

CHINESE BELT AND ROAD INITIATIVE AND THE PHILIPPINES' "BUILD, BUILD, BUILD" INFRASTRUCTURE FINANCING REQUIREMENT

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ABSTRACT

After the 2008 Global Financial Crisis, the People's Republic of China unveiled the US\$8trillion Belt & Road Initiative that promised to provide connectivity between Asia, Africa and Europe. After the 2016 Presidential Elections, President Rodrigo Roa Duterte (PRRD) unveiled his Php7-8trillion Build, Build, Build Projects. The thawing of relationship between the PROC and the Philippines brought the US\$24billion pledge to finance part of the Build, Build, Build portfolio of projects. Two years after the pledge was made this paper will assess the socio-economic viability of the BRI financing and political risks of the BRI as a source of financing for the Philippines.

Keywords: Socio-economic Viability, Geo-political Risks, BRI, Build Build Build, Philippines

I. INTRODUCTION TO INFRASTRUCTURE, COMMUNICATION AND ENERGY CONNECTIVITY IN PLACE OF SOVEREIGN BORDERS

There was a thawing of relations between the Philippines and the People's Republic of China (PROC) after the 2016 Philippine National Elections. There was a US\$24billion offer under the Belt and Road Initiative (BRI) to finance part President Rodrigo Roa Duterte's (PRRD)'s Build, Build, Build Projects (<https://www.cnn.com/2018/11/23/chinese-investment-in-the-philippines.html>).

It has been two years since the initial offer, and the intent of this paper is to review the global drivers for the demand for connectivity for people, cargo, energy and communications and to assess the progress of the disbursement of the US\$24billion financing from BRI for PRRD's Build, Build, Build Projects.

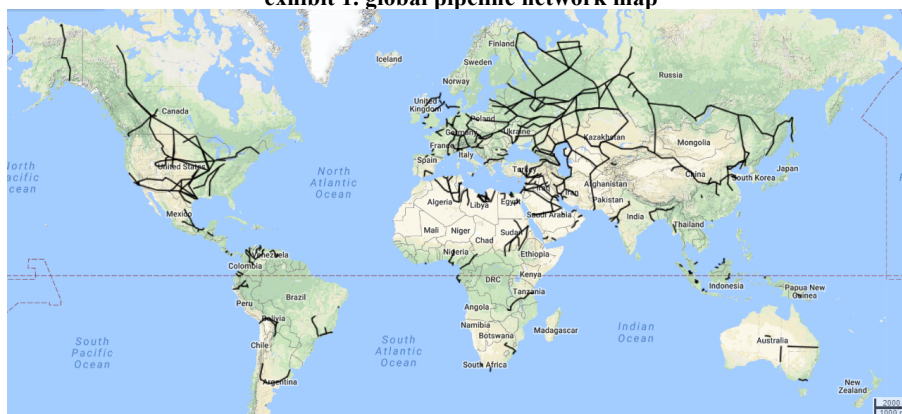
As a potential recipient of BRI financing, it is in the best interest of the Philippines to understand the socio-economic viability of BRI and the political risk of BRI as a source of Build, Build, Build projects of the PRRD Administration.

A. Global Drivers for Connectivity

Global improvement of infrastructure and energy connectivity is the crucial building block for greater economic integration. There is particular unexploited potential for energy trade, which requires the pooling and interconnection of electric power grids (<https://www.die-gdi.de/en/publications/mitarbeiter-sonstige/article/chinas-belt-and-road-initiative-challenges-and-opportunities/>).

The world has less than 500,000 kilometers of borders in comparison to the expanding Global Infrastructure Matrix of 64 million km of highways, 4 million km of railways, 2 million km of pipelines and more than 1 million km of Internet cables (<http://www.businessinsider.com/5-critical-maps-for-presidential-candidates-2017-7>). In the 21st century, maps are needed to show connections over borders, including the corridors of energy, data, and trade.

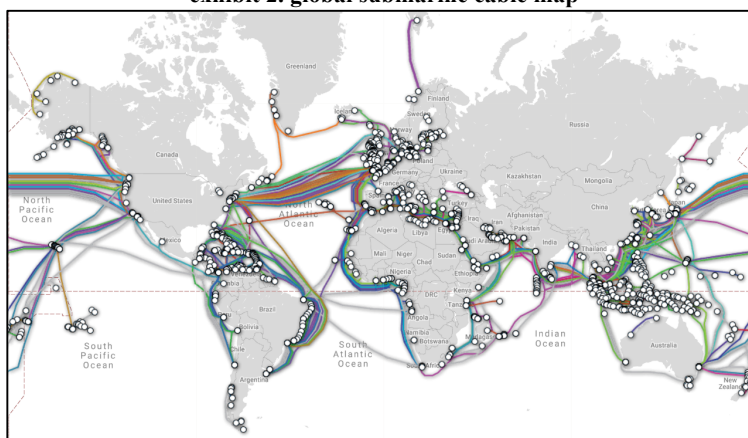
exhibit 1. global pipeline network map



(<http://pelham.lib.harvard.edu:8080/opengeoportals/>)

Pipelines are the most economical modes of transport for oil and gas. International energy markets depend on approximately 2,000,000 km of pipelines to transport about 40% oil and gas globally. They run over thousands of miles and across some of the most volatile areas in the world.

exhibit 2. global submarine cable map



(<https://www.submarinecablemap.com/>)

Cross-border data flows are increasing at rates approaching 50 times those of the last decade. Almost a billion social-networking users have at least one foreign connection, while 2.5 billion people have email accounts, and 200 billion emails are exchanged every day. About 250 million people are currently living outside of their home country, and more than 350 million people are cross-border e-commerce shoppers —expanding opportunities for small and medium-sized enterprises to become “micro-multinationals.”

