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Sustainability of External Debt, Current Account Balance and Budget Balance in Developing Countries: A Cross Country Analysis

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Abstract

In this study; sustainability of external debt, current account balance and budget balance in 25 in developing countries are analyzed via Kapetanios unit root test with multiple structural breaks. According to results of the analysis; external deficits in Columbia, Peru and Thailand are unsustainable. While it is weakly sustainable in Bangladesh, Brazil, India, Indonesia, Malaysia, Mexico, Pakistan, Philippines, South Africa and Turkey, it is strongly sustainable in China and Egypt. Additionally, current account balance in Columbia, Czech Republic, Egypt, Greece, India, Malaysia, Pakistan, Philippines and Poland are unsustainable. While it is weakly sustainable in Bangladesh and Turkey, it is strongly sustainable in other countries. Finally, it is determined that budget balance in China, Colombia, India, Indonesia, Pakistan, and Turkey are unsustainable. While it is weakly sustainable in the Czech Republic and Greece, it is strongly sustainable in other countries.

Keywords: External Debt Sustainability, Current Account Balance Sustainability, Budget Balance Sustainability, Unit Root Test with Multiple Structural Breaks.

INTRODUCTION

The Covid-19 pandemic caused the foreign debts, current account deficits and budget deficits of countries to increase again. It is anticipated that countries will have to be more interested in these problems in the near future (Saleemi, 2020). For this reason, it is beneficial to reconsider these issues and keep them on the agenda. It is expected that this study will make a contribution to the literature in terms of its focus, countries and analysis methods used.

Foreign currency flows from countries having excess funds to countries having fund shortage is called external debt (Gill and Pinto, 2011). Accumulation of this debt in time gives external debt stock. External debt stock can be divided into two parts; public and private. Private sector takes credit from foreign markets and begins to use foreign savings when domestic saving is not sufficient to finance investments and savings. This happens mostly through syndicated loan. Public sector external debt, on the other hand, occurs when budget deficit could not be financed from domestic markets. Major external debt types are (IMF, 2014):

- Inter-government external debts
- External debts from international institutions (IMF, World Bank)
- External debts from market in return of bonds
- External debts from foreign banks

External debts, seen as a development accelerating factor for countries facing resource shortages in the beginning (Bernardin et al. 2018), might become one of the major obstacles to have a sustainable economic growth performance with its values reached over time. The reason behind the crises occurred in Latin America (Adler and Sosa, 2013), Far East and many other areas since 1980 is the external debt which had reached to high values and had become unsustainable (Ejigayehu, 2013).

In this study, sustainability of external debts in 25 countries which are classified as Developing Countries according to Morgan Stanley Capital Index (MSCI) is analyzed by available external debt stock, external debt burden, and current account deficit and budget deficit data for 1970-2019 periods. At the end of this study, it is seen that the external debt stocks of developing countries have reached quite high values and sustainability of the debts has become risky. To prevent more critical problems in future, policy makers of the countries and supranational institutions like IMF and World Bank should take necessary precautions as soon as possible. The most important contribution of this study to country economies and the literature is that existence of sustainability in the fields of external debts, current account balance and budget deficit in developing countries was analyzed with the help of tables and econometric methods.

EXTERNAL DEBTS

Reasons and Sustainability of External Debt

Insufficiency of production and income capacity to finance economic growth, increasing public sector financing deficits and balance of payments deficits in Developing Countries (DC) forced these countries to external debts. The main reason which directs countries to external debt is the lack of domestic savings. Other reasons; (*i*) not having the opportunity to get loan from domestic capital market, (*ii*) the need of foreign currency, (*iii*) the reserve search of Central Banks to keep the national currency's value, (*iv*) less interest burden of having loan from developed countries and (*v*) the fact that developed countries compel developing countries to indebtedness (Panizza, 2008).

