The Impact of COVID-19 Mobility Restrictions on Trade Facilitation at Borders in the Central Asia Regional Economic Cooperation Region

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Introduction

- **Landlocked countries**, which are reliant on transit countries for its trade activities, were significantly affected by **border and mobility restrictions** imposed during the pandemic.
- **Trade costs and travel time** escalated even more, to around 25% with port of entry closures (UNESCAP, 2021).
- The **Central Asia Regional Economic Cooperation (CAREC)** countries, just like the rest of the world, imposed lockdowns and closed borders in response to the COVID-19 outbreak.
- The average time taken at the BCPs increased by 23.7%, from 12.2 hours in 2019 to 15.1 hours in 2020.
- To keep trade flowing, CAREC implemented various **trade facilitation measures** (i.e simplify customs procedures, expedited clearance).

11 CAREC countries: Afghanistan, Azerbaijan, the People's Republic of China, Georgia, Kazakhstan, the Kyrgyz Republic, Mongolia, Pakistan, Tajikistan, Turkmenistan, and Uzbekistan.

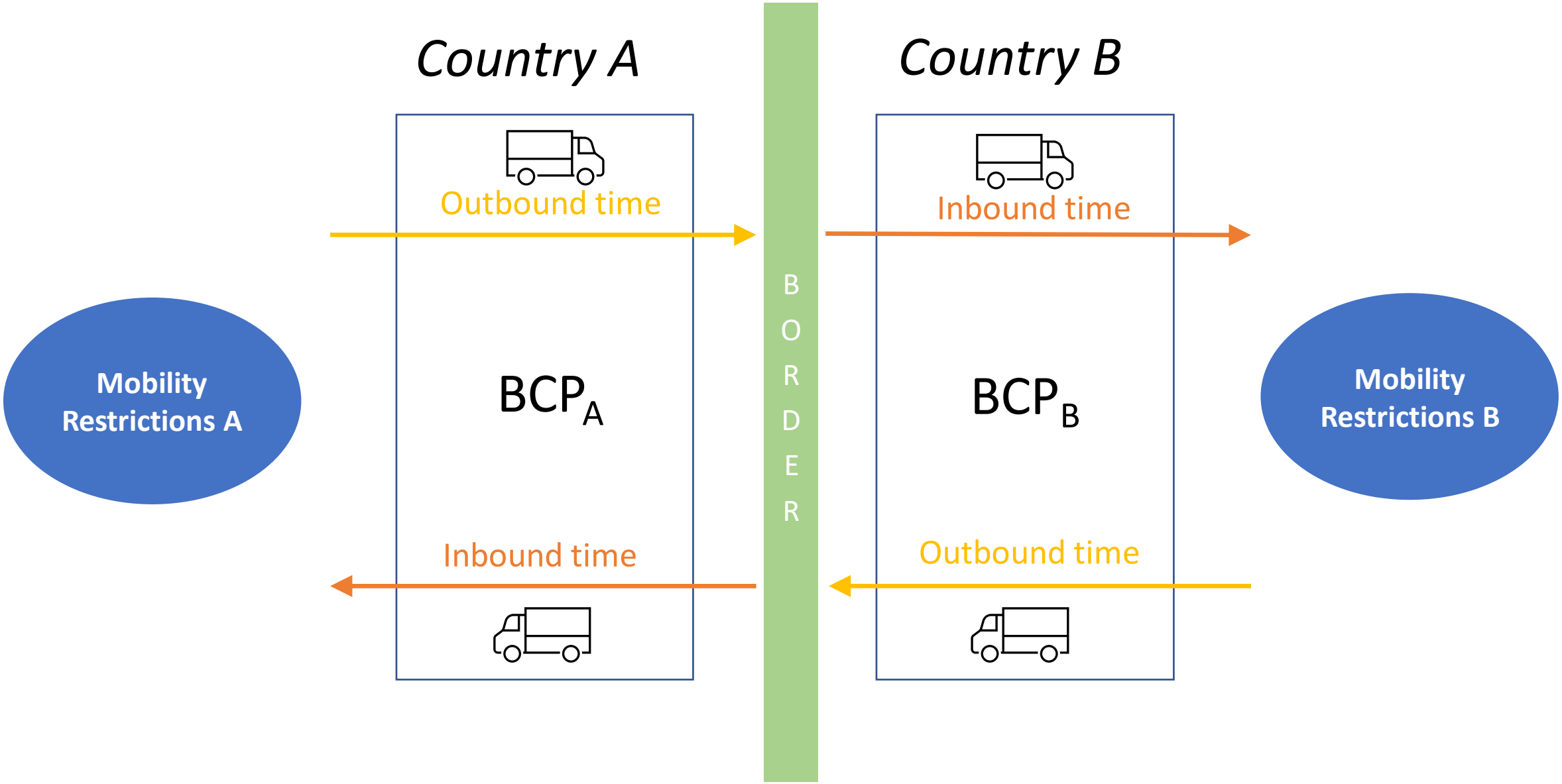
Objectives and expected contributions

- The **impact of mobility restrictions** on cargo border crossing for CAREC member countries by using inbound and outbound times taken at a border crossing point as part of the **CAREC Corridor Performance Measurement and Monitoring Trade Facilitation Indicators** (CPMM TFIs).
- It assesses the **impact on time** taken for incoming and outgoing cargos and any possible differences in the impact depending on the direction of the cargo flow.
- It also examines if any **heterogeneity** exists in the impact of different mobility measures.
- The availability of **high-frequency** trade facilitation measures allows us to capture monthly pandemic impacts on time taken at BCPs.
- This paper helps design timely monitoring and **evidence-based decision making** for trade facilitation polices in CAREC countries. It also adds value to the literature on the COVID-19 impact on trade facilitation

