

An Analysis About the International Debt of Developing Countries: A Case Study About China, India and Ukraine

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Abstract. In recent five years, debt crisis has been a focus issue which the default of US debt has led to an overwhelming situation for many countries especially for developing countries. Additionally, subsequent effects of Covid-19 are still insisted that global economic still at a trough since the virus started to spread. There are many factors contributed to the trend of change in debt by country. Base on the dataset produced by world bank named international debt statistics last 5 years, using the method of quantitative analysis on analyzing China, India and Ukraine to find the factors that influence debt change in different countries. According to this study, it has found out that US debt crisis and the depreciation of US\$ could be the main reason why the debt scale were decreased in final two years. However, Covid-19 is the cause which debt continue to increase. Government structure is also a factor affect the change in debt.

Keywords: Developing countries, Covid-19, Debt risk, US\$.

1. Introduction

According to R.H. Wang (2022), “Debt crisis” has been a great issue since the last few decades which can be divided into four stages and ended with a global financial crisis [1]. The recent stage was linked up with the global financial crisis started in 2008, while it influences consisted with factors like aged tendency of population, economic downturn, rising trade barriers. In order to deal with these problems, governments have to issue more debt to stimulate the economy. Not only for the developed countries like USA or UK, a large number of developed countries also have high risk of debt. Since the developed countries were developed at a fast pace, they continued to attend global economic events. On the other hand, those countries were more easily in debt risk because of poor market managing which being lacked of. According to the “international debt report 2022” made by the world bank, three-fifths of the world are in the list of reaching the level of high risk for the Debt Services Suspension Initiative [1-2]. As the data has mentioned, it has become an emergency problem to deal with. For some previous research related to this question, the proportion that debt shares in the whole GDP reached the peak which was nearly 100%, then fell to 60% in the next decade, while risen up to 80% in 2020 and it is higher than the rate of developed countries [2], so it could be mentioned that developing countries are suffering large debt risk. Developing countries are gradually becoming more significant roles and their responsibility in the world economy system.

In all times economy developing, debt risk is always being attached importance on by economists and the economy agency in government. For this problem, many scholars devote themselves to research in this question, Before the pandemic of Covid-19, the developing countries are suffering from high debt risk because of government are facing imbalance of expenditure and revenue. As P. Steele and S. Patel (2020) said the priority consideration of most of the developing countries is debt which have surpassed US\$8 trillion in 2019 [3]. According to Oheler.A (2020), the International Monetary Fund (IMF) concerned about debt burden in developing countries which related to Covid-19 [4]. For most of the previous study, it concentrated on the difference of debt structure between high income and low-income countries which are binary opposition structure. Also, some studies tried to find the relationship between debt and act of government, which tried to find how politic influence economic decision.

This research would focus on developing countries debt which can be divided into two topics, their variation trend, similarity and difference of these countries, also with the preference of type of developed countries debt. During this study, the impact of low-income countries' debt and its' development can be found out. Also, what could be the most important factor which influence government choosing which kinds of debt, while how debt contribute to the progress of economy such as GDP, GNI and CPI. The following passage may focus on China, India and Ukraine, discuss the relationship of their debt and the economic development, find out the similarities and differences of their debt.

2. Data description

The data are mostly come from Kaggle database named international debt statistics, while it includes various kinds of debt in different countries from 2018 to 2022 (the latest data being uploaded were in 2022.12.6). Link: <https://www.kaggle.com/datasets/leoth9/international-debt-statistics-last-5y>. In this set, there are about five columns which are country names, country code, series name (566 types of debt) and the accurate amount of debt in recent five years ended up in 2022. The diagram were about 76814 lines in total and only 52555 lines (135 countries) were valid after deleting errors in the initial data. Each line represented the scale of debt in different years under a specific type of debt.