Sustainability of external debts is the ability to pay the principal and interest of the debt in time and in complete amount (O'Neill, 2016). When the principal and interest cannot be paid, several problems arise. What happens first in such situation is the unwillingness of the creditor to give loan again (IMF, 2013). Second, a delay especially in payment of external debt will be felt by market immediately and all the creditors whether they previously give loan to treasury or not will hesitate to create new credits. When such delay happens frequently, country will face big troubles in getting credit from both domestic and external markets. Therefore, it is quite important to pay the principal and interest of the debt in time (World Bank, 2017). In macroeconomics, three concepts have importance on investigating the sustainability of external debts (Mustapha and Prizzon, 2015):

i) External Debt Stock: Total sum of external debts of public and private sectors. Ratio of external debt stock to export can calculated by Eq. (1);

$$Ratio\ of\ External\ Debt\ Stock\ to\ Export\ = \left(\frac{External\ Debt\ Stock}{Export}\right) * 100 \qquad (1)$$

If the ratio is in between 165% and 275%, the country is moderately indebted. If it is over 275%, the country is heavily indebted (World Bank, 2020h).

ii) External Debt Burden: The ratio calculated by Eq. (2);

$$External\ Debt\ Burden\ = \left(\frac{External\ Debt\ Stock}{GDP}\right) * 100 \qquad (2)$$

If this ratio is in between 30% and 50%, the country is moderately indebted. If the ratio is over 50%, the country is in heavily indebted (IMF, 2021).

iii) Total Debt Service: Shows the amount of principal and interest payments of previous loans to be paid in next year. Rise of external debt stock will make countries more fragile against economic crisis whether it is public or private sector in many countries. World Bank takes two ratios into account while classifying the developing countries about external debts. Total debt service ratio can calculate by Eq. (3);

$$Total\ Debt\ Service\ Ratio = \left(\frac{Total\ Debt\ Service}{GNI}\right) * 100 \qquad (3)$$

If the ratio is in between 18% and 30% the country is moderately indebted. If the ratio is over 30%, the country is heavily indebted (World Bank, 2012).

vi) Ratio of Total Debt Service to Export: The ratio calculated by Eq. (4);

$$Ratio\ of\ Total\ Debt\ Service\ to\ Export = \left(\frac{Total\ Debt\ Service}{Export}\right) * 100 \qquad (4)$$

If the ratio is below 5%, the country is moderately indebted and if it is above 5%, the country is heavily indebted. Although export trend is important here, exchange rate trend and price stability are also important determinants (Merotto et al. 2015).

Several indicators have been developed to track sustainability of public debt stock (Ozkaya, 2013):

- One of the main indicators is the condition that the economic growth rate is greater than the real indebtedness interest rate. If this condition is satisfied, a sustainable growth rate will occur and getting credit again is possible. Otherwise, the country will have hard time on finding credits and external debt stock will increase in time in most countries.
- Another major criterion on investigating the sustainability of external debts is the ratio of external debt stock to country's export revenue. It is hard to have a sustainable external debt when the ratio of external debt to export revenue is over 50% in most countries.
- One of the other important criterions giving idea about sustainability of external debts is the share of external debt stock of public sector in GNP. According to Maastricht Criteria accepted in 1993, one of the necessary conditions for an EU country to join in common monetary union is that the external debt stock of public sector has to be less than 60% of its GDP. We can evaluate this ratio as a criterion of sustainable external debt.
- The last but not least factor is Net Present Value (NPV) of external debts. The NPV of debt is the sum of all the future debt service obligations (interest and principal) on existing debt, discounted at the market interest rate. NPV of the external debt is compared to the threshold. If NPV smaller than threshold, that countries' external debt is sustainable (Wyplosz, 2007).

The validity of these threshold values may vary depending on the indebtedness degree of the countries. The present value of the debt to exports ratio in Heavily Indebted Poor Countries (HIPC's) is 150% and debt service to exports ratio is 15%. In very open economies, whose exports-to-GDP ratio are at least 30%, that have a heavy fiscal burden of debt despite strong efforts to generate revenue (demonstrated by a fiscal revenue to GDP ratio of at least 15%), the present value of debt-to-exports target can be below 150% and is set so as to achieve a 250% ratio of the present value of debt to fiscal revenue at the decision point (OECD, 2021).