Literature Review

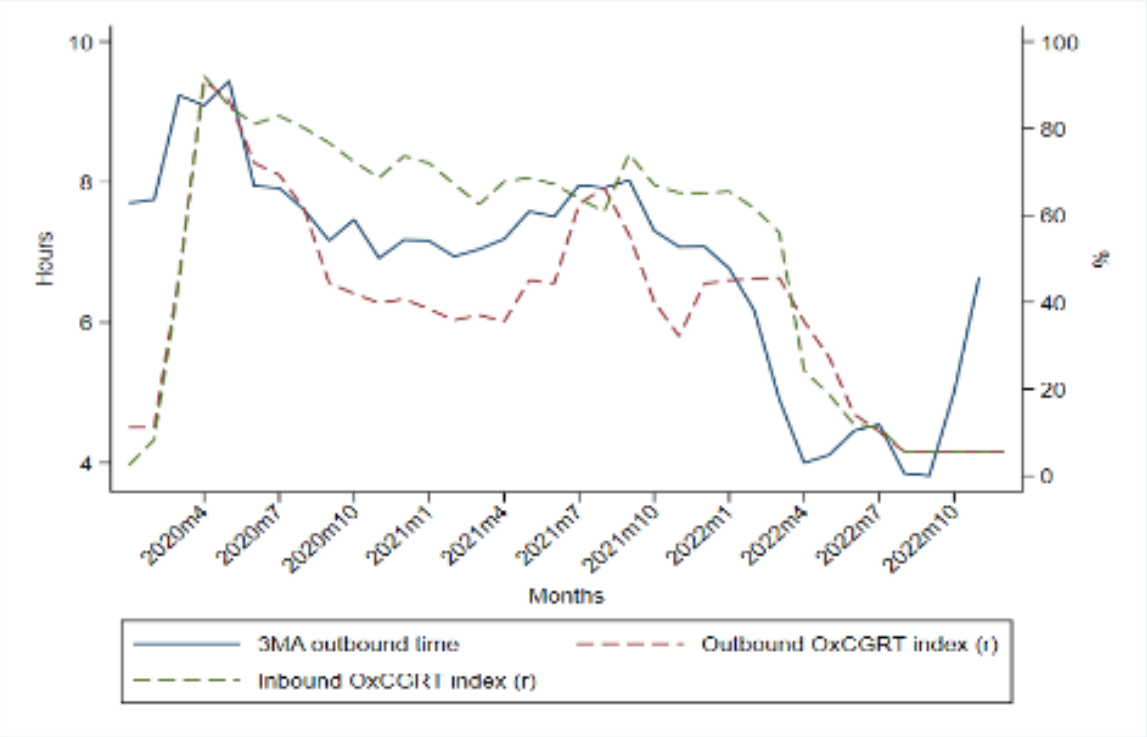
- Several studies reports significant **negative impacts of COVID-19 on trade flows** (Barbero et al. 2021, SANEM 2020. Holzhacker 2020, UNCTAD 2022)
- A few of studies examined the **spillover effects of COVID-related policies, mostly focusing on trade**, and found that policies implemented in response to the pandemic by trading partners significantly impacted trade (Sharma and Mishra 2023; Cerdeiro and Komaromi 2022).
- However, the discussion of the pandemic **impact on trade facilitation is limited**, focusing mostly on case-based impacts, and policy measures to address and prevent delays at borders.
- Regarding **trade facilitation measures** implemented during the pandemic, experiences varied across Asia.
    - simplifying trade procedures and promoting digital trade facilitation; electronic submission of documents for verification, conditional on the later submission of hard copies upon approval; emergency response manual to maintain operational continuity; streamlined procedures for essential goods; a unified set of coordinated policies

Schematic representation of the settings

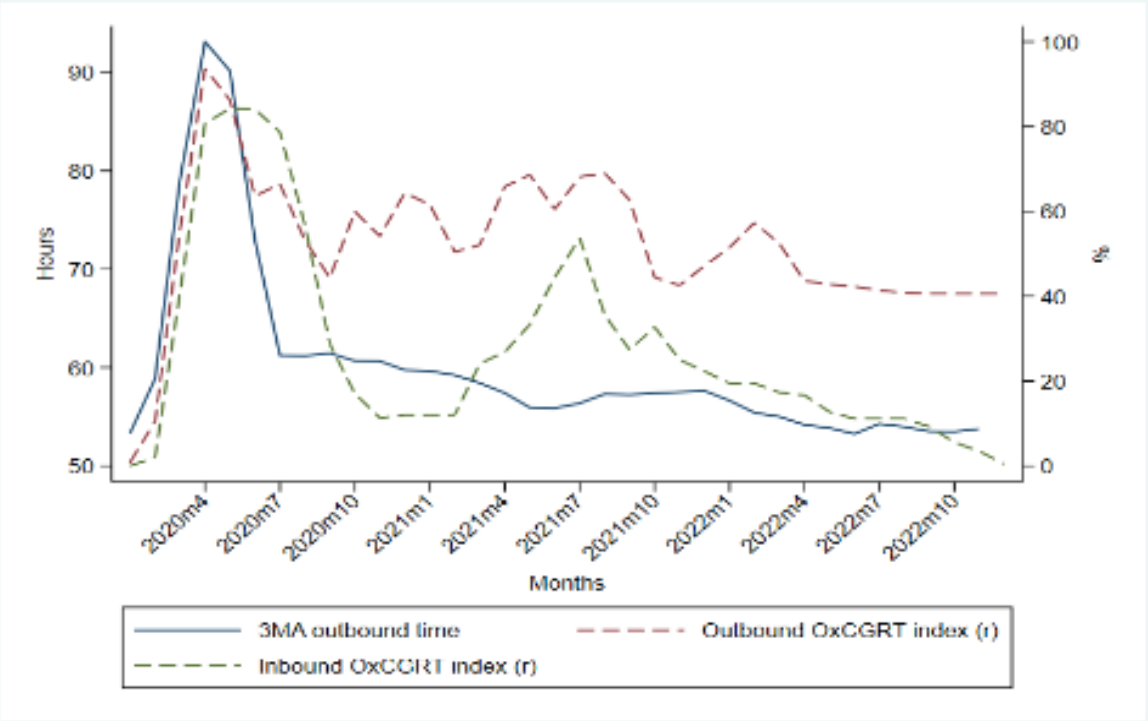


Trends of Time taken at BCPs (TFI1) and stringency index

Outbound time (Dautota, UZB – Beyneu, KAZ)



Inbound time (Chama, PAK – Spin Buldak, AFG)

