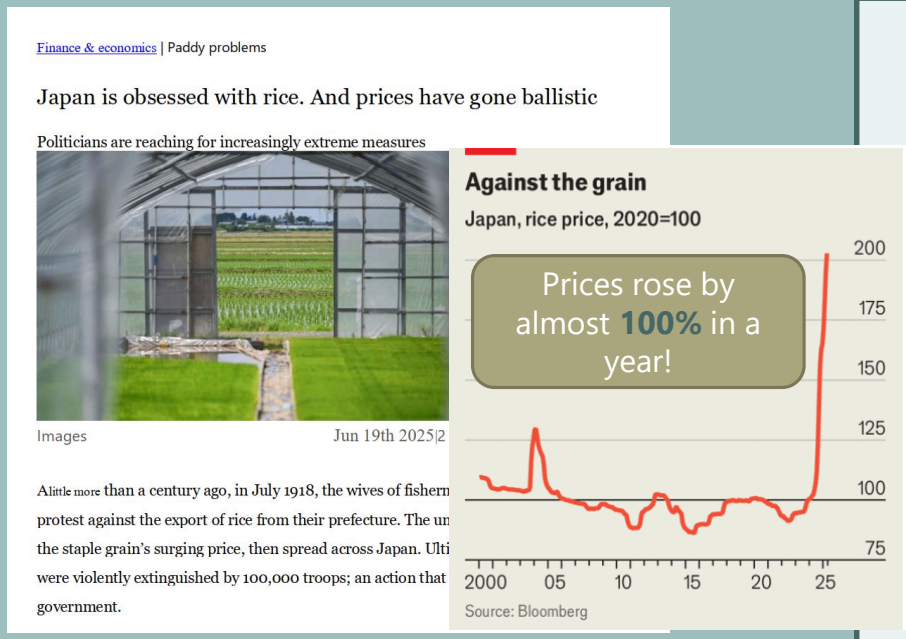
Japan grows 99% of the rice it consumes. What's behind Japan's rice shortage?

- In 2023, extreme heat devastated rice crops, resulting in very poor harvest
- People switched to rice as wheat prices soared (due to Ukraine war)
- Tourists returned and so restaurant restocked
- Households began hoarding rice after mega-earthquake warning and headlines about shortage

Even government's emergency rice reserves nearly ran out.

To calm the market, old rice reserves are being sold, including rice from 2 – 3 years ago

Japanese invented new words:
Komai ("old rice from last year")
Kokomai
Kokokomai



Finance & economics | Paddy problems

Japan is obsessed with rice. And prices have gone ballistic

Politicians are reaching for increasingly extreme measures

Images Jun 19th 2025|2

A little more than a century ago, in July 1918, the wives of fishern protest against the export of rice from their prefecture. The un the staple grain's surging price, then spread across Japan. Ulti were violently extinguished by 100,000 troops; an action that government.

Against the grain

Japan, rice price, 2020=100

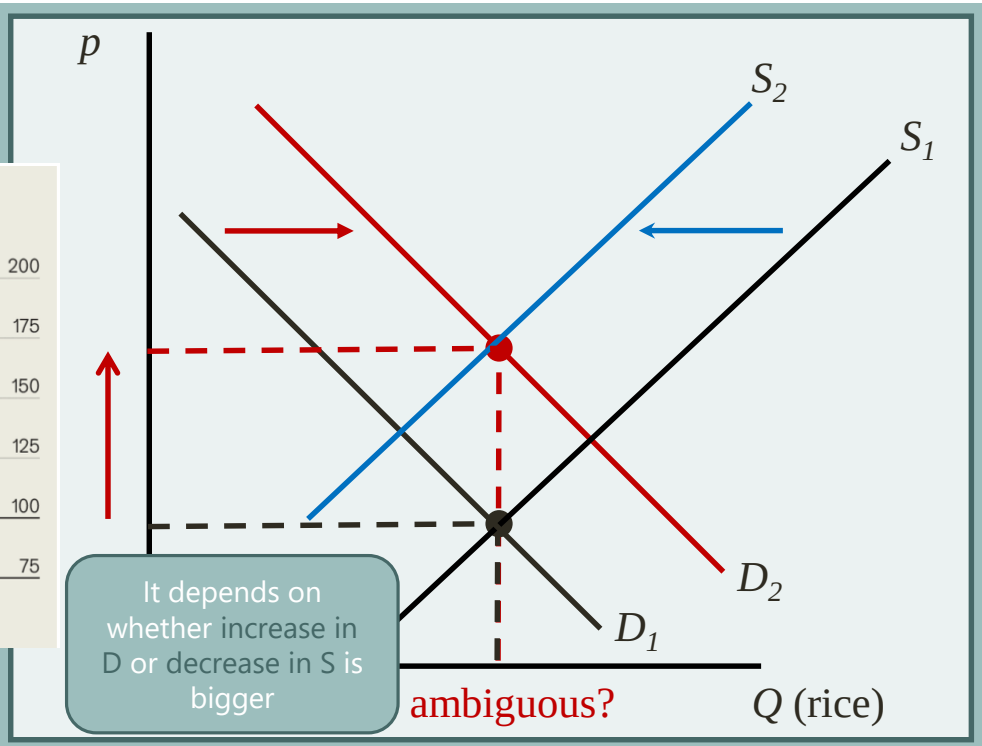
Prices rose by almost **100%** in a year!

200 175 150 125 100 75

2000 05 10 15 20 25

Source: Bloomberg

(Source: Paddy problems, *The Economist*, June 21. 2025;
A sticky situation, *The Economist*, April 12, 2025.)



APPLICATION: GARLIC BUBBLE?

- Garlic Bubble in China (2009)
  - Garlic prices have jumped tenfold in China's big cities and fourfold nationwide.
  - Many speculators ins Shandong invested millions of RMB and scored profits as high as **1000%**!

