Examining the Debt Servicing Capacity of Belt and Road Initiative's Developing Countries

Zahra Thania Atmoko Putri

University of Groningen, Faculty of Economics and Business, the Netherlands

Abstract

As China faces a wave of debt renegotiations on the Belt and Road Initiative, the importance of examining what factors cause the depletion of participant countries' debt servicing capacity arises. This paper empirically studies the importance of 5 financial indicators in determining the debt servicing capacity of participant developing countries based on the probability of rescheduling. Using logistic regression analysis and more than 500 observations, the *reserves to imports* ratio is found to be the most important indicator of whether a country would reschedule its debt obligations. Countries are thus encouraged to hold a higher level of international reserves relative to their imports as it will substantially increase their capacity to service debt. Moreover, in a world of rising external debt levels, this finding implies that the same will improve a country's resilience to shock. As creditors are equally required to maintain debt sustainability, China must increase its debt transparency and provide sound debt management assistance if it wishes its project to proceed to completion.

Keywords: Belt and Road Initiative, debt servicing capacity, developing countries

1. Introduction

The world has a large infrastructure gap that constrains trade, openness and future prosperity (OECD, 2018). Many stocktaking of global infrastructure needs have been conducted, and although each reveals varying numbers and methods, all sources point to a growing global infrastructure investment deficit (OECD, 2018) which results in lower economic growth and deprives citizens of essential services (Woetzel, Garemo, Mischke & Palter, 2016). First proposed in 2013 by China's President Xi Jinping, the Belt and Road Initiative (BRI) is an infrastructure project attempting to close that gap through increased connectivity encompassing 138 diverse countries—henceforth 'BRI countries'—as of March 2020 (Nedopil, 2020) with a target completion in 2049. With an announced investment as high as $8 trillion (Hurley, Morris & Portelance, 2018; Nedopil, 2020), the BRI aims to maintain an open world economic system and achieve diversified yet inclusive and sustainable development in a region of the world where development is sorely needed (Cremer, McKern, and McGuire, 2020).

An extensive analysis conducted by the World Bank (2019) on the likely economic impacts of the BRI claims that the improved transportation network is expected to reduce trade times and lower costs, thereby opening market access, expanding trade, and increasing foreign direct investment which will boost GDP and welfare. As openness facilitates learning through various channels, the aforementioned developments can also affect other dimensions of connectivity such as knowledge transfers that can further contribute to improvements in economic activity (Gould, 2018).

However, these anticipated benefits are not without risks. For the Belt and Road Initiative, those risks could be intensified by limited transparency and weak economic fundamentals and governance. Apart from the fact that benefits will not be shared equally (Enderwick, 2018), because trade gains are not commensurate with project investment, for some BRI countries, a net welfare loss due to the high final cost of infrastructure may instead be the result (De Soyres, Mulabdic, and Ruta 2019). Given its sheer size, financing the BRI which is almost entirely in the form of sovereign lending has become a concern for its stakeholders (Liu, Zhang & Xiong, 2020). Most of the 138 countries that have officially signed up to the BRI are developing nations, many with the weakest credit ratings in the world (Kynge & Wheatley, 2020), and China has lent up to $350 billion to these countries—half of which are considered high-risk debtors (Abi-Habib & Bradsher, 2020).

Naturally, this has raised questions about its debt sustainability (Gerstel, 2018). By IMF's definition, a debt is sustainable if the government is able to meet all its current and future payment obligations without exceptional financial assistance or going into default (Hakura, 2020). Considering the nature of BRI loans which tend to carry higher interest rates, shorter maturities, and frequent use of national assets as collateral (Abi-Habib & Bradsher, 2020), it is not surprising that BRI financing could exacerbate existing debt vulnerabilities in a number of countries as Bandiera and Triropoulos have demonstrated (2019). In fact, some BRI-eligible countries faced rising debt levels already prior to the BRI, and the growth impact of BRI investment in several countries is unlikely to be enough to prevent public debt from rising further (World Bank, 2019).