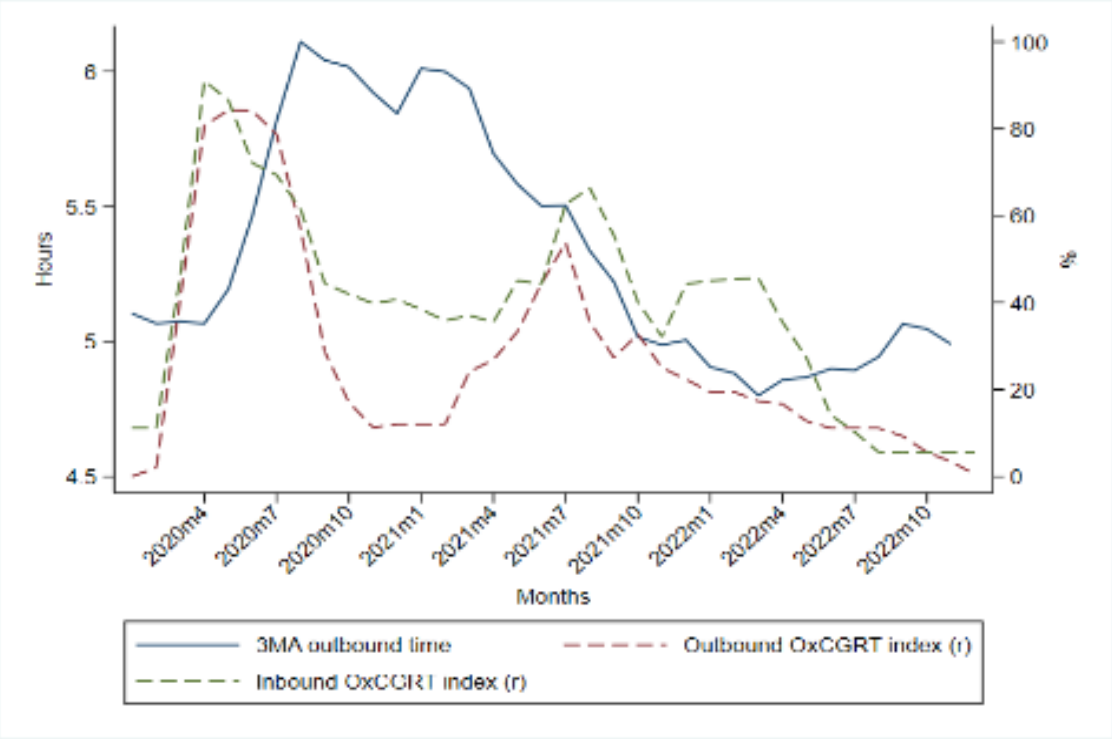


Note: 3MA = 3 month moving average

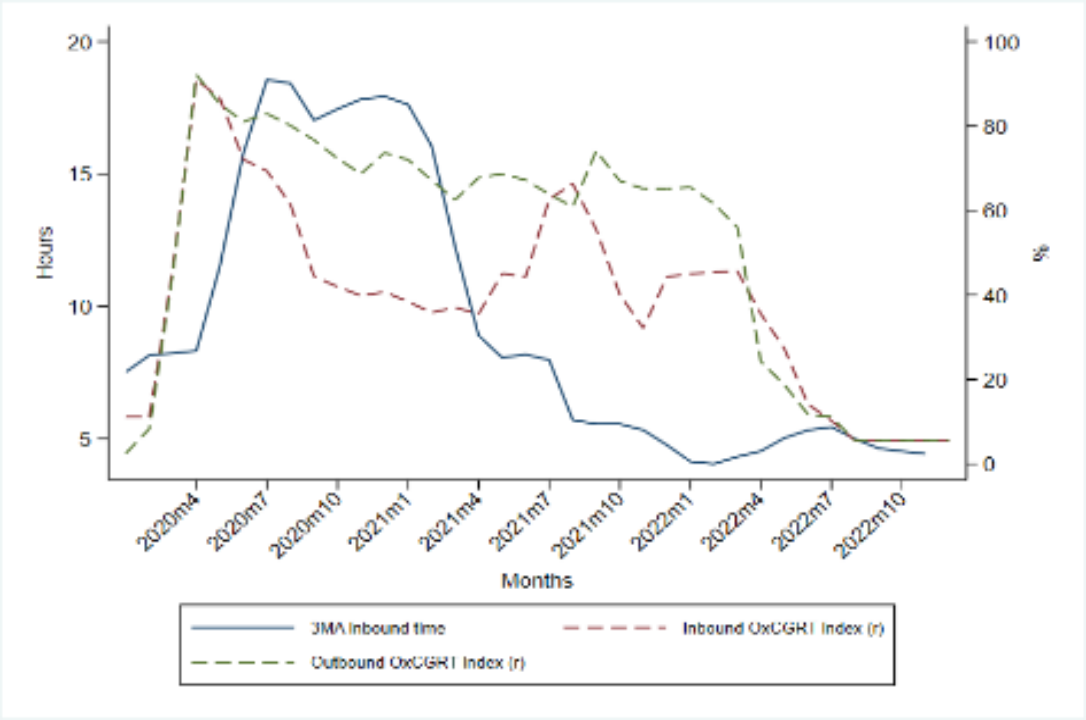
Source: Authors' calculations using CAREC Corridor Performance Measurement and Monitoring trade facilitation indicators data and OxCGRT stringency index.

Trends of TFI1 and stringency index

Outbound time (Hairatan, AFG – Termez, UZB)



Inbound time (Beyneu, KAZ – Dautota, UZB)



Note: 3MA = 3 month moving average

Source: Authors' calculations using CAREC Corridor Performance Measurement and Monitoring trade facilitation indicators data and OxCGRT stringency index.

Data

Variable	Description	Time Period	Source
Time at border crossing points—inbound and outbound (TFI1)	Number of hours it takes to move cargoes across a border crossing point—exit from country i and enter country j.	Jan 2020 to Dec 2022	CAREC CPMM
OxCGRT COVID-19 Stringency Index	Calculated mean score of the aggrigate stringency metric, taking the value between 0 (most lenient) to 100 (most stringent).	Jany 2020 to Dec 2022	Hale et al. (2021)
Internal restrictions	Measures policies on internal movements from 0 (no measures) to 2 (restrictions movement of citizens).	Jan 2020 to Dec 2022	Hale et al. (2021)
International restrictions	Measures policies on international travel controls from 0 (no measures) to 4 (total border closure).	Jan 2020 to Dec 2022	Hale et al. (2021)
Public transportation restrictions	Measures policies on public transport closures from 0 (no measures) to 2 (requires closing or prohibit most citizens from using it).	Jan 2020 to Dec 2022	Hale et al. (2021)
Workplace closures	Measures policies on workplace closures from 0 (no measures) to 3 (require closing or work from home of all but essential workplaces).	Jan 2020 to Dec 2022	Hale et al. (2021)
COVID-19 cases	COVID-19 daily cases gathered from official country sources and the World Health Organization with 2 days lag.	Jan 2020 to Dec 2022	Dong, Du, and Gardner (2020)
Bilateral goods exports	Nominal value (in US dollars) of goods exports from source country i to destination country j. The export values are in terms of free-on-board.	Jan 2020 to Dec 2022	IMF DOTS

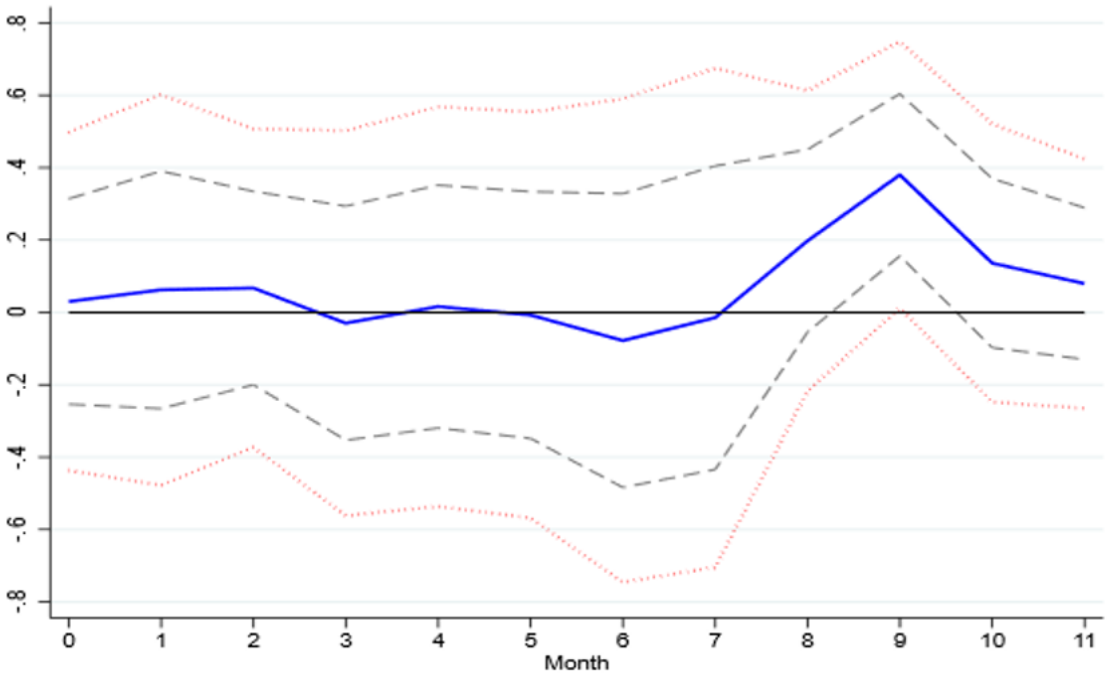
Model: FE panel regression to estimate IRFs based on local projection

