The 2018 US-China Trade War and Trade Diversion: Evidence from Thai Customs Data

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Summary of the paper

- Examine the impacts of the US-China trade war on Thai exports
- Use Thai customs data at 6-digit HS level from 2013-2023, covering 3,765 products
- Employ a difference-in-differences (DID) estimator to identify the effect
- Key results
  - The 2018 US-China trade war led to an increase in Thai exports to the U.S., particularly for products exposed to U.S. tariffs on Chinese goods.
  - There's a negative and significant impact of Chinese retaliatory tariffs on Thai exports to China in some periods after 2018.
  - The effect is delayed and heterogeneous across product groups.

Comment#1: Analytical framework

- Incorporating the global value chain (GVC) dimension would strengthen the paper's analysis
- Thailand has long engaged in 'global production sharing' — splitting the production process into discrete activities that are then allocated across countries
  - A prime driver of industrialization in this era of economic globalisation
  - A key role in determining Thailand's trade pattern
  - Variously known as 'global manufacturing value chain', 'international fragmentation', 'offshoring', and 'vertical specialisation'
  - Allow firms to specialize in a specific task, not whole product
  - Modern trade driven by GPS creates interdependence among countries in a way that the analysis based on old-fashioned horizontal approach to trade fails to capture.
  - GPS participation has direct implications for both Trump's ability to implement punitive tariffs and the economic impacts.

Thailand-US trade relations

- Thailand's exports to the U.S. are dominated by manufactured goods (other primary products accounting for <10% of total merchandise exports).
- GVC-related trade accounts for the bulk of manufactured goods (its share rose from 34% in 2000 to >48% in 2022).
  - Sharp increase in GVC-related trade after 2018, especially machinery, electrical and optical equipment, and transport equipment
  - GVC-related trade between Thailand and the U.S. is primarily driven by "pure backward GVC participation" – Thai exports rely strongly on foreign parts and components to assemble goods for export to the US
- This evidence supports to the paper's finding.

However, ….

- The impact of tariff on exports of GVC products may not be as significant—positively or negatively—as commonly assumed.
- Why?
  - Key players or the 'lead firm' is a multinational manufacturing enterprise (e.g., Intel, Motorola, Apple, and Samsung). They manage production sharing either through their own global branches or by leveraging strong operational ties with trusted contract manufacturers. Thus, post-tariff price may play the *smaller* role for firm's decision, compared to non-GVC products.
  - Production units of the value chain located in different locations normally specialize in specific tasks/activities. Not directly substitutable for tasks produced elsewhere. Substitutability of components obtained from various sources is limited.
  - The establishment of overseas production bases and related service links entails high fixed costs, thereby relative price/cost change due to tariff are less important in business decision-making.
    - This limits this possibility: "One plausible explanation is that U.S. importers sought to diversify their sourcing in response to tariff-induced uncertainty, reallocating demand toward alternative suppliers such as Thailand."
    - Think about firmly established relationship among suppliers (e.g., tiers 1 and 2 in automotive industries)

Comment#2: Using fine product level data

- The paper uses fine product level data, allowing for exploration of differences in responses by product type (Intermediate goods, capital goods, and final goods)
- But might not precisely capture GVC participation
- No hard and fast rule in delineating GVC products
  - Goods that are most likely to be parts of supply chains (ICT goods, intermediate trade in the machinery industries) (Swenson, 2024)
  - Flaasen et al. (2020) focus on South Korea's washing machine
  - Kohpaiboon et al. (2023) utilise the so-called "input-output mapping"
  - Kimura and Obashi (2010) focus on intermediate input in machinery industries
  - Athukorala (2014), Durongkaveroj (2023) use the list of PC and final assembly from BEC classification

Comment#3: Tariff and Data issue

- If the focus is the trade diversion effects caused solely by tariffs on China, it may be more appropriate to separate Section 301 tariffs from those imposed under Sections 201 and 232?
  - Section 301: main battleground for US-China trade war
  - Sections 201 and 232: not China specific, imposed by the US on every trading partners

- "We further collapse the data to the quarterly frequency to reduce volatility and zero trade flows"
  - But it is this volatility that gives you variations and more consistent with timeline of trade dispute between the US and China
  - Transform data into quarter, but some quarter saw greater impact than others (July – Sep 2018, 6 events vs Jan – March 2019, 2 events)

Comment#4: Choices of tariff data

- 4 Measures of trade policy exposure: (i) U.S. tariffs on Chinese exports, (ii) Chinese tariffs on U.S. imports, (iii) U.S. tariffs on Thai exports, and (iv) Chinese tariff on Thai exports.
  - (i) and (iii) taken from Fajgelbaum et al. (2024), weighted average
  - (ii) taken from Bown (2021)
  - (iv) from … (WTO?)

- Why (i) and (ii) not from Bown (2021)
- Aggregate the tariff data for the US (10-digit level) and for China (8-digit level) to the 6-digit level using a weighted by the import share before trade war
  - Simple average of tariff values for robustness check?

Comment#5: Econometrics

- Equation (1) is estimated using the DID estimator
  - DID requires a clearly defined treated group and control group
  - Treatment group: HS-6 products hit by US tariff and Chinese tariff, and control are those not affected by the tariffs
  - Parallel trends assumption? Treated and control groups might not have followed similar export trends in the absence of trade war due to exchange rate volatility, price competition on specific product, local demand shift, etc. A test?
  - An increase in exports to US may be due to strategic responses by firm that wants to fill gaps left by Chinese exporters, so the treatment (i.e., benefiting from trade diversion) is endogenous to Thai firms' competitiveness and supply chain flexibility?
  - Tariffs were imposed in multiple rounds, targeting specific product and changing overtime. Thai products were affected gradually and differently. A DiD with a binary post-treatment indicator may result in biased estimate?
- What's about the model with change in tariff implemented by the US/China?
- Other economy-wide macroeconomic shocks such as changing currency exchange rates, GDP of US and China, commodity price?

Miscellany

- Role of 'International Technology Agreement', tariff-free trade in electronics-related products
- Extension to 8 or 10 digit? (to make it consistent with Fajgelbaum et al., 2024; Bown, 2021)
- Useful graph: show Thai export share in the US, by tariff status (products that never faced a U.S. trade-war tariff versus those that were hit by a trade-war tariff)
- Separate raw materials from intermediate (111, 121, 21, 22, 31, 322, 42, and 53 in BEC classification)
- Further study: things will be more complicated if tariffs are imposed based on 'the lead firm nationality' basis.