Title: Soft Infrastructures and the Belt and Road Initiative

Author(s): Ramasamy, B., Yeung, M., Duval, Y. and Utoktham, C.

In Book: The Belt and Road Initiative: Opportunities and Challenges of a Chinese Economic Ambition (Cremer, D. D., McKern, B., & McGuire, J., ed.)

Year: 2020

ISBN: 9789353287917

Publisher Link: https://uk.sagepub.com/en-gb/eur/the-belt-and-road-initiative/book272159

Chapter 6: Soft Infrastructures and the Belt Road Initiative

Bala Ramasamy, Matthew Yeung, Yann Duval and Chorthip Utoktham

Abstract

The Belt Road Initiative (BRI) suggested by China's President Xi Jinping provides an ambitious vision encouraging a new level of cooperation among countries along several economic corridors spanning most of the Asian economies. This chapter[1] analyzes and compares the potential impact on trade from improvements in hard (physical connectivity via good quality transportation networks) and soft (efficient trade facilitation via an effective border administration and use of Information and Communications Technology (ICT) infrastructures. Results of the econometric analysis show the importance of both hard and soft infrastructures in enhancing export performance of economies involved in the BRI although the latter shows a much greater impact on most BRI countries.

Keywords: Belt Road Initiative, BRI, trade facilitation

[1] An earlier version of this paper was included in the Asia-Pacific Research and Training Network on Trade (ARTNET) Working Paper series No.172/2017.

Introduction

The BRI is an ambitious vision that encourages a new level of cooperation among countries along the various corridors identified by the Chinese government. The Vision document (National Development and Reform Commission (NDRC) and Ministry of Commerce, 2015) states a number of co-operative initiatives that will bring member countries closer together, politically, economically and culturally. These range from free trade areas along the corridors to an international summit forum on the BRI. However, two main initiatives that make up a significant portion of the Vision document are:

a. To improve the region's infrastructure and put in place a secure and efficient network of land, sea and air passages, raising the connectivity to a higher level, and
b. To further enhance trade and investment facilitation, establish a network of free trade areas that meet high standards so that economic ties among member economies can be further deepened.

In other words, the BRI has a dual objective of improving both the hard and soft infrastructure of the economies aligned to the initiative. Portugal-Perez and Wilson (2010) explain that trade facilitation in a broad sense can be undertaken along these two broad dimensions. The hard dimension relates to tangible infrastructure like roads, ports, highway and telecommunications whereas the soft dimension relates to transparency, customs management, the business environment and other institutional factors. The distinction between the two can assist in policy decisions. Portugal-Perez and Wilson (2010) also state that both dimensions are complementary in nature, as one dimension reinforces the other in lowering the cost of trade. They do however find that improvements in infrastructure quality have the greatest benefits for export growth, particularly for lower income countries. The marginal impact of ICT usage on export performance, on the other hand, is greater for richer countries.

The impact of infrastructure improvement (air, land and sea) is simulated by Herrero and Xu (2016) for the BRI countries. Using a gravity model and using distances as proxy for transportation costs, they find that a 10 percent reduction in railway, air and maritime costs will increase export by 2, 5.5 and 1.1 percent respectively. This implies that the marginal impact of a reduction in air and railway costs is greater than a reduction in ad valorem tariffs.

We conducted an in-depth analysis to compare the magnitude of impact of these hard and soft infrastructures along the six corridors of the BRI, namely the New Eurasia Land-bridge Economic Corridor (NELB), the Central Asia West Asia Economic Corridor (CAWA), the Indochina Peninsula Economic Corridor (IP), the Bangladesh-China-India-Myanmar Economic Corridor (BCIM), the China-Mongolia-Russia Economic Corridor (CMR) and the China-Pakistan Economic Corridor (CP).[2] No doubt, both physical infrastructure and trade facilitation are important for trade to flourish. However, physical infrastructure has been found to be financially expensive and risky. ADB (2017) reported that developing Asian economies need to spend USD 1.7 trillion annually from 2016 to 2030 if the region wants to maintain its economic momentum. Hurley et al. (2018) considered the risk of debt distress among 68 BRI countries and find that countries like Laos, Kyrgyzstan, Mongolia, Pakistan and Tajikistan will face debt sustainability problems. Hard infrastructure also requires strong political cooperation and will definitely be scrutinized by public opinion on its social and environmental impact. On the other hand, the soft infrastructure, more specifically trade facilitation, is relatively cheaper, and is less obvious to the public eye. Reducing trade barriers are policy driven initiatives. They are also within the jurisdiction of national governments. Although both hard and soft infrastructures are mutually supportive, our comparison between the two shows the importance of the latter.

