

經濟學

Principles of Economics (10th)

N. Gregory Mankiw

Chapter 13 The Design of the Tax System

稅制的設計

Chapter 12 The Economics of Healthcare

醫療經濟

Look for the answers to these questions:

- ❑ What are the main sources of tax revenue in the U.S.? At the federal level and at the state and local levels. 美國稅收的主要來源是什麼？在聯邦層級以及州和地方層級
- ❑ What are the efficiency costs of taxes? 稅金的效率成本是多少
- ❑ How can we evaluate the equity of a tax system? 如何評價稅制的公平性

Introduction

- ‘A government can sometimes improve market outcomes’
“政府有時可以改善市場結果”
 - Providing public goods 提供公共產品
 - Regulating the use of common resources 規範公共資源的使用
 - Remedying the effects of externalities 補救外部性的影響
- The government 政府
 - Raises revenue through taxation 透過稅收增加收入
 - To perform its many functions 執行其許多功能

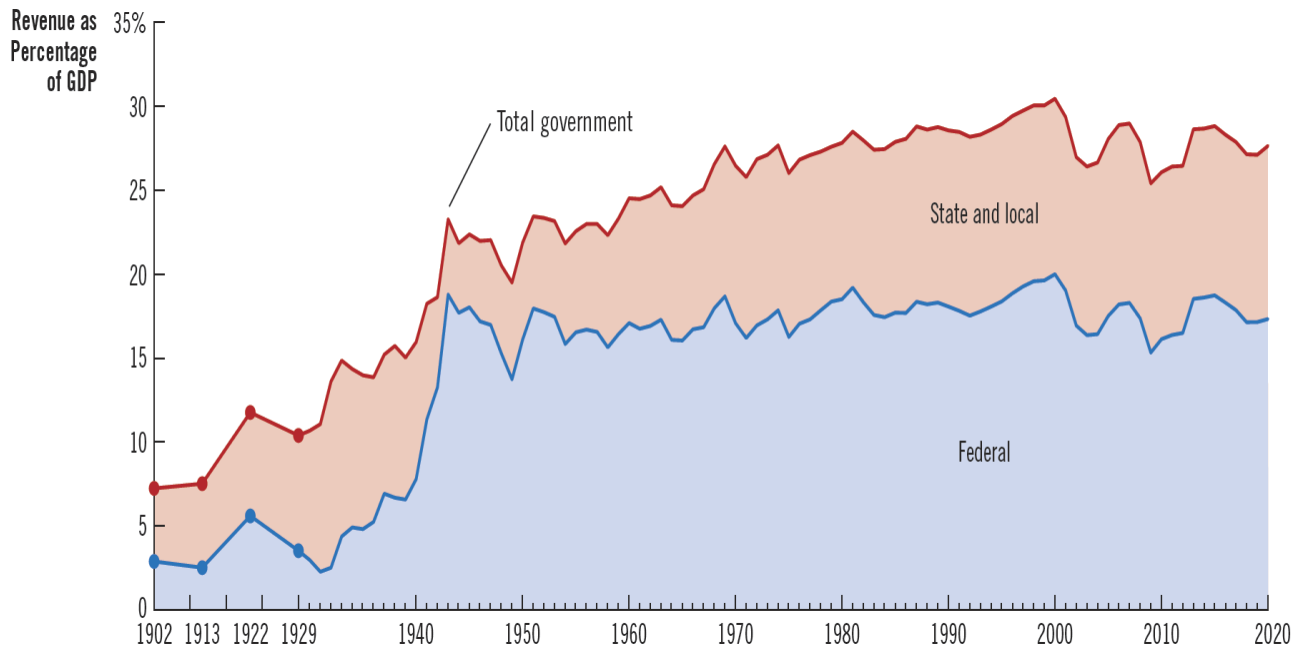
Review from previous chapters

- **Lessons about taxes :關於稅收的教訓**

- A tax on a good reduces the market quantity of that good對某種商品徵稅會減少該商品的市場數量
- The burden of a tax is shared between buyers and sellers depending on the price elasticities of demand and supply稅負由買家和賣家分擔，取決於需求和供應的價格彈性
- A tax causes a deadweight loss稅收導致無謂損失
- Taxes can increase efficiency when they are used to internalize externalities and thereby correct market failures當稅收被用於內部化外部性並從而糾正市場失靈時，可以提高效率

Government revenue as a percentage of GDP, U.S.