exhibit 3. global flow of data, trade, and finance

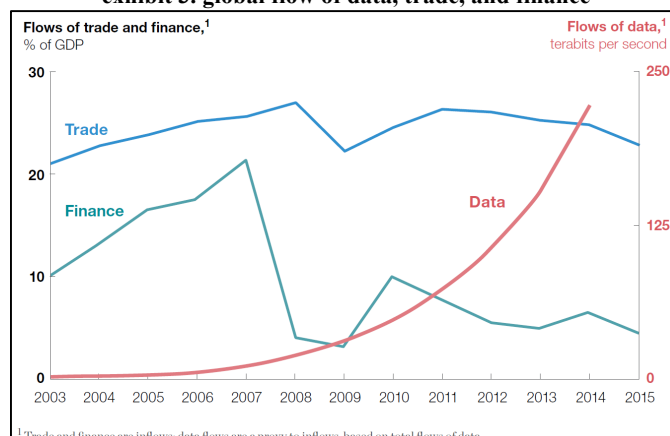
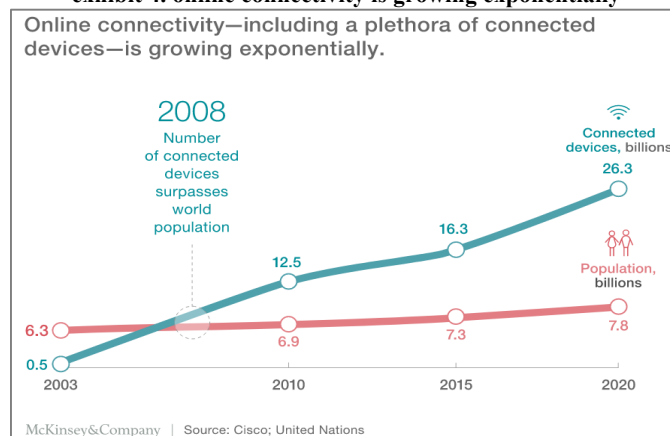


exhibit 4. online connectivity is growing exponentially



(<https://www.mckinsey.it/idee/the-global-forces-inspiring-a-new-narrative-of-progress>)

Growth in data flow will be driven by the increase in the number of interconnected devices. In 2008 the number of interconnected devices was equal to the global population and by 2020 the number of interconnected devices was 27 billion compared to the 7.8 billion global population.

Digitization has brought consumers an ever-expanding menu of goods and services to choose from, some of which are free. Many goods and services consumers once paid for are now available online at a swipe or a click.

II. INFRASTRUCTURE CONNECTIVITY IN THE ASIAN REGION

The global demand for infrastructure connectivity will be driven by the estimated 60% of the world's population moving to urban areas by the year 2030. This will necessarily redirect infrastructure planning and spending. The growing wealth will trigger the need for smarter and more attractive centers for living and commerce (<https://www.pwc.com/gx/en/capital-projects-infrastructure/assets/infrastructure-development-in-asia-pacific.pdf>).

A. Developing Asian Region Infrastructure Needs 2016 to 2030 (ADB) and Why BRI May Matter

The funding requirement for infrastructure development in the region is believed to be the bottleneck for economic growth and social development:

- **Developing Asia will need to invest \$26 trillion from 2016 to 2030, or \$1.7 trillion per year** if the region is to maintain its growth momentum, eradicate poverty, and respond to climate change (climate-adjusted estimate)
- **Developing Asia currently invests an estimated \$881 billion in infrastructure annually** (for 25 economies with adequate data, comprising 96% of the region's population). The infrastructure investment gap—the difference between investment needs and current investment levels—equals **2.4% of projected GDP** for the 5-year period from 2016 to 2020 when incorporating climate mitigation and adaptation costs.
- Without the PROC, **the gap for the remaining economies rises to a much higher 5% of their projected GDP.**
- Fiscal reforms could generate additional revenues equivalent to 2% of GDP to bridge around 40% of the gap for these economies. **For the private sector to fill the remaining 60% of the gap or 3% of GDP, it would have to increase investments from about \$63 billion today to as high as \$250 billion a year over 2016–2020.**

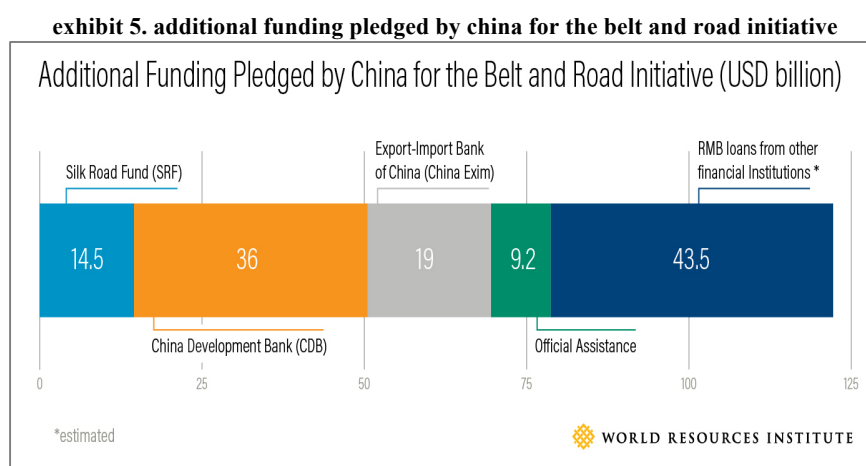
B. BRI Connectivity from China to Asia to Africa to Europe

The **One Belt One Road (OBOR)** now referred to as the **BRI** will provide connectivity for people, cargo, energy and then communication thru the **Silk Road Economic Belt** that links China to South Asia to Central Asia and to Europe and the **21st-century Maritime Silk Road** that links China to South East Asia, South Asia, Middle East and to Europe (<https://www.worldbank.org/en/topic/regional-integration/brief/belt-and-road-initiative>). This is a development strategy of the Chinese Government involving infrastructure development and investments in countries in Europe, Asia and Africa (Kuo, Lily; Kommenda, Niko. "What is China's Belt and Road Initiative?". *The Guardian*).

The BRI would encompass some 65 countries that account collectively for over 30 percent of global GDP, 62 percent of population, and 75 percent of known energy reserves (<https://www.worldbank.org/en/topic/regional-integration/brief/belt-and-road-initiative>).

BRI has an announced investment as high as \$8 trillion for a vast network of transportation, energy, and telecommunications infrastructure linking Europe, Africa, and Asia (<https://www.cgdev.org/publication/examining-debt-implications-belt-and-road-initiative-a-policy-perspective>).

On the other hand, the infrastructure financing needs of Developing Asia of **\$26 trillion** that is 3.25 times greater than the BRI Funds. The sources of BRI financing are as follows:



(<http://www.wri.org/blog/2017/05/4-ways-china's-belt-and-road-initiative-could-support-sustainable-infrastructure>)

C. PRRD's Build, Build, Build Development Program for Nationwide Connectivity

Prior to 2016, Chinese Official Development Assistance (ODA) Projects in the Philippines that included the US\$900million North Luzon Railway of which US\$185million was disbursed (<https://www.ft.com/content/7f7f314c-522b-3a68-b6ad-4188ff607f4d>) and US\$329million National Broadband Network Project were both cancelled. In 2015, the award for the US\$88million supply of 48 trains from Dalian to the MRT3 Line is under question due to difference of the operating specifications and the bid specifications.

