International Management Studies

Lecture 9

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I. Global Trade War and Recent Development

U.S.-China Trade War and Its Global Impacts

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Abstract: With high growth rates during the past two decades and the largest trade surplus with the United States, China is the primary target of the U.S. trade war efforts. Tariffs are the first shot in bilateral tensions that are multilateralizing and injuring global economic integration, coupled with ever more intense technology competition. The evolving global scenarios of U.S.-China trade and technology conflicts are the outcome of an ever more anxious America forsaking its multilateral cooperative stances for primacy doctrines. In the worst case, these conflicts may escalate into a "decoupling" of both economies and cause lasting global recession and new geopolitical confrontation. This gloomy scenario has become viable with the exceptional use of executive power by the post-9/11 U.S. administrations. The Trump administration, in particular, is predicated on "imperial presidency" that relies on an emergency status quo, new campaign finance, and "big money," which poses significant risks not only to U.S.-China relations, but also to American democracy and existing international order.

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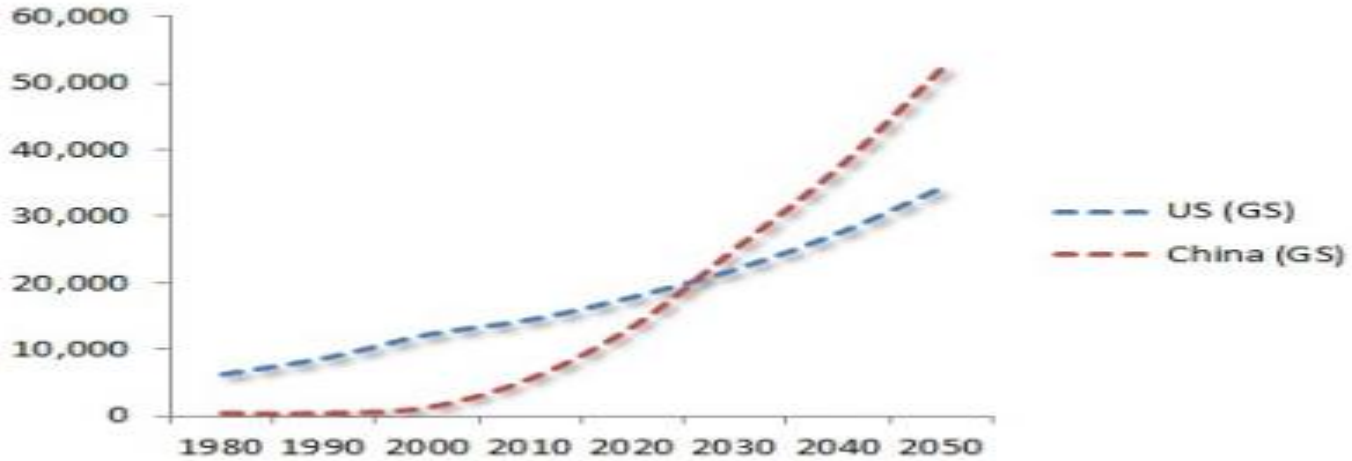


Fig. 2a. Expansion of U.S. and Chinese Economies, 1980–2050E Goldman Sachs BRICS Projection

