

Optimal Trade Policies of South Korea in Changing International Trading Regimes

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Research Question

Identifying South Korea's ideal tariff strategy amid global trade protectionism

Motivation

Protectionism on the rise worldwide

- Trade war between US and China, imposing high tariffs on counterparts
- War in major parts of the globe

The export-oriented economy of South Korea

- Small domestic market
- Greatly affected by changes in trade partners and others' trade policies

Relevant Research

Ralph Ossa(2014), Trade Wars and Trade Talks with Data

- Analysis of non- & cooperative trade policy
- A unified framework that incorporates traditional, new trade, and political economy motives for protection

Model Construction

The Optimum Tariff was calculated as the one that maximizes the government's objective function.

1. Optimum Tariff in One-shot Game

- Assuming no retaliation

2. Optimum Tariff in Repeated Game

- Nash calculation with retaliation
- Re-optimize given every country's optimal tariffs

3. Optimum Tariff in Cooperative Game

- Maximize total welfare gains
- Gains are redistributed equally among participating countries

Subject of Analysis

Three industries, five countries

- Steel, semiconductor, Car
- Korea, Japan, USA, China, Germany

Data & Variables

- Trade Volumes, Product price, Actual tariffs, CPI, GDP, Industry revenue

Optimum Tariff in One-Shot Game

- Current international laws (FTA, WTO) promote low tariffs
- Countries could achieve higher welfare with higher tariffs.
 - Optimum tariff > factual tariff in most cases