(Source: The price also stinks, *The Economist* , 28 November, 2009; *Mingpao*, 4 August. 2010)



山東「大蒜華爾街」炒暴利

白領投資300萬：好過炒股

內地農產品價格飆升，大蒜、生薑奇貨可居，雖然官方解釋漲價只因天災影響供應，但其實人禍也是推高農產品價格的重要原因。盛產大蒜的山東省金鄉縣被戲稱「大蒜華爾街」，突顯當地炒賣蒜有如炒買期指，更有炒家披露「炒蒜跑好過炒股」，錢時暴升10倍。

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內地傳媒報道，金鄉縣每天都有近千輛滿載着大蒜的貨車在等待交易。7月中旬，廣州江南果菜批發市場的蒜頭批發價每半公斤售價6元（人民幣，下同），較6月底上漲50%。據全國農副產品和農資價格行情系統監測，近期生薑價也開始上漲，數據顯示7月14日至26日，生薑價格連漲13天至每半公斤5.93元，與6月下旬相比上漲8.8%。

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千萬元級別僅屬「小炒家」

以千萬元投資炒蒜看似誇張，但金鄉縣大蒜年均產量70餘萬噸，要是按照前日金鄉大蒜最新市價每公斤10元計算，整個大蒜市場價值已高達70多億元，難怪說千萬元級別的炒家亦只是「小炒家」。導致蒜蒜價高，與年產量的被動大有關係。金鄉大蒜因2008年價錢太低，導致2009年大蒜種植面積減少了三分一，於是今年大蒜產量銳減，加上天氣影響，令供應更少。

山東省濟寧市金鄉縣是全國大蒜集散地，每天都有逾千輛貨車來此收蒜，場面壯觀。（綠上圖片）



China's latest commodity boom

The price also stinks

HONG KONG

A new twist on garden-variety speculation

WORRIES about overheating in China usually focus on obvious candidates: property in big cities, mainland stockmarkets and so forth. On November 25th China tightened the rules on foreign-currency transfers by individuals in a bid to control flows of hot money into the country. But signs of frothiness are also cropping up in odd places: garlic has become an unlikely target for Chinese speculators.

According to reports in *China Business News*, prices in Jinxiang, China's garlic-growing capital, have seen a fortyfold increase since March. Further down the supply chain, garlic prices have jumped tenfold on wholesale markets in big cities and fourfold nationwide. That compares with a meagre doubling in the price of copper this year and a 77% increase in the Shanghai stockmarket.

"This sort of thing happens in China whenever you have too much bank lending," says Jerry Lou of Morgan Stanley. "The liquidity spills everywhere. Garlic is just the area of the moment. We are at an asset-bubble-foaming stage."

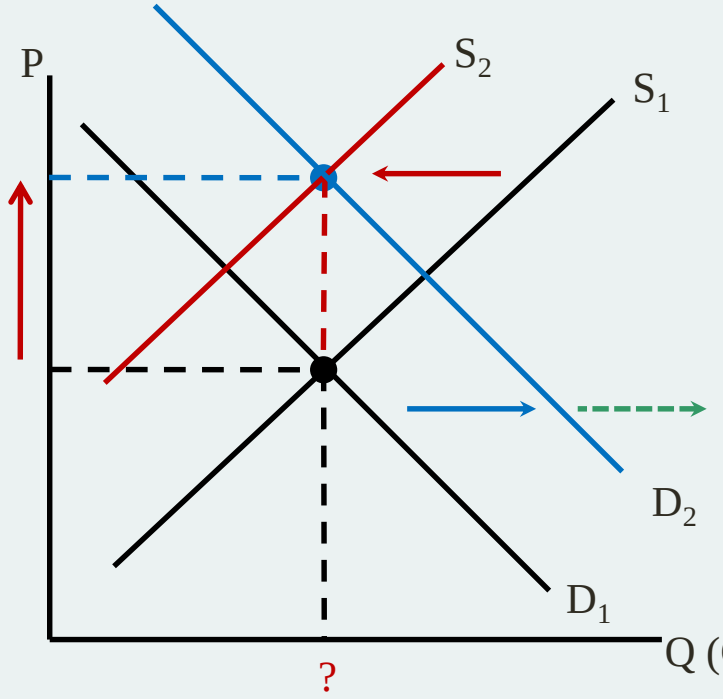
There is some justification for the increases. The amount of land set aside for garlic-planting is said to have fallen by half in 2008 in response to low prices. Rumours abound that garlic may prevent swine flu. Cheap herbal remedies are popular in China, and ways to ward off disease are compelling in the absence of comprehensive health care.

That said, there appears to be much more demand for garlic from speculators than consumers. Trading activity has created such intense need in Jinxiang for cash that banks and cash machines are having problems keeping up. Whatever health benefits garlic may have, this particular market looks unwell.

Bulbous bubble

APPLICATION: GARLIC BUBBLE?

- Why?
  - The amount of land set aside for garlic-planting have fallen by half in 2008.
  - **Rumors abound that garlic may prevent swine flu.**



When more people predicts the garlic prices to increase, what would be the consequence?

"… I've never seen my commodities and inventories, but the commodities I owned is much more than enough for my whole life's consumption…"

Creation of commodity (or other assets) bubbles!

"This sort of thing happens in China whenever you have *too much bank lending*," said a Morgan Stanley analyst.