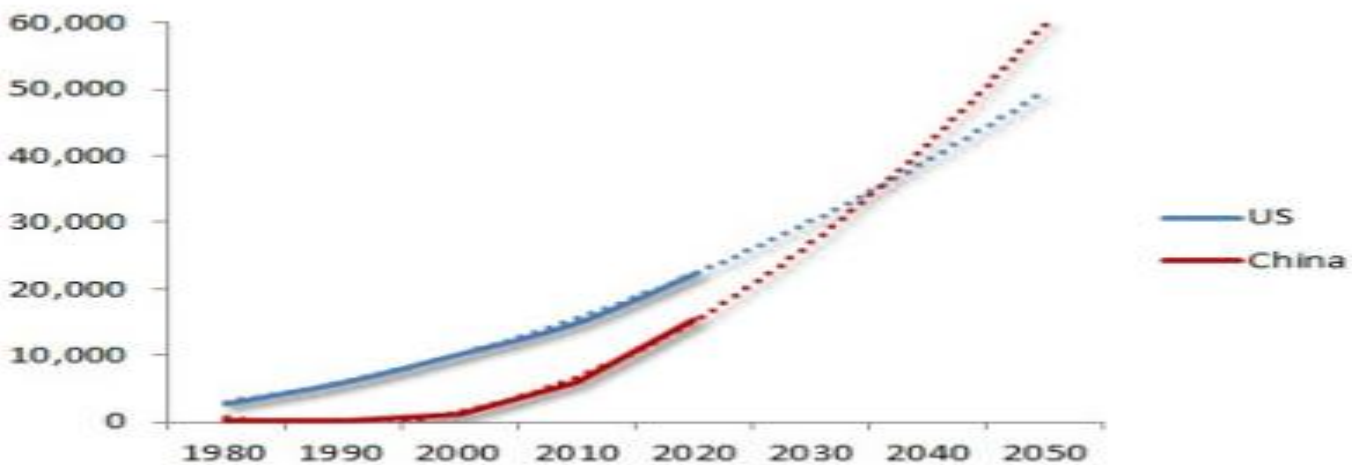


Fig. 2b. Expansion of U.S. and Chinese Economies, 1980–2050E Current Projection.

Source: Difference Group.

Worsening U.S. Perception of China

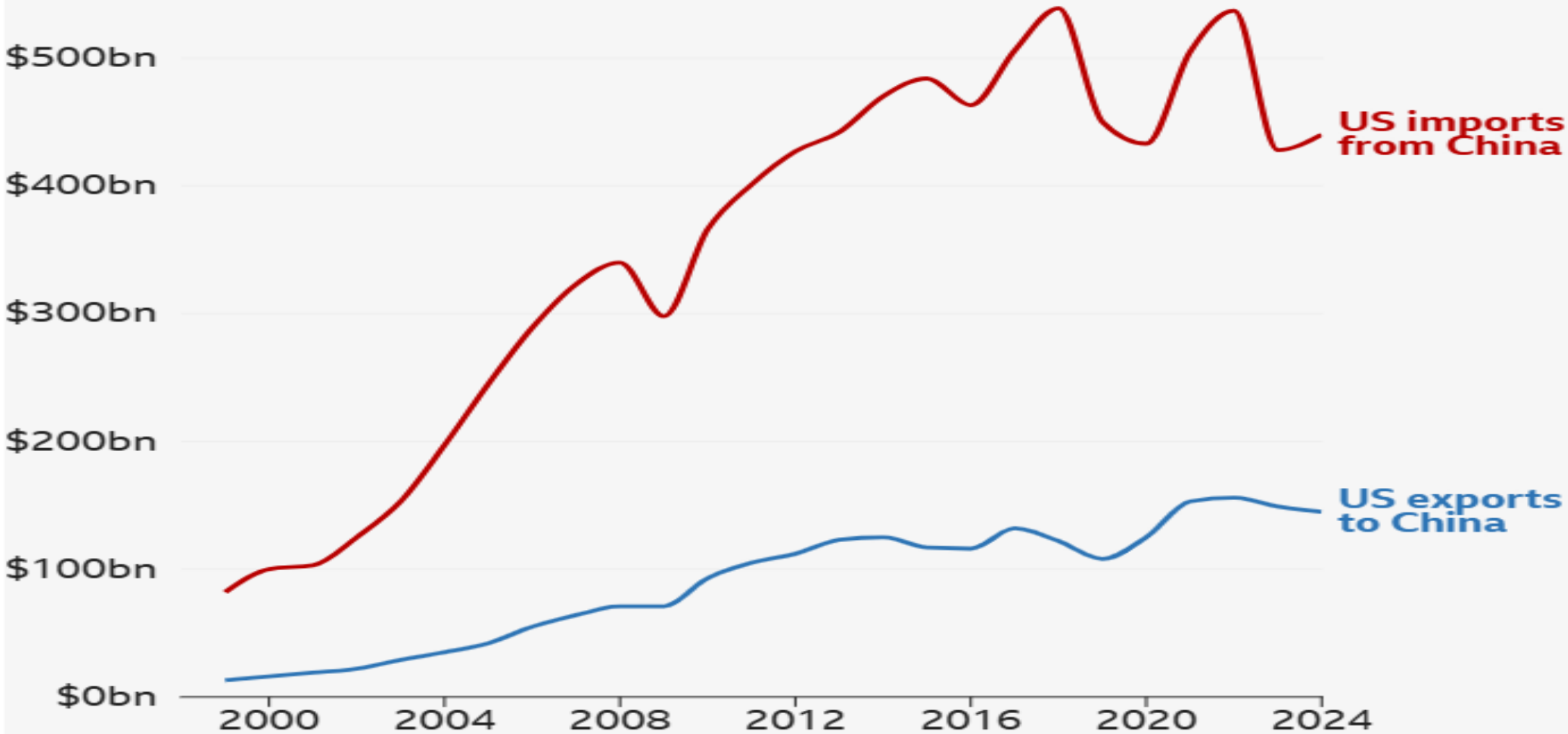
When President Trump introduced the *2017 National Security Strategy*, China was termed America's strategic "rival," even an "adversary":