A country has to have primary surplus in order to be able to ensure its debt sustainability (Beqiraj et al. 2018). Otherwise, its debt stock will continuously increase. According to economists, two deficits must be monitored to sustain external debts: current account deficit and non-interest deficit (Orhan and Nergiz, 2014).

Countries can increase their sustainability of external deficits by means of adopting export-led growth strategies and precautions to reduce non-interest budget deficit. When export increases, the share of total debt service in exports and the country's total debt service payment problem decreases. In order to reduce budget deficits, either public expenditures are to be decreased or public revenue is to be increased. To increase public revenue, either taxes will be raised or privatization which provides instant income will be tried (OECD, 2021). Of course, the maturity structure of external debts is also of great importance here. Particularly, excessively high short-term external debt is an important financial risk indicator for HIPC's (IMF, 2019).

Most of the developing countries including Turkey have adopted export-led growth strategy since 1980's and tried to increase their production and export. They accelerated privatizations where this strategy became inadequate. For instance, in Mexico, almost all of the small businesses owned by government were privatized until 1988 in order to reduce budget deficit in accordance with the stabilization program signed between Mexico and IMF in 1983. In 1989, the process has gained speed with Salinas Administrations and 940 of 1155 State-Owned Enterprise have liquidated, unified or sold until 1991. Total value of these was 14 billion Dollars, which was 6% of Mexico's GDP. At the beginning, revenue of privatizations was kept in a special account to protect the economy from unanticipated shocks. When Mexico has become a strong economy, as of the beginning of 1992, domestic debt worth of 14 trillion peso were paid just by privatization revenue. In this way, public sector domestic debt worth of 29.2% of GDP in 1988 was decreased to 17.5% of GDP in 1991. In Turkey, 43 billion Dollars privatization, of which 35 billion Dollars part between 2002 and 2011, were realized 1986-2011 period (OECD, 2021).

Results of External Debts in Developing Countries

According to Rosenstein-Rodan (1943) Big Push Theory, in least developed countries at which private sector cannot arise, financial and physical capital in huge amounts provided from abroad may take the country out of recession and make it self-growing. That is, the use of foreign finance resources is effective in the beginning of development. However, to keep development, domestic finance resources must be advanced. When the external debts of DC's are not evaluated efficiently, they cannot provide required economic growth and become a significant burden on economy in addition to being a reason for fragility against crisis (Macovei, 2009).

External debts of developing countries had quickly risen because of the rapid increase in oil price in 1973, the worldwide economic recession in 1974-1975 and another oil shock in 1978. In this way, period of external debt crisis had begun with the increase in external debts' interest rates and the value of US Dollars between 1980 and 1982. External debt crisis faced by countries deepened as a result of the significant increase in interest rates, implied as "$Libor + spread$" (Watson and Relging, 1992).

The ratio of total debts to GDP rose to 29% from 22% and the ratio of external debts to export jumped to 128% from 115% in developing and underdeveloped countries in 1973. Consolidation demands for external debts, which actually started in 1975, made the external debt crisis a worldwide issue after 1982 in terms of the amount and number of applicant country.

The period, called "debt decade" in literature and begun with the moratorium declaration of Mexico in August 1982, continued with the consolidation demand of Brazil in 1983 and implication of conversion on external debts in Chili in 1985. In 1987, Brazil declared moratorium in February and Argentina reached a discount on external debts by negotiations. Official bilateral credit paybacks postponed in 1988 Toronto G-7 Meeting (G7 Information Service, 1988).

Increasing real exchange rates in East Asia countries in 1990's raised their foreign trade and current account deficits. In this way, external debts of countries started to rise. Moreover, expenditure of external debts on non-exportable sectors like construction, leading the loss of anticipated efficiency, had worsened the sustainability of external debts in these countries. All this circumstances together with speculative attacks created a significant economic crisis in Southeast Asia countries in 1997. The crisis started in Thailand had quickly spread to Indonesia, Malaysia, Philippines and then South Korea, Hong Kong, Singapore and Taiwan (Pesenti and

Till, 2000). After a short while, Russia was affected from crisis and declared moratorium in 1998. Brazil, which lived a great debt crisis in 1980's, faced a significant economic crisis in January 1999 under the impact of Russian crisis together with increasing fiscal and current deficits (Cardosa and Helwege, 1999). In 2001-2002 crisis, Brazil experienced a "default" situation and could not payback its debt around 100 billion Dollars (Macovei, 2009).