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Bulbous bubble

6. GOVERNMENT INTERVENTION (I): PRICE CONTROLS

- **Price Ceiling**:
  - a maximum price in a market imposed by a government.
    - A *binding* price ceiling is set below the market equilibrium price, i.e. $p_c < p^*$.
  - Example: Auto LPG (liquefied petroleum gas)

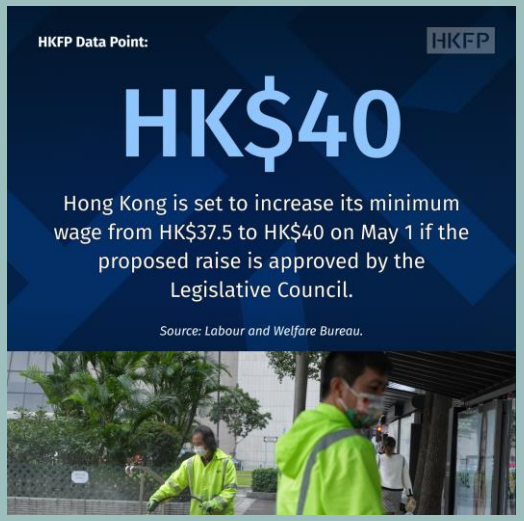
- **Price Floor**:
  - a minimum price in a market imposed by a government.
    - A *binding* price floor is set *above* the market equilibrium price, i.e. $p_c > p^*$.
  - Example: Minimum wage



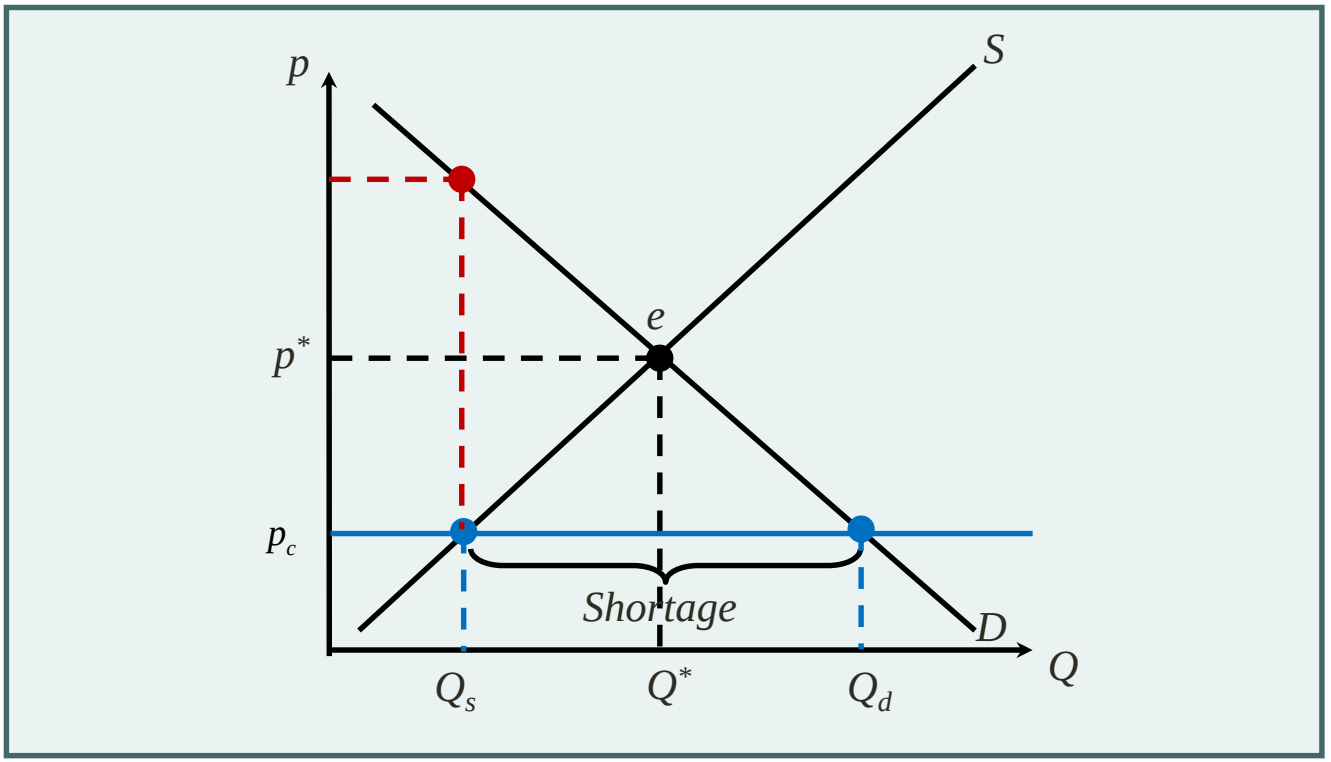
3 Ceiling price of LPG

The calculated LPG ceiling prices (HK$/litre) for respective dedicated LPG filling stations are as follows:

Location of Dedicated LPG Filling Station	LPG ceiling prices for Dedicated LPG filling stations (HK$/litre)											
	Year 2024			Year 2025								
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Kwai On Road, Kwai Chung	3.61	3.71	3.74	3.75	3.71	3.76	3.67	3.67	3.61	3.55	3.46	3.22
Sham Mong Road, Mei Foo	3.67	3.77	3.81	3.81	3.78	3.82	3.74	3.73	3.68	3.62	3.52	3.28
Wai Lok Street, Kwun Tong	3.72	3.82	3.86	3.86	3.83	3.88	3.79	3.79	3.73	3.67	3.58	3.34
Cheung Yip Street, Kowloon Bay	3.77	3.87	3.90	3.91	3.88	3.92	3.84	3.83	3.78	3.72	3.62	3.38
Ngo Cheung Road, West Kowloon	3.78	3.88	3.91	3.92	3.89	3.93	3.85	3.84	3.79	3.73	3.63	3.39
Yuen Chau Tsai, Tai Po	3.83	3.93	3.97	3.97	3.94	3.99	3.90	3.90	3.84	3.78	3.69	3.45
Tak Yip Street,	3.94	4.04	4.07	4.08	4.05	4.10	4.01	4.01	3.95	3.89	3.80	3.56



EFFECTS OF A PRICE CEILING



- Shortage (*what quantity would be sold?*)
- Non-price competition
- Black market or parallel markets may develop
  - *What would be the black market price?*

APPLICATION: TAXI WARS IN LAN KWAI FONG (LKF)

- After 2 a.m. on weekend, getting a taxi in LKF is tough!
- Over 90% of taxi drivers pick and choose their passengers, sparking a bidding war.
- Customers pay way extra – up to $200 from Central to Causeway Bay
- Undercover police found drivers demanding $100 (normal fee: $24) before boarding

(Source: SCMP, 31 May, 2019; updated Aug 8, 2023)

Source: SCMP, 31 May, 2019.