As high levels of debt are associated with a significant outflow of annual debt service payments, to meet external obligations, countries have to manage their balance of payments. However, the combined effect of heavy debt service, export revenue stagnation or decline, and other adverse developments may render debt service obligations to be deferred or otherwise rearranged (Feder, Just, and Ross, 1981). Following the COVID-19 pandemic which has taken the world's economy into its worst recession yet, several BRI projects have been put on hold (Mangin, 2020) and some BRI countries—including Pakistan, Sri Lanka, Kyrgyzstan, and a number of African nations— have already requested for debt relief and/or debt restructuring (Abi-Habib & Bradsher, 2020).

To ensure that the Belt and Road Initiative proceeds to completion, its financing should be without disturbance—meaning, each and every borrower must execute their debt servicing as planned. It is clear that this has not been nor will it be the likely case for

the BRI. Unfortunately, papers that study the financial condition of the BRI have focused more on the structure of its financing or the impact of debt for participating countries (Liu, Zhang & Xiong, 2020; Liu, Xu, & Fan, 2020; and Hurley, Morris and Portelance, 2018). Now that countries are heavily indebted, a focus on what makes these countries able to pay back their debt is of mounting interest.

It is thus critical to understand what macroeconomic factors significantly affect the debt servicing capacity of BRI countries as this would allow governments to have greater knowledge of the areas that desperately need their attention: the macroprudential policies that should be taken can then be evaluated more strategically. Moreover, input for China on its current lending practices can be obtained. Hence the research question, *what factors significantly affect the debt servicing capacity of BRI developing countries?*

The purpose of this paper is to provide an empirical analysis of the debt servicing capacity of BRI developing countries as a means to identify its most relevant factors. The next section of this paper will review the literature of debt servicing measurement where the suggested variables will be proposed. Details regarding the methods used in this study will be illustrated and ensued by a report on the estimation results. Following these is a discussion of the implications of findings within the context of today's environment for both BRI developing countries and China as the creditor. Finally, limitations and recommendations for future research along with conclusions will be presented.

2. Theoretical Foundation

2.1 Literature Review

The study of debt is an important topic in literature as it has profound implications on an entity's financial wellbeing. In particular, studying the debt servicing capacity of nations will allow international lending institutions to have greater knowledge of country risks, which will assist them in exercising caution when committing their capital in certain countries. The same virtue will exist for borrowers as policy evaluation can be done more strategically. Combined, these two aspects can hinder the probability of a financial crisis, as it has been suggested that the absence of the former had contributed to the 1970-1980 debt crisis (Edwards, 1984). Debt servicing capacity is defined as a country's ability and willingness to fulfil their foreign debt obligations (Feder *et al.*, 1981) i.e. the repayment of a loan's interest and principal in accordance with the initial agreement. A country that has arrears or seeks to renegotiate its external debt is considered to lack debt servicing capacity because it signals that they cannot service its debt per agreement. Generally, creditors agree to reschedule to avoid loss through default (Moghadam, 1995).

Many factors influence this capacity and they have been studied by many researchers on numerous occasions, typically following a wave of debt reschedulings or a steep rise in debt obligations of a particular country (Edwards, 1984; Morgan, 1986; Burney, 1988; Ngassam, 1992; and Siddiqui & Siddiqui, 2001). Both a qualitative and quantitative approach have been conducted, the latter including ones with financial,

monetary, and political factors. Monetary factors such as inflation are included in some studies because it is believed that they affect the overall balance of payments. However, as Feder *et al.* (1981) have mentioned, to the extent that this is indeed true, those effects will be reflected in the exports and imports indicators. Political factors on the other hand, have been argued to be one of the two basic causes of a debt crisis, the other being economic mismanagement (Siddiqui & Siddiqui, 2001). Although the political situation of a country is indeed important as it determines the structure of a country and ultimately the will to service their debt (Moghadam, 1995), this paper aims to conduct an explanatory as opposed to an exploratory analysis which political factors still require to this day. Thus, although criticism persists on debt studies including only financial indicators as determinants, this research will continue to employ solely financial indicators.