美國政府收入佔 GDP 的百分比

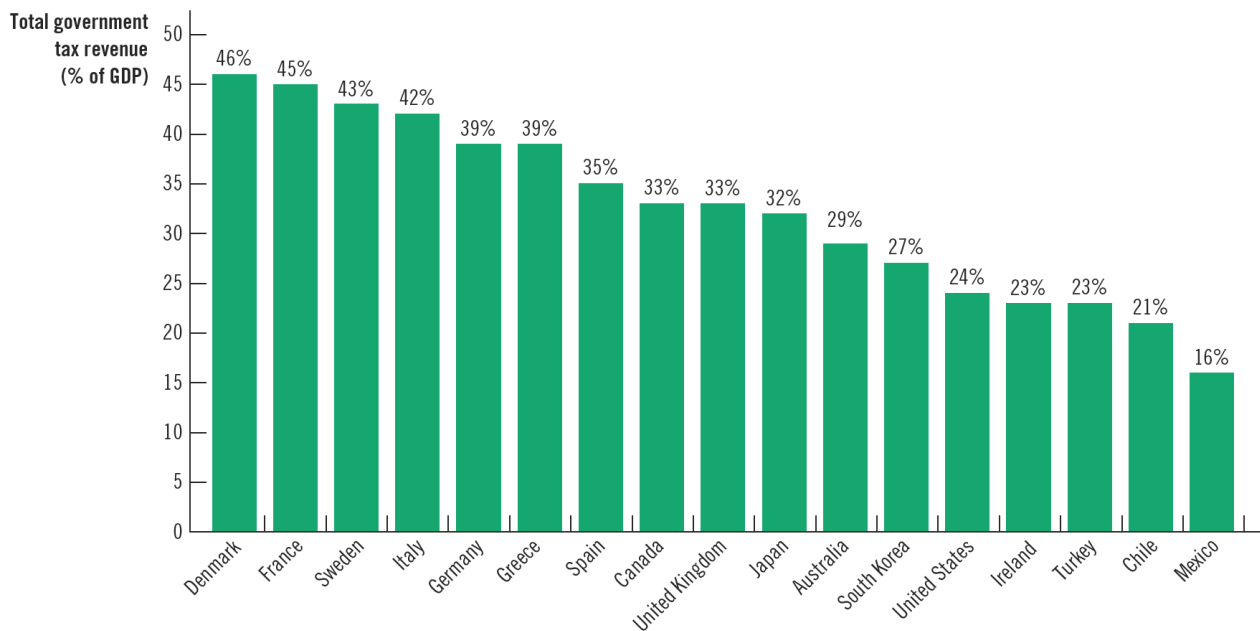


U.S. Taxation: The Big Picture

美國稅收：大局

- Government revenue has increased政府收入增加
 - As percentage of total income佔總收入的百分比
 - As economy's income has grown隨著經濟收入的成長
 - Government's revenue from taxation has grown even more政府稅收成長更多
 - 1902: 7% of income(1902 年：收入的 7%)
 - Recent years: 30% of income(近年來：收入的30%)

Government revenue as a percentage of GDP:
international comparisons
政府收入佔國內生產毛額的百分比：國際比較



Taxes Collected by the Federal Government

聯邦政府所徵收的稅款

- **Personal income taxes** 個人所得稅
 - On wages, interest, dividends, profits (small businesses it operates) 關於薪資、利息、股利、利潤（其經營的小型企業）
- **Payroll taxes (social insurance taxes)** 薪資稅（社會保險稅）
 - On the wages that a firm pays its workers 關於公司支付給工人的工資
 - Mostly earmarked to pay for Social Security and Medicare 大部分用於支付社會安全和醫療保險
- **Corporate income taxes (tax on profits)** 企業所得稅（利潤稅）
- **Other taxes (excise, estate taxes, custom duties)** 其他稅（消費稅、遺產稅、關稅）

Receipts of the federal government: 2022, Q1

聯邦政府的收入：2022 年第一季

	Amount (billions)	Amount per person	Percent of receipts
Personal current taxes	\$2,405.9	\$7,227.1	46.7%
Social insurance	1,675.9	5,034.3	38.7
Taxes on corporate income	280.8	843.5	4.5
Others	453.8	1,363.2	10.2
Total	\$4,816.4	\$14,468.1	100.0%

The federal income tax rates: 2020

聯邦所得稅稅率：2020

On Taxable Income . . .	The Tax Rate Is . . .
From \$0 to \$9,875	10%
From \$9,876 to \$40,125	15%
From \$40,126 to \$85,525	22%
From \$85,526 to \$163,300	24%
From \$163,301 to \$207,350	32%
From \$207,351 to \$518,400	35%
From \$518,401 and above	37%

EXAMPLE 1: Calculating your tax burden 計算您的稅負

In 2020, Kayla has earned \$49,000 and Malik \$39,000 in income. Based on the Federal Income Tax Rates for 2020, calculate their 2020 tax liability.