Data, Models and Methods

Rather than developing a unique dataset for the issues of interest as done by Portugal-Perez and Wilson (2010), Otsuki (2011) and Herrero and Xu (2016), we use the pillar-level indicators calculated by the World Economic Forum's Enabling Trade Index (ETI). The ETI comprises of 7 pillars – 1) domestic markets access, 2) foreign market access, 3) efficiency and transparency of border administration, 4) availability and quality of transport infrastructure, 5) availability and quality of transport services, 6) availability and use of ICTs and 7) operating environment. We are particularly interested in pillars 3, 4 and 6. Among the variables considered in pillar 3 include customs services, customs transparency, number of documents, days and cost to import and export as well as irregular payments involved. Pillar 4 on the other hand includes the quality and availability of air, rail, road and port infrastructure. Pillar 6 includes the internet penetration rate as well as the extent of ICT use in

[2] The countries along each corridor covered in our analysis are shown in Appendix 1.

business transactions. Pillars 1 and 2 were not included as these are not our main focus in this chapter while Pillars 5 and 7, though relevant, were excluded to avoid multicollinearity issues in modeling.

Each pillar in the ETI is normalized within a range of 1 (lowest quality) to 7 (highest quality). Our gravity model based on Portugal-Perez and Wilson (2010) and Otsuki (2011) uses mixed effects model of panel data estimation with more than 70,000 bilateral trade relationships among 139 countries worldwide for the period between 2008 and 2014 (years for which consistent ETI data is available). The gravity modeling method is proven to be remarkably successful in predicting bilateral trade flows based on the mass of the exporting and importing economy, the geographical distance between the two economies, and other attributes according to the researcher's interests.

As our main interest is the impact of improvements in trade facilitation and infrastructure along the various corridors of the BRI, we specify the following gravity model to which we append the selected enabling variables of the exporting country:

$$y_{ij} = \alpha_{j[i]} + b_1(Border_i) + b_2(Infra_i) + b_3(ICT_i) + \beta X + \delta T + \in_{ij} \qquad [1]$$

where:

y_{itj}	= the value of exports from country i to country j
Border	= the efficiency of border administration in the exporting country i
Infra	= the quality and availability of transport infrastructure in the exporting country i
ICT	= the availability and quality of ICT in the exporting country i
$\alpha_{j[i]}$	= fixed effects for importer j
T	= fixed effects for each year t
$\in$ij	= the random error term

X consists of a basket of variables that are commonly included in a gravity model, which comprise of real GDP of both countries, the size of population of both countries, the physical distance between trading partners, dummy variables for sharing a common border, a shared language, colony-colonizer relationship, land-locked countries and if a Regional Trading Arrangement (RTA) exists with the trading partner.

All variables are log-transformed, except for dummy variables. Equation 1 is a varying intercept model and controls for the importing country j. Sources of data are reported in Table 1.

Table 1. Variables and Data Source

Variable	Details	Source
Border	Efficiency and transparency of border administration	Various issues of the World Economic Forum's Global Enabling Trade Report 2008 – 2014
Infra	Availability and quality of transport infrastructure	
ICT	Availability and use of ICTs	
Exports	Amount of exports from country i to country j (in million USD)	UNCTAD's Data Centre
GDP	Real GDP of country i and j (in million USD, constant)	
Population	Size of population in country i and j(in 1000)	
distance	Geographic distance between country i and j	dist_cepii.xls from CEPII
contig	Dummy variable set equal to 1 if country i and j share a common border	
comlang	Dummy variable set equal to 1 if country i and j share a common language	
col45	Dummy variable set equal to 1 if country i and j had a colonial relationship after 1945	
comcol	Dummy variable set equal to 1 if country i and j had a common colonizer after 1945	
landlocked	Dummy variable set equal to 1 for landlocked countries, 0 otherwise	geo_cepii.xls from CEPII
RTA	Dummy variable set equal to 1 if country i and j are members of an RTA, 0 otherwise	De Sousa (2012) http://jdesousa.univ.free.fr/data.htm

As mentioned earlier, the hard and soft infrastructures do not only impact trade individually. There is also synergy between the two. We extend our analysis by considering the possible interacting effects of various pillars on export performance. We added three interaction

variables, namely [border * infra], [border * ICT] and [infra * ICT], to the original model as shown in Equation [2]. To reduce multicollinearity, all the R.H.S variables in equation [2], except for the dummy variables, are centered. The model also takes into account the fixed effects of importer country j and time T.

$$y_{ij} = \alpha_{j[i]} + b_1(Border_i) + b_2(Infra_i) + b_3(ICT_i) + b_4(Border_i \bullet Infra_i) + b_5(Border_i \bullet ICT_i) + b_6(Infra_i \bullet ICT_i) + \beta X + \delta T + \in_{ij} \quad [2]$$

Results of Analysis

The fitted model for Equations [1] and [2] are reported in Table 2 Panels A and B, respectively. The fitted model yield a goodness of fit (Snijders-Bosker) of R2 > 0.8. In the fitted equation [1], the usual variables used in gravity models have the right sign and are significant. A larger geographic distance between trading partners have a negative effect on exports. Similarly, when one partner is landlocked, the effect on export is also negative. Other variables that reduce the liability of foreignness (Zaheer, 1995) like sharing a common border, language etc have significant positive impact on exports. A larger GDP and population of both trading partners also result in more exports. More importantly, the coefficients for border, infra and ICT are all positive and significant indicating that these are indeed enablers of export. Our analysis also finds significant positive results for RTA.