The first study that measured debt servicing capacity was by Frank and Cline (1971) who argued for eight factors using a discriminant analysis. Their findings report that, from the eight, three were proven to be of mount significance to the dependent variable. They are: the debt-service ratio, the debt to amortization ratio, and the ratio of imports to reserves.

Feder and Just (1977) on the other hand, argued for nine factors and conducted a different quantitative approach in their empirical study, namely a logit regression analysis which defines debt servicing capacity as a binary dependent variable, rescheduling or non-rescheduling. Their decision to do the aforementioned is based on the rationale that it makes more sense to claim that a country was pushed beyond a critical level, leading to a rescheduling, than to claim that a country has suddenly become a member of another group—as with a discriminant analysis. Five variables were significant: the debt-service ratio, per capita GNP[1], the ratio of imports to reserves, the average rate of export growth, and the ratio of capital inflows to debt service.

Another logit regression analysis was conducted by Feder *et al.* (1981) which improved on the previous study. Their variables include: the debt-service ratio, the foreign exchange reserves to imports ratio, the ratio of net non-commercial foreign exchange inflows to debt service payments, the ratio of commercial foreign exchange inflows to debt service payments, the exports to GNP ratio, and the real per capita GNP to US per capita GNP ratio. These factors are meant to be indications of the degree of liquidity squeeze in the balance of payments as well as the government's ability to withstand a liquidity crisis should one occur—they underlie the decision actually taken (Feder *et al.*, 1981). In this study, all variables proved to be significant.

These earlier studies on debt reschedulings have helped to identify a few of the important indicators. However, according to Morgan (1986), they are unrepresentative of the then present-day international debt environment after restudying the models following the debt reschedulings of 30 developing countries. Specifically, they did not accurately forecast the debt reschedulings of the late seventies and early eighties: Frank and Cline's (1971) overestimated the number of debt reschedulings while Feder and Just's (1977) underestimated them. This is believed to have occurred due to the small

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[1] Now known as the GNI i.e. *Gross National Income*

number of debt rescheduling observations in their sample, which caused their models to test for a rather unusual event, and their indicator measurements that were not able to properly capture important economic changes. He thus conducted his own debt rescheduling study with a more refined sample that accounted for the majority of debt owed by developing countries within a period of important economic transition, along with a set of variables that can be divided among demand, supply, and exogenous shock indicators. Shocks to a domestic country cause sudden declines in the nation's income and may lead to a situation where it cannot meet its debt service obligations as Sachs and Cohen's (1982) model has demonstrated, hence its inclusion. He concluded that three variables always seemed to be significant: real GDP growth, a measure of debt, and the reserves to imports ratio.

2.2 Determinants of Debt Servicing Capacity

Based on the literature review and relevance to the research question, this study suggests the following five variables. Building on earlier works, a measure of: debt, asset, inflow, flexibility, and exogenous shocks have been included and are presented below in order.

The debt-service ratio is the ratio of service on debt to export earnings and is the most widely used indicators for creditworthiness evaluation (Bittermann, 1973). An increase in the debt service ratio implies increased vulnerability to foreign exchange crises (Frank & Cline, 1971). A positive correlation to the probability of rescheduling is hence expected.

The reserves to imports ratio. Foreign exchange reserves are defined as assets denominated in a foreign currency that are held by a central bank and readily available for use. They are used to finance liabilities and serve as a buffer against exchange earnings fluctuation (Feder & Just, 1977). The larger reserves are relative to imports, the more reserves are available also to service external debt (Feder *et al.,* 1981). Thus, it is hypothesized to be negatively correlated to the probability of rescheduling.

The ratio of capital inflows to debt service. Capital inflows can be in the form of grants, direct and portfolio investments, and transfer payments. They are important sources of foreign exchange receipts which can be used for debt service. A higher ratio of capital inflows to debt service should be associated with a lower rescheduling probability.