While total debts of DC's were 72.8 billion Dollars in 1970's, it increased 609.4 billion Dollars in 1980's, 1458 billion Dollars in 1990's, 2492 billion Dollars in 2000 and 2800 billion Dollars in 2005. It has jumped to 4780 billion Dollars in 2014 (World Bank, 2016b).

In 2019, net debt inflow of low- and middle-income countries was 464 billion Dollars, 18% less than the previous year. It was the result of 60% decrease in net short-term debt flows, from 188 billion Dollars to 72 billion Dollars. External debt to GNI ratio was 22 percent in 2019, and the ratio of external debt to exports was 79 percent in average while external debt burden of low- and middle-income countries stayed at moderate levels. In Table 1, data related to external debts of the countries as of 2019 is presented.

Table 1: External Debt Statistics of Developing Countries

	External Debt Stocks (Billion Dollars)	External Debt Stocks to Exports (%)	External Debt Stocks to GNI (%)	Debt Service to Exports (%)
Bangladesh	47.1	120	18.1	5.5
Brazil	542.9	205.9	26.9	36.1
Chile	102.1	NA	65.4	NA
China	1710.2	63.8	14	7.6
Colombia	124.3	232.6	41.3	41.6
Czech Republic	137.6	NA	86.7	NA
Egypt	82.8	190.2	35.8	15.1
Greece	455.7	NA	174	NA
Hungary	143.7	146.5	115	NA
India	513.2	101	19.7	10
Indonesia	354.3	177	36	33.9
Malaysia	202.5	94.4	66.8	5.8
Mexico	455	101.6	40.4	14
Pakistan	84.5	285.9	26.2	22.8
Peru	68	127.2	33.5	21.7
Philippines	73	74.3	19.3	11.3
Poland	355.9	130.1	39.9	NA
Qatar	116.1	NA	55	NA
Russia	492.7	107.6	32	26
South Africa	176.3	160.3	52	12.1
South Korea	380.9	NA	37	NA
Taiwan	172	NA	37.4	NA
Thailand	129.7	40.6	29.8	4.7
Turkey	454.7	211.4	54.1	40.2
U.A. Emirates	220.4	NA	59	NA

Source: World Bank-External Debt Statistics (2020a, 2020b, 2020c, 2020d).

In Table 1, it is seen that the countries having the most external debt among developing countries are China, Brazil, India, Russia, Greece and Turkey. The ratio of external debt stock to GNI has the highest values in Greece, Hungary, Czech Republic, Malaysia, Chile, Qatar and Turkey. According to the classification of World Bank calculated as external debt stock/GNI, Greece, Hungary, Malaysia, Chile, Qatar and Turkey are heavily indebted. In terms of external debt stocks to exports ratio for the countries whose data are available, it is seen that countries generally classified as moderately indebted. Debt service to exports ratio reveals that, again for the countries with available data, all countries except Thailand is heavily indebted.

Sustainability of External Debts in Developing Countries

In order to determine the sustainability of external debts in developing countries, external debt stocks to GNI and external debt stocks to exports data of each country are analyzed by Kapetanios (2005) unit root test with multiple structural breaks[1]. This unit root test allows up to *m* structural breaks and it can determine break dates and numbers endogenously (Kapetanios, 2005). Null hypothesis of Kapetanios (2005) test is "*series has a unit root*" and rejection of this hypothesis means that the series is stationary. If the series stationary, it can decide that policy is sustainable. For the countries being stationary on level values, it is decided that external debts are sustainable (Jha and Sharma, 2001; Afonso, 2004; Bozoklu and Yilanci, 2004; Claeys, 2007; Afonsa and Jalles, 2012). Kapetanios (2005) test results were presented in Table 2.