$$TFI1_{(i,j),t+h} = \alpha_{(i,j),h} + \beta_h TFI1_{(i,j),t-1} + \sum_{z=0}^{1} \gamma_{z,h} S_{i,t-z} + \sum_{z=0}^{1} \rho_{z,h} S_{j,t-z} + \sum_{z=0}^{1} \delta_{z,h} X_{(i,j),t-z} + \sum_{z=0}^{1} \theta_{z,h} C_{i,t-z} + \vartheta_{t,h} T_t + \varepsilon_{(i,j),t+h}$$

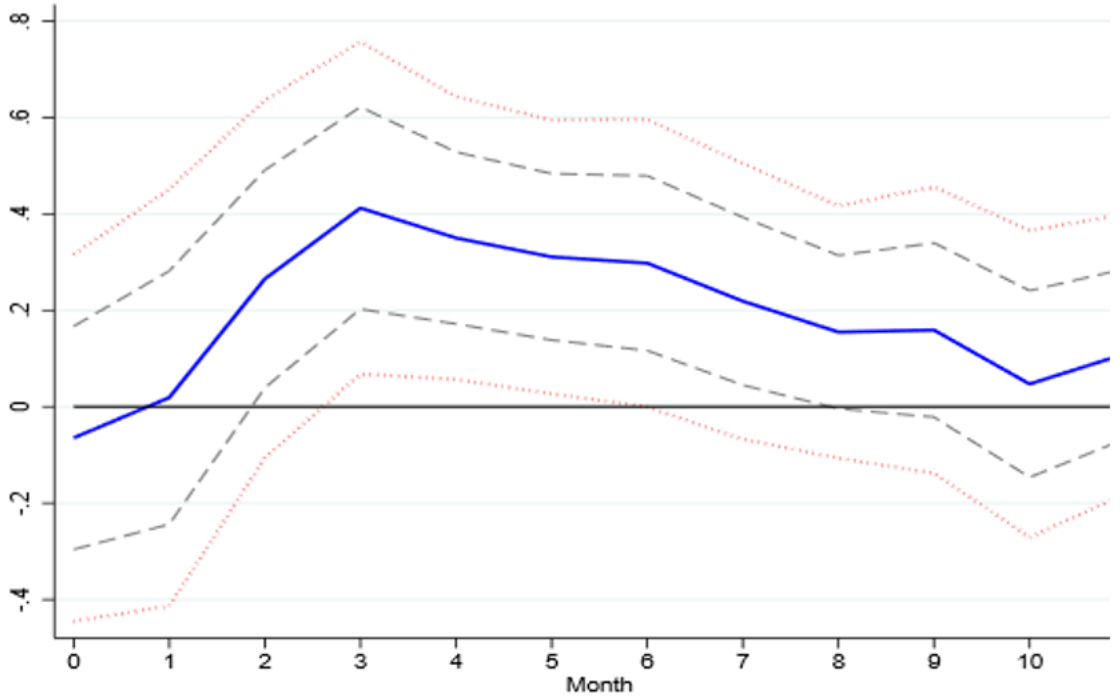
- $TFI1_{(i,j),t+h}$ = the logarithm of the average time taken at either inbound or outbound country pair (i, j) at time t and the forecast horizon $h = \{0, \dots, 11\}$
- i and j = a reporting (source) country and a destination country, respectively, corresponding to a BCP pair
- $S_{i,t-z}$ = the OxCGRT Stringency Index of an own (reporting) country and the lag where z = {0, 1}
- $S_{j,t-z}$ = the OxCGRT Stringency Index of the trading partner
- $X_{(i,j),t-z}$ = the logarithm of bilateral exports and its lag
- $C_{i,t-z}$ = the logarithm of new covid cases per million people and its lag
- T_t = a vector of time dummy variables for quarter and year
- $\alpha_{(i,j)}$ = a country-pair fixed effect

Effects of a Unit Increase in Domestic Stringency Index on Own Time (%)

