

# **MICROECONOMIC FOUNDATIONS OF ENHANCING THE TRANSPORT CORRIDORS: EVIDENCE FROM FIRM PERFORMANCE FROM AZERBAIJAN, GEORGIA AND KAZAKHSTAN**

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# Motivation

- Transport corridors are fundamental for economic growth in the CAREC region
- Greater infrastructure development could give Central Asian economies a critical boost by enhancing growth, poverty eradication, climate change mitigation etc.
- Empirical studies both for developing and developed economies underline the significance of infrastructure for firm performance (Agnusdei et al. 2022; Barzin, et al. 2018; Chauvet and Ferry, 2021)
- It is also important to set up available infrastructure and resources for sustainable development enterprises at the country level

# Objective

- This paper aims to study factors affecting basic barriers that firms in Azerbaijan, Georgia, and Kazakhstan experienced during the COVID-19 in their performance, including exports, sales and liquidity
- Empirical analysis is based on the enterprise survey for 2019-2021

# Data Sources:

## World Bank Enterprise Survey

Sample countries: Azerbaijan, Georgia and Kazakhstan

- Baseline survey - Enterprise Survey conducted before COVID-19 (2019)
  - Mainly on firm characteristics such as innovation, finance, corruption, infrastructure, crime, competition, labor, business-government relations, obstacles to growth, and performance measures.
- The follow-up surveys were conducted during the pandemic and about the impact of COVID-19
  - observe the impact of the COVID-19 crisis on the private sector, as well as on firm performance in particular.

# Data: Business survey data

	<b>Azerbaijan</b>	<b>Georgia</b>	<b>Kazakhstan</b>	<b>Total</b>
<i>By surveys</i>				
Baseline survey	July, 2019 – March, 2020 (N=225)	March, 2019-Jan., 2020 (N=701)	Jan.-Oct., 2019 (N=1446)	2372
Follow-up survey (Round 1)	Apr.- May, 2021 (N=105)	June, 2020 (N=614)	Jan.-March, 2021 (N=871)	1590

Source: <https://www.enterprisesurveys.org>

# Methodology

- Measure of firm performance:

- Sales (=1 if increase)
- Liquidity, cash flow (=1 if increase)
- Hours worked per week(=1 if increase)
- Share of total export (as % of total share)
- Share of direct export (as % of total share)
- Capacity utilization

- Probit regression model:

$$P(y_i = 1|x_i) = F(\beta_0 + \beta_k x_k)$$

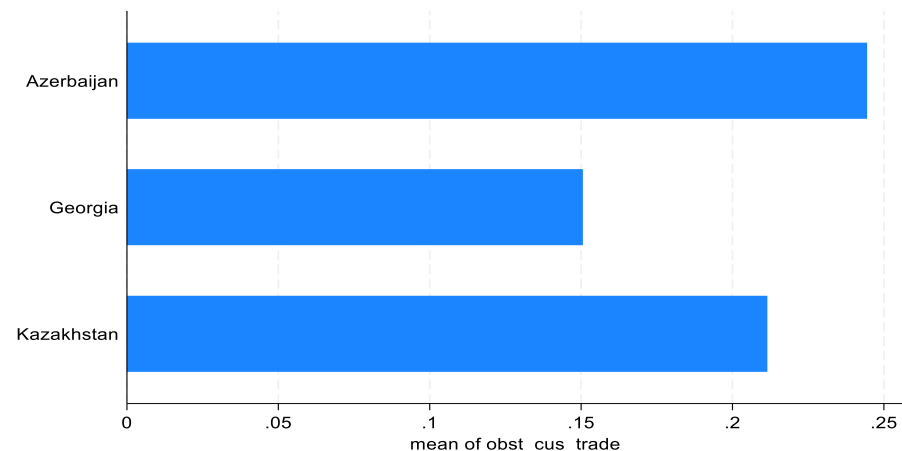
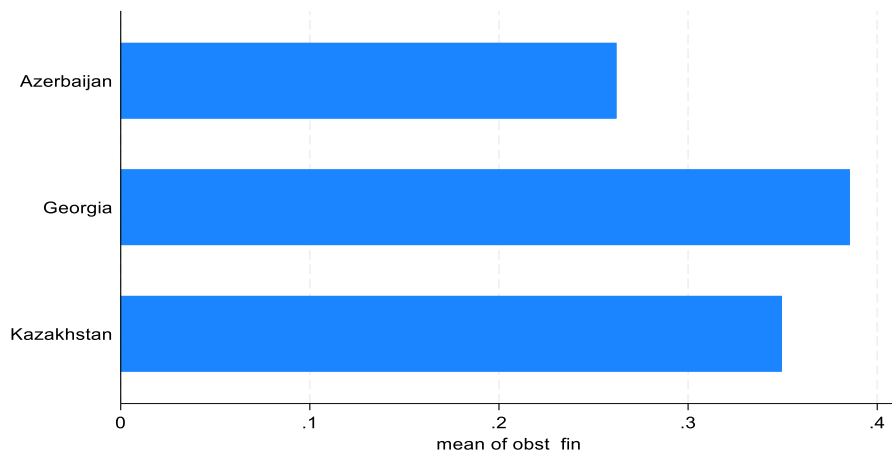
- $Y_i$  is a dummy dependent variable indicating whether the firm performance measure has decreased or not.
- $X_k$  is a vector of firm-specific and exogenous factors that influence firm performance (infrastructure, COVID-19)