Per capita Gross National Income (GNI). A higher level of per capita income implies higher levels of nonessential consumption and this allows the government more flexibility of resources for debt service payments (Feder and Just, 1977). Hence, the higher the per capita GNI, the lower the probability of rescheduling.

Real GDP Growth is an indication of a decline in national income or an economic recession (Morgan, 1986). It shows the development direction of a country's wealth, productivity, and return on investment. Furthermore, it reflects external and internal shocks that may disturb the country' debt servicing capabilities (Morgan, 1986). Thus, real GDP growth is hypothesized to be negatively correlated to the probability of rescheduling.

As debt service is made in terms of foreign currency, the ability to service foreign loans

depends to a large extent on the economy's ability to generate foreign exchange earnings at a level which suffices to cover debt service obligations (Feder, 1980). The country's growth rate and income are also important determinants which cannot be ignored. Other studies on debt servicing measurement of developing countries (Ngassam, 1992 and Burney, 1988) have also used the previous variables and reported significant results.

3. Methods

The data is entirely sourced from the World Bank's *Databank*. As the research question focuses on developing countries within the Belt and Road Initiative, the dataset consists of 85 countries' annual economic data over the period 2012-2019. Originally, there are around 100 developing countries in the BRI, but due to data unavailability in the *Databank,* those countries have been eliminated. The 2012-2019 period has been chosen considering the commencement of BRI in 2013. All indicators will be lagged one year, meaning: economic data from 2012 were used to determine the probability of rescheduling in 2013.

A logistic regression analysis will be carried out to study the relevance of the explanatory variables on the probability of a country rescheduling or non-rescheduling as it is the most appropriate statistical method to study what leads an event (here rescheduling) to occurring. In this paper, debt servicing capacity will be quantified as a dichotomous dependent variable of probabilities. Observations of a country which has a rescheduling, restructuring, or arrears of external debt will be denoted by the value 1, otherwise 0. The regression equation of debt servicing capacity is as follows:

$$P(X) = e^{B'X} / 1 + e^{B'X}$$

Where P represents the probability of rescheduling; e is the exponential operator; X is a vector of relevant explanatory variables; and B is a vector of fixed coefficients operating as weights. The probability $P(X)$ increases with higher values of an indicator if the corresponding B coefficient is positive and declines with higher values of an indicator if the corresponding B coefficient is negative.

Table 1: [2]Sample Observations by Region (2013-2019)

Sub-Saharan Africa	South Africa (1)	Bulgaria (7)	Thailand (0)
Angola (7)	Sudan (7)	Georgia (7)	Timor-Leste (0)
Burundi (7)	Tanzania (7)	Kazakhstan (6)	Tonga (3)
Cabo Verde (1)	Togo (7)	Kyrgyz Republic (5)	Vanuatu (0)
Cameroon (7)	Uganda (7)	Moldova (7)	Vietnam (7)
Chad (7)	Zambia (7)	Montenegro (0)	
Côte d'Ivoire (7)	Zimbabwe (7)	North Macedonia (7)	**South Asia**
Ethiopia (7)		Serbia (7)	Afghanistan (7)
Gabon (6)	**Middle East & North Africa**	Tajikistan (6)	Bangladesh (2)

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[2] The numbers in the table symbolize the number of times a country has arrears or rescheduled its debt out of 7 years, with 7 being the maximum number.