Table 2. Effects of Border Administration, Physical Infrastructure and ICT on Exports

Panel A: Equation 1 [Main Effect Model]; n=73868

Variable	Coefficient	Std.Error	z
landlocked	-0.765**	0.137	-5.58
contig	1.368**	0.052	26.28
comlang	0.684**	0.026	26.02
col45	0.763**	0.083	9.18
comcol	0.963**	0.033	28.81
distance	-1.111**	0.013	-87.25
GDP(i)	0.724**	0.013	55.34
GDP(j)	0.935**	0.034	27.51
Population(i)	0.525**	0.013	40.04
Population(j)	0.088**	0.044	1.99
Border	1.532**	0.061	25.05
Infra	0.686**	0.054	12.81
ICT	1.400**	0.057	24.54
RTA	0.571**	0.025	23.16

Panel B: Equation 2 [Interaction Model with centered Data]; n=73868			
Variable	Coefficient.	Std.Error.	z
Landlocked	-0.765**	0.137	-5.57
contig	1.369**	0.052	25.86
comlang	0.683**	0.026	25.46
col45	0.758**	0.083	9.70
comcol	0.960**	0.033	28.57
distance	-1.111**	0.013	-88.01
GDP(i)	0.724**	0.013	54.36
GDP(j)	0.934**	0.034	27.48
Population (i)	0.525**	0.013	39.40
Population(j)	0.089*	0.044	2.03
Border	1.701**	0.063	27.17
Infra	0.686**	0.054	12.67
ICT	1.264**	0.058	21.69
RTA	0.574**	0.025	23.28
Border*Infra	2.943**	0.236	12.47
Border*ICT	-0.510**	0.139	-3.66
Infra*ICT	-1.701**	0.153	-11.09

Note: * and ** refers to level of significance at 1% and 5% respectively.

A one-percent increase in the efficiency of border administration and transport infrastructure will increase exports by 1.5 percent and 0.7 percent, respectively. A one-percent improvement in the quality of ICT on the other hand can increase exports by 1.4 percent. Clearly, among the three enablers in the model, improvements in the efficiency of border administration have the largest impact on exports, ceteris paribus. In fact, the border administration co-efficient is the largest among all our variables.

Using the estimations from Equation [1], we can calculate the improvements in export performance that will accrue to countries if they reach higher standards of performance in border administration, infrastructure and ICT – presumably through the support provided by the BRI in these areas. Two scenarios are considered: (1) Countries involved in BRI whose standards were lower than China improve their performance to the level of China; (2) Countries involved in BRI improve their performance to that of the top performer.[3]

The results of selected countries are shown in Table 3. Our estimations suggest that Mongolia, Tajikistan and Uzbekistan could see their exports more than triple if they can align the efficiency of their border administration with that of China (scenario 1). Mongolia is found to gain most from advances in trade facilitation under the China benchmarking scenario, as do

[3] Singapore is chosen as the reference for this second scenario since it ranked as number one for border administration (Pillar 3) and infrastructure (Pillar 4) and among the top ten countries for ICT (Pillar 6) in the ETI 2014.

most other countries. On the other hand, Myanmar gains relatively more from improvements in transport and ICT infrastructure and services.

Thailand and Turkey, whose performance on trade facilitation are higher than China, are two other countries who gain most from hard infrastructure improvements under scenario 1. However, considering scenario 2 where BRI economies all upgrade their performance to that of the best performer among them, improvements in trade facilitation and ICT are generally found to be most important in raising exports.

Looking at these numbers from a corridor perspective (see Table 4), results from the improvement of trade facilitation to China level suggests that exports would increase most for countries along the NELB as well as the CMR, essentially due to the fact that countries along these corridors currently stand well below China's performance in this area. In contrast, the CP corridor stands out in terms of potential export increases if infrastructure and the use of ICT can be improved.