On cumulative average OUTBOUND time



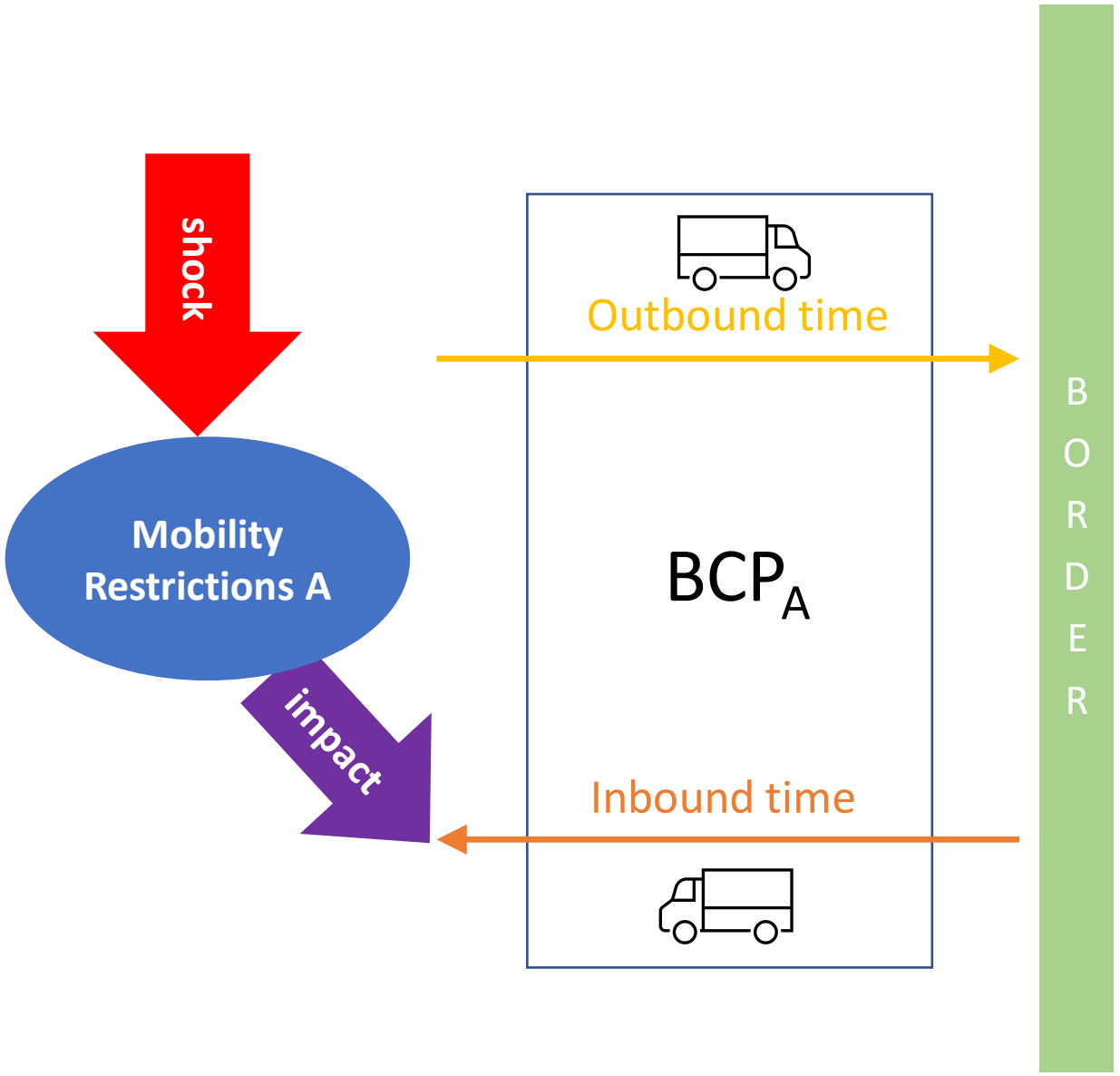
On cumulative average INBOUND time



IRF of average inbound time — 60% confidence interval ····· 95% confidence interval

Note: Impulse response functions estimated from the fixed effect panel regression model
Source: Authors' calculations.

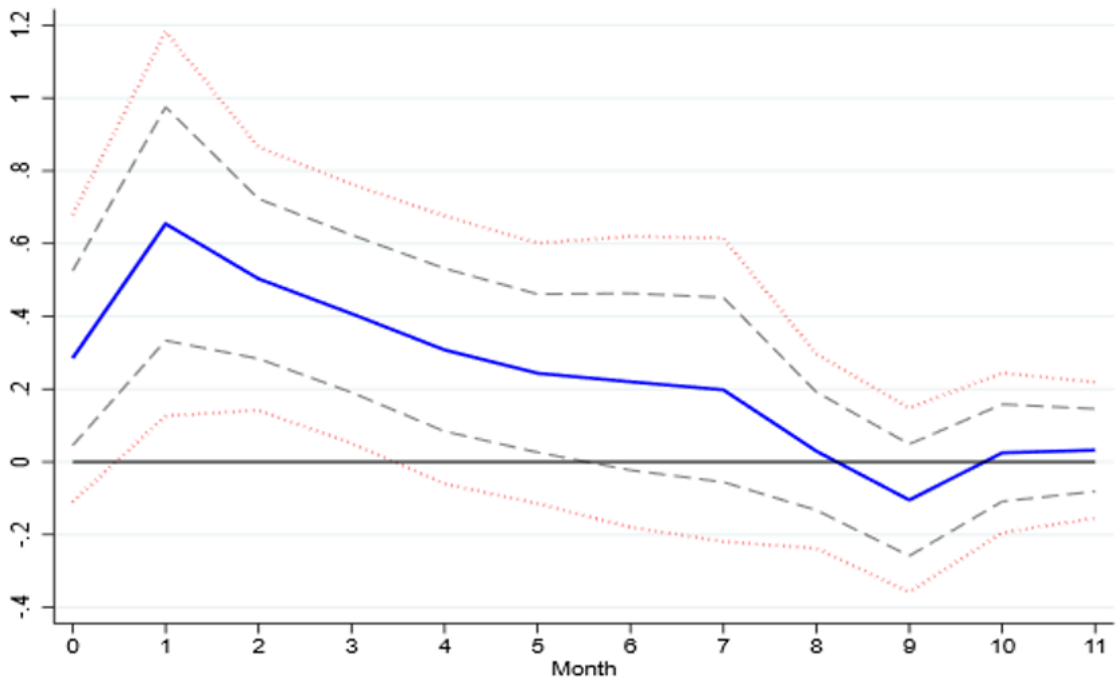
Effects of Domestic Stringency on Own Time – Implications



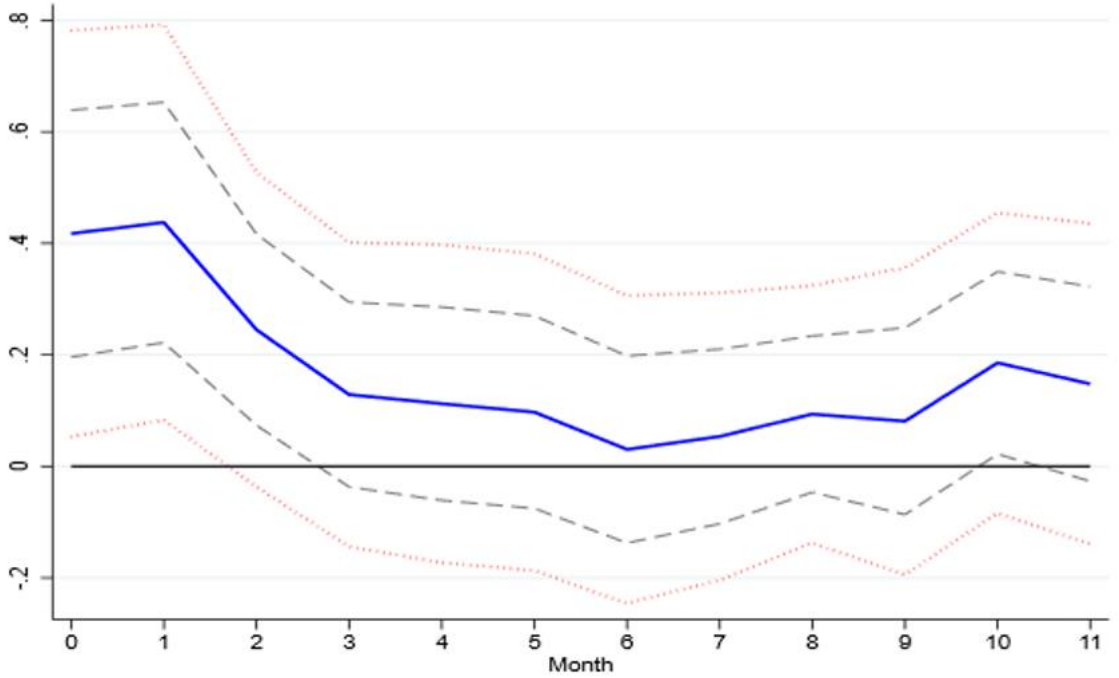
- Overall delay could be attributed to several factors, such as stringent screening procedures, additional documentation requirements, or stricter health protocols
- Domestic policies **focus more on regulating the inflow of goods**
- For example, some BCPs introduced a designated area for waiting and health screening **for incoming cargo** truck drivers only
- less stringent control over exports or outgoing cargo and a view that **preserving the outflow of goods carries greater economic significance**