[1] The reasons of why Kapetanios (2005) unit root test was chosen are the long analysis period in the study, the existence of many domestic and external factors affecting the economies of the countries in this period and the fact that these factors may have caused more than one structural break in the data.

Table 2: Analysis Results for Sustainability of External Debts

	Period	Test Statistics (According to External Debt Stocks to GNI)	Period	Test Statistics (According to External Debt Stocks to Exports)	Decision
Bangladesh	1973-2019	-3.85 [1994]	1976-2019	-4.27* [1991]	WS
Brazil	1970-2019	-3.46 [2003]	1975-2019	-4.92*** [2002]	WS
China	1981-2019	-4.88** [1993]	1982-2019	-4.20* [1991]	SS
Colombia	1970-2019	-3.40 [2003]	1970-2019	-3.99 [2003]	US
Egypt	1970-2019	-5.47*** [1988]	1977-2019	-8.20*** [1989]	SS
India	1970-2019	-2.91 [1993]	1975-2019	-4.08* [1991]	WS
Indonesia	1970-2019	-2.78 [1998]	1981-2019	-4.93*** [1999]	WS
Malaysia	1970-2019	-3.74 [1986]	1974-2019	-4.18* [1986]	WS
Mexico	1970-2019	-2.97 [1987]	1979-2019	-5.74*** [-193]	WS
Pakistan	1970-2019	-3.15 [2002]	1976-2019	-6.18*** [1999]	WS
Peru	1970-2019	-2.35 [1988]	1977-2019	-3.95 [1993]	US
Philippines	1970-2019	-3.41 [1986]	1977-2019	-4.09* [1988]	WS
South Africa	1994-2019	-7.66*** [2011]	1994-2019	-3.31 [2008]	WS
Thailand	1970-2019	-3.24 [1998]	1975-2019	-4.04 [1998]	US
Turkey	1970-2019	-3.08 [1981]	1974-2019	-4.91*** [1986]	WS

Note: Critical values for 1%, 5% and 10% significance levels in Kapetanios test are -4.89, -4.35 and -4.07 respectively. ***, ** and * show that the series is stationary at 1%, 5% and 10% significance levels respectively and that the related policy is sustainable. Those who are stationary in two series are called strongly sustainable and those who are stationary in one series are called weakly sustainable. Numbers in brackets is the structural break times determined by the test. SS: Strongly Sustainable, WS; Weakly Sustainable, US: Unsustainable.

According to results of Table 2, external deficits in Colombia, Peru and Thailand are unsustainable because of high external debts in Colombia in recent years and in Peru and Thailand in the early 2000's. While it is weakly sustainable in Bangladesh, Brazil, India, Indonesia, Malaysia, Mexico, Pakistan, Philippines, South Africa and Turkey, it is strongly sustainable in China and Egypt because average external debts/GNI ratio is nearly 12% in China and 26% in Egypt. It is seen that the structural break times estimated endogenously by the test are generally the times in which countries faced debt crisis. Due to the Covid-19 crisis forcing governments to implement expansionary fiscal policies and the loss of production and tax in economies, countries will need more external financing. In this way, it is evaluated those external debts of Bangladesh, Brazil, India, Indonesia, Malaysia, Mexico, Pakistan, Philippines, South Africa and Turkey all of whose external debt are weakly sustainable may become unsustainable.

CURRENT ACCOUNT BALANCE

Current Account Balance in Developing Countries

Current account balance is the most important indicator of countries' external economic performances as it consists of export, import, tourism, transportation, construction, transfers, revenue of direct investment and interest payments for external debts transactions between the residents of a country and the residents of other country within a period. The case when the expenses are more than income in current account, which is called current deficit, is a risk factor that must be monitored carefully.

Every deficit arose in current account is compensated by either selling external assets of residents or crediting from abroad. This case increases debt burden of the country, which is interpreted as a crisis alert by foreign investors and may make the capital flow out (Gocer, 2013a). In this way, external debts may become unsustainable for the country. That is, the movements and sustainability of current account, being a macroeconomic indicator that should not give deficit, has a great importance to determine policies (Thanh et al., 2001).