2020 年，Kayla 的收入為 49,000 美元，Malik 的收入為 39,000 美元。根據 2020 年聯邦所得稅稅率，計算其 2020 年稅務義務

- Kayla will pay: $10\% \text{ of } \$9,875 + 15\% \text{ of } (40,125 - 9,875) + 22\% \text{ of } (49,000 - 40,125)$
 $= \$987.5 + 4,537.5 + 1,952.5 = \$7,477.50$
- Malik will pay: $10\% \text{ of } \$9,875 + 15\% \text{ of } (39,000 - 9,875)$
 $= \$987.5 + 4,368.75 = \$5,356.25$

Receipts of the state and local government: 2022 Q1

州和地方政府收入：2022 年第一季

	Amount (billions)	Amount per person	Percent of receipts
Property taxes	\$650.7	\$1,954.65	18.3%
Sales taxes	535.9	\$1,609.80	15.0
Personal income taxes	613.6	\$1,843.21	17.2
Excise taxes	227.6	\$683.69	6.4
Corporate income taxes	175.6	\$527.49	4.9
Federal government	916.3	\$2,752.49	25.7
Other	445.1	\$1,337.05	12.5
Total	\$3,564.8	\$10,708.38	100.00%

Taxes and Efficiency

稅收和效率

- **Policymakers' objectives:**政策制定者的目標
 - Equity and efficiency公平與效率
- **Costs of taxes to taxpayers**納稅人的稅務成本
 - Tax payment itself納稅本身
 - Deadweight losses無謂損失
 - Taxes distort the decisions that people make稅收扭曲了人們所做的決定
 - Administrative burdens行政負擔
 - Taxpayers bear as they comply with the tax laws納稅人在遵守稅法的情況下承擔

Deadweight Losses 無謂損失

- ‘People respond to incentives’
“人們會對激勵做出反應”
- Taxes distort incentives 稅收扭曲激勵
 - Cause people to allocate resources according to tax incentives rather than true costs and benefits 促使人們根據稅收優惠而不是真實的成本和收益來分配資源
- Deadweight loss 無謂損失
 - The fall in taxpayers’ well-being exceeds the revenue the government collects 納稅人福祉的下降超過了政府徵收的收入



*"I was gonna fix
the place up, but if
I did the city would
just raise my
taxes!"*

EXAMPLE 2: How taxes cause deadweight losses

稅收如何造成無謂損失

Sydney places a \$35 value on an ice-cream cake, and Zaid places a \$40 value on it. $P = \$30$. Each wants to buy one. Calculate total surplus. What is changing if the government imposes a \$6 tax on ice-cream cakes?

雪梨對冰淇淋蛋糕的估價為 35 美元，而扎伊德則對它的估價為 40 美元。 $P = 30$ 美元。每個人都想買一個。計算總盈餘。如果政府對冰淇淋蛋糕徵收 6 美元的稅，會發生什麼變化？

	No tax	With \$6 tax
Price	\$30	$30 + 6 = \$36$
Sydney's surplus	$35 - 30 = \$5$	Cannot buy
Zaid's Surplus	$40 - 30 = \$10$	$40 - 36 = \$4$
Tax revenue		\$6
Total surplus	$5 + 10 = \$15$	$4 + 6 = \$10$
DWL		\$5

Should income or consumption be taxed?

- **Income tax discourages people from saving: 所得稅阻礙人們儲蓄**
 - If income tax rate is 25%, then 6% interest rate is 4.5% after-tax interest rate. 如果所得稅稅率為25%，那麼6%的利率就是4.5%的稅後利率。
 - The lost income compounds over time. 一些經濟學家主張對消費徵稅而不是對收入徵稅
- **Some economists advocate taxing consumption instead of income 一些經濟學家主張對消費徵稅而不是對收入徵稅**
 - Would restore incentive to save. 將恢復儲蓄動力
 - Better for individuals' retirement income security and long-run economic growth. 有利於個人退休收入保障和長期經濟成長



Should income or consumption be taxed?