Hong Kong / Law and Crime

Dodgy Hong Kong taxi drivers targeted in fare sting after police catch one charging HK$100 for a 1km journey – more than four times amount it should cost

- Officers cracking down on city's unscrupulous cabbies who they say operate in entertainment and shopping districts
- Force identifies The Peak Tram terminal, Lan Kwai Fong and Tsim Sha Tsui as problem areas

Clifford Lo
Published: 2:21pm, 31 May, 2019
Why you can trust SCMP



的士劏客影片瘋傳！中環去銅鑼灣開價$200　內地客拒付即咁做超衰



撰文：布萊恩
出版：2023-08-08 03:06　更新：2023-08-09 17:33



(Source: Renting to the rich world, *The Economist*, June 1st, 2024; Control your instincts, *The Economist*, Sept 19th, 2019.)

International | Control yourself!

Is your rent ever going to fall?

Too often politicians tout awful solutions for helping tenants



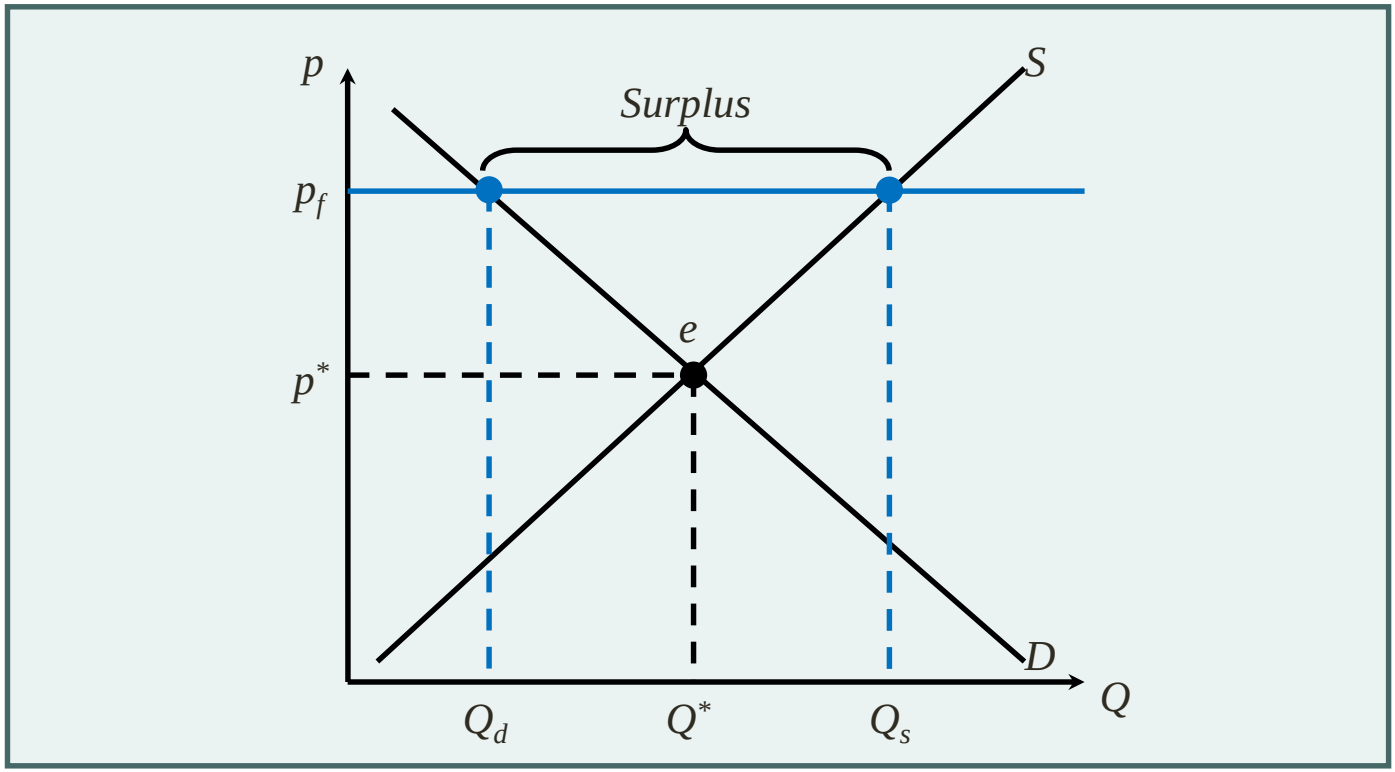
May 29th 2024|Stockholm

An entire generation of tenants is tearing its hair out. Across the rich world—from America to New Zealand—millions spend more than a third of their disposable income on rent. The squeeze extends from social democracies that prize strong tenancy rights to Anglophone countries that prefer homeownership—and it is mostly getting worse. The good news for anxious renters is that they are gaining a louder voice as their numbers swell. The bad news is that campaigners and politicians mostly focus on the wrong kinds of solutions to their woes.

APPLICATION: RENTING IN THE RICH WORLD

- In the last three years, rents have soared worldwide. Across the world, people spend 40% or more of their disposable income just on rent!
  - Can government fix it?
- **Rent controls** are popping up everywhere.
  - Scotland froze rent in 2022.
  - France & Germany tightened rent controls.
  - Longstanding rent controls in New York and San Francisco.
- **Sweden**'s rent controls, the *hyresreglering*, is the world's strictest:
  - Average wait for an apartment is **20 years!**.
  - Lucky tenants never move, with some families secretly pass apartments to their relatives.
  - Young Swedes often pays big for expensive black-market contracts or even resort to bribes.
- Also, with rents capped, building new houses becomes less profitable. Even maintaining existing properties is discouraged because landlords see no return for their investment.