Link: Selected data.xlsx

Country N	Country C	Series Nar	Series Cod	2018	2019	2020	2021	2022
China	CHN	Debt servi DT.TDS.DF		2.40939E+11	2.75788E+11	2.73275E+11	3.36772E+11	2.33691E+11
China	CHN	Disbursen DT.DIS.DL		2.47559E+11	3.3822E+11	3.60755E+11	3.60267E+11	2641379694
China	CHN	Debt servi DT.TDS.DL		1.87678E+11	2.16347E+11	2.12377E+11	2.72354E+11	2.33691E+11
China	CHN	Debt servi DT.TDS.DF		1.66252E+11	1.87044E+11	1.79693E+11	2.22526E+11	1.78636E+11
China	CHN	Principal r DT.AMT.D		1.60494E+11	1.80617E+11	1.80783E+11	2.25855E+11	1.84956E+11

Figure 1. International debt statistics dataset by world bank last 5 years

2.1. Description of frequency table

The world map above the table has concluded that how many kinds of debt does every country had during the five-year period. The bar chart below explained what is the meaning of each color being printed on the map. As the color turning to red, there are more kinds of debt that a country owned. For example, China and Brazil are the country which printed in red, while Russia had less kinds of debt that used light green. Those regions with pink or blue color like African countries were with less kinds of debt.

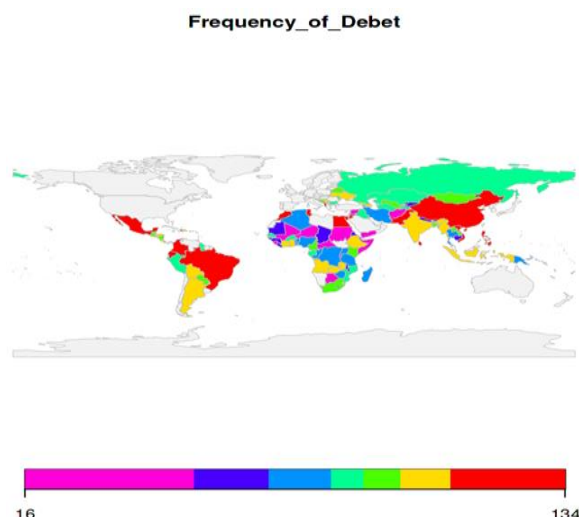


Figure 2. Frequency of debt

2.2. China

According to the frequency of debt table, China shared the most varied types of debts among the world which is about 114 kinds, similar to India, Brazil and some countries in Northern Africa. It could be known that Chinese economy is quite relying on debt and debt is the most important driving force of the economy. While selected out the data of Chinese debts, the ranking is based on the total of the five years of debt data in China, the top five types of debt are being chosen so that the tendency of how each debt were developed could be figured it out [Picture 1]. As the picture is shown, all the five types were continued to increase from 2018 to 2021 but then fall in 2022. Especially for one type which have dropped three fourth of overall compared to the preceding year named the “Disbursements on external debt, long-term (DIS, current US\$)”. “Disbursements on external debt, long-term (DIS, current US\$)” is the amount of external debt government needs to repay with US\$. This result might be derived by different factors such as Covid-19 and depreciation of US\$. Another four types of debt were both decrease at the period of 2019 to 2020, then resume to the tendency of increase until 2021. To sum up, China’s debt types are mostly concentrated on long-term and external debt, while most of debt were required to pay back in US\$. So, USA is the largest debtor nation of China. Due to the top 5 kinds of debt, only “Debt services on external debt, private nonguaranteed (PNG) (TDS, current US\$)” was private loans, while only” principal repayments on external debt, long term (AMT, current US\$)” did not repaid interest of debt.