After the 2016 National Elections, PRRD unveiled his Build Build Build Program that includes the acceleration of the development of infrastructure and of industries that will yield robust growth across the archipelago, create jobs and uplift the lives of Filipinos.

Infrastructure is among the top priorities of this Administration with public spending on infrastructure projects targeted to reach PhP8-9trillion from 2017-2022.

The Build, Build, Build Portal lists down high impact projects that are envisioned to increase the productive capacity of the economy, create jobs, increase incomes, and strengthen the investment climate leading to sustained inclusive growth (<http://www.build.gov.ph/>).

BRI started with a lot of promise for the President Rodrigo Roa Duterte Administration. The following Build, Build, Build Projects were initially programmed for BRI funding:

1. Tutuban to Malolos: ₱242-billion project, 40km rail line, and 300,000 passengers a day design capacity. This will cut traveling to 30 minutes. This will connect the Historic Tutuban Station the ancestral home to the father of the Philippine Revolution and to the Malolos District to the birthplace of the first Philippine Republic. This project is classified as a tourism convergence infrastructure project by the Philippine Government.
2. Malolos to Clark/Tarlac: PhP211billion, 82km rail line, and 13 stations. This will project commuter rail connectivity to the Clark International Airport.
3. Tutuban to Calamba/Los Banos: Ph285billion, 72km and 300,000 passengers a day
4. Los Banos to Legaspi: PhP288billion to PhP335billion (est without ROW), 406km and 316,000 passengers a day. This will be a trade and a tourism convergence project.
5. Legaspi to Matnog: a PhP85billion to PhP97billion (est without ROW), 117km rail line and 158,000 passengers a day with connectivity to the Inter-Island Bridge between Matnog and Allen (20-km). This will be a trade and a tourism convergence project.
6. Mindanao Rail: PhP914billion (est US\$20km per km without ROW), 830 km rail loop line but will start with a 102 km from Tagum, Davao to Digos.

As of the present time, items 1 to 3 are being developed with JICA funds and items 4 to 5 are projects that are still open for discussion. The Feasibility Study for items 4 to 6 are for funding. The Philippine National Railways may end up funding the FS under General Appropriations.

Early experience after June 2016, the discussion for the development of transportation projects between Chinese representatives and Philippine representative appears to be supplier-driven and not project-driven. Gentle reminders of transparency requirements and Organisation for Economic Co-operation and Development (OECD) rules related to ODA projects were raised during discussions.

As a result, the Philippine Government and the Chinese Government adopted an agreement that:

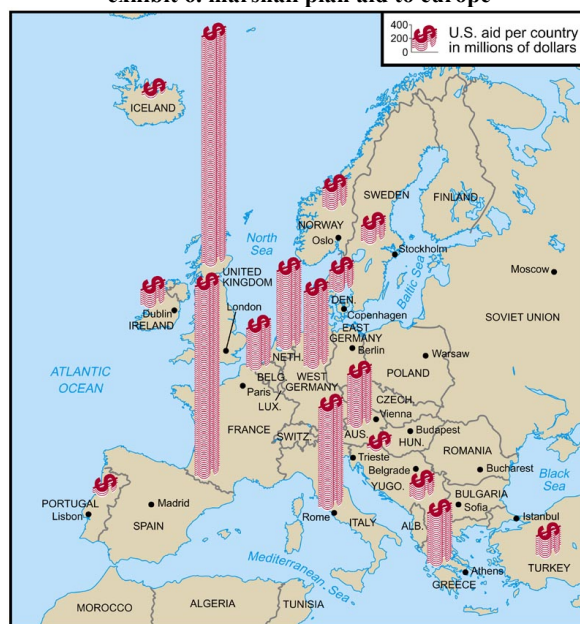
1. The project must be jointly approved by both parties and a Feasibility Study must be completed and undertaken with possibly a grant from the Chinese Ministry of Finance.
2. The companies who can bid for the projects will come from a list provided by the Chinese Ministry of Finance.
3. The project that will be awarded to winning bidder will be screened by the Investment Coordination Committee (ICC).

III. MARSHALL PLAN AND BELT AND ROAD INITIATIVE (BRI) - The Marshall Plan as a response to reinvigorate European Economy after World War II and the BRI as a response to reinvigorate Chinese and Global Economy after the 2008 Global Financial Crises.

A. Marshall Plan

The Marshall Plan is a Political and Economic program to provide a buffer against the tide of Communism that allowed the United States to export its currency. The total amount of aid provided was \$13 billion, which is now equivalent to roughly \$100 billion (<http://theasiadialogue.com/2016/10/11/obor-and-the-marshall-plan/>).

exhibit 6. marshall plan aid to europe



(<http://www.marshallplan.freeterritory.com>)

exhibit 7. the new silk road economic initiative



(<https://www.thestar.com.my/news/nation/2015/10/18/slow-and-steady-ambition-china-will-need-time-to-tackle-the-challenges-of-reviving-its-much-talked-ab/>)

B. Inception of the Belt and Road Initiative (BRI)

During the 19th National Party Congress in 2017, China's Communist Party formally adopted the BRI under its Party Constitution as part of a resolution to achieve "shared growth through discussion and collaboration." (<https://www.cgdev.org/publication/examining-debt-implications-belt-and-road-initiative-a-policy-perspective>). The BRI is part of an Economic Stimulus Program to drive Chinese growth after export-driven growth faltered starting 2008 and after infrastructure-driven growth has started to lose steam starting 2015 (<https://www.brookings.edu/blog/future-development/2017/09/22/future-development-reads-chinas-belt-and-road-initiative/>). The plan to build a network of rail, highways, and ports will heighten China's soft power status.

China's goal is to revive an ancient trading route to develop a Chinese-led Eurasian economic and trading bloc that will rival the American-led transatlantic economic and trading bloc. It has the potential to touch 64 countries, 4.4 billion people and around 40 % of the global economy and will be 12 times bigger in absolute dollar terms than the Marshall Plan. China may spend as much as 9% of GDP -- about double the U.S.'s 4.5% of GDP boost to post-war Europe in those terms.

The 30 to 40-year plan is remarkable as China is the only country with any long-term development plan, and this underscores the policy long-termism in China, in contrast to the dominance of policy short-termism in much of the West

(<https://www.bloombergquint.com/china/2016/08/07/china-s-marshall-plan>). Basically, there is no comparison between the two programs.