Effects of a Unit Increase in a Trading Partner's Stringency Index on Own Time (%)

On cumulative average OUTBOUND time



On cumulative average INBOUND time

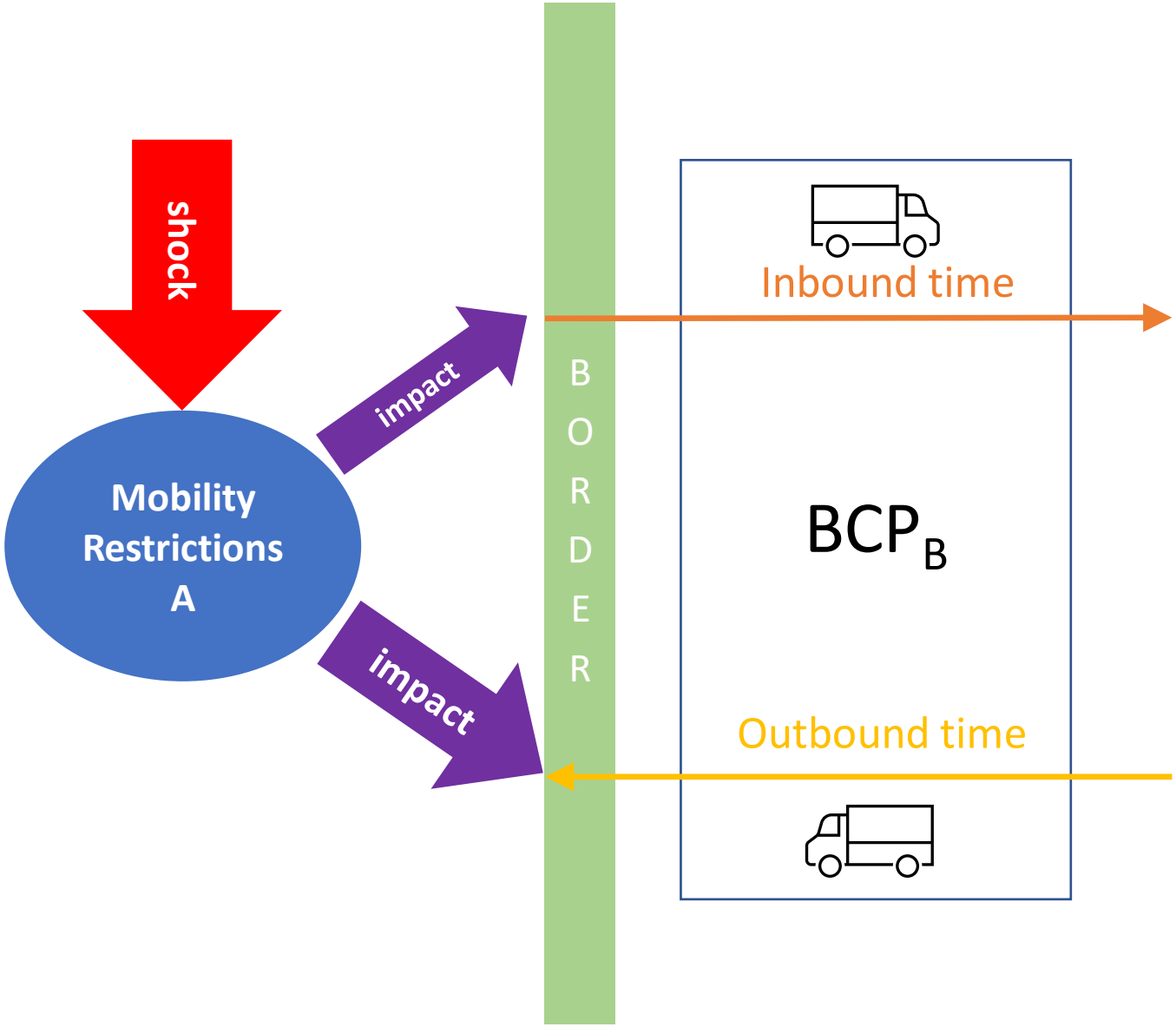


IRF of average inbound time — 60% confidence interval ····· 95% confidence interval

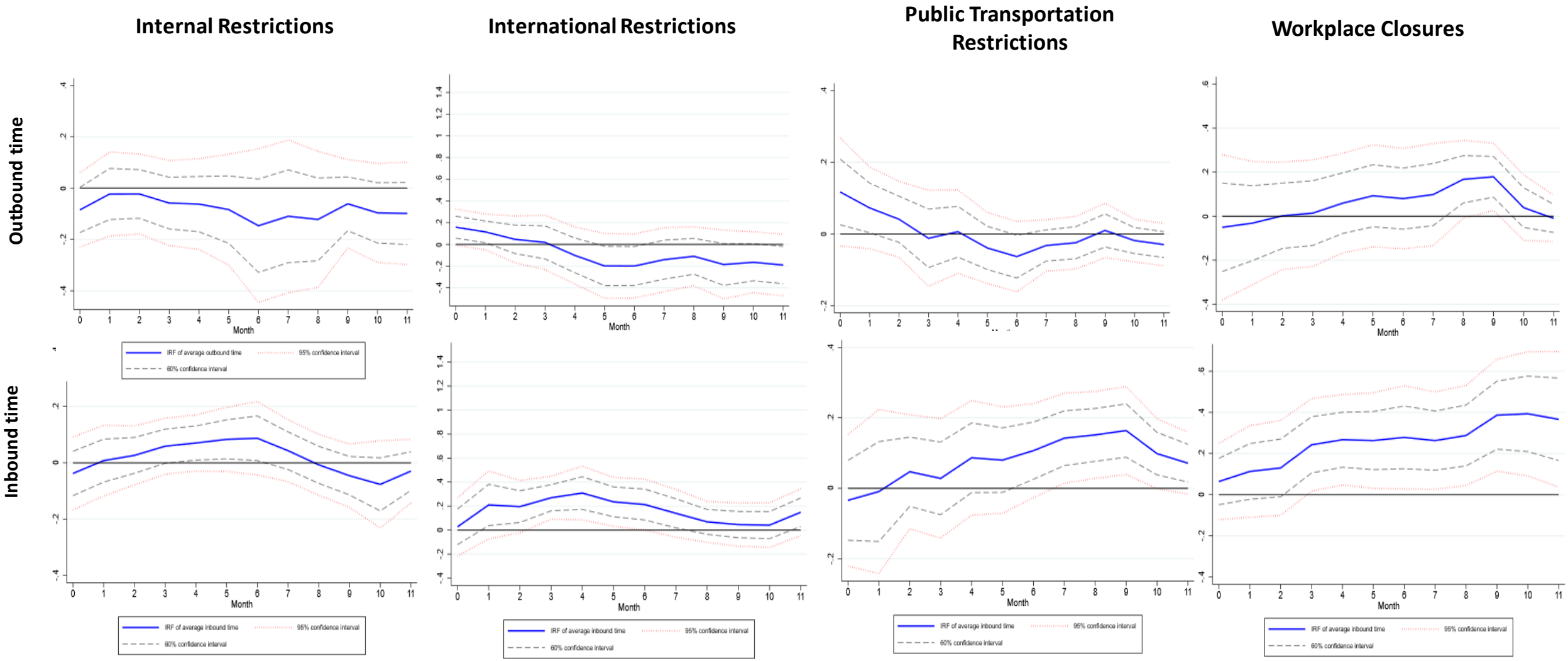
Note: Impulse response functions estimated from the fixed effect panel regression model
Source: Authors' calculations.

