The Global Image of the Belt and Road Initiative and the responses from the rest of the world
A Big Data Analysis

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With contribution from Hanrui Li
1. Motivation and objective
2. Data and methodology
3. Results
4. Change of image over time
5. Multilateral Responses to BRI
6. Conclusions
1. Motivation and Objective
In 2013, China embarked on its grand project of the Belt and Road Initiative (BRI) and, as of May 2018, it had been supported by sixty-six countries.

Judging on the massive financing that China is bringing to Belt and Road countries to build infrastructure, one could expect recipients to view China’s grand plan very positively.

However, there is no systematic evidence of how this project is perceived among recipient countries and, more generally, globally.

Garcia-Herero and Xu in a working paper published by Bruegel offer a quantitative assessment of the image of BRI across the globe, using big data drawing on media all over the world. Finally, paper investigates empirically what may be the key reasons for such perception at the country level.

In this presentation, I also open the discussion to two main multi-country responses to BRI, both of very different nature: the Indo-Pacific strategy and the EU-Asia connectivity Plan.
A dynamic view of the Belt and Road

Source: www.gdelt.org & CARTO
Our country classification of BRI versus non-BRI countries

<table>
<thead>
<tr>
<th>Country Classification</th>
<th>East Asia &amp; Pacific</th>
<th>South Asia</th>
<th>Central Asia</th>
<th>Europe</th>
<th>Latin America and the Caribbean</th>
<th>Middle East &amp; North Africa</th>
<th>Sub-Saharan Africa</th>
<th>Non-BRI country</th>
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<tr>
<td>BRI country</td>
<td>Brunei Cambodia</td>
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Objective of the Garcia-Herrero and Xu’s paper on BRI image

• Quantitatively assess the perception of the Belt and Road Initiative across regions and BRI versus non BRI countries.

• Identify the key factor explaining each country’s image of the Initiative.

• More specifically, the perception can be further captured by answering two questions:
  – How well received it is?
  – What is the key factor/s behind such image?
2. Data and methodology
Our big data source is **Global Database of Events, Language, and Tone (GDELT)**

- **Content coverage**: Print, broadcast, and web news media in over 100 languages
- **Time span**: Jan 1, 1979 to present; Update every 15 minutes
- **Identification of tone**: Built-in tonal dictionary
## Two approaches to GDELT

### Table 1 Comparison between two data pools

<table>
<thead>
<tr>
<th></th>
<th>GDELT</th>
<th>GDELT Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chosen keyword(s)</strong></td>
<td>Key words are restricted within the built-in dictionary for institutions and/or events For the project, only “One Belt and One Road” is available</td>
<td>No restriction on the choice of key words for search</td>
</tr>
<tr>
<td><strong>Content coverage</strong></td>
<td>Print, broadcast and online news</td>
<td>Online news</td>
</tr>
<tr>
<td><strong>Time coverage</strong></td>
<td>Jan 1, 1979 to present</td>
<td>The past 355 days before the date of search</td>
</tr>
<tr>
<td><strong>Extraction method</strong></td>
<td>SQL in Google BigQuery</td>
<td>Application Programming Interface (API)</td>
</tr>
</tbody>
</table>

Our choice since concept not in GDELT dictionary and also recent enough to use summary.
We look for several definitions relating to Belt and Road

- One Belt, One Road
  - “China’s ‘one belt, one road’ initiative has been much talked about for the past two years, ...”, SCMP Editorial, *South China Morning Post, April 02, 2015*

- The Belt and Road Initiative
  - “In concrete terms, the Belt and Road initiative is an immensely ambitious development campaign, ...” – Tom Phillips, *The Guardian, May 12, 2017*

- New Silk Road
  - “If the new Silk Road is symbolized by images of stasis – police checkpoints, long lines of trucks and barbed wire – there won’t be much to remember.” – Jonathan Hillman, *The Washington Post, February 14, 2018*
Which media to focus on

• We use **public media** as the best channel to reflect the mainstream public opinion.
  – Beyond official or elites’ opinions
  – Exclude extreme opinions

• Why we exclude social media?
  – Avoid noisy and volatile opinions
  – Avoid fake news
Construction of the key sentiment measurement

