DESA Macroeconomic Modelling Tool and Preliminary Results

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UN DESA
1. Overview of BRI and SDGs
2. DESA Project
3. Example: Central Asia
Infrastructure gap (1)

Availability of Transport Infrastructures

Map showing the availability of transport infrastructures across the world, with different colors indicating varying levels of availability.
Infrastructure gap (2)

Quality of Transport Infrastructures

Source: World Economic Forum Global Competitive Index 2017
Six major Economic Corridors

1. China-Indochina Peninsular
   - China-Lao EC (2017)
   - Lancang-Mekong Cooperation (2016)

2. Bangladesh-China-India-Myanmar

3. China-Pakistan

4. New Eurasian Land Bridge

5. China-Mongolia-Russia

6. China-Central Asia-West Asia
Belt and Road Initiative

Five Cooperation Priorities

- **People-to-people Bond**: Promoting people-to-people exchanges and friendly cooperation.
- **Policy Coordination**: Promoting inter-governmental cooperation and building a mechanism for policy exchange and communication.
- **Financial Integration**: Deepening financial cooperation and promoting financial system development.
- **Facilities Connectivity**: Strengthening infrastructure planning and construction, and achieving facilities connectivity.
- **Unimpeded Trade**: Removing investment and trade barriers, and creating a sound business environment.
Overview of BRI

- 136 countries and 30 international organizations signed cooperation documents (as of July 2019).
- More than 1,800 projects (*loose definition of BRI projects*).
- Total BRI investment since 2013 estimated btw USD120bn - 575bn (*1-5% of global FDI*) although some put it as high as USD1trn
- Sectoral focus in energy and infrastructure development with an increasing emphasis on manufacturing and even services.
- Partner countries already account for 60% of the world’s population and 30% of its GDP – numbers continue to grow. *Notably in ASEAN, CIS, Sub-Saharan Africa and Eastern Europe.*
- Progress remains uneven, with projects scattered both inside and outside the scope of the supposed six economic corridors.
Sectoral and Regional Analysis

Investments in BRI corridor economies by industry:
- Energy and electric power: 46%
- Transportation and shipping: 25%
- Chemical engineering: 13%
- Metallurgy and mining: 4%
- Construction and real estate: 7%
- Other: 5%

Source: World Bank, based on USD575bn of investments in the World Bank’s assumptions. This includes projects in the planning phase.

Investments in BRI corridor economies by region:
- East Asia and Pacific: 34%
- Europe and Central Asia: 32%
- South Asia: 19%
- Middle East and North Africa: 13%
- Sub-Saharan Africa: 2%

Source: World Bank, based on USD575bn of investments in the World Bank’s assumptions. This includes projects in the planning phase.
Implications of BRI

• BRI alters the development landscape

• For China, the BRI allows the country to a “new pattern of all-round opening-up, and [to] integrate itself deeper into the world economic system.”

• For the world, the potential to substantially improve trade, foreign investment and living conditions for citizens in its participating countries
  - but only if participating economies adopt deep policy reforms that increase transparency, expand trade, improve debt sustainability, and manage environmental, social and corruption risks.

• UN Secretary-General outlined the importance of “inclusive sustainable and durable” development and the urgency of “green development” in the context of imminent climate impacts, pledging the support of UN country teams (April 2019)
Linking BRI to global development agenda

• **Improve infrastructure** --- SDG 9
  Low-income countries are expected to see a significant 7.6% increase in FDI due to the new transport links.

• **Boost trade and investment** ---- SDG 8
  World Bank suggests that trade will grow from between 2.8-9.7% for corridor economies and between 1.7-6.2% for the world.

• **Reduce poverty** --- SDG 1
  It is estimated that BRI transport projects could help lift 7.6 million people from extreme poverty ($1.90 a day) and 32 million people from moderate poverty ($3.20 a day).

However, gains will be unevenly distributed (some may incur welfare losses due to huge infrastructure cost)
Outline

1. Overview of BRI and SDGs
2. DESA Project
3. Example: Central Asia
Introduction of UN DESA project

• https://youtu.be/2U_t1ErxRu0
UN DESA BRI-SDGs project
UN DESA project activities (2018-2020)

• Data collection and research on BRI and SDGs at the national level
• Macroeconomic model (WEFM-e) simulations and projections on SDG indicators
• Capacity building for policy makers, researchers and private sector
• Regional and global events to share experiences, and establish research/policy network
Lessons learnt so far (1)
– limited data

• BRI was found to be not well understood in many participating countries.
• Lack of available information and evidence for its impact especially on SDGs.
• Policy formulation related to BRI and its activities are mainly driven by the Chinese counterparts given the weak capacity in many participating countries.
• Data collection, progress monitoring and evaluation on the impact of the BRI activities on SDGs would be crucial to inform and present possible options to policymakers to exploit the benefits while mitigating the risks to ensure the achievement of SDGs by 2030.
• Special attention should be paid to the spillover effects and trade-offs on the SDGs at the national level and on local communities.
Lessons learnt so far (2) – inclusive development

• Chinese investments in “connective infrastructure” produce positive economic spillovers that flatten the spatial distribution of economic activity and reduce regional inequality.