Table 3. Changes in Exports in selected BRI Economies from Improvements in Hard and Soft Infrastructure (%)

Economy	% Change in Exports under Scenario (1): Improvement to China's performance level			% Change in Exports under Scenario (2): Improvement to top BRI performer's level		
	Border Admin	Infrastructure	ICT	Border Admin	Infrastructure	ICT
Myanmar	95.9	104.3	188.5	200.4	141.3	454.1
Bangladesh	106.4	72.7	72.8	216.5	103.9	231.9
Mongolia	236.7	72.7		416.3	103.9	85.7
Lao PDR	86.2	50.9	82.4	185.5	78.2	250.2
Cambodia	86.2	63.1	25.1	185.5	92.6	140.2
Tajikistan	234.4	26.3	107.1	395.1	35.8	188.7
Uzbekistan	232	19.2	119	409.1	40.7	320.6
Kyrgyz Republic	95.9	58.8	11.3	200.4	87.5	113.7
Iran, Islamic Rep.	95.9	29.5	36.1	200.4	52.9	161.3
Pakistan	24.9	32.1	64.1	91.5	56	215.2
Kazakhstan	130.4	27		253.3	50	34.6
India	30	12.4	36.1	99.3	32.8	161.3
Vietnam	41.2	34.8		116.6	59.2	68.7
Indonesia	20.1	27		84.1	50	92
Russian Federation	68.9	20.2		159.1	42	34.6
Thailand	7.3	10.7		64.6	30.7	79.7
Turkey		9		53.3	28.7	85.7
China				53.3	18.1	92
Malaysia				38.6	15	31.2

Table 4. Changes in Exports along BRI Corridors from Improvements to China's performance level (%)

Corridors	Border Admin	Infrastructure	ICT
ICP	17.51%	18.06%	2.17%
BCIM	39.43%	20.63%	43.00%
CP	24.90%	32.10%	64.10%
CMR	68.90%	20.20%	0.00%
CAWA	60.17%	19.11%	3.95%
NELB	76.12%	21.00%	-

Note: numbers shown reflect aggregate changes in exports to the world of all Asian economies in each corridor other than China.

Turning now to interactions between hard and soft infrastructure as modeled in equation [2], we find strong evidence to show that border administration and infrastructure complement each other. Figures 1 and 2 provides a visual of the interaction effects. Our results strongly suggest that improving hard infrastructure in a context of inefficient border crossings and trade procedures may not result in an increase in trade (the rather flat line in Figure 1). At the same time, however, countries with better quality infrastructure tend to gain more from a more efficient border administration (Figure 2). These results do confirm our earlier findings that trade facilitation is a critical driver of export performance.

Figure 1. Effect of infrastructure improvements on exports in a low/high trade facilitation environment

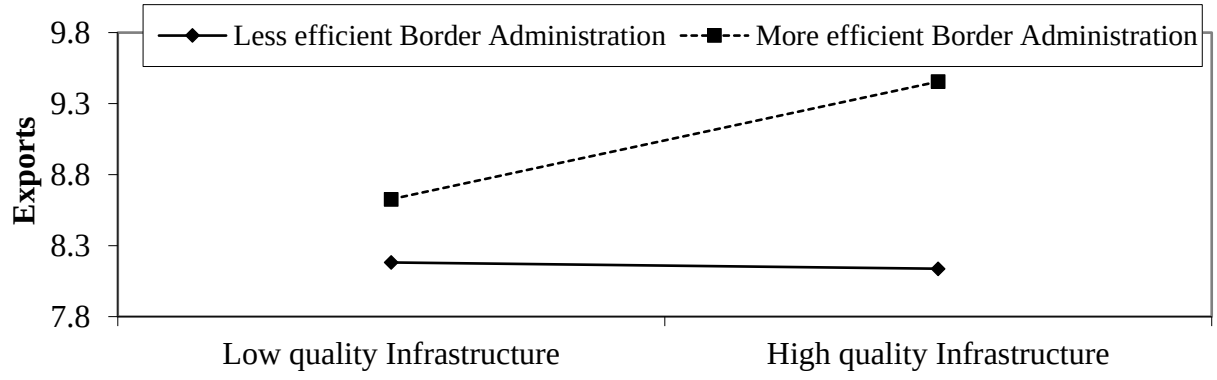


Figure 2. Effect of trade facilitation improvements on exports in a low/high quality infrastructure environment