Many economists think that the basic reason of the crisis happened in developing countries in 1990's is current deficit (Freund, 2000). Current account gives important information about possible crisis (Edson, 2003; Zanghieri, 2004). The size of current deficit of a country can be seen as an important indicator of future exchange rate crisis (Corsetti, et al., 1999). Dornbusch and Fischer (1990) stated that the ratio of current deficit to GDP should not be greater than 4% while the ratio is 5% according to Freund (2000) and 6% to Karunaratne (2010). This is a critical value which indicates crisis alert in case of surpassing it. Together with the fact that there is not a consensus on this topic, it is accepted that the countries with high current deficit are more vulnerable to crisis. A few years long high current deficits may be the precursor of crisis if export sector is small, external debts are high, savings are low and auditing in banking/financing sector is weak (Radelet and Sachs, 2000). High current deficit in developing economies like Mexico, Turkey, Brazil, Argentina and East Asia Countries can be seen as crisis precursor (Labonte, 2005). Data about current account of developing countries are presented in Table 3.

Table 3: Current Account Balances in Developing Countries (% of GDP)

	1980	1985	1990	1995	2000	2005	2010	2015	2019
Bangladesh	-3.9	-2.0	-1.3	-2.2	-0.6	0.7	1.8	1.3	-1.0
Brazil	-5.5	-0.1	-0.8	-2.3	-3.7	1.6	-3.4	-3.3	-2.7
Chile	-6.8	-7.9	-1.5	-1.8	-1.1	1.5	1.4	-2.2	-3.0
China	NA	-3.7	3.3	0.2	1.7	5.8	3.9	2.7	1.4
Colombia	-0.6	-5.2	1.3	-4.9	0.8	-1.3	-3.0	-6.4	-4.2
Czech Republic	NA	NA	NA	-2.3	-4.4	-2	-3.6	0.2	-0.3
Egypt	-1.9	-5.2	5.4	-0.4	-1	2.3	-2.1	-5.2	-3.4
Greece	-3.9	-6.9	-3.6	-2.1	-7.5	-7.4	-10.1	-0.2	-1.4
Hungary	NA	NA	NA	-3.4	-8.5	-7.0	0.3	3.4	-0.8
India	-0.9	-1.8	-2.2	-1.5	-1.0	-1.2	-3.2	-1.1	-0.9
Indonesia	NA	-2.2	-2.6	-3.2	4.8	0.1	0.7	-2	-2.7
Malaysia	-1.1	-1.9	-2.0	-9.7	9.0	13.9	10.1	3.1	2.1
Mexico	-5.4	0.4	-2.8	-0.5	-2.7	-1.0	-0.5	-2.5	-0.2
Pakistan	-3.7	-3.4	-4.2	-5.5	-0.1	-3.3	-0.8	-1	-2.6
Peru	-0.6	0.6	-5.5	-8.9	-3.0	1.5	-2.5	-4.8	-1.6
Philippines	-5.9	-0.1	-6.1	-2.7	-2.7	1.9	3.6	2.5	-0.1
Poland	NA	NA	4.7	0.6	-6.0	-2.6	-5.4	-0.6	0.5
Russia	NA	NA	NA	1.8	17.5	11.0	4.4	4.9	3.8
South Africa	3.9	3.4	1.4	-1.6	-0.1	-3.1	-1.5	-4.6	-3.0
South Korea	-10.1	-2.0	-0.8	-1.7	1.9	1.4	2.6	7.7	3.6
Thailand	-6.4	-4.0	-8.5	-8.0	7.4	-4.0	3.4	8	6.9
Turkey	-5.0	-1.5	-1.7	-1.4	-3.7	-4.2	-5.8	-3.7	1.2

Source: World Bank (2020e). NA: Non-available.