Gambia, The (7)	Algeria (0)	Turkey (0)	Maldives (7)
Ghana (7)	Djibouti (7)	Ukraine (7)	Nepal (0)
Guinea (7)	Egypt, Arab Rep. (4)	Uzbekistan (4)	Pakistan (0)
Kenya (7)	Iran, Islamic Rep. (4)		Sri Lanka (7)
Lesotho (7)	Lebanon (0)	**East Asia & Pacific**	
Liberia (7)	Morocco (2)	Cambodia (1)	**Latin America**
Madagascar (7)	Tunisia (3)	Fiji (2)	Bolivia (1)
Mali (7)	Yemen, Rep. (7)	Indonesia (0)	Costa Rica (2)
Mauritania (7)		Lao PDR (7)	Ecuador (7)
Mozambique (7)	**Europe & Central Asia**	Mongolia (7)	El Salvador (0)
Nigeria (7)	Albania (1)	Myanmar (7)	Grenada (7)
Rwanda (7)	Armenia (0)	Papua New Guinea (7)	Guyana (7)
Senegal (4)	Azerbaijan (0)	Philippines (0)	Jamaica (7)
Sierra Leone (7)	Belarus (7)	Samoa (0)	Peru (0)
Somalia (7)	Bosnia and Herzegovina (2)	Solomon Islands (0)	Venezuela, RB (6)

4. Results

Initially, there are 595 observations, 395 (66%) of which had a rescheduled debt and 200 (34%) of which did not. But the valid number of observations became 526 as some cases have been eliminated due to missing data in the corresponding explanatory variables, resulting in 335 (67%) rescheduling cases and 191 (33%) non-rescheduling cases. To begin with, the correlations of variables are studied in order to check whether multicollinearity exists i.e. when a pair of variables are highly correlated with each other. As Table 2 reports, there are 4 significant linear relationships at the 1 percent level: GNI per capita and the Debt Service ratio at 0.451, GNI per capita and the Reserves to Imports ratio at 0.125, GNI per capita and GDP growth at -0.203, and GDP growth and the Debt Service ratio at -0.154.

Although multicollinearity is indeed unfavourable, these significant correlations are expected considering how the highlighted indicators contain several of the same items. For instance, the Debt Service ratio is measured by dividing debt service payments with exports and exports are part of a country's GDP which is included in calculating the per capita GNI and growth rate of a nation. The same is true for the Reserves to Imports ratio. Moreover, in spite of the statistical significance the 4 indicators have, the highest correlation among them (0.451) is still only moderately correlated: the threshold for a strong degree of correlation requires a value above 0.5 or below -0.5.

Table 2: Correlations

	(1)	(2)	(3)	(4)	(5)
1. DS Ratio	1				
2. Reserves/Imports	-0.019	1			
3. Inflows/DS	-0.074	0.049	1		

| 4. GNI per capita | 0.451* | 0.125* | -0.096 | 1 | |
| 5. GDP growth | -0.154* | -0.065 | 0.022 | -0.203* | 1 |

*Significant at 1% level *

Estimation results of the logistic regression which includes all explanatory variables in one model are presented in Table 3. With a Chi-Square value of 139.438 (N = 526), the model is overall statistically significant at the 1% level. Its Nagelkerke R-Square statistic at 0.319 indicates that the model is able to explain approximately 32% of the variation in the dependent variable. In this study, only two of 5 variables proved to be significant at the 1 percent level, namely the *reserves to imports ratio* and the *GNI per Capita*.

Table 3: Estimation Results

Variables	Coefficients	Wald test	Odds Ratio
Constant	3.088*	76.386	21.926
Debt Service Ratio	0.001	0.015	1.001
Reserves to Imports Ratio	-4.838*	66.705	0.008
Inflows to Debt Service	-0.001	0.785	0.999
GNI per Capita	0.000*	19.519	1.000
GDP Growth %	0.043	1.521	0.217
Chi-Square	139.438*		
Nagelkerke R-Square	0.319		

*Significant at 1% level *

The *reserves to imports ratio* with a coefficient of -4.838 is a negative predictor of the probability of debt rescheduling, with the Odds Ratio indicating that for every one unit increase in this predictor, the odds of a country rescheduling and/or skipping its payment (i.e. debt arrears) change by a factor of 0.008 all else equal, meaning: the odds are decreasing, which confirms the hypothesis and is in line with the literature. The *GNI per capita,* although significant, does not have any effect on the dependent variable. Its coefficient of 0.000 is non-discriminatory and its Odds Ratio suggests that the *GNI per capita* does not contribute to the odds of a country rescheduling as its value is 1.000: neither greater or lesser than 1. Thus, results show that only the *reserves to imports ratio* supports the propositions stated in the Literature Review. According to the model, it is by far the most important indicator of the probability of debt rescheduling and build-up of arrears within the context of BRI developing countries.