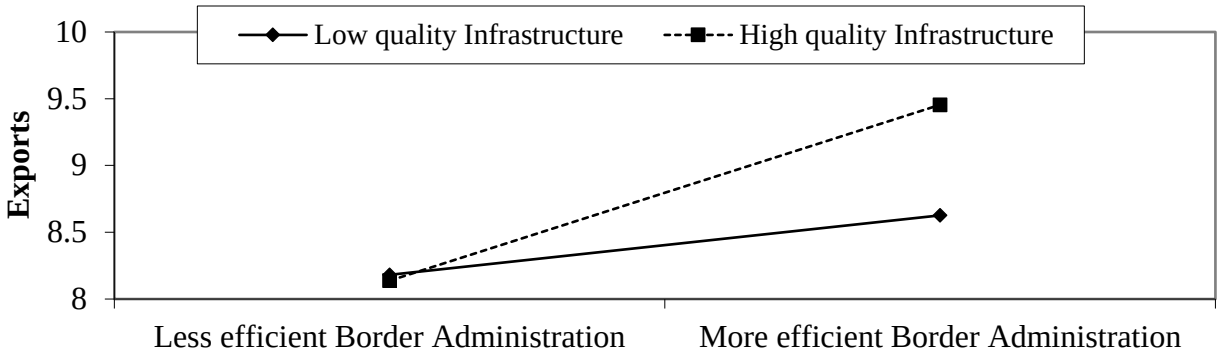


Figure 3. Effect of infrastructure improvements on exports in a more/less ICT input

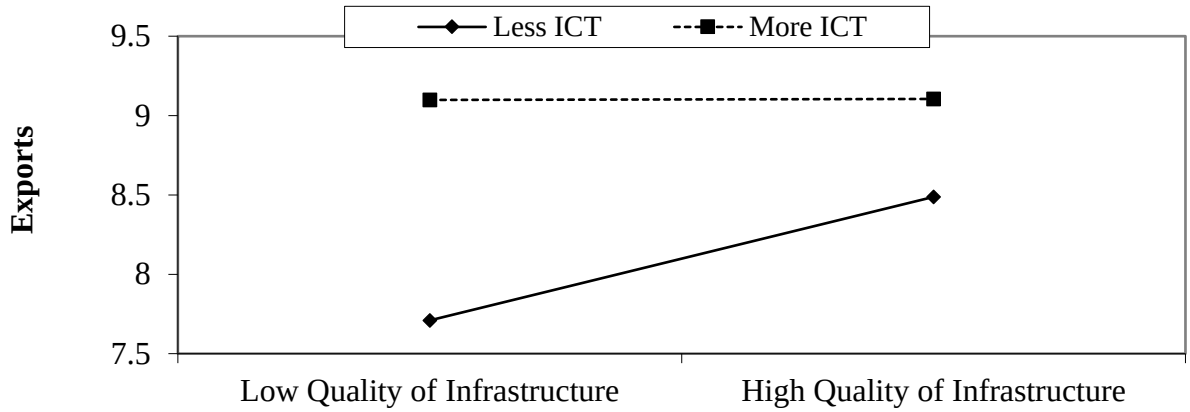
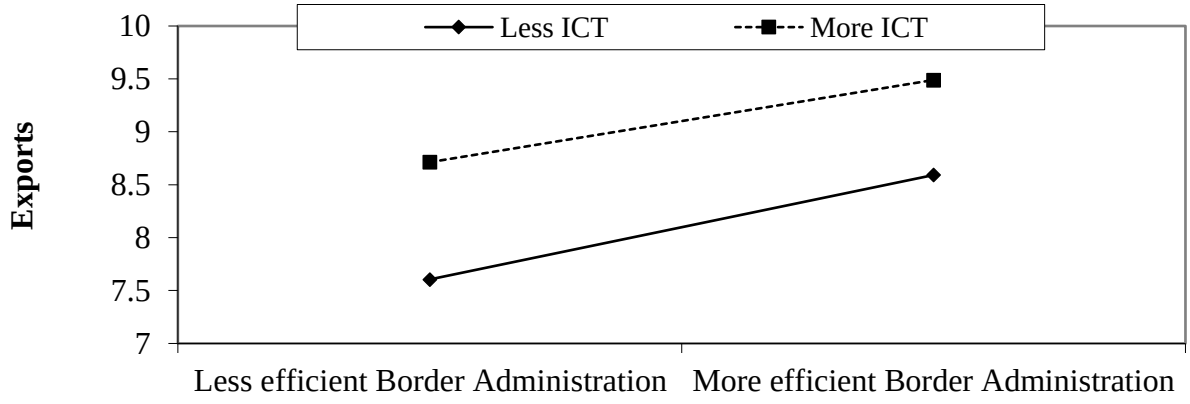


Figure 4. Effect of trade facilitation improvements on exports with more/less ICT input



Significant interactions are also found between ICT and infrastructure. In particular, while improving ICT has a positive effect on exports for countries with both high and low quality infrastructure, the effect is greater in countries with lower levels of infrastructure (Figure 3).

As for ICT and trade facilitation, improvements in ICT have similar positive effects on exports, regardless of the level of trade facilitation (Figure 4).

Discussion

Banomyong (2013) explained that a transport corridor is one where an area or region is connected physically by transportation networks. A logistics (or a trade facilitation) corridor takes the transport corridor to another level as the institutional framework is harmonized such that freight, people and information are able to move within the corridor much more efficiently. Finally, an economic corridor is one that is able to attract investments into the region, which will generate greater economic activities. Since the BRI is designed to develop economic corridors, efforts that focus on transport and trade facilitation corridors as a pre-requisite make strategic sense.