• Tone: as proxy for the image of BRI

• Step 1: calculate the tone of a specific article $c$ in country $j$

$$T_{j,c} = \frac{w_{jpc} - w_{jnc}}{w_{jc}}$$

- $w_{jpc}$: the number of words with positive sentiment in article $c$ of country $j$
- $w_{jnc}$: the number of words with negative sentiment in article $c$ of country $j$
- $w_{jc}$: the total number of words in article $c$ of country $j$

• Step 2: calculate the general tone in a country

$$T = \frac{1}{N_c} \sum_j T_{j,c}$$
3. Results
BRI generally perceived positively

Figure 1 reports the summary statistics for our measurement of the sentiments across countries, indicating that the Initiative is on average positively received by the world.
BRI perceived similarly among BRI and non-BRI countries

In Figure 2, we further compare the tones between BRI countries and Non-BRI countries. Interestingly, the Belt and Road seems only slightly less positive for countries within the Belt and Road geographies than the outsiders, but the difference is statistically insignificant.
Africa has the best image while South Asia the worst

South Asia fares worst in terms of their image of the BRI while Africa fears best. Central Asia and Sub-Saharan Africa showed the most positive perception.
At country level

Nearly all Central Asian countries show very positive attitudes towards the Initiative. In Europe, the EU countries seem more positive about the Belt and Road than the non-EU European countries. The South Asian countries take a generally negative attitude against the Chinese plan.

Figure 4 Distribution of sentiment within 130 countries and regions
Regional Comparison
Southeast Asia

Top Positive Tone
Laos 3.01

Top Negative Tone
Philippines 0.22

Note: Tone for BRI country
## Regional Comparison

### Europe

#### Top Positive Tone

<table>
<thead>
<tr>
<th>Country</th>
<th>Tone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Netherlands</td>
<td>3.12</td>
</tr>
</tbody>
</table>

#### Top Negative Tone

<table>
<thead>
<tr>
<th>Country</th>
<th>Tone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bosnia and Herzegovina</td>
<td>-2.43</td>
</tr>
</tbody>
</table>

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### EU&BRI & Non-EU&BRI Tone

![Tone Chart]

#### Average Line (Europe & Central Asia)

- EU&BRI
- Non-EU&BRI
- EU&Non-BRI
- Non-EU&Non-BRI
- Average Line (Europe & Central Asia)
Regional Comparison
Middle East

Top Positive Tone
- Jordan: 2.47

Top Negative Tone
- Iraq: -1.19

Note:
Tone for BRI country
Regional Comparison
Africa

<table>
<thead>
<tr>
<th>Top Positive Tone</th>
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<tbody>
<tr>
<td>Botswana</td>
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<table>
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<tr>
<th>Top Negative Tone</th>
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<tbody>
<tr>
<td>South Africa</td>
</tr>
</tbody>
</table>
Regional Comparison
Central and South America

Top Positive Tone
Brazil 1.26

Top Negative Tone
Guyana -2.26

Tone
-2.50 -2.00 -1.50 -1.00 -0.50 0.00 0.50 1.00 1.50

Note:
Tone for BRI country
Tone for non-BRI country
Difference in the BRI image are very large and sometimes unexpected. Both extremes are broadly based in Europe and Asia, which means China’s Belt and Road Initiative has particularly penetrated the two regions but received much-divided opinions within them.

Source: https://www.gdeltproject.org
Empirical analysis: Descriptive statistic to chose key factors

To investigate the relationship between the image of the BRI and the factors that may affect such image, we select the countries with the highest and lowest sentiment towards the BRI in each region. Within the selected sample, we found most of the BRI-related articles contain two keywords: trade and investment.

Table 1 Descriptive statistic of the tone and proportion of trade, investment, and other topics

<table>
<thead>
<tr>
<th>Keywords</th>
<th>Tone</th>
<th>Proportion (%)</th>
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</thead>
<tbody>
<tr>
<td>‘trade’ only in BRI-related news</td>
<td>0.58</td>
<td>22.9</td>
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<tr>
<td>‘investment’ only in BRI-related news</td>
<td>0.57</td>
<td>11.3</td>
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<tr>
<td>Both ‘trade’ and ‘investment’ in BRI-related news</td>
<td>0.88</td>
<td>40.2</td>
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<tr>
<td>Others and BRI</td>
<td>0.27</td>
<td>25.6</td>
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<tr>
<td>BRI (Total)</td>
<td>0.58</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: https://www.gdeltproject.org/
Empirical analysis: Modeling