5. Discussion

5.1 Implications

Results of the regression analysis revealed that a higher proportion of reserves relative to imports substantially alleviates the probability of debt rescheduling, which means it increases the capacity of Belt and Road Initiative's developing countries in carrying out its debt obligations. Why the reserves to imports ratio is proven to be statistically more important than other variables can be explained by the current international debt

environment. To illustrate, it is reported that the total external debt stocks of developing countries and transition economies as a group reached an estimated $10.1 trillion in 2019—the highest level to date, and this figure was growing faster than their income on average in 2009 to 2019 (UNCTAD, 2020). Meanwhile, their share of total external debt to exports has risen and their average ratio of international reserves to short-term debt has halved (UNCTAD, 2020). These adverse developments create rising vulnerabilities to external shocks that may lead to financial crises and reduce the ability to service debt, and Kose, Nagle, Ohnsorge, & Sugawara (2020) confirm this, "a larger share of short-term debt in external debt, greater debt service cost, and lower reserve cover were associated with significantly higher probabilities of financial crises."

A financial crisis occurs when the value of assets drops rapidly (Semczuk, 2019), businesses and consumers are unable to pay their debts, and financial institutions experience liquidity shortages (Kenton, 2020). Correspondingly, countries with higher international reserve levels were significantly more resilient to external shocks that triggered a financial crisis (Gourinchas & Obstfeld, 2012), ergo the need to request a debt renegotiation. This is because the accumulation of international reserves preceding a crisis positively contributes to the real GDP growth of a country whilst being in the crisis (Bussière, Cheng, Chinn, & Lisack, 2015), and the depletion of them during the crisis allows countries to successfully stabilize their exchange rate (Dominguez, 2014).

In a world with growing external debt levels coupled with vulnerabilities, reserves are possibly the most viable self-insurance method for countries to hedge against unwelcome shocks. Therefore, the policy that emerges from this study is to acquire a level of international reserves that both cover current liabilities and estimated future liabilities based on the degree of vulnerability the country has towards shocks, which can be determined by studying the aspects of the economy that are exposed to external influences, such as its current account balance. Certainly however, this does not dismiss the importance of attaining and retaining other dimensions of economic strength and growth. Moreover, it should be noted that international reserves holding exhibits diminishing returns: Llaudes, Salman, & Chivakul (2010) and Berkmen, Gelos, Rennhack, & Walsh (2012) emphasize that its relationship with reduced vulnerability is nonlinear—such a result suggests the presence of threshold effects (Allegret and Allegret-Sallenave, 2015). The acquisition of reserves, hence, should not be over the top.

For a debt to be sustainable and productive, both the creditor and borrower are required to partake in the process of making it so. Debt sustainability is desirable because it allows the borrower to repay their loans without difficulty or delay and allows the creditor to receive their money back in the same manner. Creditors play an important role in mitigating the risks associated with debt accumulation—they need to ensure that their own lending practices are prudent (Kose *et al.,* 2020). As a further consideration, the avoidance of a debt rescheduling should very much be within the interest of creditors as large amounts of LDC[3] debt reschedulings not only harm the perceived

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[3] Least Developed Countries

creditworthiness of the debtor countries but also contribute to the financial difficulties of creditors (Moghadam, 1995).

To achieve this quality of debt, sound debt management, which favours debt contracted on terms that preserve macroeconomic and financial resilience, is necessary—preferably at longer maturities, at fixed (and favourable i.e. lower) interest rates, and in local currency (Kose *et al.,* 2020). The aforementioned preferences unfortunately do not exist in BRI loans. As stated previously, BRI loans tend to carry higher interest rates, shorter maturities, and frequent use of national assets as collateral (Abi-Habib & Bradsher, 2020). In China's defence, those features are requisites that give them the confidence to lend to risky borrowers. Nevertheless, there are certain features of China's loans that cannot be excused, that of which includes imposing non-disclosure clauses and collateral requirements that obscure the scale and nature of debt loads (Kose *et al.,* 2020).