Our analysis of the trade and trade facilitation data of countries affected by the BRI clearly points to the fact that the improvement of both transportation networks and trade facilitation procedures as well as ICT capacities do indeed encourage and increase trade flows between countries. Our findings suggest that on average, a one percent improvement in trade facilitation will increase exports by more than 1.5 percent, while a one percent improvement on the quality of transport infrastructure will increase exports by about 0.69 percent. In fact, we find that both strategies complement each other and that an integrated cross-sectoral approach would be most effective. The movement of people and freight will be delayed at the border if procedural issues are overwhelming, no matter how good the transportation networks are. Similarly, getting to and crossing the border will be delayed if transportation networks are poor in quality and uncoordinated, no matter how advanced trade facilitation procedures are.

Countries that perform well in trade are those that excel in both. However, improvements in physical infrastructure will have a much more important effect on export performance in countries that have relatively more efficient border administration. This highlights the need for countries with weak trade facilitation to take stock of their weaknesses and work on improving their border administration if they wish to receive the full effect of better infrastructure. This also implies that the BRI has to dedicate enough importance on both strategies – border administration and physical connectivity- although not necessarily equal emphasis as the impact differs from one corridor to another.

A review of the literature on trade facilitation efforts of the Asian sub-regions covered by the six corridors in the BRI tends to point to a common set of problems in each of the corridor – customs and other authorities who require excessive documentation and/or do not apply modern ICT to trade procedures; a lack of harmonization of various standards and procedures within and between countries; and inadequate border infrastructure facilities at the border and between borders.[4]

However, there is still insufficient knowledge about the bottlenecks that hamper the seamless flow of freight along the corridors. While business process analyses of trade procedures (BPA) have been carried out for more than 50 goods involving 13 countries in the Asia-Pacific region since 2010 (UNESCAP, 2014), only a few of them have focused on cross-border trade and transport processes directly relevant to the BRI. Therefore, there is an urgent need to better understand the procedures involved in moving popular products along the various corridors in the BRI. In particular, BPA and BPA+ studies[5] of the top products crossing borders, as well as along the corridors to identify the bottlenecks are necessary. Identifying and releasing the bottlenecks for these goods will be the low-hanging fruits that can be harvested and gain support from the various players, both public and private, in the trading activity. These studies should also identify which type of infrastructure – soft or hard – contributes more towards the bottlenecks so that policies and projects can be prioritized effectively.

In the case of building and utilizing fully ICT capabilities, firstly, a technological leapfrogging is required (Fong, 2009). Without capacity building in ICT and its widespread use, paperless system will be a mirage. Investing in broadband and leapfrogging into future internet systems and extending the use of mobile phone and its various applications in facilitating trade procedures are all strategies well-worth considering. In fact, given that the BRI consists of China as a leading country in computer and mobile phone hardware and India as a leading software developer, eradicating digital poverty in the BRI is well within reach. This requires governments of individual countries to allocate a larger portion of their resources into building these digital capabilities. This could also be achieved by attracting more multinationals from China, India and other countries to invest in their countries. We

[4] For example, refer to UNNExT Brief No. 11 http://www.unescap.org/resources/unnext-brief-no-11-insights-escap%E2%80%99s-trade-process-analysis-database

[5] BPA+ extends the BPA to the Time-Cost-Distance (TCD) and Time-Release Studies (TRS) methodologies, providing reliable and detailed data so that bottlenecks can be identified and addressed. This information can provide the basis for establishment of integrated and sustainable Trade and Transport Facilitation Monitoring Mechanisms (TTFMM) at the national or regional levels (UNESCAP, 2014).

have shown elsewhere five simple policies that attract Chinese companies (Ramasamy and Yeung, 2016). These include minimizing institutional risks by reducing corruptive practices and establishing free trade agreements with China. Liberalizing the telecommunication industry and inviting foreign investors can achieve technological leapfrogging and building human resource capacity in ICT. Building ICT capacity would be an important step towards cross-border paperless trade facilitation in the BRI.

Secondly, an extensive usage of ICT in facilitating trade procedures is necessary. In other words, a paperless initiative at a national level should be a policy priority (UNESCAP 2014). The paperless system should consider decreasing the need for repetitive information, and connect digitally the various national agencies involved in regulating the movement of goods and services. Further, allowing exporters and importers to make online submissions of relevant documents should be encouraged (Rastogi and Arvis, 2014). The UN Global Survey on Trade Facilitation and Paperless Trade Implementation finds that even when internet connection is available among Customs and other regulatory bodies within a country, electronic application and the issuance of various certificates like the Certificate of Origin is yet to be implemented (UNESCAP 2015). Once a single window system can be implemented at a national level, harmonizing the necessary rules, regulations and requirements can be considered at a sub-regional, regional and corridor level. The adoption in May 2016 at ESCAP of a Framework Agreement on Facilitation of Cross-border Paperless Trade in Asia and the Pacific is worth noting in this context, as it could provide the neutral and dedicated platform for countries to reduce non-tariff barriers and trade costs through digitalization of procedures.