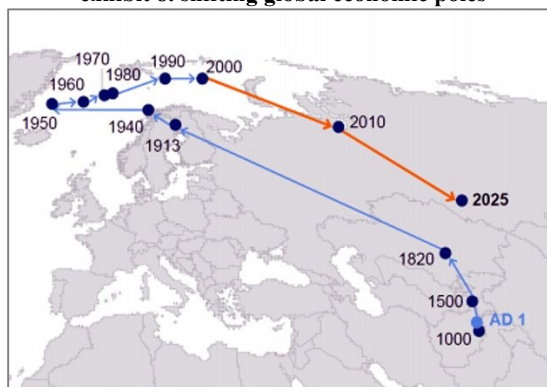
IV. ECONOMIC PIVOT FROM WEST TO EAST IS AN IMPETUS FOR THE BRI TO PROVIDE CONNECTIVITY BETWEEN CHINA TO ASIA TO AFRIC TO EUROPE

Even before today's connected world, the Afro-Eurasian world was already well connected. The Silk Road is not just one, but many roads that lead through all of Asia, from Constantinople in the west, through Central Asia and the Himalayas, to Liangzhou in the east.

However, the foreign trade that was mostly concentrated in the southern European ports were both Jews and Muslims had their own communities. These were connected to the Island of Sumatra which was the most influential maritime and commercial node in the Srivijaya Kingdom (<https://merchantmachine.co.uk/medieval-trade-routes/>).

The GDP-based Global Economic Centre is shifting back from the western hemisphere to eastern hemisphere from year 1 to the year 2015, in particular, North Asia, East Asia, and South East Asia as shown in the map below.

exhibit 8. shifting global economic poles



(<http://www.businessinsider.com/evidence-of-economic-shift-to-the-east-2013-3>)

exhibit 9. a world map of earth's city lights



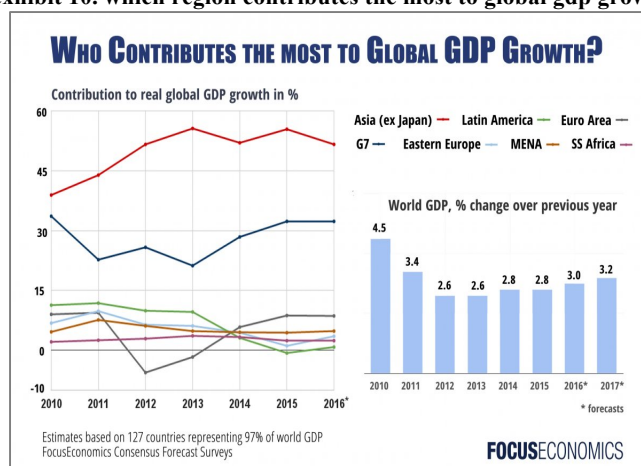
(<http://www.businessinsider.com/cities-at-night-nasa-2012-1#a-world-map-of-earths-city-lights-15>)

This is supporting in recent NASA images of Earth at nighttime. According to the research of the Swiss Federal Institute of Technology in Zurich, the center of light has been gradually shifting eastwards over a distance of approximately 620 miles at a pace of around 37 miles per year. The European and Asian region is home to 5 billion of the 7 billion total Global population.

A. Asian Contribution to Global Economic growth

Asia contributes the most to GDP growth worldwide (<https://www.focus-economics.com/blog/posts/which-region-contributes-the-most-to-global-gdp-growth>). The world's economic balance of power is shifting rapidly, and the trend has only been accelerated by the global recession. China remains on a path to overtake the United States as the world's largest economic power within a generation, and India will join both as a global leader by mid-century.

exhibit 10. which region contributes the most to global gdp growth



(<https://www.focus-economics.com/blog/posts/which-region-contributes-the-most-to-global-gdp-growth>)

B. Asian Region Contribution to Foreign Direct Investment and Stock Market Growth

In 2017, North America, Asian and Europe holds 30%, 20%, and 24% respectively of the Global Stock Market, and they hold 23%, 30%, and 16% respectively of the Global Foreign Direct Investments.

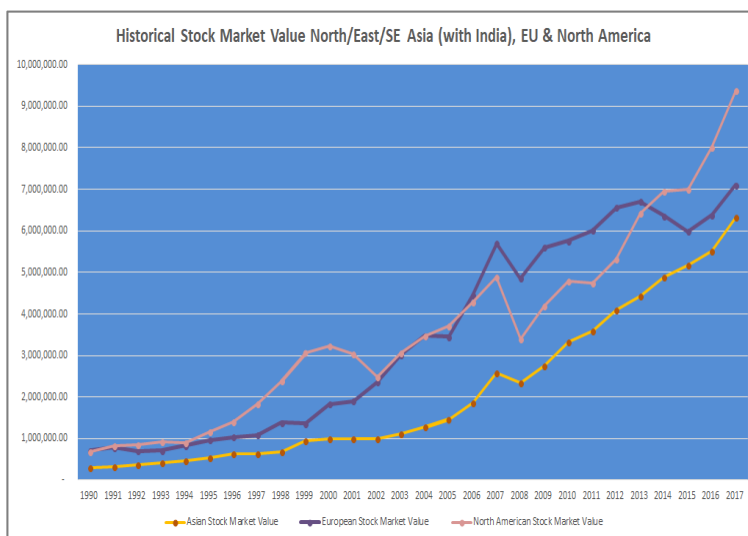
exhibit 11. stock market value and foreign direct investment