In Table 3, it is seen that the current account deficit of Brazil in 1980's was 5.5% and become current account surplus in 2005, but in recent years it started to increase again. Chili has been successfully reducing its current account deficit which was 7.1% in 1980. China continuously gives current account surplus since 1990. Greece's and Turkey's current account deficits had reached 10% in 2010-2011 but deficits of these countries are in a tendency to decline. Malaysia and Thailand have a significant current account surplus, while Russia also generally gives current account surplus. Peru was faced a dangerous current account deficit shock in 1995. As of end of 2019, countries which are in most danger in terms of current deficit are Colombia and Egypt. Therefore, above mentioned countries should take precautions to reduce current account deficit as soon as possible.

Sustainability of Current Account Balance in Developing Countries

In order to determine the sustainability of current account balance in developing countries, current account balance to GDP data of each country is analyzed by Kapetanios (2005) unit root test with multiple structural breaks. If the countries being stationary on level values, it is decided that current account are sustainable. Unit root test results are shown in the Table 4.

Table 4: Analysis Results for Sustainability of Current Account Balance to GDP

	Period	Test Statistics	Critical Values 1%	5%	10%	Structural Break Dates	Decision
Bangladesh	1976-2019	-6.07*	-6.58	-6.11	-5.84	1994; 2008	WS
Brazil	1975-2019	-7.123**	-6.58	-6.11	-5.84	1992; 2004	SS
Chile	1975-2019	-7.123**	-6.58	-6.11	-5.84	1986; 2003	SS
China	1982-2019	-5.86***	-5.70	-5.08	-4.82	2004	SS
Colombia	1968-2019	-4.52	-5.70	-5.08	-4.82	1991	US
Czech Rep.	1993-2019	-3.65	-5.70	-5.08	-4.82	2003	US
Egypt	1977-2019	-5.41	-6.58	-6.11	-5.84	1989; 2001	US
Greece	1976-2019	-5.24	-6.58	-6.11	-5.84	2005; 2011	US
Hungary	1991-2019	-5.67**	-5.70	-5.08	-4.82	2008	SS
India	1975-2019	-4.21	-6.58	-6.11	-5.84	2000; 2012	US
Indonesia	1981-2019	-6.72***	-5.70	-5.08	-4.82	1997	SS
Malaysia	1974-2019	-4.50	-5.70	-5.08	-4.82	1997	US
Mexico	1979-2019	-5.24**	-5.70	-5.08	-4.82	1994	SS
Pakistan	1976-2019	-5.23	-6.58	-6.11	-5.84	2000; 2008	US
Peru	1977-2019	-6.31**	-6.58	-6.11	-5.84	1988; 2007	SS
Philippines	1977-2019	-4.80	-6.58	-6.11	-5.84	1988; 2005	US
Poland	1990-2019	-4.38	-5.70	-5.08	-4.82	2006	US
Russia	1994-2019	-7.48***	-5.70	-5.08	-4.82	2005	SS
South Africa	1960-2019	-6.22**	-6.58	-6.11	-5.84	1976; 2003	SS
South Korea	1976-2019	-6.12***	-6.58	-6.11	-5.84	1988; 2004	SS
Thailand	1975-2019	-5.20**	-5.70	-5.08	-4.82	1996	SS
Turkey	1974-2019	-6.05*	-6.58	-6.11	-5.84	1987; 2002	WS

Note: ***, ** and * show that the series is stationary at 1%, 5% and 10% significance levels respectively and that the related policy is sustainable. Those who are stationary in 1% or 5% series are called strongly sustainable and those who are stationary in %10 is called weakly sustainable. SS: Strongly Sustainable, WS; Weakly Sustainable, US: Unsustainable.

According to results of Table 4, current account balance in Columbia, Czech Republic, Egypt, Greece, India, Malaysia, Pakistan, Philippines and Poland are unsustainable. Because Current Account Balance to GDP exceeded 6% Poland in 2007-2008, Colombia in 2015, in Egypt in 2016; came near to 6% in Czech Republic in 2002 and India in 2012; it exceeded 14% in Greece and 9% in Pakistan in 2008. Current account balance of Malaysia and Philippines have got a big volatility. While it is weakly sustainable in Bangladesh and Turkey, it is strongly sustainable in other countries. It is seen that the structural break times estimated endogenously by the test are generally the times in which countries faced current account crisis. Since Covid-19 crisis is expected to reduce the purchasing power of the countries and reduce their imports and current account deficits, it is evaluated that the current account balance of the countries whose current account balance is found to be unsustainable or weakly sustainable in this analysis can become strongly sustainable.