Our econometric models also pointed to the significant positive effects that regional trade agreements (RTAs) have on exports. RTAs among countries within specific corridors can act as a catalyst towards greater cooperation between countries. In most of the corridors of the BRI, there are often at least one or two Free Trade Agreements (FTAs) that unite a majority of the corridor countries – ASEAN and ASEAN China-FTA for the Indochina Corridor, China-Pakistan FTA for the CP corridor, South Asian FTA (SAFTA) and Bay of Bengal Initiative for Multi-sectoral Technical and Economic Cooperation (BIMSTEC) for BCIM, and the Eurasian Economic Community (EAEC) for Central Asia. However, two points needs to be considered. First, China needs to step up its relationship with other regions. Currently, only its relationship with ASEAN seems to be at an advanced stage with the China-ASEAN FTA. There is no such agreement with the EAEC nor with the Russian Federation while with

South Asia, the only link that China has with India the Asia Pacific Trade Agreement (APTA), which is relatively weak. No doubt, the proportion of China's exports in 2015 to the Commonwealth of Independent States (CIS) and the South Asian Association for Regional Cooperation (SAARC) were only 3% and 4% of total exports respectively, these are also regions with high potential. Second, a coordinating body needs to be established to facilitate greater trade relationships between regions as well as to share capacities and knowledge among regions. In this regard, existing institutions like the United Nation's Economic and Social Commission for Asia and the Pacific (ESCAP) or the Asian Infrastructure and Investment Bank (AIIB) could act as initiators. A less formal organization (like the APEC) to forge closer political and economic ties among the countries of the BRI could also be considered.

Conclusion

The BRI is an ambitious initiative that aims at developing economic corridors connecting China to Europe by land and sea and enhancing the trading relationships between all economies involved. However, there is great diversity among the BRI economies and the various corridors in terms of level of trade development and integration. The Indo-China Peninsula corridor is ready to become a major economic corridor due to the China-ASEAN FTA legacy, while other corridors such as the CAWA or NELB corridors will likely take longer to develop.

In this chapter we showed that trade facilitation and the development of soft infrastructure are keys to trade development along all the BRI corridors. Most countries along the corridors still have significant trade barriers and inefficient procedures in place. Our empirical analysis indicated that average export growth that could be expected from a 1% improvement in trade facilitation performance in BRI countries was twice what could be expected from a similar change in terms of transport infrastructure. The quantitative analysis also highlighted that trade benefits from improvement in transport and logistics infrastructure development could not be reaped in an environment where trade regulations are not harmonized and implemented in a transparent and efficient manner.

While the China-Pakistan and the Indo-China Peninsula corridors are well covered by trade agreements, China appears to have limited formal trade arrangements with countries in the CAWA, NELB and CMR corridors. Accordingly, it may need to step up its efforts in

concluding trade agreements with South and Central Asia to ensure that improved physical connectivity can effectively lead to more intra-regional trade. Given the relatively large number of existing and overlapping trade agreements in the region, this may best be done through expansion of existing agreements and initiatives, or through agreements between China and existing trade blocs.

While physical infrastructure may require investment from foreign firms and governments, trade facilitation is very much an internal effort that requires commitment and actions of national governments. The returns on investment in physical infrastructure along the BRI corridors is likely to be limited unless the political will for trade facilitation is secured. Thus, there is an urgent need for further studies to be conducted to identify the major bottlenecks that reduces smooth movement of goods across borders along the corridors. The potential use of ICT to release these bottlenecks should also be considered.

Our empirical analysis and the findings that follow assume that factors other than those that are controlled for (common language, common border etc) are held constant. In reality, other factors can also influence the trade that takes place between countries. Political stability and economic freedom influences trade, independent of how advanced the infrastructure and ICT of a country is or how efficient the border administration might be. These important factors also need to be when evaluating trade between countries.

References

ADB (2017), Meeting Asia's Infrastructure Needs, Manila: Asian Development Bank. https://www.adb.org/sites/default/files/publication/227496/special-report-infrastructure-highlights.pdf

ADB and UNESCAP (2013). Designing and implementing trade facilitation in Asia and the Pacific. Mandaluyong City, Philippines: Asian Development Bank, 2013.