Stock Market Value and Foreign Direct Investment		
	Stock Exchange Index 2017	Foreign Direct Investment 2017
PROC Shenzhen & Shanghai	1,490,933,000,000.00	136,320,000,000.00
HK	1,968,644,996,160.74	104,332,980,463.86
Taipei	86,820,000,000.00	3,255,000,000.00
Japan	207,487,865,367.58	10,429,831,959.24
Korea	230,596,600,000.00	17,052,800,000.00
India	377,683,490,069.33	39,916,086,071.88
Thailand	219,368,474,001.33	7,635,246,012.19
Philippines	78,788,392,000.00	9,524,284,000.00
Singapore	1,284,929,447,852.76	62,005,974,256.39
Malaysia	139,540,132,829.62	9,543,446,164.71
Indonesia	248,510,480,000.00	23,063,110,000.00
Asia Subtotal	6,333,302,882,741.36	423,078,758,928.27
	20%	30%
Scandinavia	678,120,950,566.79	5,306,685,871.29
UK	1,563,866,949,100.00	15,090,039,632.34
Luxembourg	1,719,667,275,250.00	65,319,775,133.48
Germany	931,285,247,591.60	34,726,280,770.52
Swiss	1,059,777,303,075.11	40,986,077,164.50
Spain	644,415,071,800.00	19,086,149,674.73
Italy	413,245,772,732.28	17,077,147,740.96
Athens	32,371,459,916.07	4,046,048,338.26
Russia	446,595,000,810.31	25,284,025,827.72
Europe Subtotal	7,489,345,030,842.16	226,922,230,153.80
	24%	16%
US NYSE & Nasdaq	7,807,032,000,000.00	275,381,000,000.00
Canada TMX	1,084,408,960,915.16	24,243,750,238.58
Mexico	489,130,051,435.58	29,695,006,000.00
North America Subtotal	9,380,571,019,799.74	329,319,756,238.58
	30%	23%
Asia, Europe & North America Subtotal	23,203,218,933,383.30	979,320,745,320.66
	93%	68%
WORLD TOTAL	31,524,355,726,652.30	1,429,807,449,997.16

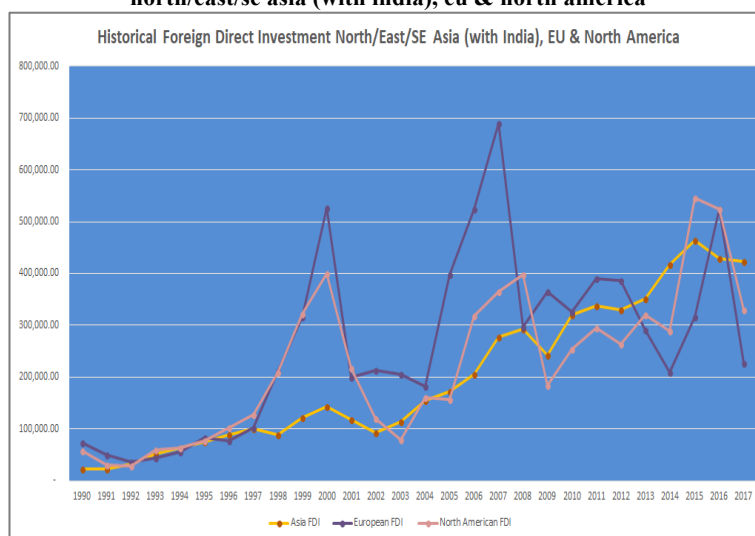
([http://unctad.org/en/Pages/DIAE/World Investment Report/Annex-Tables.aspx](http://unctad.org/en/Pages/DIAE/World%20Investment%20Report/Annex-Tables.aspx).)

The North American, European (EU with Russia) & Asian Continent has 93% of Global Stock Market Value and attracted 68% of Global Foreign Direct Investment. Demographics and urbanization will continue to drive Asian Economic Growth which already has the largest share in Foreign Direct Investments and has the 3rd largest Stock Value.

exhibit 12. stock market value
north/east/se asia (with india), eu & north america



**exhibit 13. historical foreign direct investment
north/east/se asia (with india), eu & north america**



([http://unctad.org/en/Pages/DIAE/World Investment Report/Annex-Tables.aspx](http://unctad.org/en/Pages/DIAE/World%20Investment%20Report/Annex-Tables.aspx).)

Traditional globalization metrics are slowing. While Market Value and Foreign Direct Investment in the European Union and North American has wide bandwidth for growth and decline is wider. Stock Market Value and Foreign Direct Investment in the Asian Region has consistently grown in spite of the 1996 Asian Crisis and the 2008 Global Financial Crisis.

V. SOCIO-ECONOMIC INDICATORS THAT JUSTIFIES THE DEMAND FOR CONNECTIVITY PROJECTS AND THE VIABILITY OF BRI AS A SOURCE OF FINANCING FOR PRRD'S BUILD, BUILD, BUILD PROJECTS

China remains the Goliath of emerging markets, with every fluctuation in its GDP making headlines around the globe. As the economies of neighboring China and India decelerate, and as the U.S. shifts its focus to the East, the region is increasingly becoming a destination for investment.

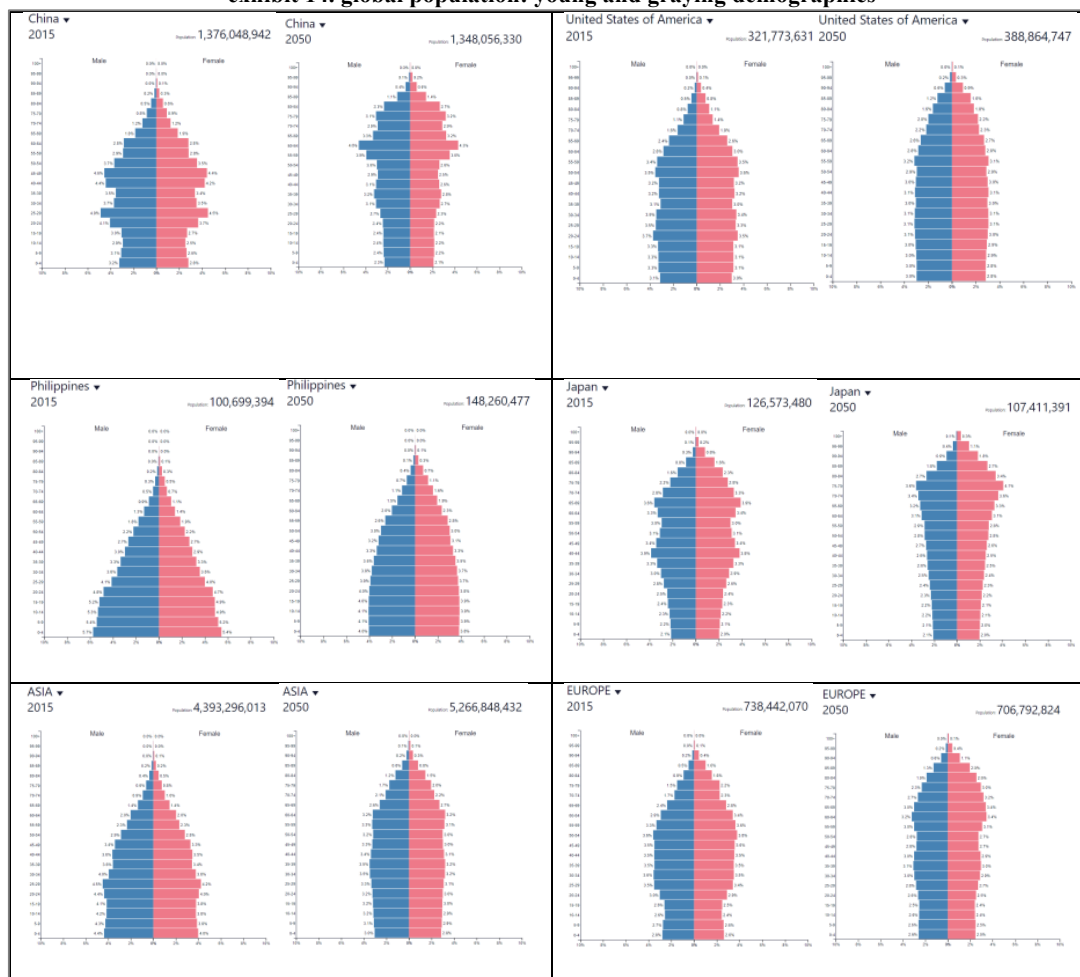
But investors and multinationals are increasingly turning their gaze southward to the ten dynamic markets that make up the Association of Southeast Asian Nations (ASEAN). The ASEAN which is made up of Brunei Darussalam, Myanmar, Cambodia, Indonesia, Laos, Malaysia, Philippines, Singapore, Thailand, and Vietnam, is fast becoming a major economic force in Asia and a driver of global growth. The viability of a consumer market with spending capability is based on ASEAN's population of more than 600 million and a nominal GDP of \$2.31 trillion (<https://www.jpmorgan.com/country/us/en/cib/investment-banking/trade-asean-future>).