Effects of Trading Partner's Stringency on Own Time – Implications

- **Outgoing cargo** headed to a trading partner with more restrictive measures might have to wait longer at the originating country's BCP before crossing the border due to a backlog of cargo awaiting clearance on the other side.
- **Incoming cargo** may also require additional time for loading/unloading and cargo sanitization if transloading is required.
- This implies that the policies and measures implemented by neighboring countries can have a **spillover effect** on the flows of goods at own BCPs
- It is also possible in a bilateral trade relationship that if a neighboring country imposes strict border controls, the country may **reciprocate with similar measures**, including additional health screenings



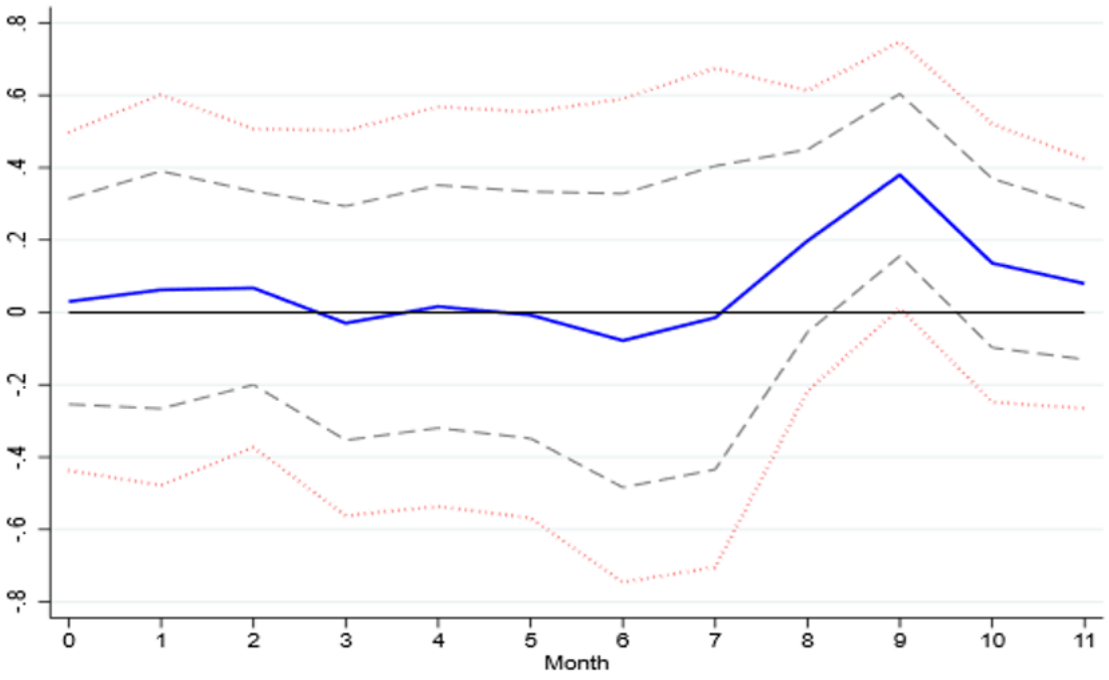
Impact on Cumulative Average Time by Containment Measure (%)



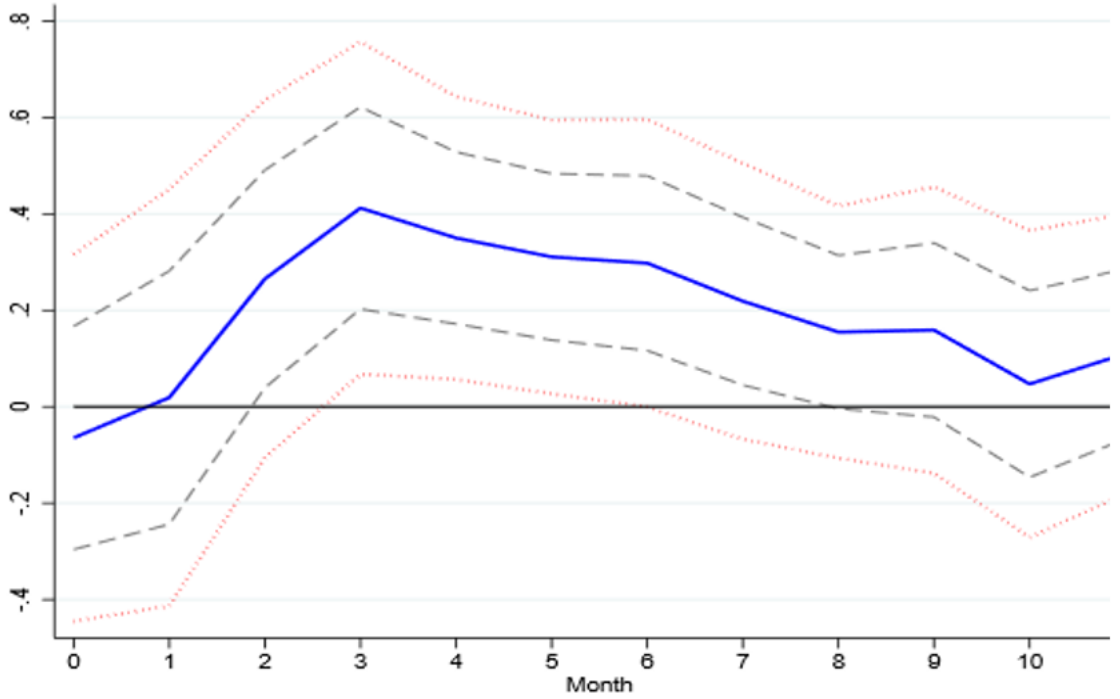
Source: Authors' calculations.