• Studies also demonstrate that Chinese development projects could produce a number of negative externalities, including possible displacement of local and marginalized communities, local corruption, environmental degradation, and low-level local community participation.

• BRI should both stimulate industries that channels more trade with China and allow for the diversification of local economy.

• Job creation should be accompanied by training and professional development to sustain the impacts.

• The role of environmental and social safeguards for infrastructure projects is pivotal for securing the overall vision of BRI.
Lessons learnt so far (3) – sustainable financing
Outline

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Example: central Asia in BRI

Source: MERICS 2018
Neighboring countries with different stories

Table 1. Number of China’s BRI and bilateral projects in Central Asia

<table>
<thead>
<tr>
<th>Sectors</th>
<th>Total number by sector</th>
<th>Kazakhstan</th>
<th>Kyrgyzstan</th>
<th>Tajikistan</th>
<th>Uzbekistan</th>
<th>Turkmenistan</th>
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</thead>
<tbody>
<tr>
<td>Total by country</td>
<td>261</td>
<td>102</td>
<td>46</td>
<td>44</td>
<td>43</td>
<td>26</td>
</tr>
<tr>
<td>Trade and industrial development</td>
<td>131</td>
<td>61</td>
<td>17</td>
<td>17</td>
<td>24</td>
<td>12</td>
</tr>
<tr>
<td>Rail and road connectivity</td>
<td>51</td>
<td>14</td>
<td>11</td>
<td>16</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Energy connectivity</td>
<td>48</td>
<td>20</td>
<td>5</td>
<td>7</td>
<td>12</td>
<td>4</td>
</tr>
<tr>
<td>People-to-people projects</td>
<td>31</td>
<td>7</td>
<td>13</td>
<td>4</td>
<td>2</td>
<td>5</td>
</tr>
</tbody>
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Source: Aminjonov et. al. 2019

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<tbody>
<tr>
<td>Total FDI in Kazakhstan</td>
<td>22,246</td>
<td>26,467</td>
<td>28,885</td>
<td>24,098</td>
<td>23,726</td>
<td>14,847</td>
<td>21,006</td>
</tr>
<tr>
<td>FDI from China</td>
<td>1,718</td>
<td>1,693</td>
<td>2,415</td>
<td>2,246</td>
<td>1,861</td>
<td>504</td>
<td>961</td>
</tr>
<tr>
<td>Percent of Chinese FDI inflows</td>
<td>8</td>
<td>6</td>
<td>8</td>
<td>9</td>
<td>8</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Total FDI in Kyrgyzstan</td>
<td>666.1</td>
<td>849.2</td>
<td>590.7</td>
<td>964.5</td>
<td>727.1</td>
<td>1,573.2</td>
<td>814.0</td>
</tr>
<tr>
<td>FDI from China</td>
<td>70.8</td>
<td>149.6</td>
<td>141.2</td>
<td>468.3</td>
<td>221.6</td>
<td>474.4</td>
<td>301.3</td>
</tr>
<tr>
<td>Percent of Chinese FDI inflows</td>
<td>11</td>
<td>18</td>
<td>24</td>
<td>49</td>
<td>30</td>
<td>30</td>
<td>37</td>
</tr>
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</table>

Source: National Statistics Committee of the Kyrgyz Republic; National Bank of the Republic of Kazakhstan
Kazakhstan and BRI

• 2013 – Silk Road Economic Belt (BRI “Belt” component) was announced in Astana.
• 2015 - Joint declaration between China and Kazakhstan on conjunction of the Silk Road Economic Belt and Bright Road
• Holding a strategic location in the New Eurasia Land Bridge Economic Corridor and the China – Central Asia – West Asia Economic Corridor.
• Khorgos Gateway (Dry port) and Special Economic Zone
• Two parallel gas pipelines running through Kazakhstan to China, i.e. the “Turkmenistan-China” gas pipeline and the “Kazakhstan-China” gas pipeline.
• Digital Silk Road, announced at the B&R Forum in Beijing in 2017, has been translated to the “Digital Kazakhstan” national program (2018-2022).
Findings – Kazakhstan case

• In general, the infrastructure development and industrial production are more relevant to Kazakhstan.

