Hard and Soft infrastructure: can investments in “Soft” infrastructure deliver a sustainable and inclusive economic boost to Central Asian nations post COV19?

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Introduction and Motivation
Introduction

• This paper uses a difference in differences methodology to assess the impact of the different application of an identical customs policy regime upon Belarus, The Kyrgyz Republic and Kazakhstan upon joining the EAEU in 2015,
• Belarus introduced a different, more efficient pre-arrival and risks based targeted search strategy using data to target the searches and reduce physical and bureaucratic customs clearance times,
• The goal was to use firm level data on exports which show the importance of policy implementation.
Motivation

• “The Asian Development Bank has forecast that Developing Asia will need to invest in the region of $8.4 USD trillion in transport infrastructure over the next decade”,
• Post COV19 financially stressed governments are looking for cost effective policy interventions to stimulate economic growth. Large scale investments will be challenging for governments post COV19,
• As an investment professional I view infrastructure as both a physical asset and service, this is ”Hard” and ”Soft” infrastructure. Can we prove the value of “Soft” infrastructure through policy implementation?

Source: https://www.adb.org/publications/asia-infrastructure-needs
Literature Review
Literature Review

• There is no explicit body of literature that deals with infrastructure as a service, as this is a relatively new term. This paper draws on three key areas; Policy reform and openness to trade - Frankel and Romer (1999), Alcalá and Ciccone (2004), and Wacziarg and Welch (2008), institutional quality - Anderson and Marcoullier (2002), Francois and Manchin (2007), and non-tariff barriers - Iwanow and Kirkpatrick (2009), Easterly (2019),
• However, all three research areas are quite siloed and the purpose of this paper is to show all three are interdependent by using a case study based on the Ashenfelter and Card (1985) paper.
Methodology and Data
Methodology and Data

- All Data from World Bank Enterprise Surveys, dependent variable is export sales/total sales to give a measure of export intensity,
- Two step difference in differences (DiD) methodology: firstly, OLS to assess the importance of accession to EAEU. Secondly an expanded “triple” DiD to better understand the policy effects on different types of firms,
- Independent indicator variables for: accession to EAEU, reported difficulties with customs, and size of firm with only large and small firms included, medium sized firms discarded to ensure sufficient difference between groups.
Methodology

- OLS

\[ Y_{ist} = \alpha + \beta_1 \text{Customs Issues}_s + \beta_2 \text{Post 2015}_t + \beta_3 \text{Post 2015} \times \text{Custom Issues}_{st} + \epsilon_{ist} \] (1)

- Triple DiD

\[ Y_{ijst} = \alpha + \beta_1 \text{Customs Issues}_s + \beta_2 \text{Post 2015}_t + \beta_3 \text{Post 2015} \times \text{Custom Issues}_{st} + \beta_4 \text{Size}_j \\
+ \beta_5 \text{Size} \times \text{Custom Issues}_{js} + \beta_6 \text{Size} \times \text{Post 2015}_j + \beta_7 \text{Size} \times \text{Customs Issues} \times \text{Post 2015}_jst + \epsilon_{ijst} \] (2)
Methodology: Triple DiD

- Due to the strong time invariant affects between each of the industries and firms in each country a Fixed Effects model will be run, since we are interested in the time variance (Wooldridge, 2010),
- In the interests of academic rigor, both a Fixed Effects and a Random Effects Model was run, and the results tested with a Haussmann test. Fixed Effects chosen to control for omitted variable bias (Wooldridge, 2010),
- A full range of post estimation tests were run to ensure efficiency of estimators and parallel trends assumption tested.
Key Results
Results

N.B Standard errors in parenthesis,

*** statistically significant at 1% confidence level,

** statistically significant at 5% confidence level,

Since the dependent variable is export sales over total sales the coefficient can be interpreted as a percentage point change.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Regression</th>
<th>Triple Difference in Differences</th>
<th>OLS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>1 Customs Issues</td>
<td>0.0157</td>
<td>-0.114**</td>
<td>-0.0082</td>
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<tr>
<td></td>
<td>(0.0348)</td>
<td>(0.0063)</td>
<td>(0.0256)</td>
</tr>
<tr>
<td>2 Post Joining EAEU</td>
<td>0.0468***</td>
<td>0.0056</td>
<td>0.0405**</td>
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<tr>
<td></td>
<td>(0.0215)</td>
<td>(0.0074)</td>
<td>(0.0243)</td>
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<td>3 Issues with customs post joining EAEU</td>
<td>0.2101**</td>
<td>0.0787****</td>
<td>0.0181</td>
</tr>
<tr>
<td></td>
<td>(0.1204)</td>
<td>(0.0335)</td>
<td>(0.0581)</td>
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<td>4 Large firm</td>
<td>0.0561**</td>
<td>0.0274</td>
<td>0.1183**</td>
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<tr>
<td></td>
<td>(0.0295)</td>
<td>(0.0205)</td>
<td>(0.0681)</td>
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<td>5 Large firm and problems with customs</td>
<td>0.1477**</td>
<td>0.0183</td>
<td>0.0025</td>
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<td>(0.0891)</td>
<td>(0.0445)</td>
<td>(0.1087)</td>
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<td>6 Large firm and post joining EAEU</td>
<td>0.0695**</td>
<td>0.0025</td>
<td>0.0007</td>
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<tr>
<td></td>
<td>(0.0401)</td>
<td>(0.0239)</td>
<td>(0.0834)</td>
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<tr>
<td>7 Problems with customs and large firm and post joining the EAEU</td>
<td>-0.1720</td>
<td>-0.0553</td>
<td>0.0832</td>
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<tr>
<td></td>
<td>(0.1987)</td>
<td>(0.0640)</td>
<td>(0.1744)</td>
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<tr>
<td>Constant</td>
<td>0.0248**</td>
<td>0.0114**</td>
<td>0.0282**</td>
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<tr>
<td></td>
<td>(0.0134)</td>
<td>(0.0062)</td>
<td>(0.0169)</td>
</tr>
<tr>
<td>Robust Standard Errors</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>
Policy Recommendations and Conclusions.
Policy Recommendations

• Policy makers and DFIs should focus on “Soft” infrastructure first. There is limited value in building the "Hard" infrastructure if political or policy barriers remain. This investment will further strain national budgets as per the Lao PDR, Pakistan and Montenegro,

• Increasing trade will increase private sector interest in investing in infrastructure, not the other way around. This point is especially pertinent as an investment professional,

• Central Asian States have a window of opportunity post COV19 to enact politically expensive customs and bureaucracy reforms. A potential source of spill over effects: increased tax base, decreased corruption?
Conclusions

• Results start to draw the different strands of literature together and add weight to the body of literature that policy alone is insufficient, good execution of that policy is vital,
• WBES survey data about the best available but still limited. Much more data is needed if policy interventions are to be studied in-depth,
• Work on the Kyrgyz Republic indicated the effect of the grey economy and so work to find news ways to capture this information/data in modelling would be vital to understand the “real” effect of policies.
Thank You!

Questions or Comments?