EFFECTS OF A PRICE FLOOR



- Surplus (*what quantity would be sold?*)
- Non-price competition
- Black market or parallel markets may develop
  - *What would be the black market price?*

APPLICATION: HONG KONG'S MINIMUM WAGE – IS IT ENOUGH?

- HK's **minimum wage** started at HK$28/hour in 2011), raised every two years. Starting from May 1, 2025, it's **HK$42.1 (US$5.40)**
- HK is one of the world's most expensive cities – tied with Los Angeles for #4 in the Worldwide Cost of Living Index, released by the Economist Intelligence Unit (EIU). New York, Singapore and Tel Aviv are the top three.
- For comparison:
  - New York: **US$15/hour**
  - Los Angeles: **US$16.78/hour**
  - Tel Aviv: **US$8.27–8.45/hour**
  - Singapore: varies by job, citizens only
- ***Is Hong Kong's minimum wage keeping up with the cost of living?***

One of the world's most expensive cities raises minimum wage … by 32 cents

By Jessie Yeung, CNN
Published 4:46 AM EDT, Tue May 2, 2023



A women holds up a placard asking for a living wage in front of the Central Government Office in Hong Kong on May 1, 2023.
NurPhoto/NurPhoto/NurPhoto via Getty Images

Hong Kong CNN —

It's one of the world's priciest cities, with the least affordable housing market on the planet and parking spaces that can go for nearly a million dollars each.

So when the Hong Kong government raised the minimum wage by a measly 32 cents on Monday, activists and community workers were scathing in their response.

"We think this is unacceptable," said Wong Shek-hung, director of the Hong Kong, Macau and Taiwan program at the charitable organization Oxfam. "It cannot cover basic needs in Hong Kong."

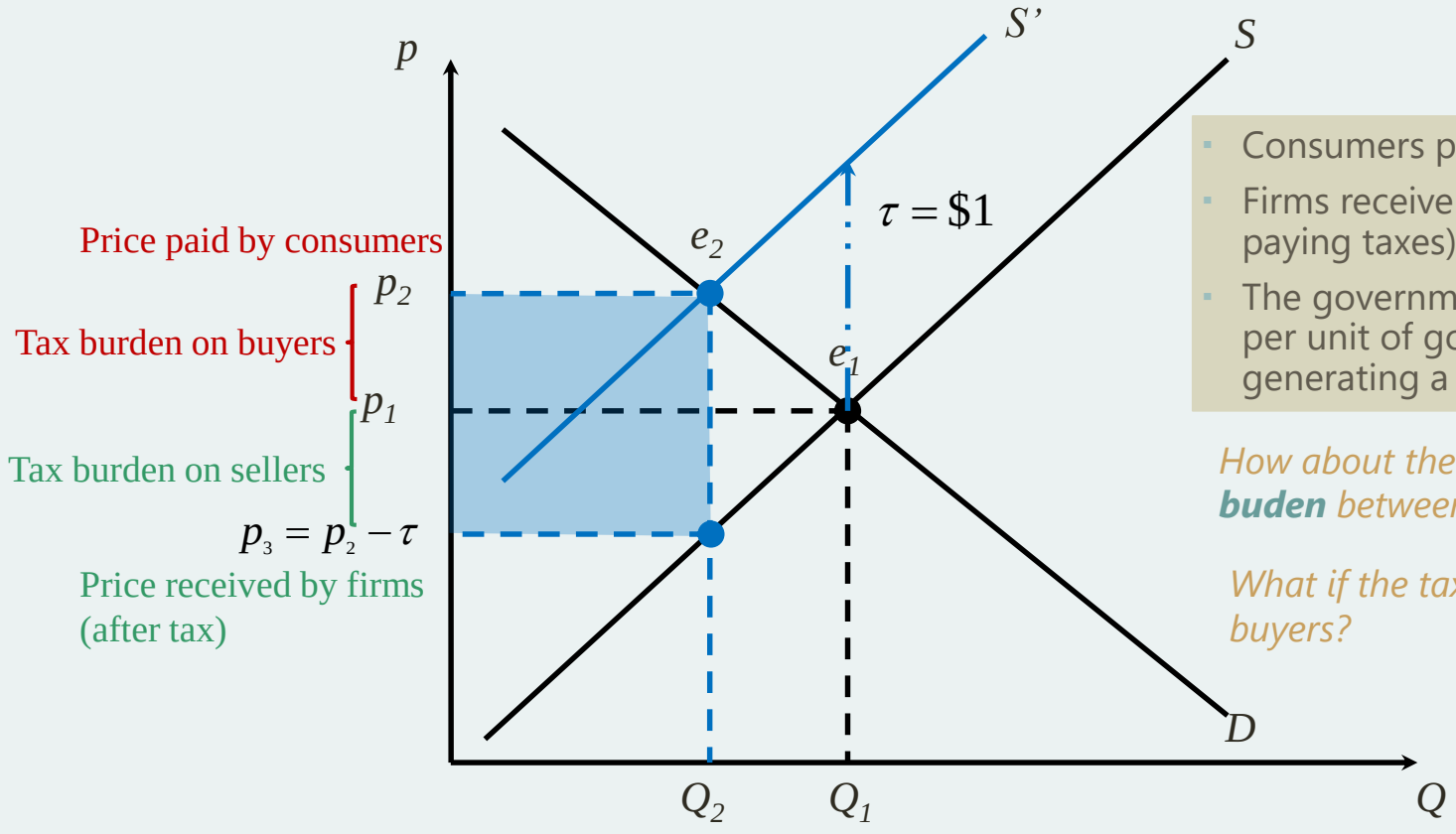
(Source: One of the world's most expensive cities raises minimum wage … by 32 cents, *CNN*, 2 May, 2023.)