Effects of a Unit Increase in Domestic Stringency Index on Own Time (%)

On cumulative average OUTBOUND time



On cumulative average INBOUND time



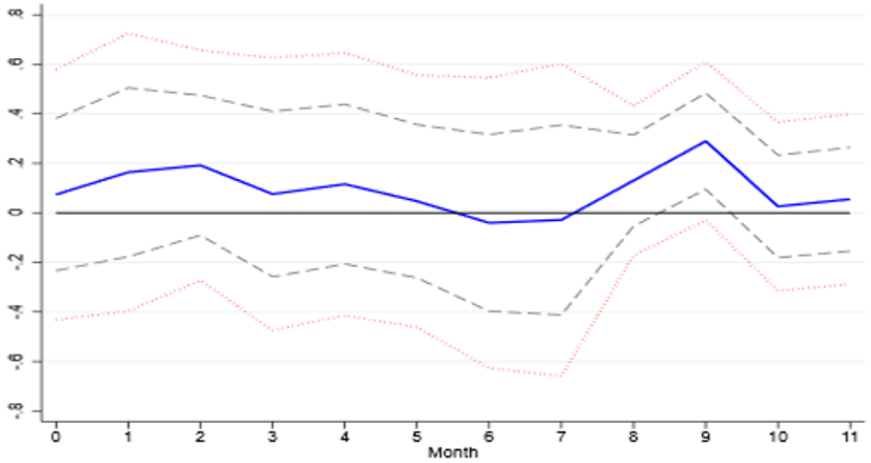
IRF of average inbound time 60% confidence interval 95% confidence interval

Note: Impulse response functions estimated from the fixed effect panel regression model
Source: Authors' calculations.

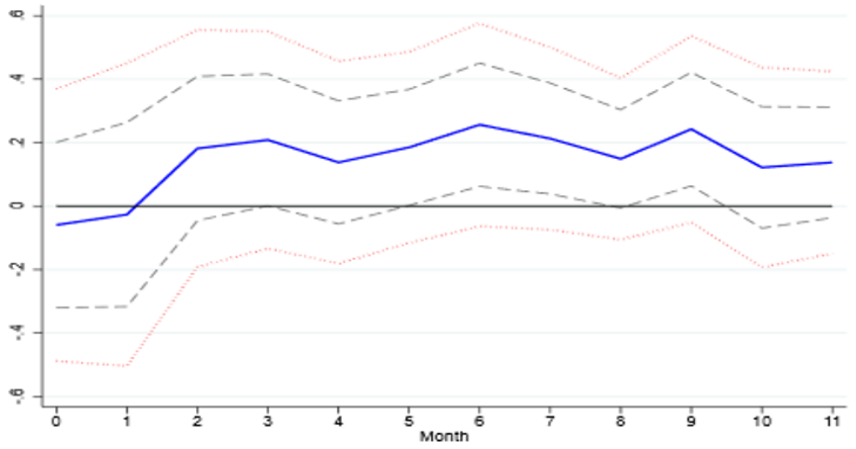
Robustness check – Influence from the Russian Invasion of Ukraine

Effects of a Unit Increase in Domestic Stringency Index on Own Time, using 2020-2021 data (%)

On cumulative average OUTBOUND time

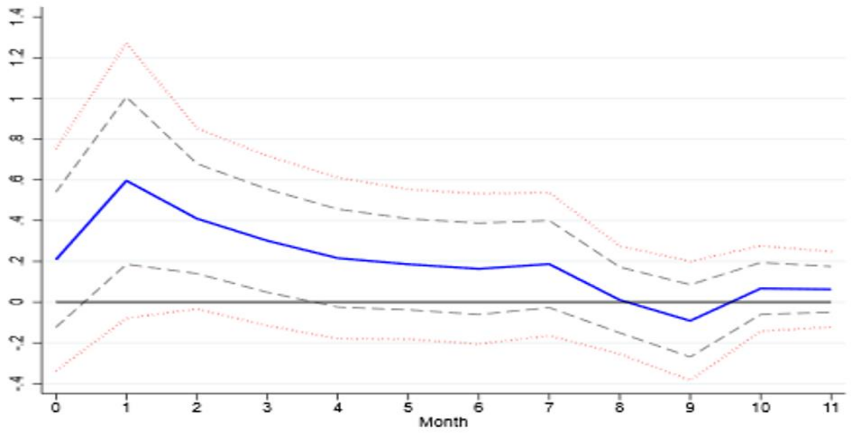


On cumulative average INBOUND time

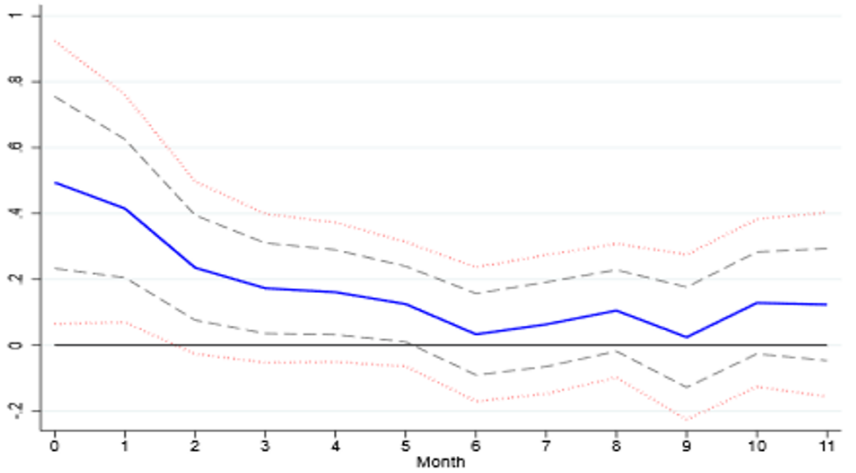


Effects of a Unit Increase in a Trading Partner's Stringency Index on Own Time, using 2020-2021 data (%)

On cumulative average OUTBOUND time



On cumulative average INBOUND time



IRF of average inbound time — 60% confidence interval ····· 95% confidence interval

Main findings

- **A unitary increase in the level of the mobility restriction index leads to a 0.4% time delay** for inbound cargo to clear the border, with the **impact lasting up to the 5th month** after implementation. However, outbound time remains unaffected by the mobility restrictions.
- This implies that in **a country implementing the strictest COVID-19 mobility restrictions**, **the time for inbound BCP clearance can increase by up to 40%.**
- Tightened mobility restrictions in a trading partner increase both inbound and outbound times in own country, indicating **a spillover effect of trading partners' mobility policies** on the flows of goods at own BCPs.
- **The impact of a trading partner's measures on outbound time** at own BPCs is larger and last longer compared to the impact on inbound time.
- Among the different mobility measures, **international restrictions, public transportation limitations, and workplace closures** significantly influenced clearance times at BCPs, irrespective of the source of the mobility disruption.

Policy Considerations

- The effects of mobility and quarantine policies are spilling across borders, impacting trade facilitation activities in trade partners.
- This highlights **the need for enhanced policy coordination and monitoring** during emergency situations.
- It is also crucial to implement trade facilitation **measures that specifically address delays in inbound and outbound time**, as the impact of lockdown measures varies in terms of degree and duration depending on whether it affects inbound or outbound BCPs.
- Although overall trade facilitation implementation in CAREC has improved, there is still considerable growth potential, particularly in the area of paperless trade.