收入或消費是否應課稅

- **Consumption tax-like provisions in the U.S. tax code include Individual Retirement Accounts, 401(k) plans.** 美國稅法中類似消費稅的條款包括個人退休帳戶、401(k) 計畫
 - People can put a limited amount of saving into such accounts. 人們可以將有限數量的儲蓄存入此類帳戶
 - The funds are not taxed until withdrawn at retirement. 這些資金在退休時提取之前不會被徵稅
- **Europe's Value-Added Tax (VAT) is like a consumption tax** 歐洲的增值稅 (VAT) 就像消費稅

Administrative Burden

行政負擔

- Administrative burden行政負擔

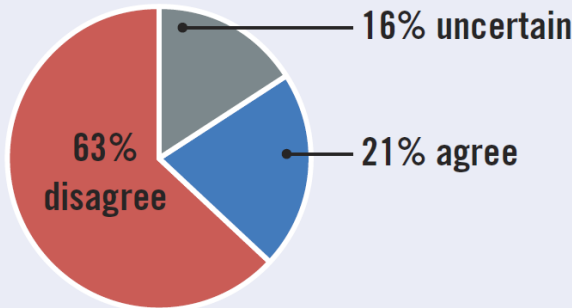
- Includes the time and money people spend to comply with tax laws 包括人們為遵守稅法所花費的時間和金錢
- Encourages the expenditure of resources on legal tax avoidance 鼓勵將資源用於合法避稅
 - e.g., hiring accountants to exploit “loopholes” to reduce one’s tax burden 例如聘請會計師鑽「漏洞」減輕稅負
- Is a type of deadweight loss 是無謂損失的一種
- Could be reduced by simplifying tax laws 可以透過簡化稅法來減少

Top Marginal Tax Rates 最高邊際稅率

“Raising the top federal marginal tax on earned personal income to 70 percent (and holding the rest of the current tax code, including the top bracket definition, fixed) would raise substantially more revenue (federal and state, combined) without lowering economic activity.”

「將個人收入的最高聯邦邊際稅提高到70%（並保持現行稅法的其餘部分，包括最高等級的定義）將大幅增加收入（聯邦和州的總收入），而不會降低經濟活動。」

What do economists say?



Source: IGM Economic Experts Panel, January 16, 2019.

Marginal Tax Rates vs. Average Tax Rates

邊際稅率與平均稅率

- **Average tax rate** 平均稅率

- Total taxes paid divided by total income 繳納的稅金總額除以總收入
- Measures the sacrifice a taxpayer makes 衡量納稅人所做的犧牲

- **Marginal tax rate** 邊際稅率

- The extra taxes paid on an additional dollar of income 額外一美元收入所繳納的額外稅款
- Measures the incentive effects of taxes on work effort, saving, etc. 衡量稅收對工作努力、儲蓄等的激勵效果

EXAMPLE 3: Calculating average tax rate 計算平均稅率

In Example 1, Kayla earned \$49,000 and Malik \$39,000 in income. Based on the Federal Income Tax Rates for 2020, their 2020 tax liability was \$7,477.50 for Kayla and \$5,356.25 for Malik. What is their (individual) average tax rate?

在範例 1 中，Kayla 的收入為 49,000 美元，Malik 的收入為 39,000 美元。根據 2020 年聯邦所得稅稅率，Kayla 的 2020 年稅務義務為 7,477.50 美元，Malik 的稅務義務為 5,356.25 美元。他們（個人）的平均稅率是多少？

The average tax rate is = amount of tax paid / income (in percentages)

- For Kayla $100 \times 7,477.50 / 49,000 = 15.26\%$
- For Malik $100 \times 5,356.25 / 39,000 = 13.73\%$

Lump-Sum Taxes

一次稅

- Lump-sum taxes一次稅

- Same amount of tax for every person, regardless of income
無論收入如何，每個人的稅額都相同
- Most efficient tax possible最有效的稅收
- Does not distort incentives: no DWL不扭曲激勵：無DWL
- Minimal administrative burden行政負擔最小
- Why are they rare in the real world?為什麼它們在現實世界中很少見？
 - Not equitable: It takes the same amount from the poor and the rich不公平：窮人和富人拿的錢是一樣的

EXAMPLE 4: Lump-sum taxes

Kayla earned \$49,000 and Malik \$39,000 in income. Each is taxed by a lump-sum tax of \$6,000. Calculate the average and marginal tax rates for Kayla and Malik.