7. GOVERNMENT INTERVENTION (II): SALES TAX AND SUBSIDIES

- Types of sale taxes:
  - **Unit (or specific) tax**
    - It specifies a dollar amount, τ, per unit sold.
    - Example: Cigarette Tax - HK$66 per pack (typically 20 cigarettes per pack)
  - **Value (or Ad valorem) tax**
    - It is expressed in percentage of the sales price, α.
    - Most of the sale taxes in HK are ad valorem taxes.
    - Example: Liquor Tax (alcohol strength > 30%) –
      - 10% (Import price of HK$200 and above); 100% (price of HK$200 or below)

EFFECTS OF A UNIT TAX

- Suppose the government collects a unit tax of τ = \$1 per unit of good sold *from sellers*.
- After imposing the tax, it shifts the *supply curve* upward by τ = \$1 from *S* to *S'* *(why?)*



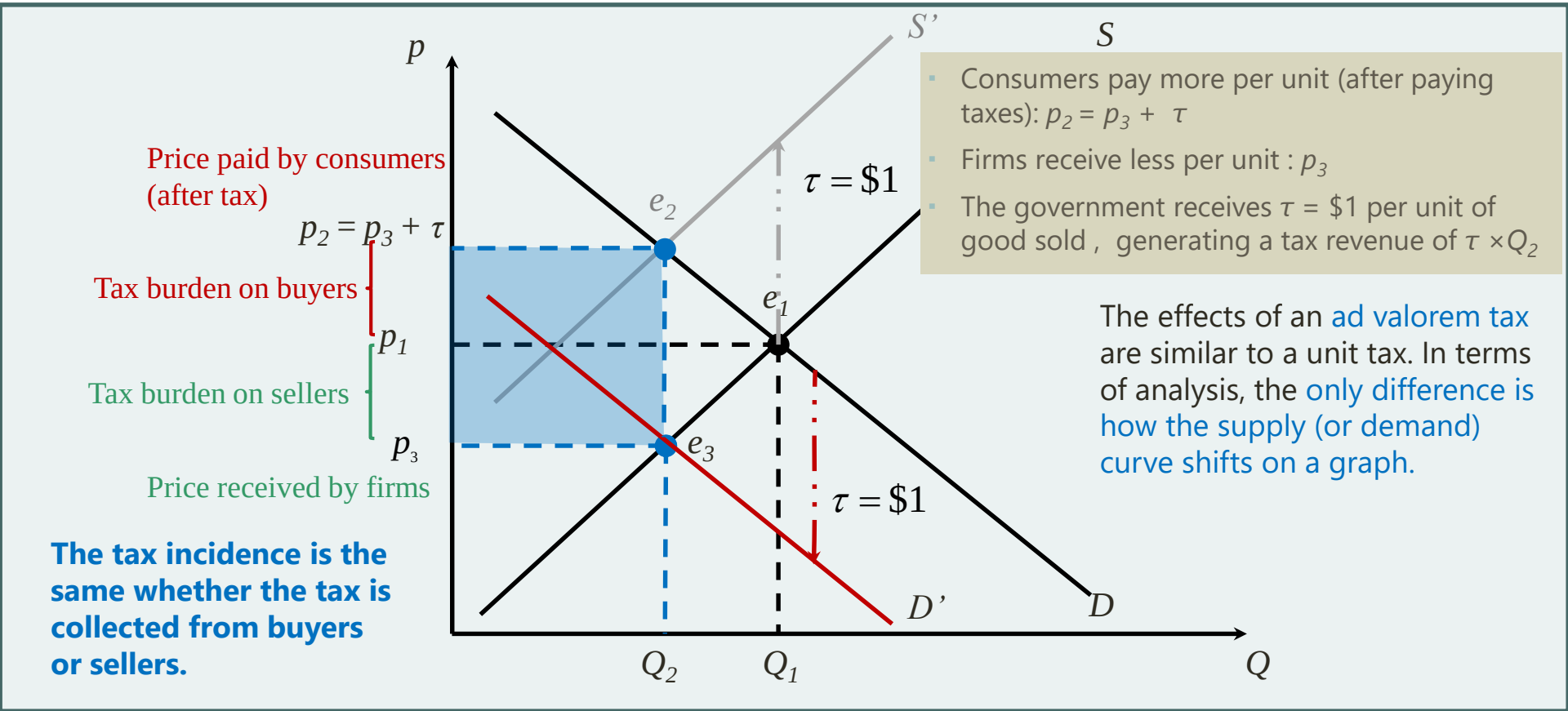
- Consumers pay more per unit: p_2
- Firms receive less per unit (after paying taxes): $p_3 = p_2 - \tau$
- The government receives τ = \$1 per unit of good sold , generating a tax revenue of $\tau \times Q_2$

How about the distribution of ***tax buden*** *between buyers and sellers?*

What if the tax is collected from buyers?

EFFECTS OF A UNIT TAX

- Suppose the government collects a unit tax of τ = \$1 per unit of good sold *from buyers*.
- After imposing the tax, it shifts the *demand curve* downward by τ = \$1 from *D* to *D' (why?)*



- Consumers pay more per unit (after paying taxes): $p_2 = p_3 + \tau$
- Firms receive less per unit : p_3
- The government receives τ = \$1 per unit of good sold , generating a tax revenue of $\tau \times Q_2$

The effects of an ad valorem tax are similar to a unit tax. In terms of analysis, the only difference is how the supply (or demand) curve shifts on a graph.

The tax incidence is the same whether the tax is collected from buyers or sellers.