A. Demographic Indicators in the ASEAN

There is a tremendous growth potential for the ASEAN consumer market by 2030 due to favourable demographics, rising urbanization, and income growth. The anticipated shift in labor structure and demographics should create significant new

demand. It should also cause a shift in consumption patterns as ASEAN consumers allocate a larger share of spending to high-quality products and services.

exhibit 14. global population: young and graying demographics



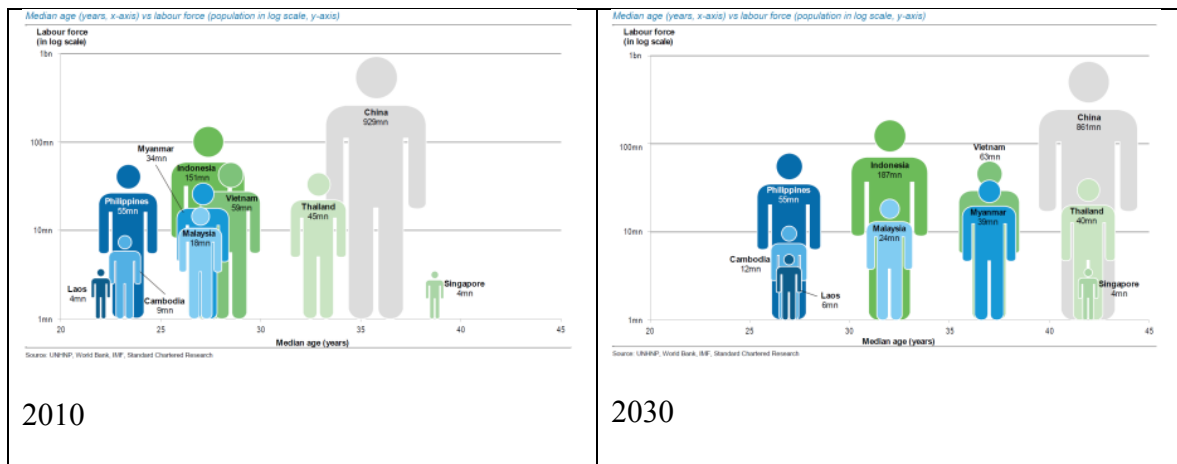
(<https://www.populationpyramid.net/>.)

ASEAN will benefit from the global shift in investment from China as China loses cost competitiveness and its labor supply tightens. ASEAN also has a demographic edge. ASEAN's median age was about 27 years as of 2013. This is much younger than China's estimated 32 years. ASEAN will also continue to add to its labor force over the next few decades. Compared to 2010, ASEAN's labor force is expected to grow by 70mn by 2030, while China's labor force is expected to contract by almost 70mn (Source: UN data). Indonesia and the Philippines are poised to enjoy a demographic dividend and should achieve faster and more resilient growth.

ASEAN economic growth is powered by its export-driven industrial base, by China's pump-priming activities domestically and internationally and by domestic engines of growth due to consumption and investment.

ASEAN's advantage with respect to average median age and size of the labor force in between 2015 to 2030 will be its fuel for domestic engines of growth. The Philippines is positioned to be the sweetest demographic sweet spot in the ASEAN Region.

exhibit 15. asean median age and labour force



(https://av.sc.com/corp-en/ASEAN_growth-in-the-fast-lane-1.pdf.)

ASEAN economies need infrastructure development to attract investment that is shifting from China, and to compete with neighbors such as India. ASEAN economies are relatively advanced in telecommunications and have good access to electricity. Improvements are needed in transport infrastructure. To date, the focus has been on developing national infrastructure, but seamless regional transport infrastructure across ASEAN is needed to more closely integrate the region in the longer term.

B. Demographic Indicators in the PROC

Based on United Nations projections, China's 2018 population is 1.42 billion. China has an estimated population density of 145 people per square kilometer or 375 people per square mile.

China's population will finally peak in 2028 with a shrinking labor force and an over-65 population of 240 million. Only Japan has aged faster than China.

China's economic growth has been attributed to its abundant and cheap workforce, combined with its low social costs. Declining number of young Chinese and the increasing number of elderly Chinese, it is not certain whether China's economy can continue to grow at the same rapid rate.

China has another very serious demographic problem due to sex-selective abortion and its one-child policy, resulting in a ratio of 120 boys for every 100 girls. It's estimated that the percentage of men in their late 30's who have never married will quintuple by 2030, and this large number of unmarried young men will have a detrimental impact on population growth.

C. GDP, Market Capitalization, Government Debt & Corporate Debt Indicators in the ASEAN, the PROC and the Philippines

As the principal behind the BRI, China is the fastest growing economy in the world and is the 2nd largest GDP in the world. In view of the concerns on the sustainability of the BRI, an assessment of the economic condition of China is needed.