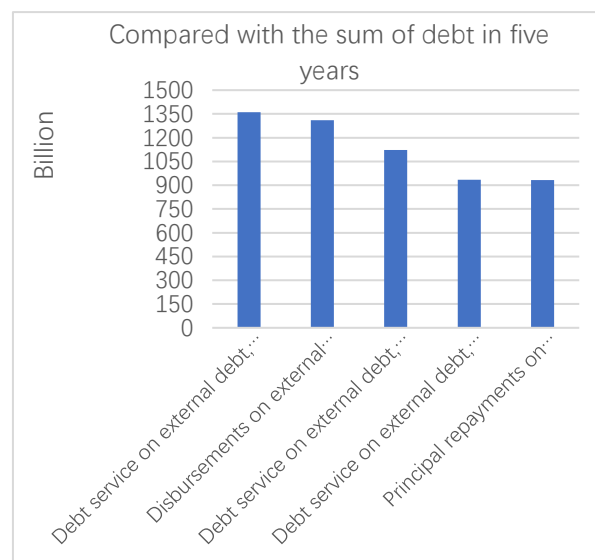


Figure 3. Compared with the sum of debt in five years in China

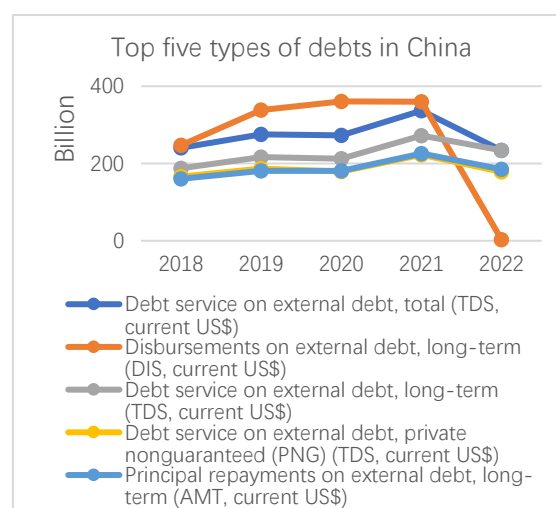


Figure 4. Top five types of debt in China

2.3. India

There are about 109 types of debt India was owned which is very close to China. The situation of India was not quite similar to China's debt type. Most of the top 5 types of debt had experienced a fluctuated change which insisted the tendency of increase except for 2019 to 2020. Only the "Disbursements on external debt, long term (DIS, current US\$)" only went up at first year then went down for the following years especially for 2021 to 2022. All top 5 debt types of India were external debts, also takes a large proportion of the whole economic system. Three fifths of the top five were long-term debt which means India government prefer to use these kinds of debt to stimulate economic growth.

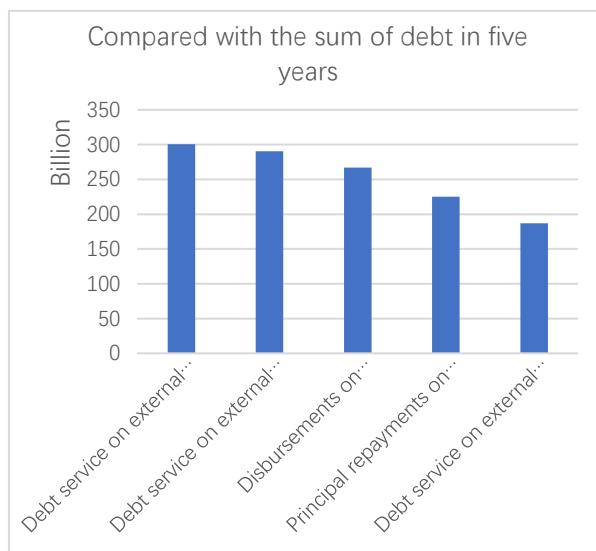


Figure 5. Compared of the sum of debt in five years in India

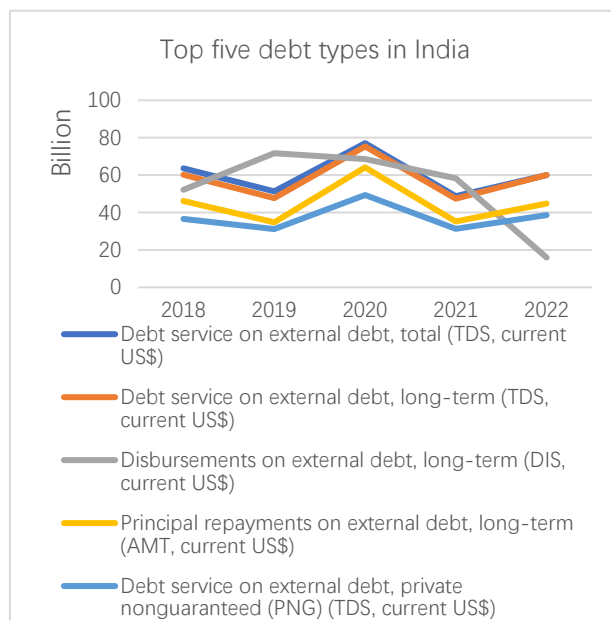


Figure 6. Top five types of debt in India

2.4. Ukraine

Ukraine also owned 104 types of debt in recent five year but their scale was smaller than India.