Banomyong, Ruth. (2013). The Greater Mekong Sub-region of Southeast Asia: Improving Logistics Connectivity. In J. H. Bookbinder, ed. Handbook of Global Logistics: Transportation in International Supply Chains. International Series in Operations Research & Management Science. New York: Springer. pp. 69–96.

EIU's (2015). Prospects and Challenges on China's One Belt One Road: A Risk Assessment Report, The Economist Intelligence Unit Ltd, www.eiu.com.

Fong, Michelle, W.L. (2009). “Technology Leapfrogging for Developing Countries”, IGI Global, http://journalistsresource.org/wp-content/uploads/2013/04/Technology-Leapfrogging-for-Developing-Countries.pdf

Herrero, Alicia Garcia and Xu, Jianwei. (2016). China’s Belt and Road Initiative: Can Europe Expect Trade Gains? Bruegel Working Paper Issue 5, Brussels: Bruegel.

Hurley, J., Morris, S, and Portelance, G. (2018). “Examining the debt implications of the Belt and Road Initiative from a policy perspective”, Center for Global Development Policy Paper 121, March 2018, https://www.cgdev.org/sites/default/files/examining-debt-implications-belt-and-road-initiative-policy-perspective.pdf

National Development and Reform Commission (NDRC) and Ministry of Commerce. (2015). Vision and Actions on Jointly Building Silk Road Economic Belt and 21st-Century Maritime Silk Road, Issued on March 2015.

Otsuki, Tsunehiro. (2011). "Quantifying the Benefits of Trade Facilitation in ASEAN," OSIPP Discussion Paper 11E006, Osaka School of International Public Policy, Osaka University.

Portugal-Perez, Alberto and Wilson, John, S. (2010). “Export Performance and Trade Facilitation Reform: Hard and Soft Infrastructure”, Policy Research Working Paper 5261, World Bank.

Ramasamy, Bala and Yeung, Matthew, C. H. (2016). “Wooing the New Chinese Businesses: Five Short-term Policies to Attract Direct Investment”, Journal of Business Strategy, 37 (5).

Rastogi, Cordula, and Jean-François Arvis. (2014). The Eurasian Connection: Supply-Chain Efficiency along the Modern Silk Route through Central Asia. Directions in Development. Washington, DC: World Bank. doi:10.1596/978-0-8213-9912-5.

UNESCAP (2014). Towards a National Integrated and Sustainable Trade and Transport Facilitation Monitoring Mechanism: BPA+, Bangkok: United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), http://www.unescap.org/resources/towards-national-integrated-and-sustainable-trade-and-transport-facilitation-monitoring

UNESCAP (2015). Trade Facilitation and Paperless Trade: State of Play and the Way Forward for Asia and the Pacific. Studies in Trade and Investment No. 85. Bangkok. ST/ESCAP/2742. Available from: www.unescap.org/resources/trade-facilitation-and-paperless-trade-state-play-and-way-forward-asia-and-pacific

World Economic Forum (2016). The Global Enabling Trade Report 2016, Gieger, T., Battista A.D., Doherty, S., and Soininen, I. [Eds.], Geneva: World Economic Forum.

Zaheer, Srilata (1995). “Overcoming the liability of foreignness”, *The Academy of Management Journal,* 38 (2): 341-363.

Appendix

Economies along the BRI Economic Corridors

New Eurasia Land Bridge (NELB)	China, Kazakhstan, Russian Federation, Belarus, Poland (EU), Germany (EU)
China-Mongolia-Russia (CMR)	China, Mongolia and Russian Federation
China-Central Asia- West Asia (CAWA)	China, Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan, Turkmenistan, Iran, Turkey, Greece (EU)
China-Indochina Peninsula (ICP)	China, Thailand, Vietnam, Laos, Cambodia, Myanmar, Malaysia, Singapore, Indonesia
China-Pakistan (CP)	China, Pakistan
Bangladesh-China-India-Myanmar (BCIM)	China, Bangladesh, India, Myanmar

Authors:

Bala Ramasamy is Associate Dean and Professor of Economics at the China Europe International Business School (CEIBS) based in Shanghai, China. His main areas of research are economic development, international trade and foreign direct investment.

Mathew Yeung is Associate Professor of Marketing at the Lee Shau Kee School of Business and Administration, Open University of Hong Kong, Hong Kong SAR. His areas of research are international trade, foreign direct investment and marketing.

Yann Duval is Chief, Trade Facilitation Unit, Trade and Investment Division, United Nations Economic and Social Commission for Asia and the Pacific (ESCAP). He currently leads the activities of the United Nations Network of Experts for Paperless Trade in Asia and the Pacific (UNNExT).

Chorthip Utoktham is a Consultant at the Trade Facilitation Unit, Trade and Investment Division, United Nations Economic and Social Commission for Asia and the Pacific (ESCAP).