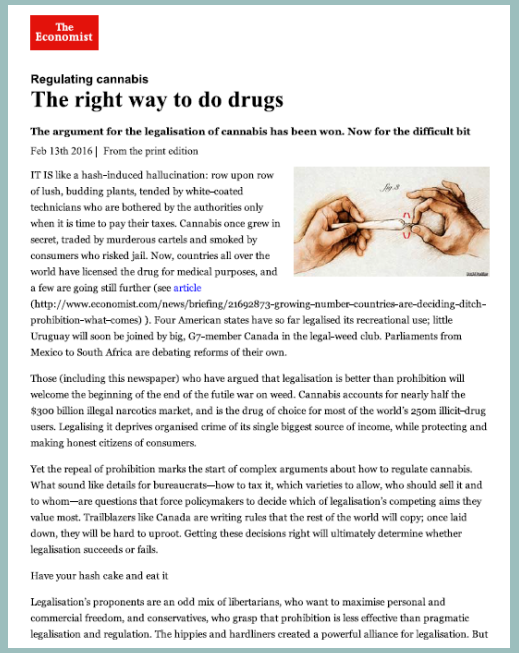
APPLICATION: THE RIGHT WAY TO DO DRUGS

- As of 2024, **24 U.S. states** (plus Washington D.C.) have fully legalized recreational marijuana – not just medical use.
  - Since 2014, licensed shops can sell it to anyone.
  - **Canada** and **Uruguay** legalized recreational marijuana nationwide.
  - **Several European countries** are moving toward legal or pilot projects.

- ***Why legalize instead of ban?***

- Legalization will surely create new consumers. *So, how does government control the use of marijuana?*
  - **High excise taxes: 25% at each stage of distribution, plus normal sales taxes.**
  - Analysts speak of the ideal price: not too low (to avoid spurring consumption) and not too high (to undercut the black market).

- Three big benefits:
  - Saves government money by not jailing people who haven't hurt anyone.
  - Raises tax revenue (Marijuana sales in U.S. states now bring in **billions of dollars in tax revenue** each year)
  - Puts criminals out of business. (but takes time)



The Economist

Regulating cannabis

The right way to do drugs

The argument for the legalisation of cannabis has been won. Now for the difficult bit

Feb 13th 2016 | From the print edition

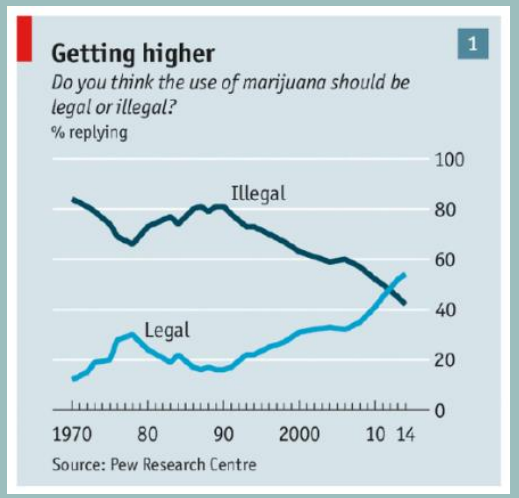
IT IS like a hash-induced hallucination: row upon row of lush, budding plants, tended by white-coated technicians who are bothered by the authorities only when it is time to pay their taxes. Cannabis once grew in secret, traded by murderous cartels and smoked by consumers who risked jail. Now, countries all over the world have licensed the drug for medical purposes, and a few are going still further (see article (http://www.economist.com/news/briefing/21692873-growing-number-countries-are-deciding-ditch-prohibition-what-comes)). Four American states have so far legalised its recreational use; little Uruguay will soon be joined by big, G7-member Canada in the legal-weed club. Parliaments from Mexico to South Africa are debating reforms of their own.

Those (including this newspaper) who have argued that legalisation is better than prohibition will welcome the beginning of the end of the futile war on weed. Cannabis accounts for nearly half the $300 billion illegal narcotics market, and is the drug of choice for most of the world's 250m illicit-drug users. Legalising it deprives organised crime of its single biggest source of income, while protecting and making honest citizens of consumers.

Yet the repeal of prohibition marks the start of complex arguments about how to regulate cannabis. What sound like details for bureaucrats—how to tax it, which varieties to allow, who should sell it and to whom—are questions that force policymakers to decide which of legalisation's competing aims they value most. Trailblazers like Canada are writing rules that the rest of the world will copy; once laid down, they will be hard to uproot. Getting these decisions right will ultimately determine whether legalisation succeeds or fails.

Have your hash cake and eat it

Legalisation's proponents are an odd mix of libertarians, who want to maximise personal and commercial freedom, and conservatives, who grasp that prohibition is less effective than pragmatic legalisation and regulation. The hippies and hardliners created a powerful alliance for legalisation. But