# Explanatory variables

1 – no obstacle; 2 – minor; 3 – moderate; 4 – major; 5 – very severe	Transport	To what degree is transport an obstacle to the current operations of the firm?
	Customs and trade regulations	To what degree is customs and trade regulations an obstacle to the current operations of the firm?
	Electricity	To what degree is electricity an obstacle to the current operations of the firm?
	Access to finance	To what degree is access to finance an obstacle to the current operations of the firm?
1-yes, 0 - no	Temporary closure	The firm was temporarily closed due to COVID-19
	Production Adaptability	The firm has introduced new or improved products or services; or discontinued the production of some goods or the offering of any services in response to the COVID-19 outbreak. (0 – no, 1 – yes)
	Government support	Since the outbreak of COVID-19, firm has received any national or local government support in response to the crisis, or expect to receive it in the next 3 months (0 – no; 1 – yes)
%	Online sales	Share of the firm's online sales in total sales during the follow-up ES (as %)

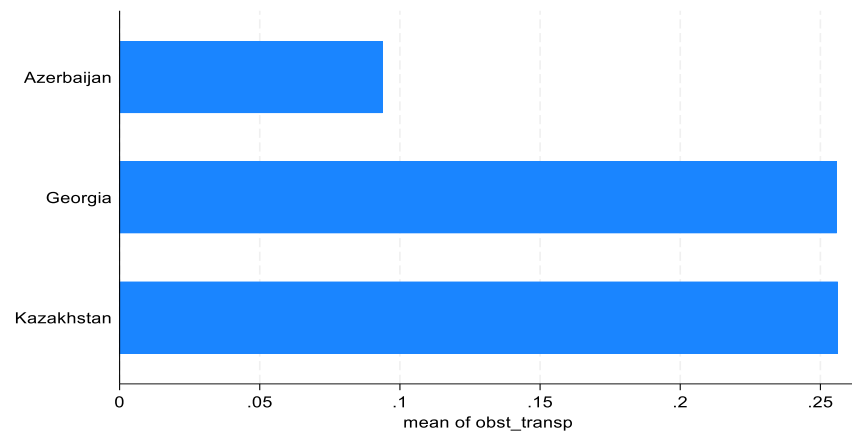
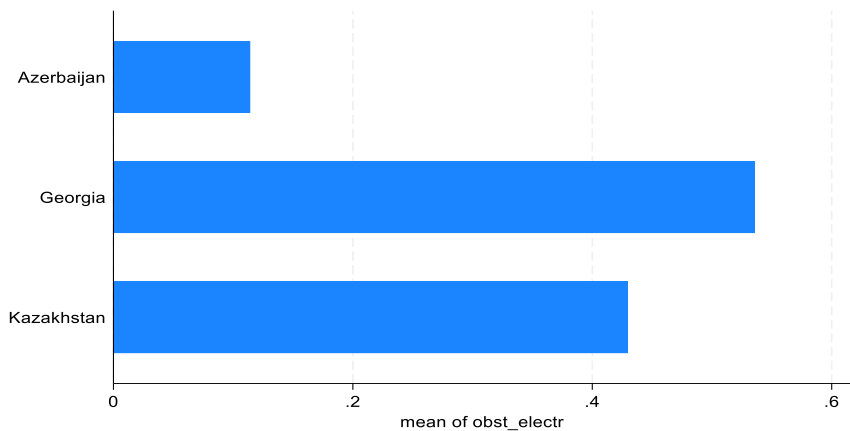
<i>Firm and manager characteristics</i>	
Firm size	1 – micro sized firm; 2 – small sized firm; 3 – medium sized firm; 4 – large sized firm
Firm age	Number of years from year that firm began operations to 2021
Experience of manager	Number of years of experience of the top manager in the sector
Gender of manager	0 – manager is male, 1 – manager is female
Foreign ownership	Share owned by foreign private individuals, companies and organizations (%)
Competition	The number of firm competitors in the main market of the main product.
Firm sector	1 - food and beverages; 2 - light industry; 3 - heavy industry; 4 - construction; 5 - trade; 6 - hotels and restaurants; 7 - other services
Country	1 – Azerbaijan; 2 – Georgia; 3 - Kazakhstan
Firm location	1 - if city has population over 1 million; 2 - from 250,000 to 1 million; 3 - if 50,000 to 250,000; 4 - if less than 50,000