> For decades, U.S. policy was rooted in the belief that support for China's rise and for its integration into the post-war international order would liberalize China. Contrary to our hopes, China expanded its power at the expense of the sovereignty of others. . . Part of China's military modernization and economic expansion is due to its access to the U.S. innovation economy, including America's world-class universities.[12]

The new *National Security Strategy* turned the status quo realities upside down: first, the Trump administration began to question — if not outright reject — the post-World War II liberal international order that the United States and its allies had constructed in the postwar era; subsequently, the administration labeled China, along with Russia, as a U.S. "adversary,"

America imports considerably more from China than it exports

Annual imports and exports of goods in $US, seasonally adjusted



Source: US Bureau of Economic Analysis

BBC

Top 5 imports/exports (2024)

Share of total

US exports to China		China exports to US	
Soybeans	9%	Smartphones	9%
Aircraft and engines	8%	Laptops	7%
Integrated circuits	4%	Batteries	3%
Pharmaceuticals	4%	Toys	2%
Petroleum	3%	Telecoms equipment	2%

Source: US International Trade Commission

BBC

II. Application of “Time Value of Money”

1. Stock Valuation

1. Stock valuation

1. Stock Valuation

✅ [1] Simple Case: One-Period Dividend Discount Model (DDM)

Assumption:

- You will hold the stock for **one year**.
- You expect a **dividend (D1)** and a **price (P1)** after one year.
- Required return = **r**

🔹 Formula:

$$P_0 = \frac{D_1 + P_1}{1 + r}$$

🔹 Example:

- D1 = $2
- P1 = $100
- r = 10%

$$P_0 = \frac{2 + 100}{1.10} = \frac{102}{1.10} = 92.73$$

✅ [2] Multi-Period DDM (with finite horizon)

Assumption: You hold stock for **n years**, receive dividends D_1 to D_n, then sell the stock for P_n.

🔹 Formula:

$$P_0 = \sum_{t=1}^{n} \frac{D_t}{(1+r)^t} + \frac{P_n}{(1+r)^n}$$

🔹 Example (2 years):

- D1 = \$2, D2 = \$2.5, P2 = \$105
- r = 10%

$$P_0 = \frac{2}{1.10} + \frac{2.5}{1.10^2} + \frac{105}{1.10^2}$$

$$P_0 = 1.8182 + 2.0661 + 86.7769 \approx 90.66$$

✅ [3] Gordon Growth Model (Infinite Horizon DDM)

Assumption: Dividends grow at a **constant rate g**, forever.

- **r > g** must hold for this to work.

🔹 Formula:

$$P_0 = \frac{D_1}{r - g}$$

🔹 Example:

- D1 = $3
- g = 4%
- r = 10%

$$P_0 = \frac{3}{0.10 - 0.04} = \frac{3}{0.06} = 50$$

2. How to value bonds

✅ [1] Simple Case: Zero-Coupon Bond

Definition: A bond that pays **no interest** (coupon), only face value at maturity.

🔹 Formula:

$$PV = \frac{FV}{(1+r)^n}$$

- **FV**: face value (e.g., $1,000)
- **r**: required yield / market interest rate
- **n**: years to maturity

🔹 Example:

- FV = $1,000
- r = 5%
- n = 3 years

$$PV = \frac{1,000}{(1.05)^3} = \frac{1,000}{1.157625} \approx 863.84$$

✅ [2] Plain Vanilla Coupon Bond

Definition: A bond that pays **fixed annual coupons** and returns face value at maturity.

🔹 Formula:

$$PV = \sum_{t=1}^{n} \frac{C}{(1+r)^t} + \frac{FV}{(1+r)^n}$$

- **C**: annual coupon = FV × coupon rate
- **FV**: face value (usually $1,000)
- **r**: market rate
- **n**: years

🔹 Example:

- FV = $1,000
- Coupon rate = 6% → C = $60/year
- r = 5%
- n = 3 years

$$PV = \frac{60}{1.05} + \frac{60}{1.05^2} + \frac{60}{1.05^3} + \frac{1,000}{1.05^3}$$

$$= 57.14 + 54.42 + 51.8 \downarrow 863.84 = \approx 1,027.23$$

3. How to value a project

✅ [1] Simple Case: Single Cash Flow in the Future

You invest today to get **one known payoff in the future**.