**exhibit 16. comparative economic indicators of china,
the us, eu, japan and the philippines**

2016	US	China	Japan	ASEAN (with Stock Exchange)	European Union (with Stock Exchange)
Unit: (1,000,000)					
GDP (US\$)	18,036,648.00	11,064,664.79	4,938,644.00	2,237,419.00	8,175,381.00
Stock Market Capitalization (Equity US\$)	19,573,073.69	7,311,460.55	4,955,299.65	2,098,677.85	7,464,561.46
Total Government Debt (IMF US\$)	19,118,846.88	7,267,271.83	11,750,021.80	994,298.35	6,725,055.89
Corporate Debt (US\$)	12,200,000.00	17,800,000.00	4,200,000.00	887,000.00	7,515,590.99
But indicative benchmarking on a per capita basis and consolidated corporate & government debt basis presents a different assessment					
GDP to Government Debt	0.94	1.52	0.42	2.25	1.22
GDP to Government & Corporate Debt	0.58	0.44	0.31	1.19	0.57
Stock Market Equity to Government Debt	1.22	3.74	1.36	1.02	0.37
Stock Market Equity to Government and Corporate Debt	0.62	0.29	0.31	1.12	0.52
Per Capita GDP	55,492.9390	7,998.2830	38,969.81	4,724.59	38,854.46
Per Capita Government Debt	58,822.5154	5,253.2723	92,716.97	2,099.59	31,961.62
Per Capita Government & Corporate Debt	96,357.9741	18,120.3081	125,858.30	3,972.60	67,680.36
Population (million)	325	1,383	126.73	473.57	473.57
GNI Ranking (2014)	10.00	80.00	26.00	81.40	17.50

(https://www.spratings.com/documents/20184/1481001/Global_Corp_Credit_0718_HomeSector/f66b581b-c4e5-420e-abba-1ccc0ac28ca8.)

(<https://stats.oecd.org/index.aspx?queryid=34814>)

(<http://www.bworldonline.com/content.php?id=141350>)

(<https://www.telegraph.co.uk/finance/globalbusiness/11683564/Russia-faces-100bn-corporate-debt-mountain.html>)

China's GDP per capita ranking is 74th in the world. Its total public debt is 38% less than the public debt of the USA but its corporate debt is 32% greater than corporate debt in the USA.

However, per capita, total public debt & corporate debt of the USA compared to per capita GDP is 2.82 and per capita, total public debt & corporate debt of China compared to per capita GDP is 3.29.

This credit risk is also shown in the drop in China's sovereign bonds as the nation extends its campaign against excessive borrowing, driving 10-year yields to 4 percent and beyond

exhibit 17. china sovereign 10-year bond yield



(<https://tradingeconomics.com/china/government-bond-yield>)

VI. POLITICAL RISK OF THE BRI AS A SOURCE OF FINANCING DUE TO POTENTIAL CONFLICT IN THE SOUTH CHINA SEA (WEST PHILIPPINE SEA)

As a matter of policy, suggests Chinese ODA Financing or BRI Financing is generally motivated by two interests: the need level of the recipient country and the broader foreign policy aims of China. A criterion for China to provide foreign aid is based on the convergence of mutual interests. The lions share of China's global development spending is not ODA financing but rather on

“other official flows” (OOF). OOF includes loans given to Russian oil companies in 2009 where motivation is clearly commercial and developmental (https://www.washingtonpost.com/news/worldviews/wp/2017/10/11/china-treats-its-foreign-aid-like-a-state-secret-new-research-aims-to-reveal-it/?noredirect=on&utm_term=.b1a39b0564c2).

A. Geo-Political Risks in the South China Sea

The South China Sea is made up of scattered major island groups which covers an area of 3.4 million square meters. These islands are namely the Paracels, the Spratlys, Macclesfield Bank, Pratas Reef, Tseng-Mu Reed and Scarborough Shoal, which are wholly or partially claimed by Vietnam, Taiwan, Malaysia, Brunei, Philippines and China.

1. Maritime Trading Route

The United Nations Conference on Trade and Development (UNCTAD) estimates that approximately US\$9.9 Trillion (2016) or 80% of global trade by volume is transported by sea. And approximately US\$3.4 Trillion or 33% of trade is transported thru the South China Sea (West Philippine Sea).

As the second-largest economy in the world with over US\$1.4 trillion or 60% of its trade is transported by sea, China's economic security is closely tied to the South China Sea (<https://chinapower.csis.org/much-trade-transits-south-china-sea/>).

International energy markets depend on reliable transport routes where about 63% move on maritime routes. World chokepoints for maritime transit of oil are a critical part of global energy security because of the high volume of petroleum and other liquids transported by these routes (<https://www.eia.gov/todayinenergy/detail.php?id=18991>).

exhibit 18. daily transit volume through world maritime oil chokepoints



(<https://www.eia.gov/todayinenergy/detail.php?id=18991>)

21% of all global trade transited the South China Sea (2016), or approximately US\$3.5 trillion. (https://www.alfred-herrhausen-gesellschaft.de/de/docs/FS_2013_China.pdf.)

2. Marine Resources

South China Sea is also identified as a breeding ground and migration path for yellowfin tuna. It is considered as one of the most productive areas in the world for commercial fishing, constituting around 8% of the world's output for total commercial fishing. Various seas in the area produce an annual yield of seven million tons of fish with an estimated value of US\$6.5 billion, while the waters between Palawan and Sabah are said to produce 10,000 tons of marine products.

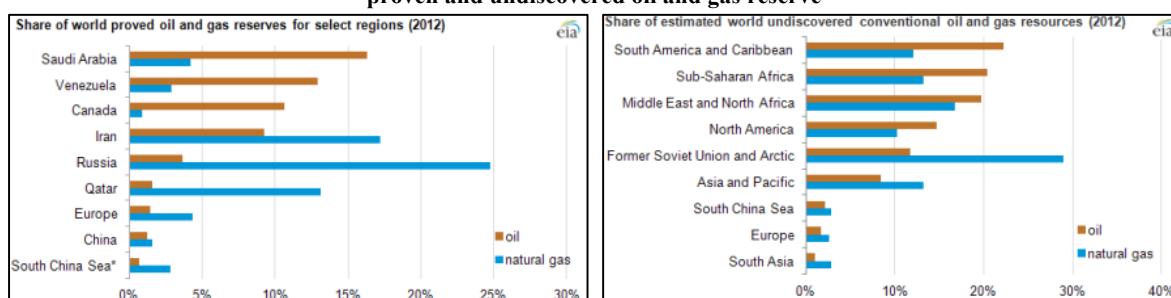
For the Philippines, the fishing industry is vital for both economic growth and national security, accounting for 5% of GNP, with around five million Filipino fishermen. Filipinos consume 40 kilograms of fish per person per year (http://chinabusinessphilippines.com/index.php?option=com_content&view=article&id=1614:strategic-interests-in-the-south-china-sea&catid=28:the-phoenix-a-the-dragon&Itemid=74).