• Investment in connectivity would most probably positively impact Goal 1 No Poverty; Goal 8 – Decent work and economic growth; Goal 9 Industry, Innovation and Infrastructure; Goal 17 Partnerships for the Goals.

• For other SDGs the comprehensive state policy is required in order to increase the positive impact and mitigate risks, especially concerning the environmental impact and economic restructuring.

• Concerns were raised on how the national policy is shaped to fully capture the opportunities provided by the investment and to mitigate its possible risks.

• Availability/discrepancies of data is another concern.
Simulations for Kazakhstan scenario

• BRI related investments amounted $4.4 billion during 2012 – 2020.

• Medium period projection until 2023
Investment growth (Modified Model)
Trend productivity growth


Original

Modified
Potential output growth

- 2012
- 2013
- 2014
- 2015
- 2016
- 2017
- 2018
- 2019
- 2020
- 2021
- 2022
- 2023

- Original
- Modified
Deb-to-GDP ratio

Year: 2012 to 2023

Original vs. Modified Deb-to-GDP ratio over time.
Simulations for Kazakhstan summary

• Limited impact in labor force participation and jobs (SDG 8)

• Limited impact on decreasing the gender gap (SDG 5, 8)

• Boosts the productivity growth (SDG 4, 8, 17)

• Leads to a faster output growth (SDG 8)

• Gov deficit and debt manageable (SDG 17)

• Overall, the positive impacts on economic growth, cautions on environment and social indicators.
Kyrgyzstan – national context

• A lower middle-income and land-locked country with an HDI of 0.672 in 2017.
• The economy is dominated by small economic entities that typically operate in the informal sector.
• Agriculture sector accounts for 25% of GDP and 30% of employment.
• Gold constituted 25% of industrial production and 48% of exports.
• Foreign remittances from immigrant workers accounted for 30% of GDP.
• Weak economic governance is the key challenge to development. Gender inequality is another outstanding issue, especially in terms of education attainment, employment and political participation.
Kyrgyzstan and BRI

• One of the first countries to support the BRI.
• Priority is given to utilize its beneficial geographic position and becoming part of the transportation corridor between Europe and China.
• Other main areas of cooperation include energy, industry, tourism, and agriculture.
• The total amount of funds allocated through bilateral grant and technical and economic assistance since 2015 is about 320 million USD.
• Preliminary agreements were reached on 24 projects for a total amount of about $7 billion.
Findings – Kyrgyzstan case

• The BRI and its infrastructure investments have the potential to contribute to sustainable development and to achieving many SDGs, including SDG 9 (industry, innovation and infrastructure), SDG 6 (clean water and sanitation), SDG 7 (affordable and clean energy) and SDG 13 (climate action).

• Some of the infrastructure and policy reforms envisaged will be difficult to implement, creating risks ranging from fiscal sustainability, to perceived negative environmental and social implications.

• Opportunities for growth and poverty reduction will likely be contingent on appropriate macroeconomic conditions and supportive institutions.
Simulations for Kyrgyzstan scenario

• total BRI related investment amounts to 1.3 USD billion and is spread across 7 years, from 2012 to 2018

• Investment growth is historically very volatile in Kyrgyzstan

• Medium period projection until 2023
Trend productivity growth

- Original
- Modified

Years: 2014 to 2023

Percentage: 2% to 5%
Labor force participation

- Modified_Female
- Modified_Male
- Original
- Modified

Year: 2014 to 2023
Budget deficit

-9  -6  -3  0  3  6  9


Original  Modified

BRI
Debt-to-GDP ratio


Original  Modified
Simulations for Kyrgyzstan summary

• Increases in labor force participation and jobs (SDG 8)

• Decreases the gender gap (SDG 5, 8)

• Boosts the productivity growth (SDG 4, 8, 17)

• Leads to a faster output growth (SDG 8)

• Reduces poverty level (SDG 1, 10)

• Gov deficit and debt managable (SDG 17)

• Overall, the magnitude of impacts is small, due to limited BRI investment.
Outline

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DESA project implementation plan

• www.brisdgs.org
• WEFM-e simulation scenarios
• Interim report (mid 2019), and final report (mid 2020)
• Regional/global workshops – Tbilisi (Oct 2019), China (Mar 2020), New York (Oct 2020)
• National workshops in countries until 2020
• In-depth training course on modelling tools including WEFM-e if requested
• Extension of BRI-SDGs project to other countries
THANK YOU

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