High debt transparency is an additional but equally, if not extremely, important factor in making a debt sustainable and productive as prudent lending standards include transparency. Greater debt transparency—by governments as well as creditors—can make it easier to identify and remedy the biggest risks (Malpass, 2020). The combination of sound debt management and transparency will then help reduce borrowing costs, enhance debt sustainability, and contain fiscal risks; and creditors can spearhead efforts in this area by encouraging common standards, supporting capacity building, and highlighting risks and vulnerabilities through timely analytical and surveillance work (Kose *et al.,* 2020).

To date, there is no reliable record of BRI projects nor does China disclose information regarding its lending standards or the amount it has invested in the project (Crabtree, 2019). Moreover, their perceived non-disclosure agreements and reluctance for cooperation with external parties make it difficult for international organizations to interfere until it becomes inevitable. Such secrecy renders distrust especially with the size of the initiative in mind. A report by Rhodium Group claims at least 18 processes of debt renegotiation with China took place in 2020, and 12 countries were still in talks with Beijing as of the end of September (Kynge & Wheatley, 2020); in other words, debt renegotiations are escalating following the outbreak. But perhaps it may well be the result of China failing to deliver a sustainable and productive debt through prudent lending practices in the first place, which the coronavirus pandemic just happened to accelerate. In any case, if China still wishes the Belt and Road Initiative to achieve its target completion and deliver its aims, before continuing to finance the project, China must first move towards creating more responsible lending practices that entail higher transparency and support for capacity building, amongst others. In time, the sustainability of their loans will improve, and the narrative surrounding the project will ameliorate.

5.2 Limitations and Recommendations

There are several limitations to this paper. First, information and empirical evidence regarding the Belt and Road Initiative is partial as it is a fairly recent subject in literature. China also does not voluntarily publish important details regarding finance-

related matters of the project. Second, although the statistical analysis includes observations of only BRI countries within a relevant period to the project, due to data unavailability, the empirical analysis was not designed to reflect specifically the financial condition of the BRI. Namely, debt service payments of countries used to calculate variables are not specified as debt service payments exclusively to China—it was to the world. Third, this study included all sample countries into one model. A wiser approach would be to divide either the model or the study based on regions; as Siddiqui & Siddiqui (2001) have stated, the significance of various indicators may vary across countries; there may be no debt crisis, but rather a series of regional debt crisis with different determinants (Moghadam *et al.*, 1991). Fourth, this paper only studied the *ability* of countries to service their debt based on financial indicators. It does not include the *willingness to* which is reflected in political factors. Recommendations for future research are thus as follows: include more specificity in the data collection and variable calculation; study one region or country at a time to exclude regional differences; consider the addition of political factors; and produce more models to see the impact of additional variables more clearly.

6. Conclusions

To conclude, this study has examined the debt servicing capacity of Belt and Road Initiative's developing countries by predicting the probability of debt rescheduling based on a set of relevant financial indicators. More than 500 valid observations revealed that the *reserves to imports ratio* was the most relevant variable in determining the probability of a BRI developing country rescheduling, with a higher ratio signalling a stronger debt servicing capacity. When applied to the current international debt environment of rising external debt levels, reserves are found to be effective in hedging against risks. BRI developing countries are thus encouraged to increase their international reserves holding relative to its imports and vulnerabilities. Additionally, input towards China's lending practices to make BRI loans more sustainable has been obtained whereby debt transparency and sound debt management assistance are sorely needed. This paper has contributed to a research gap but it is subject to a couple of limitations so findings should be received with care. Finally, this research can be extended by adding data specificity, regional application, as well as political factors in the statistical models.

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