凱拉的收入為 49,000 美元，馬利克的收入為 39,000 美元。每人需繳納 6,000 美元的一次性稅。計算凱拉和馬利克的平均稅率和邊際稅率

- Kayla's average tax rate: $100 \times 6,000 / 49,000 = 12.24\%$
- Malik's average tax rate: $100 \times 6,000 / 39,000 = 15.38\%$
- The marginal tax rate for both both is 0% 兩者的邊際稅率均為 0%
 - If their income is increasing, the additional tax they have to pay is \$0.
 - 如果他們的收入增加，則他們需要繳納的額外稅金為 0 美元

Taxes and Equity

稅收和股權

- Equity公平
 - Another goal of tax policy 稅收政策的另一個目標
 - Distributing the burden of taxes “fairly” 「公平」分配稅負
- Agreeing on what is “fair” is much harder than agreeing on what is “efficient” 就什麼是「公平」達成一致比就什麼是「有效」達成一致要困難得多
 - Yet, there are several principles people apply to evaluate the equity of a tax system 然而，人們應用幾個原則來評估稅收制度的公平性

The Benefits Principle

效益原則

- The benefits principle 效益原則

- People should pay taxes based on the benefits they receive from government services 人們應該根據從政府服務中獲得的好處來納稅
- Tries to make public goods similar to private goods 試圖使公共物品與私人物品相似
- Example: gasoline taxes 例：汽油稅
- Wealthy citizens should pay higher taxes: they benefit more from public services 富裕公民應該繳納更高的稅：他們從公共服務中受益更多
 - Police, fire protection, national defense, antipoverty programs 警察、消防、國防、反貧窮項目

The Ability-to-Pay Principle

支付能力原則

- The ability-to-pay principle 支付能力原則
 - Taxes should be levied on a person according to how well that person can shoulder the burden 應根據一個人承擔負擔的能力對他徵稅
 - All taxpayers should make an “equal sacrifice” 所有納稅人都應做出“同等犧牲”
 - A \$10,000 tax bill is a bigger sacrifice for a poor person than a rich person. 10,000 美元的稅單對窮人來說比對富人來說是更大的犧牲
 - Vertical equity 垂直平等
 - Horizontal equity 橫向平等

Vertical Equity垂直平等

- Taxpayers with a greater ability to pay taxes should pay larger amounts 納稅能力較強的納稅人應繳納較多的稅款
 - Richer taxpayers should pay more than poorer taxpayers 富裕的納稅人應該比貧窮的納稅人支付更多
- How much more should the rich pay? 富人還該多付多少錢
 - Focus of the debate over tax policy 稅收政策爭論焦點

Three Tax Systems

三稅制

- **Proportional tax: 比例稅**

- High-income and low-income taxpayers pay the same fraction of income 高收入和低收入納稅人繳納相同比例的收入

- **Regressive tax: 累退稅**

- High-income taxpayers pay a smaller fraction of their income than do low-income taxpayers 高收入納稅人支付的收入佔其收入的比例比低收入納稅人少

- 換言之，納稅人收入和財富的增加而實際稅率逐步遞減的稅制

- **Progressive tax: 累進稅**

- High-income taxpayers pay a larger fraction of their income than do low-income taxpayers 高收入納稅人比低收入納稅人繳納的收入佔其收入的比例更大

Three tax systems

	Regressive		Proportional		Progressive	
income	tax	% of income	tax	% of income	tax	% of income
\$50,000	\$15,000	30%	\$12,500	25%	\$10,000	20%
100,000	25,000	25	25,000	25	25,000	25
200,000	40,000	20	50,000	25	60,000	30

The burden of federal taxes, 2018

2018 年聯邦稅負

Quintile	Average Market Income	Taxes as a Percentage of Market Income	Taxes Less Transfers as a Percentage of Market Income
Lowest	\$16,600	0.0%	– 127.1%
Second	35,900	11.1	– 44.0
Middle	63,900	15.5	– 11.1
Fourth	104,000	18.8	4.6
Highest	310,000	25.4	21.3
Top 1%	1,987,500	30.3	29.7

Horizontal Equity(橫向平等)

- Horizontal equity

- Taxpayers with similar abilities to pay taxes should pay the same amount 納稅能力相近的納稅人應繳納同等金額的稅款
- Special provisions that alter a family's tax based on its specific circumstances 根據家庭具體情況改變家庭稅收的特殊規定
- Problem: Difficult to agree on what factors, besides income, determine ability to pay 問題：除了收入之外，哪些因素決定支付能力，很難達成一致

Active Learning 1: Taxes and marriage 稅收和婚姻

The income tax rate is 25%. The first \$20,000 of income is excluded from taxation. Tax law treats a married couple as a single taxpayer. Makena and David each earn \$50,000.