To assess how the readings of ‘trade’ and ‘investment’ affect the countries’ perception of the BRI, we use the following econometric model to analyze their influences.

\[
Tone_i = \theta_0 + \theta_1 BRI_i + \theta_2 Trade_i + \theta_3 Investment_i + \varepsilon_i
\]

- **Tone**\(_i\) is the sentiment of the BRI in country \(i\), in other words, the image of the BRI in country \(i\).
- **BRI**\(_i\) is a dummy variable with its value is set to 1 if country \(i\) is in the BRI geographies and 0 if not. To maintain consistency with the coverage of the sentiment variable, we define the BRI countries using its official status (classified by China’s official Belt and Road website) until April 25\(^{th}\), 2018.
- **Trade**\(_i\) represents the proportion of the BRI-related news mentioning the word ‘trade’ to all the BRI-related news, depicting the influence of trade in the local media reporting the BRI.
- **Investment** represents the proportion of the BRI-related news mentioning ‘investment’ to the total BRI-related news.
### Empirical analysis: Results

#### Table 2 Robust OLS regression result

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>BRI only</th>
<th>Trade only</th>
<th>Investment only</th>
<th>All controls</th>
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<tbody>
<tr>
<td>BRI</td>
<td>-0.117 (0.20)</td>
<td></td>
<td></td>
<td>-0.249 (0.20)</td>
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<tr>
<td>Trade (%)</td>
<td>-0.019 (0.01)</td>
<td>-0.030* (0.01)</td>
<td></td>
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<tr>
<td>Investment (%)</td>
<td>-0.004 (0.02)</td>
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<td>-0.016 (0.01)</td>
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<tr>
<td>R²</td>
<td>0.0025</td>
<td>0.0305</td>
<td>0.0009</td>
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<td>Obs</td>
<td>130</td>
<td>118</td>
<td>113</td>
<td>107</td>
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p<0.001: ***; p<0.01: **; p<0.05: *; p< 0.1: ^

1. No statistical difference between BRI and non-BRI countries as regards their perception of the Belt and Road.
2. Key factor explaining differences in perception of BRI is **trade** and, more especially, how frequently trade is mentioned in media relating to BRI. The more frequently trade is mentioned in the media (*trade intensity*), the worse perception a country tends to have about BRI.
3. Also investment carries a negative coefficient but generally not statistically significant.
4. Change of image over time
The image of BRI increasingly negative everywhere but Northern Africa but particularly in the Western Hemisphere.

Figure 7 Average growth rate of the image of BRI across region, %

1 Jan 2017 – 28 Jan 2019

- Average regional growth rate (%)
- Most rapid improvement (%), rhs
- Global average growth rate
- Most rapid deterioration (%), rhs

Countries with the most rapid improvement include Egypt, Panama, and Wales. Countries with the most rapid deterioration include Algeria, Somalia, and Zimbabwe.
Pakistan, second largest recipient of Chinese funding within BRI strategy, also experiencing a deterioration of this project’s image.

Figure 8 Image of BRI in Pakistan (30-days moving average)

- Pakistan Chief of Army Staff met Chinese Foreign Minister in Beijing
- Border dispute between China and India at Doklam plateau.
- China cultural festival was organized in Pakistan
- Gwadar project has not improved Baloch economy and Baloch militants attacked Chinese engineers.
The same is true for Panama, whose image of BRI plummeted since becoming a member.

Figure 9 Image of BRI in Panama (30-days moving average)

- Panama joined the Belt and Road Initiative
- The Belt and Road Forum in Beijing
- The Second Ministerial Meeting of China-CELAC Forum
- Xi Jinping visited Panama and signed 19 agreements.
The Situation is not too different for Uruguay, another reason member after some hype when entering the club.

Figure 10 Image of BRI in Uruguay (30-days moving average)

1. The 11th China-LAC Business Summit was held in Uruguay.
2. Chinese government extended the Belt and Road to LAC.
3. Uruguay formally joined in the Belt and Road Initiative.
Russia’s being the largest recipient of China’s BRI funding would be expected to have a positive image but it falls slightly short of that and with big swings for the last two years.