a) Average share of firms choosing access to finance as their obstacle

b) Average share of firms choosing customs and trade regulations as their obstacle



c) Average share of firms choosing electricity as their obstacle

d) Average share of firms choosing transportation as their obstacle

# Results

Obstacles	<b>Liquidity</b> (=1 if increased)			
	Total Sample	Small Firms	Medium Firms	Large Firms
Transport	0.031** (0.014)	0.034 (0.022)	0.040* (0.024)	0.031 (0.035)
Custom and trade regulations	-0.027* (0.016)	-0.049** (0.023)	-0.004 (0.027)	-0.057 (0.042)
Access to finance	-0.023* (0.013)	-0.048*** (0.018)	0.000 (0.022)	-0.013 (0.030)
Electricity	-0.001 (0.012)	0.016 (0.016)	-0.013 (0.021)	0.015 (0.031)
	<b>Sales</b> (=1 if increased)			
	Total Sample	Small Firms	Medium Firms	Large Firms
Transport	0.002 (0.015)	0.003 (0.022)	0.002 (0.024)	-0.006 (0.040)
Custom and trade regulations	0.004 (0.016)	0.002 (0.023)	0.019 (0.026)	-0.032 (0.043)
Access to finance	-0.006 (0.013)	-0.044** (0.019)	0.012 (0.022)	0.062* (0.033)

<b>Export share</b> (% of total sales)				
	Total Sample	Small Firms	Medium Firms	Large Firms
Transport	0.269	0.213	-0.603	1.943
	(0.592)	(0.388)	(0.571)	(1.411)
Custom and trade regulations	0.847	1.378***	0.270	-3.702**
	(0.627)	(0.400)	(0.617)	(1.630)
Access to finance	-0.275	-0.671**	0.431	0.068
	(0.503)	(0.310)	(0.513)	(1.236)
Electricity	-0.636	-0.063	-0.887*	0.747
	(0.464)	(0.279)	(0.489)	(1.215)

<b>Direct Export Share</b> (% of total sales)				
	Total Sample	Small Firms	Medium Firms	Large Firms
Transport	0.770	0.213	-0.603	1.943
	(0.521)	(0.388)	(0.571)	(1.411)
Custom and trade regulations	-0.000	1.378***	0.270	-3.702**
	(0.552)	(0.400)	(0.617)	(1.630)
Access to finance	-0.221	-0.671**	0.431	0.068
	(0.443)	(0.310)	(0.513)	(1.236)
Electricity	-0.447	-0.063	-0.887*	0.747

# Results

- Customs and trade regulation increases the probability of liquidity decline (particularly in small firms) and reduces direct export (as a share in total sales) in large firms.
- Access to finance as barrier has a negative impact on corporate performance
- The negative impact of obstacles associated with the provision of electricity on export

# Policy implications

- Infrastructure obstacles (electricity, access to finance, customs and trade regulation and transportation) remain firms' biggest obstacles in all countries for many firms
- Access to finance and customs and trade regulations have significant impact of firm performance
- Small firms are mainly negatively affected by the infrastructure obstacles comparing to medium and large firms

**Thank You.**

**We will highly appreciate your comments:  
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