所得稅稅率為25%。前 20,000 美元的收入不徵稅。稅法將已婚夫婦視為單一納稅人。Makena 和 David 每人收入 50,000 美元

- A.** If Makena and David are unmarried and living together, what is their combined tax bill? 如果馬克納和大衛未婚並住在一起，他們的綜合稅單是多少
- B.** If Makena and David are married, what is their tax bill? 如果馬克納和大衛結婚了，他們的稅單是多少

Active Learning 1: Answers

A. If unmarried, Makena and David each pay

$$0.25 \times (\$50,000 - 20,000) = \$7,500$$

Total taxes = **\$15,000 = 15%** of their joint income.

B. If married, they pay

$$0.25 \times (\$100,000 - 20,000) = \textbf{\$20,000}$$

or **20%** of their joint income.

The \$5,000 increase in the tax bill is called the “marriage tax” or “marriage penalty.” 稅單中增加的 5,000 美元被稱為「婚姻稅」或「婚姻罰款」

Active Learning 2: Taxes and marriage, again 稅收和二次婚姻

The income tax rate is 25%. For singles, the first \$20,000 of income is excluded from taxation. For married couples, the exclusion is \$40,000. Daniel earns \$0. Ciara earns \$100,000.

所得稅稅率為25%。對於單身人士來說，前 2 萬美元的收入不需繳稅。對於已婚夫婦，免稅額為 40,000 美元。丹尼爾賺 0 美元。席亞拉的收入為 10 萬美元

- A.** If Daniel and Ciara are living together unmarried, what is their combined tax bill? 如果丹尼爾和席亞拉未婚同居，他們的綜合稅單是多少
- B.** If Daniel and Ciara are married, what is their tax bill? 如果丹尼爾和席亞拉結婚了，他們的稅單是多少

Active Learning 2: Answers

A. If unmarried, Daniel pays \$0 in taxes.

Ciara pays:

$$0.25 \times (\$100,000 - 20,000) = \$20,000$$

Total taxes = **\$20,000 = 20%** of their joint income.

B. If married, they pay

$$0.25 \times (\$100,000 - 40,000) = \textbf{\$15,000}$$

or 15% of their joint income.

The \$5000 decrease in the tax bill is called the “marriage subsidy.” 稅收減少 5000 美元被稱為「婚姻補貼」

Tax Incidence and Tax Equity

稅收歸宿和租稅公平

- Tax incidence 稅收發生率
 - Who bears the burden of taxes 稅負誰承擔
 - Central to evaluating tax equity 評估稅收公平的核心
 - Person who bears the burden a tax is not always the person who gets the tax bill from the government 承擔稅款的人並不總是從政府處獲得稅單的人
- Taxes alter supply and demand 稅收改變供給和需求
 - Alter equilibrium prices 改變均衡價格
 - Indirect effects 間接影響

EXAMPLE 5: Taxes and equity租稅與公平

- A tax on fur coats對毛皮大衣課稅
 - May appear to be vertically equitable: “Rich people buy furs”可能看起來是垂直公平的：“富人買皮草”
 - But furs are a luxury with very elastic demand但皮草是一種奢侈品，需求非常有彈性
 - The tax shifts demand away from furs, hurting the people who produce furs (who probably are not rich)稅收將需求從毛皮轉移，傷害了生產毛皮的人（他們可能並不富有）
- When evaluating tax equity, must take tax incidence into account.在評估稅收公平時，必須考慮稅收歸宿

Who pays the corporate income tax? 企業所得稅由誰繳？

People pay all taxes 人們繳納所有稅款

- **Tax on a corporation** 公司稅

- Corporation – more like a tax collector than taxpayer 公司
– 更像是收稅人而不是納稅人
- Burden of the tax ultimately falls on people: owners, customers, or workers of the corporation 稅負最終落在人們身上：公司的所有者、客戶或工人
- Workers and customers bear much of the burden of the corporate income tax 工人和顧客承擔了企業所得稅的大部分負擔
- Is popular: it appears to be paid by rich corporations 很受歡迎：它似乎是由富有的公司支付的

Who pays the corporate income tax?