**Figure 11 Image of BRI in Russia (30-days moving average)**

- **1** Xi Jinping met Medvedev in Moscow to discuss building "Ice Silk Road"
- **2** Russia intended to suspend rail cooperation with China because of the delay and insufficient funding
- **3** IMF warned that China-led Belt and Road Initiative caused risk to global economy
- **4** Turkey’s financial crisis raised concern on China’s debt driven projects
Sri Lanka’s image of BRI has suffered massive fluctuations: Chinese’s military/economic support helps but not if coming with colonialist symbols.

Figure 12 Image of BRI in Sri Lanka (30-days moving average)

1. Sri Lanka faced debt crisis
2. The Belt and Road Forum
3. "Sri Lanka-China Logistic and Industrial Zone Office" was launched
4. Chinese flag raised by a Chinese company at Sri Lanka
5. Chinese state media attacked New York Times because of questioning on BRI
6. China prepared to hand over a gift frigate to Sri Lanka
Indonesia’s image of BRI has also suffered a very rapid deterioration due to the use of Chinese workers and debt concerns.

Figure 13 Image of BRI in Indonesia (30-days moving average)

1. China Huadian Corporation intended to invest in Indonesia
2. The third Conference of China-Indonesia High-level Economic Dialogue was held in Beijing
3. Indonesian government stated Chinese companies in Indonesia needed to hire more local workers
4. Legal experts warned debt risk within the BRI
5. Multilateral responses to BRI from rest of the world
The Indo-pacific strategy

– The US uses concept introduced by Japan in India and Australia follows.

– Now at the core of the US National Strategy since 2017

– Strategic response to China’s threat in the free navigation on Indo-South China seas

– Not so much a massive financing tool for emerging economies in the region.

– South East Asia worry about having to choose between BRI and Indo-Pacific and insist on ASEAN centrality

– Also military angle, by resuscitating Quadrilateral Military Dialogue among 4 countries
Seemingly not a response to BRI as much narrower in scope and funding

However, communication of the plan does point to a response to China as far as the building of infrastructure is concerned but without excluding China

“The European Union should proactively define and pursue its own comprehensive vision of connectivity in line with its values and interests, working with partners to achieve this vision and common objectives”
Quick comparison of two main response

- **US** reason to support Indo-Pacific strategy goes well beyond protecting its key ally in Asia, namely Japan, but really to contain China's growing influence in the region. **Military security** as central point

- **Japan**'s version of Indo-Pacific strategy quite different; namely preserving **multilateralism/status quo** (Free and Open Indopacific Strategy, FOIPS) and having formally invited China to join

- **India** continues to be the big elephant in the room as it wants to keep the Indo-Pacific strategy India (and not US) centered and also plays a hedging card with China. Its participation in Shanghai Cooperation Organization since 2017 with Pakisitan is a good indication

- For **EU** the **scope is narrower**, focusing on **physical connectivity** as the key concern is China's building infrastructure in Europe outside of EU's standards and plans.

- In a nutshell, while the US wants to create an alliance against China in Asia, Europe's goal is to protect the integrity/control its infrastructure in the light of China's growing influence
6. Conclusions
Key take-aways

- China’s landmark project of global influence, the BRI, seems to hold a still positive but worsening image across the globe, based on Garcia-Herrero and Xu’s big data analysis.
- Still wide differences in the perception of BRI are found across regions and countries. Interestingly, countries who are members of the BRI strategy do not seem to hold a better image of the project.
- Among the many factors explaining each country’s image, ‘Trade’ seems to be the key factor, and in particular fears of an unbalanced trade with China. Investment seems to be less relevant.
- Zooming into individual country’s evolution of their image about the Belt and Road, the deterioration is quite clear for those most involved in the initiative.
- Finally, when analyzing two key multilateral responses to BRI, the Indo-pacific strategy is understood differently among members, with the US pushing to contain China in Asia and Japan trying to keep the status quo. India, instead, tries to elevate its international role through this strategy.
- The EU’s response to BRI is much narrower, focusing on controlling its own infrastructure and that of its neighborhood and ensuring standards without stopping China’s funding necessarily.
Comments welcome!