🔹 Formula:

$$\text{NPV} = \frac{CF_1}{(1+r)^1} - C_0$$

- CF_1: cash inflow in year 1
- C_0: initial investment (cash outflow at t=0)
- r: required rate of return (discount rate)

🔹 Example:

- Initial cost $C_0 = 800$
- Return in one year $CF_1 = 1,000$
- $r = 10\%$

$$NPV = \frac{1,000}{1.10} - 800 = 909.09 - 800 = +109.09$$

→ ✅ **Accept the project** (NPV > 0)

✅ [2] Multiple Cash Flows (Conventional Project)

You invest today and receive returns for several years.

🔹 Formula:

$$NPV = \sum_{t=1}^{n} \frac{CF_t}{(1+r)^t} - C_0$$

🔹 Example:

- C_0 = 1,000
- CF_1 = 300, CF_2 = 400, CF_3 = 500
- r = 10%

$$NPV = \frac{300}{1.10} + \frac{400}{(1.10)^2} + \frac{500}{(1.10)^3} - 1,000$$

$$= 272.73 + 330.58 + 375.66 - 1,000 = -21.03$$

→ ❌ **Reject** the project (NPV < 0)

✅ [3] Include Terminal Value or Salvage Value

Final cash inflow includes **asset resale value or terminal cash flows**.

- **Formula:**

$$NPV = \sum_{t=1}^{n} \frac{CF_t}{(1+r)^t} + \frac{TV}{(1+r)^n} - C_0$$

- **Example:**

Same as above, but project ends with $200 resale value in Year 3.

$$NPV = 272.73 + 330.58 + \frac{(500+200)}{(1.10)^3} - 1,000 = 272.73 + 330.58 + 476.52 - 1,000 = +79.83$$

→ ✅ Accept the project.

4. How to value a real estate

✅ [1] Simple Case: Single Future Sale Value

You buy a property today and plan to sell it in the future. No rental income.

🔹 Formula:

$$\text{PV} = \frac{\text{Expected Sale Price}}{(1+r)^n}$$

- **r** = required return or discount rate
- **n** = number of years until sale

🔹 Example:

- Buy now (what's it worth today?)
- Sell in 5 years for $500,000
- Required return = 8%

$$PV = \frac{500,000}{(1.08)^5} = \frac{500,000}{1.4693} \approx 340,136$$

→ The max you'd pay today is **$340,136**.

✅ [2] Rental Income Property (Fixed Income)

Now assume you earn **annual rental income (R)**, and sell at the end.

$$PV = \sum_{t=1}^{n} \frac{R}{(1+r)^t} + \frac{P_n}{(1+r)^n}$$

- R: net rental income per year
- P_n: sale price in year n

🔹 Example:

- Net rent: $30,000 per year
- Hold for 5 years, sell at $400,000
- r = 10%

$$PV = \sum_{t=1}^{5} \frac{30,000}{(1.10)^t} + \frac{400,000}{(1.10)^5} = 113,719 + 248,686 \approx 362,405$$

→ Property is worth **$362,405** today.

✅ [3] Real Estate as a Perpetual Income Stream (Capitalization Method)

If a property generates **constant net income forever**, use the **perpetuity formula**:

$$PV = \frac{\text{Net Operating Income (NOI)}}{r}$$

- NOI = gross rent − expenses
- r = cap rate (or required rate of return)

🔹 Example:

- NOI = $50,000/year
- r = 5%

$$PV = \frac{50,000}{0.05} = 1,000,000$$

→ You'd pay **$1 million** for a 5% return.

✅ [4] Growing Rental Income (Gordon Growth Model)

Rent increases at a **constant growth rate g** each year.

$$PV = \frac{NOI_1}{r - g}$$

- NOI_1 = net income next year
- g < r

🔹 Example:

- NOI_1 = $52,000
- g = 2%
- r = 6%

$$PV = \frac{52,000}{0.06 - 0.02} = \frac{52,000}{0.04} = 1,300,000$$

→ Higher valuation due to growth.

III. Next Week: Team Presentation

1. Topic: The most promising industry over the next 5 years (globally or locally)
2. PPT material (more than 10 pages), should be submitted before the presentation
3. Get prepared to answer any question from other teams
4. 10 minutes for presentation and Q&A
5. All members should participate in preparing the presentation material and in presenting your project.
6. All the presentation material should be loaded in the board before the presentation.