Optimum Tariff in Repeated Game

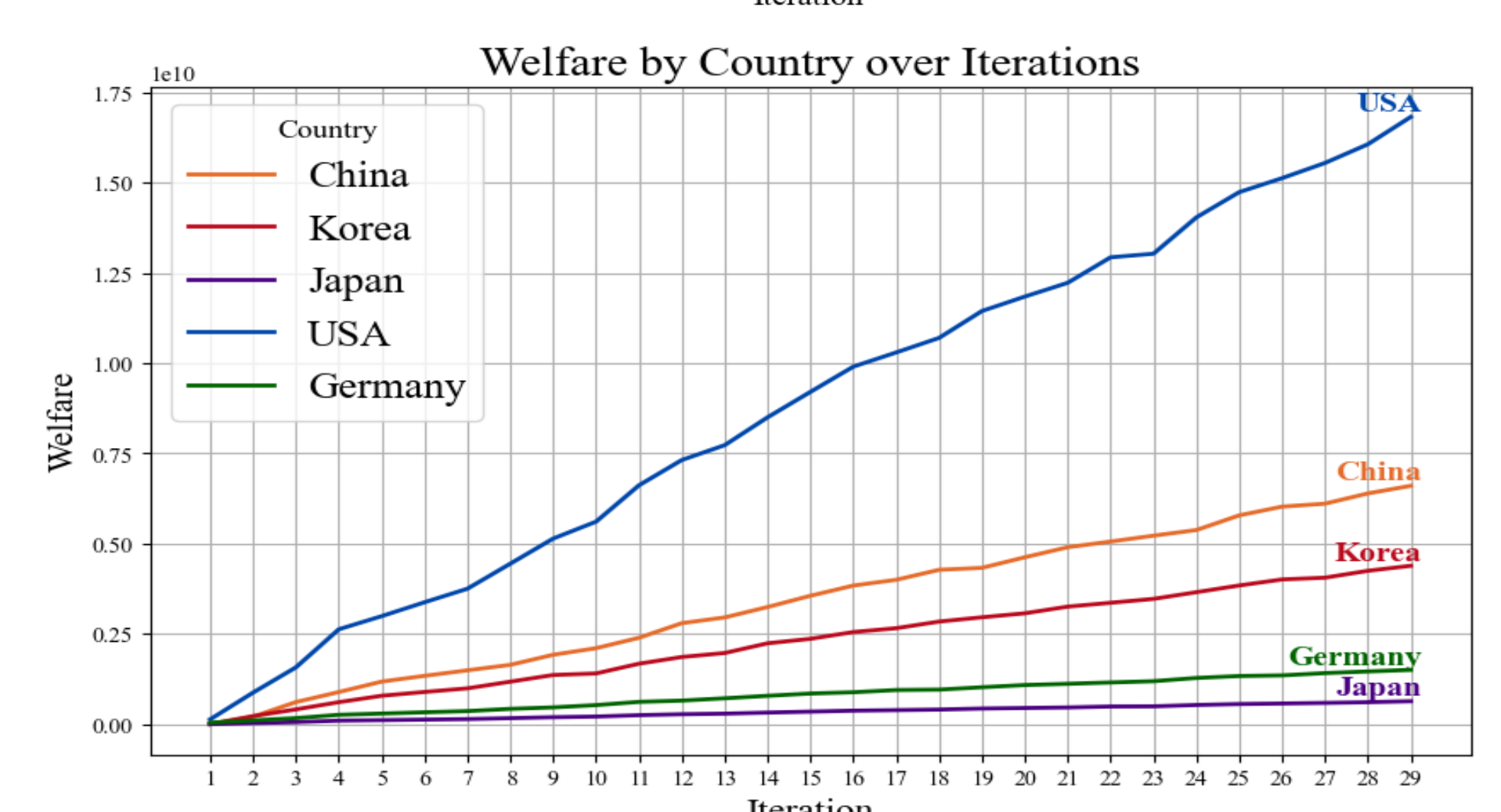
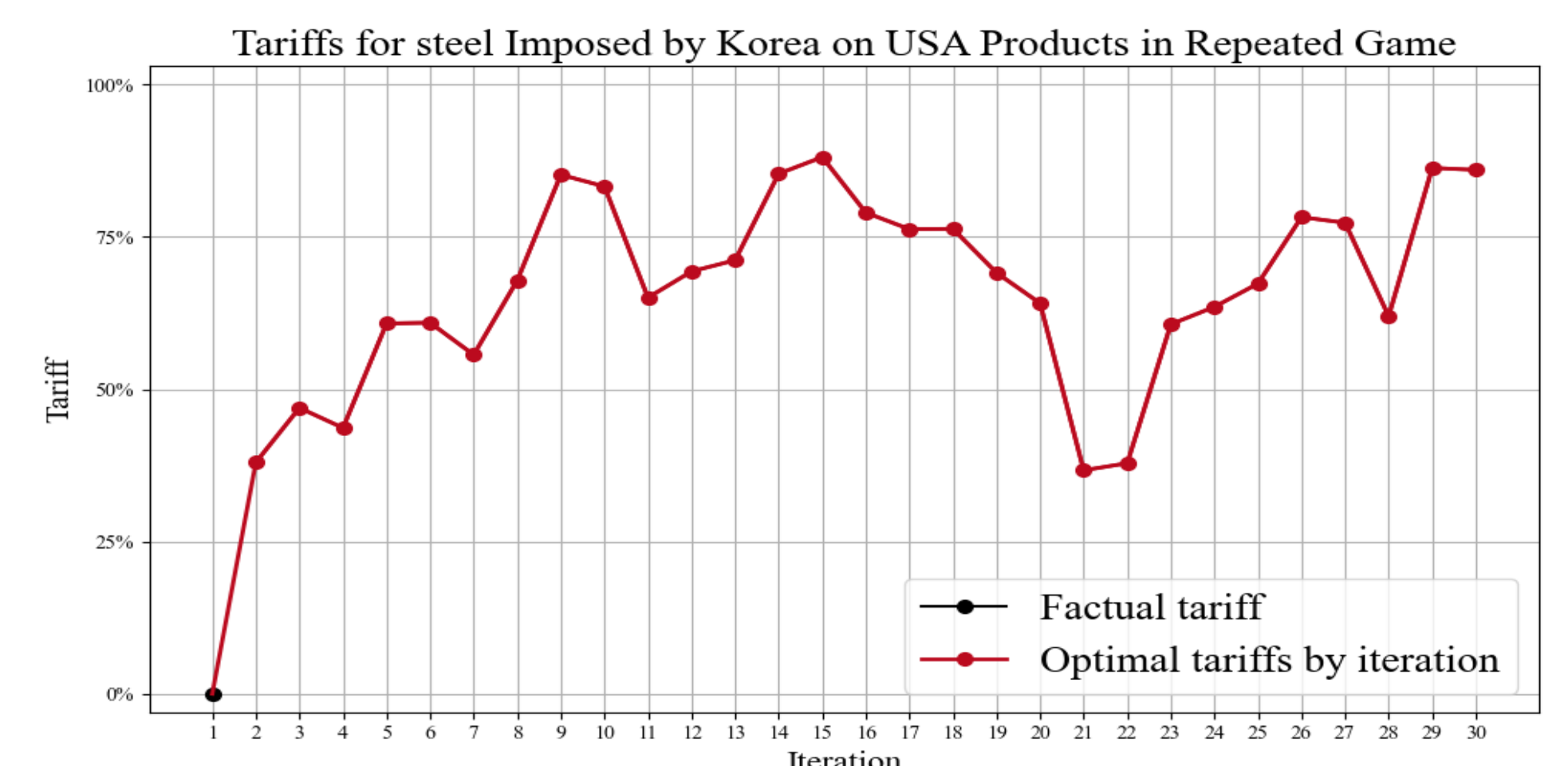
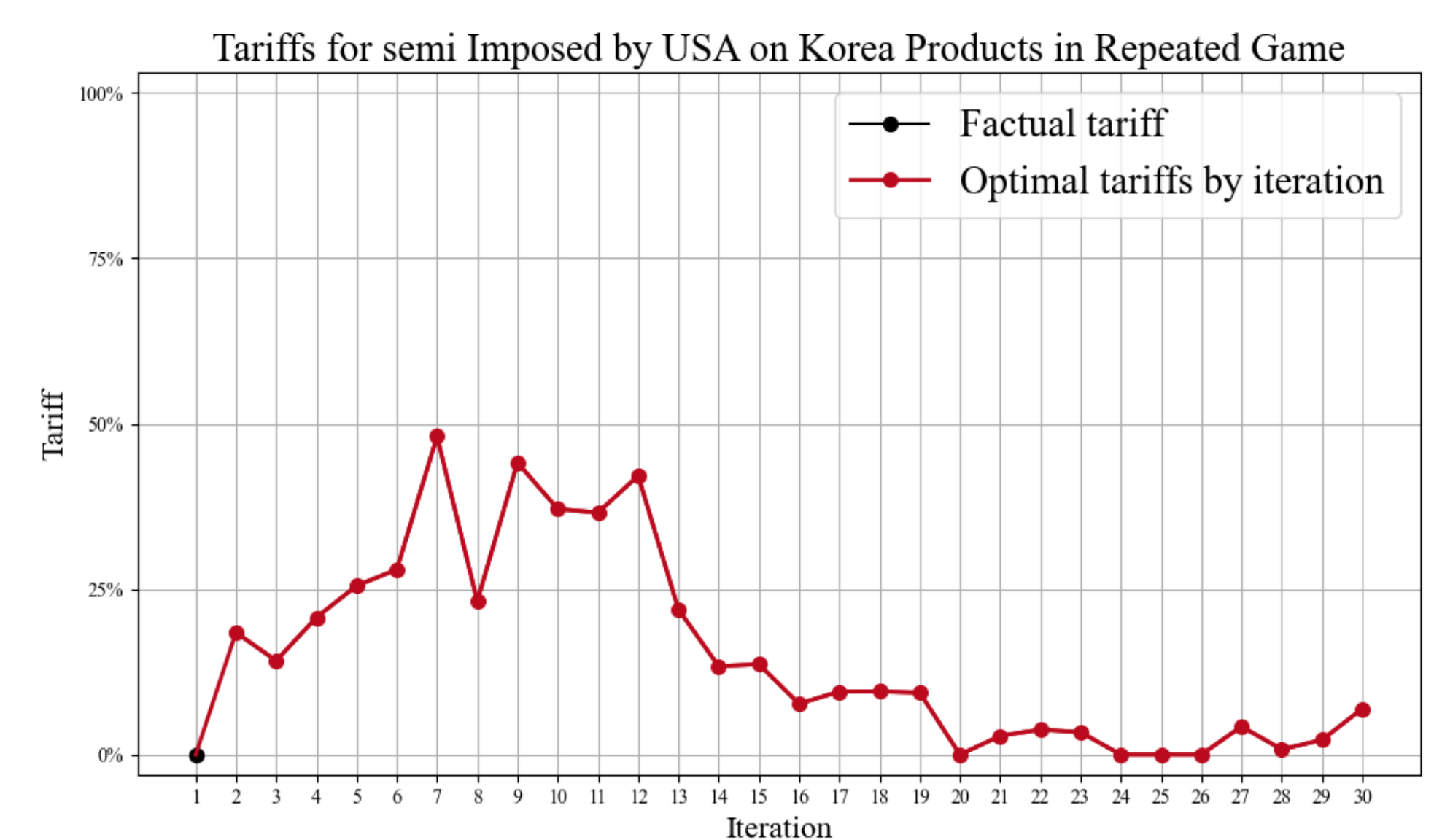
- Imposing high tariffs is a strategy that increases welfare for Korea's key industries.
- There is a possibility of increasing in Korean welfare by imposing high tariffs on other countries, with the expectation that retaliatory tariffs against Korea would be minimal.
- While tariff changes converge, welfare does not.
- Welfare continues to increase, ultimately allowing the United States to dominate.
- This creates significant inefficiencies for countries other than the US, providing an incentive for cooperation.

Optimum Tariff in Cooperative Game

- Korea, Japan, Germany: tariffs decrease, China & USA: tariffs increase
- Korean welfare reaches 39% in the repeated game compared to the cooperative game.
- Cooperation leads to superior outcomes more rapidly than the repeated game.
- Tariffs converge, with welfare being distributed relatively equally among countries by the 5th iteration.

Implication

- Countries need to cooperate to achieve better welfare.
- Cooperation leads to the same maximized total welfare more quickly than in the repeated game
- The welfare distribution becomes relatively more equal than in the repeated game, where the USA dominates the majority of welfare
- There is a need to balance national interests with global economic stability in trade policies.



Unique Origin
Unique Future