Compared with the trend of top 5 types of debt, only "Disbursements on external debt, long term (DIS, current US\$)" were continued to decrease in 2022, while the other four types reached the peak in 2022. It was a well-known reason that the Russia-Ukraine war broke out in February 2022, Ukraine

received a large amount of debt from NATO, most were given by USA, in order to solve the economic crisis in Ukraine. Because the industrial in Ukraine were almost stopped, so debt has become the prior revenue of government to maintain the development. That is also why they could hardly disburse the external debt.

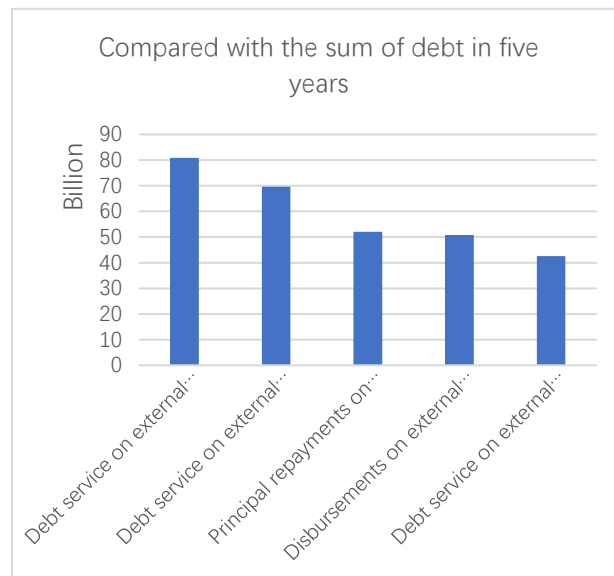


Figure 7. Compared with the sum of five years in Ukraine

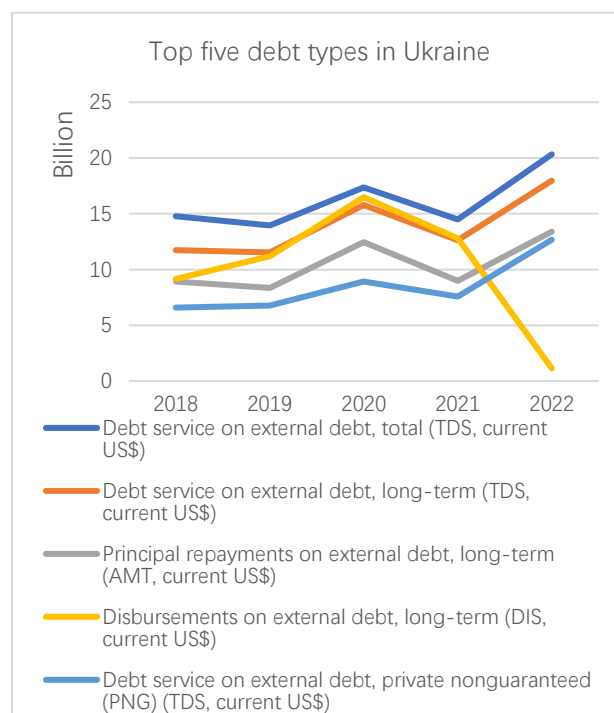


Figure 8. Top five types of debt in Ukraine

2.5. Comparison

The total amount of These countries was between a quite big gap. China enjoyed the largest amount of the debt scale because of the economic volume. China needs to raise up the debt amount which the economic sustainability highly relied on debt. India had the second largest amount of debt, following by Ukraine. The trend of how these countries owned different types of debt which were both went up at first then decrease in the last two or one years.

