L9: Government Policy, Firms and the Macroeconomy

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Essentials of Financial Economics 2020
Financial Decision-Making (1^{st} Quarter)

Overview

- Governments change policies all the time.
- What are the implications for firm-level decision making?
- What are the implications for the macroeconomy?

Overview

- Let's focus today on taxes.
- Big recent example: U.S. Tax Cuts and Jobs Act (TCJA).
- Law passed in December 2017: became effective January 2018.
- How did it affect firm decision-making? How did it affect the U.S. economy?

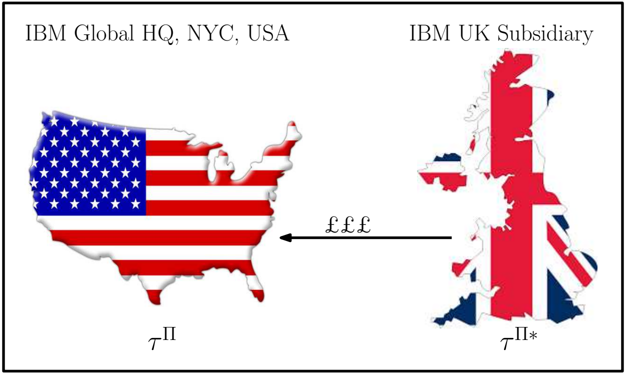
TCJA

- Drop of the U.S. corporate tax rate from 35% to 21%.
- Significant reforms to the taxation of U.S. multinationals.

TCJA

- Focus on one particular aspect of the TCJA related to multinationals.
- Removal of the *repatriation tax*.
- How did this affect firm decision-making? Abstract from the other TCJA changes.
- This was the main topic of my Ph.D. dissertation.

Policy Application: Institutional Details



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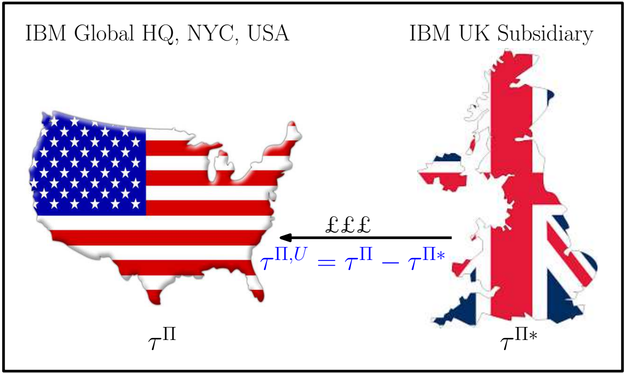

- $\tau^{\Pi,U} = \tau^{\Pi} - \tau^{\Pi*}$ is pre-reform (pre-2018) repatriation tax.

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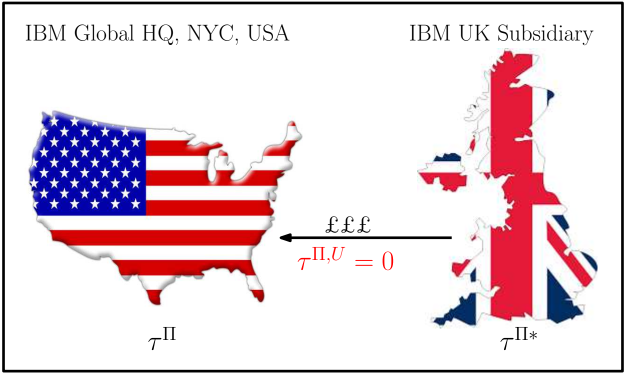

- $\tau^{\Pi,U} = \tau^{\Pi} - \tau^{\Pi*}$ is pre-reform (pre-2018) repatriation tax.
- $\tau^{\Pi,U} = 0$ post-reform (Jan 2018–).

Tradeoff: exporting v.s. FDI

- This reform affects multinationals' incentive for *foreign direct investment (FDI)*.
- A firm with an overseas subsidiary now faces a lower tax burden on its foreign profits!

Tradeoff: FDI extensive margin

- There are two margins that we usually consider in economics.

1. Intensive margin: a continuous choice (e.g. how many hours to I work?).

2. Extensive margin: a discrete choice (e.g. do I get a job or not?).

Tradeoff: FDI extensive margin

- For a firm: the extensive-margin multinational decision.
  - Do I open up a foreign subsidiary or not?
  - Benefit: I can produce in another country, I can generate profits in another country.
  - Cost: establishment fees, legal fees, building factories, paying government officials.

Tradeoff: FDI extensive margin

- Removing the repatriation tax increases the *benefit* of undertaking FDI.
- Do I undertake FDI or not? NPV should drive the decision:

$$\text{NPV} = -\text{Upfront costs} + PV(\text{Future benefits})$$

- Future benefits includes **after** tax profits of the subsidiary.
- These profits are now taxed by **only** the local authority!
- Increases the NPV of the expansion.

Example A

- Macrosoft, (a U.S.-incorporated company), is faced with a potential overseas investment opportunity.
- There are two periods, ($t = 0$ and $t = 1$).
- The opportunity arises in Gatesland, whose currency trades at 1 for 1 with the USD.
- Gatesland has a zero domestic corporate tax rate.
- The investment has an upfront cost of \$66m at $t = 0$ and generates \$100m at $t = 1$.
- Assume there is no discounting.
- Find the NPV of the project under the current worldwide U.S. system and contrast it with that under a territorial alternative.

Example A

- Given that this is a two period problem, Macrosoft will bring **all the earnings at** $t = 1$ back to the U.S. at $t = 1$ if they take the project.
- Under the current worldwide system

$$NPV_{WW} = -\$66m + (1 - 0.35) \times \$100m = -\$1m$$

- Under the territorial system

$$NPV_{T} = -\$66m + (1 - 0.0) \times \$100m = \$44m$$

- Overseas investment appears to be more attractive under the territorial system.

Macro Implications

- If there were many firms, like Macrosoft, who were on the margin between undertaking the FDI and not, this policy can lead to a large *discrete jump* in the level of investment.
- E.g. say that there are ten firms just like Macrosoft.
- With this reform, investment has just increased by \$660m ($10 \times \$66m$)!

Macro Implications

- More generally, a future FDI decision is an *option* for U.S. firms.
- E.g. start-up my own local coffee production company. It'll be small and local at first, but I could upsize it to become a multinational in the future.
- This reform makes being a U.S. startup company more profitable!
- Increase in the number of startup firms: even larger boost to investment.

Macro Implications

- My own research shows that this aspect of the TCJA increased U.S. production through investment by around 1%.
- Enormous numbers!
- Option value can be a really powerful thing for investment.

Takeaways

- NPV analysis is a versatile tool for evaluating investment decisions.
- Government policy affects many of the terms that enter NPV calculations.
- The decisions of individual firms can aggregate, giving big quantitative effects on the macroeconomy.