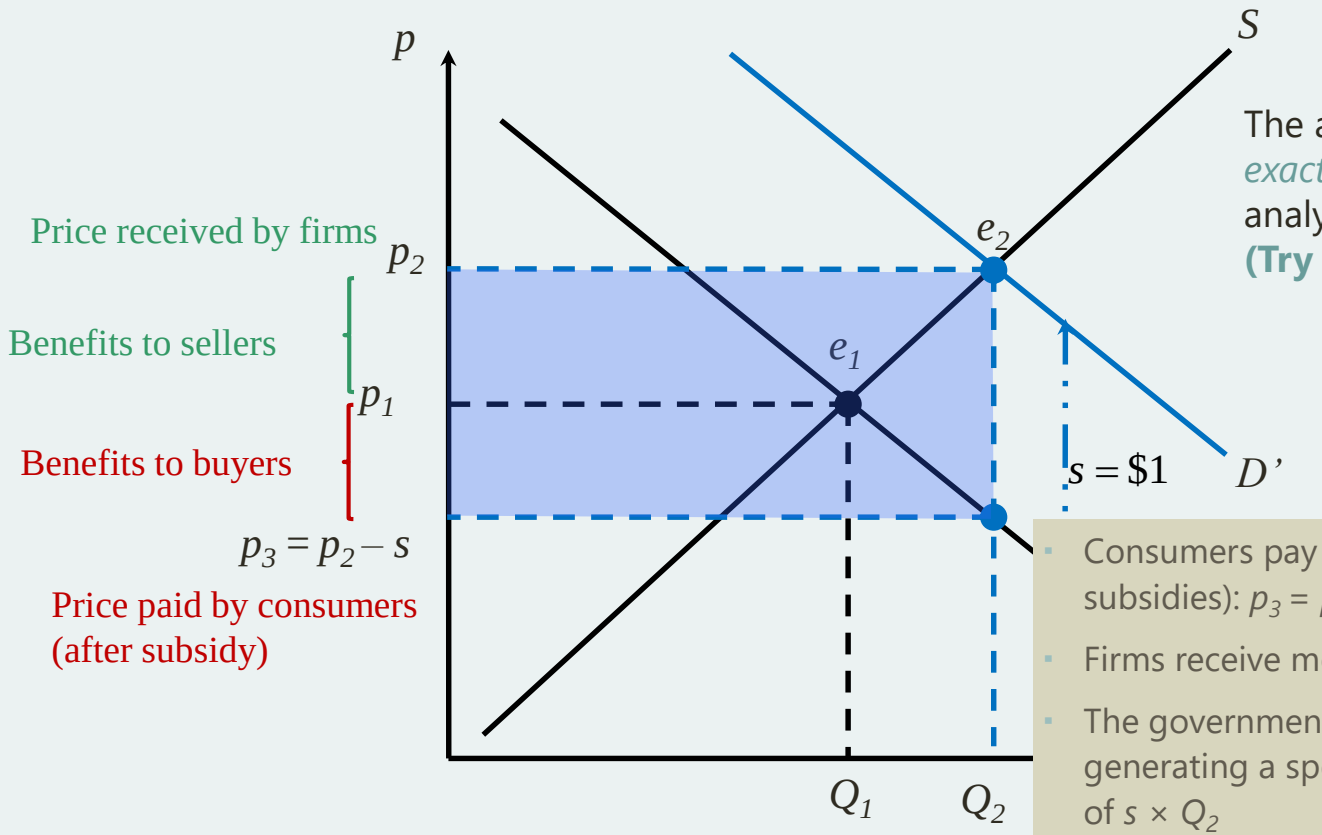


(Source: The right way to do drugs, *The* Economist, Feb 13th, 2016; The great pot experiment, *The Economist*, July 12th, 2014; *updated* 2024)

EFFECTS OF A SUBSIDY

- **Subsidy:** A government payment to buyers or sellers on each unit purchased or sold.

- Suppose the government provides a unit subsidy of s = \$1 per unit of good sold *to buyers*
- After imposing the tax, it shifts the *demand curve* upward by s = \$1 from D to $D + s$ *(why?)*



The analysis of a subsidy is *exactly opposite* to the analysis of a sales tax. **(Try subsidy to sellers.)**

- Consumers pay less per unit (after receiving subsidies): $p_3 = p_2 - s$
- Firms receive more per unit : p_2
- The government pays s = \$1 per unit, generating a spending (negative tax revenue) of $s \times Q_2$

APPLICATION: GERMANY'S PUSH FOR ELECTRIC VEHICLES

Source: Forbes, 4 June 2020

Germany Boosts Electric Car Sales Incentives But Penalizes Gas Guzzlers

Neil Winton Contributor
Transportation



Most Tesla Model 3s will be too expensive to qualify for new German electric car sales incentives. ... [+]

VCG VIA GETTY IMAGES

Germany raised the incentives to buy electric cars and cut the sales tax on more fuel -efficient internal combustion engines (ICE), but increased taxes on gas guzzling SUVs and sports cars which will hit the profits of the big auto makers.

The measures were part of the German government's 130 billion euro ($150 billion) stimulus package designed to pull the country out of the coronavirus-induced economic slump. The package included general sales tax cuts and money for local governments, and child allowances.

The buying incentives for electric cars were raised to an effective 9,000 euros ($10,000), but with a price ceiling of 40,000 euros ($45,000). This will exclude most Tesla Model 3s, the Model S and Model X. Pricey electric vehicles like the Audi e-Tron, Mercedes EQC and Jaguar I-Pace won't benefit either. Electric vehicles likely to get a sales boost will include the Kia e-Niro,

- Germany raised cash incentives (up to €9,000 or US$10,000) to help people buy electric cars.
  - With a price ceiling of €40,000. This will exclude most pricey electronic vehicles, including most Tesla models, Mercedes EQC, Audi e-Tron and so on.
- They also cut the sales tax on more fuel-efficient internal combustion engines (ICE), i.e. traditional cars.
- But, they raised taxes on big, gas-guzzling SUVs and sports cars.
- As a result, electric car sales in Western Europe (led by Germany and France) outpaced those in China, thanks to these government subsidies to stimulate demand.

(Source: Germany boosts electric car sales incentives but penalizes gas guzzlers, *Forbes*, 4 June, 2020; Europe electric-car subsidies have market excedding china sales, *Bloomberg Green*, 13 August, 2020.)

APPLICATION:
HYDROGEN: FUEL OF THE FUTURE?

- Governments are pouring money (**subsidies**) into making hydrogen fuel, hoping it'll power everything from cars to planes, even power plant!
  - Unlike fossil fuels, hydrogen emits zero greenhouse gases, helping curb climate change, but only if it is cleanly made.

- The U.S. is leading the charge, offering the world's highest subsidy: **$3 for every kg of "green hydrogen" produced from renewable energy**, plus other incentives for low-carbon hydrogen.

- Europe led the word in developing clean hydrogen, the Hydrogen Council, an industry association, has found that the IRA lured many potential investors to U.S. with proposed investments in hydrogen as of Jan 2024 at $46 billion, up from just $29 billion in May 2022.

(Source: Growth versus greenery, *The Economist*, 22 December, 2023.)