3. Qualitative analysis

3.1. China

After finish the writing of quantitative analysis, some phenomena could be found and the reason why would these situations happened should be found. According to previous parts of the essay, the first fact we could founded out that both India, China and Ukraine's "Disbursement on external debt long term (current US\$)" were tended to decrease after 2021. These might be influenced by many different factors. In China, government usually take over the responsibility to raise debt in order to help the economy growth, while government itself also divided into different levels. As W.Li (2022) said in the study, The central government have the dominance over the local government both on financing as well as politics [5]. Local government are separated into three levels due to the issue of management, the provincial level, municipal level and district level. As the study of local debt in China, local finance is one of the most important factors influenced debt risk occurred that imbalance between the local fiscal revenue and expenditure could be contributed to the risk. In recent years, local government were facing pressure of disability of paying back loans due to the widening gap between revenue and expenditure (W.Li, 2022) [5]. Local government always want to fix up with the gap because of the factors like economic downturn, Covid-19 etc. Make Covid-19 as an example, it had affected the local debt structure in China. In three years, China had put a lot of money into securing people from the virus for political and medical reason, but these had seriously infected how the local debt is functioned. For the study of Y. M. Gao (2022), although the 14-days quarantine measure block the virus away effectively, but these costs may be equal to 8% of a whole year GDP [6]. China usually takes the responsibility to help other low-income countries to develop. According to R. Rajah (2023), the necessity of guarantee debt sustainability in future BRI projects was stressed by President Xi Jinping at the Second Belt and Road Forum held in Beijing in 2019 [7]. This has caused Chinese external debt at a high level for most of the time.

3.2. India

The major reason influenced India debt is global economic downturn with its additional effects. According to Thakur. S (2022), Covid-19 has hugely impacted India's GDP while the global debt amount has reached 277 trillion in 2020 [8]. During these three years, India has also put a lot of effort into securing people from coronavirus. Acharya et al. (2023) has concluded that Indian economy, after the World health organization announced the pandemic burst out at 3.11 in 2020, whole country's market participants has seriously looked down on the prospect [9]. The price pressure in India had increasingly grown up which the government need to contract foreign debt because the domestic debt quotation was not good.

Moreover, India was highly relied on USA's economy. From 2019, US\$ were at the time of depreciation and US debt crisis, which would cause the inflation of Asian countries' economy significantly. According to Tan, Wayne, Soong, Jeen-Jaw (2023), Indian government has to take hedging measure in order to protect them from uncertainty concerns [10]. But India was not similar like the other Asian countries because of its scale and economic system.

3.3. Ukraine

Ukraine had faced with the conflict between Russia, that is the major reason why Ukraine have faced with the such a big problem on economy. The conflict was not only influenced Ukraine and Russia but for the global economy (Chernysh, Olga, et al., 2022) [11]. In order to fill up with the gap of expenses on war, Ukraine have to borrow debt from NATO countries such as USA or European countries for long term because the reason of war. They could not repay the loan in short term. According to M. Karpiak, and M. Popadynets (2022), about 6 million of refugee had to get away from their home and seven tenths of overall population gained the disadvantage from war which is a big crisis for the economic system [12]. Moreover, the reproductivity and innovation action taken by

Ukrainian government have brought positive effect on the recovery of economy (M. Karpiak, and M. Popadynets, 2022) [12].

4. Conclusion

The data source was developed countries' debt data from 2018 to 2022. In this study, it had been selected three countries which are China, India and Ukraine. The reason why selected these countries is because of three reasons. For China, it is the biggest developing countries till recent time. China was also the country that has taken the strictest action to stop the spread of Covid-19. Researching China's debt data could also find out how the pandemic affected Chinese economy. India has the largest population among all the countries so how population influence the debt structure. As for Ukraine, it has suffered from the war against Russia which was a significant reason why the economy has declined. Studying on Ukraine can learn the effect of modern war to the economy. As this passage stated, it has concluded that debt of both three countries have similarities. They all have highly dependent on US treasury bond is because the us treasury bond is the anchor of the global assets pricing. The default on US debt is one of the main reasons why three countries debt fall suddenly in 2022. Covid-19 is another reason how debt change with these tendency. The pandemic stopped domestic and international economic interaction, while increase the risk of global debt crisis, deleveraging and inflation. This study has promoted evidence about developing countries' debt in recent years especially for Ukraine. Additionally, it gives a view to investors who are interested in developing countries debt. However, this study did not cover about what proportion debt have occupied in the whole country's GDP and how the fluctuation of debt influence economy in detail.

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