3. Oil & Gas Deposits

Energy security has become a top national security priority throughout the region over the past decade due to the combination of extremely high and volatile energy prices, China's rapid emergence as a huge oil and gas importer, Japan and Northeast Asia's total and continuing dependence on imported oil and gas, and Southeast Asia's emergence as a net oil and gas importer (<http://maritimeawarenessproject.org/2016/06/28/the-role-of-energy-in-disputes-over-the-south-china-sea/>).

In context, proven and estimated undiscovered oil and natural gas reserve in the South China Sea is less than 5% of total world's proven and estimated undiscovered oil and natural gas reserve.

**exhibit 19. south china sea (west philippine sea)
proven and undiscovered oil and gas reserve**



(<https://www.eia.gov/todayinenergy/detail.php?id=10651>)

In addition, there is a wide variance of estimates of undiscovered reserves for oil from 11billion barrels (US-EIA) to 125billion barrels (CNOOC) and for natural gas from 190trillion (US-EIA) to 500trillion cubic feet (CNOOC) (<https://www.eia.gov/todayinenergy/detail.php?id=10651>; <http://maritimeawarenessproject.org/2016/06/28/the-role-of-energy-in-disputes-over-the-south-china-sea/>).

In this regard, the oil and gas reserves may not be at the top of the list in strategic value to the South China Sea.

VII. RECOMMENDATION AND CONCLUSION

A. Based on socio-economic indicators, is the BRI a viable source of financing for infrastructure connectivity for the 65 target countries and for the Philippines as only one of the 65 target countries?

1. PROC will need to tap the capital and debt market to supplement its average of US\$150billion annual expenditure since 2006 to complete the US\$8trillion fund requirement of the BRI. The US\$24billion pledge to the Philippines by the PROC over 6 years is US\$4billion annually which is 2% of the US\$150billion average annual expenditure of the BRI.
2. Domestic source of financing for the BRI may not be sustainable in the medium to long term due to demographic aging and due to burgeoning GDP to Debt ratio and GDP-Corporate to Debt ratio. The Philippines will need to secure the terms and conditions of the US\$24billion pledge before the concerns on the GDP-Corporate to Debt ratio begins to negatively affect the interest rates of BRI Financing.

B. Based on geo-political risks, is the BRI a viable source of financing for the Philippines?

1. Conflict in claims between the Philippines and the PROC over Exclusive Economic Zones in the South China Sea. This is driven by demand for Marine Resources and potential oil and gas deposits by PROC and the Philippines.
2. International demand for open seas access and PROC demand for recognition of its sovereignty over the South China Seas are premised on keeping the critical global trading routes open.

Based on socio-economic and geopolitical risks, the viability of the BRI as an additional source of financing for PRRD's Build, Build, Build Program will be under the shadow of socio-economic and geopolitical risks of the PROC.

exhibit 20. comparison of philippine infrastructure financing requirement and bri financing availability

Belt & Road Initiative (BRI) Total Budget and Source of Funds	(US\$)	Philippines Budget for Infrastructure Development	(US\$)	Philippines Sources of Funds for Infrastructure Development	(US\$)
BRI (US\$ 4 to 8 Trillion estimate)	4,000,000,000,000.00	Philippine GDP (2016)	304,696,000,000.00	% of ODA Loans went into Infrastructure Finance	6,030,000,000.00
BRI Annual Financing Requirement till 2030	266,666,666,666.67	1. Current Spending for Infrastructure Development (2.25% average for last 10 years but 5% in 2017)	7,617,400,000.00	PPP Committed Projects	4,570,440,000.00
		2. Ideal Spending for Infrastructure Development based on AB estimates (9% of GDP)	27,422,640,000.00	Total Available Sources of Financing for Infrastructure Development	18,217,840,000.00
Silk Road Development Fund	40,000,000,000.00	3. Additional Spending for Infrastructure to Reduce Traffic	2,964,705,882.35	Financing Deficit for Infrastructure Development	12,169,505,882.35
Chinese Government	14,000,000,000.00	Total Annual Spending for Infrastructure Development	30,387,345,882.35		
China Development Bank	36,200,000,000.00			http://www.neda.gov.ph/2017/01/19/oda-portfolio-review-2015/	
Chinese Export Import Bank	18,800,000,000.00			https://www.adb.org/news/features/how-much-should-asia-spend-infrastructure	
Total Fund Available for First Year	109,000,000,000.00			https://ppi.worldbank.org/~media/GIAWB/PP/IDocuments/Global-Notes/2016-PPI-Update	
Fund Deficit to Finance Annual Budgetary Requirement of BRI	157,666,666,666.67			https://businessmirror.com.ph/golden-age-of-infrastructure-key-to-high-gdp-growth-adb/	
http://www.veri.org/blog/2017/05/4-ways-china%27s80%99s-belt-and-road-initiative-could-support-sustainable-infrastructure					

It appears that despite the favorable socio-economic indicators and the market driven needs for infrastructure, the Philippines may need to explore other sources of financing for its PhP7-8trillion Build, Build, Build Program.

Despite the favorable GDP growth potential, demographic sweet spot and the fiscal space of the Philippines, BRI financing has not gained traction in the connectivity rail projects in Luzon and in Mindanao.

In fact, 50% of projects once eyed for BRI financing are being implemented with JICA financing for the feasibility study and for the actual project implementation.

There is a need for both parties to work more closely together in implementing developmental projects in the perspective of the Philippines and in providing access for raw materials and trade in the perspective of China. This may be applied in the following instances:

1. Proposed 4,000 kilometer Mindanao Rail which would facilitate the movement of goods and people in Mindanao a resource rich island in the Philippines.
2. Proposed Inter-land Bridges that would connect Luzon, Visayas and Mindanao with a 20km bridge between Matnog (Luzon) to Allen (Visayas) and a 24km bridge between San Ricardo (Visayas) to Surigao City (Mindanao).

In conclusion, there is space for the BRI to play a major role in developmental projects of the Philippines while aligning the projects along the principles of financial viability for the creditor and debtor and along OECD guidelines for ODA financing.

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