企業所得稅由誰繳納

- Suppose the government levies a tax on automakers: 假設政府對汽車製造商課稅
 - Owners receive less profit, may respond over time by shifting their wealth out of the auto industry. 車主獲得的利潤減少，隨著時間的推移，他們可能會透過將財富從汽車產業轉移出來來做出反應
 - The supply of cars falls 汽車供應下降
 - Car prices rise, car buyers are worse off. 汽車價格上漲，購車者的處境變得更糟
 - Demand for auto workers falls 對汽車工人的需求下降
 - Wages fall, workers are worse off. 工資下降，工人的處境更糟

The Trade-off Between Equity and Efficiency

公平與效率之間的權衡

- **Equity and efficiency**公平與效率
 - The two most important goals of a tax system 稅收制度的兩個最重要的目標
 - Often conflict, especially when equity is judged by progressivity 經常發生衝突，尤其是當公平性以進步性來判斷時
 - Political leaders differ in their views on this tradeoff 政治領袖對這種權衡的看法不同
- **Economics can help us**: 經濟學可以幫助我們
 - Identifying the trade-offs that society faces 確定社會面臨的權衡
 - Avoid policies that sacrifice efficiency without enhancing equity 避免犧牲效率而不增強公平的政策

The History of Tax Policy – 1

稅收政策的歷史

- Before 1980

- 50% top marginal tax rate (on the earnings of the richest Americans) 50% 的最高邊際稅率 (針對最富有的美國人的收入)
- 70% marginal tax rate on interest income 利息收入邊際稅率為 70%

- 1981, 1986, Ronald Reagan 雷根

- 28% top marginal tax rate 28% 最高邊際稅率

- 1993, Bill Clinton 柯林頓

- 40% top marginal tax rate 40% 最高邊際稅率

The History of Tax Policy – 2

- 2003, George W. Bush布希
 - 35% top marginal tax rate 35% 最高邊際稅率
- 2013, Barack Obama歐巴馬
 - 40% top marginal tax rate 40% 最高邊際稅率
- 2018, Donald Trump川普
 - 37% top marginal tax rate 37% 最高邊際稅率
- 2021, Joe Biden拜登
 - Proposed 45% marginal tax rate (on income > \$25 million)
建議 45% 的邊際稅率（收入 > 2,500 萬美元）

You are having a political debate with a friend. The discussion centers on taxation. You show your friend some data from your economics textbook that suggests that the average American paid about \$11,000 in federal income tax in 2020. Your friend says, “If \$11,000 per person is what it takes to run this country, then I think that it would be much simpler if we just billed each American \$11,000 and eliminated the complex tax code.”

您正在與一位朋友進行政治辯論。討論的焦點是稅收。您向您的朋友展示了經濟學教科書中的一些數據，這些數據表明，2020 年美國人平均繳納的聯邦所得稅約為11,000 美元。您的朋友說：「如果管理這個國家需要每人11,000 美元，那麼我認為如果我們只向每個美國人收取 11,000 美元的費用並取消複雜的稅法，事情就會簡單得多。」

THINK-PAIR-SHARE

- A. What type of tax is your friend suggesting? What is its appeal?
您的朋友建議徵收什麼類型的稅？它的吸引力是什麼？
- B. Is this type of tax supported by the “benefits principle” of tax equity? Explain 此類稅收是否受到稅收公平「效益原則」的支持？解釋
- C. Is this type of tax supported by the “ability-to-pay” principle of tax equity? Is it vertically equitable? Is it horizontally equitable?
這種稅收是否受到稅收公平的「支付能力」原則的支持？垂直公平嗎？橫向公平嗎？
- D. Your friend agrees that the tax is not equitable, so she now suggests that we simply tax rich corporations since they can clearly afford it and then people wouldn't have to pay any taxes. Is she correct? Who would actually pay the taxes? Explain. 你的朋友同意稅收不公平，所以她現在建議我們簡單地對富有的公司徵稅，因為他們顯然有能力負擔，然後人們就不必繳納任何稅款。她說得對嗎？誰會真正繳稅？解釋。

本單元結束！