BUDGET BALANCE

Budget Balance in Developing Countries

Sustainability of budget deficit is defined as management of the financing resources by administrations to carry out the expenditure liabilities of now and future (Haris, 2000). In this context, a sustainable budget system provides intergenerational fair distribution of public resources. Besides, it keeps interest at a rate that incentivizes investments and protects from uncertainty. In this manner, economy becomes strong against shocks (Intergenerational Report, 2002: 3-13).

The idea originated from Keynes that the government should intervene even expense of budget deficit had brought the permanent and growing budget deficit problems. Many countries try to pay its debts with new credits and that makes finance and sustain budget deficits harder. This process drags countries into vicious debt circles and may create crisis (Gocer, 2013b).

Some regulations with Maastricht Agreement legislated to force the countries reduce debts their debts in 1993. With these criteria, European Union countries willing to join Economic and Monetary Union need to keep their annual budget deficit under 3% of GDP and total debt stock to GDP ratio under 60%.

In economics literature, sustainability of budget deficits can be handled by inter-time budget restriction or accounting approach (Sriwardana, 1998). Sustainability of budget deficit, according to first approach, happens when the discounted value of future non-interest surplus equals or bigger than the public sector current debt stock (Trehan and Walsh, 1988; Quintos, 1995). In second approach, sustainability of budget deficits depends on the fact that today's sum of current and future values of assets and liabilities should be equal or assets are higher (Blejer and Cheasty, 1991).

It can be said that uncontrolled budget deficits have important impact on crisis occurred in different countries in recent periods. Budget deficits are a significant factor in economic problems lived in Greece, Italy, Spain, Portugal and Ireland. According to IMF data, 141 of 184 countries have faced budget deficit in 2019 (IMF, 2020). Many countries, mainly United States of America (USA), followed expansionary monetary and fiscal policies in order to get rid of the effects of 2008 global economic crises and budget balance of related countries significantly disrupted. In Table 5, ratio of budget deficits to GDP for developing countries is presented.

Table 5: Budget Deficit (% of GDP) and General Government Gross Debt (% of GDP)

	Budget Deficit (% of GDP)				General Gov. Gross Debt (% of GDP)			
	1990	**2000**	**2010**	**2019**	**1990**	**2000**	**2010**	**2019**
Bangladesh	-0.18	-2.9	-2.6	-4.2	NA	NA	35.5	33.4
Brazil	NA	-3.3	-2.7	-8.5	NA	65.5	63	88.4
Chile	2.3	-0.7	-0.4	-1.6	NA	13.2	11.1	24.7
China	-0.7	-2.8	-0.3	-4.1	NA	22.8	33.7	50.1
Colombia	-0.4	-2.9	-3.3	-2.7	NA	38.1	36.5	48.7
Czech Rep.	NA	-3.5	-4.2	1.5	NA	17	37.3	33.2
Egypt	NA	1.3	-7.4	-9.2	NA	71.7	69.6	92.5
Greece	-13.1	-4.1	-11.2	0.5	73.1	104.9	146.3	188.1
Hungary	NA	-3	-4.5	-2.3	NA	54.9	80.2	71.3
Indonesia	NA	-1.8	-1.2	-2.2	NA	87.4	24.5	29.8
India	-7.9	-8.2	-8.6	-6.6	NA	73.6	67.4	69.5
Mexico	-3.3	-2.8	-3.9	-2.5	NA	40.3	41.9	53.8
Malaysia	-2.5	-6.1	-4.5	-2.7	75.2	32.8	51.9	55.1
Pakistan	NA	-4	-6	-6.4	NA	76.8	60.5	72.5
Peru	NA	-2.1	0.1	-2.6	NA	44.4	25.3	26.4
Philippines	-1.5	-3.3	-2.3	-1	NA	61.1	49.6	39.8
Poland	NA	-2.9	-7.3	-1.5	NA	36.4	53.1	49.9
Qatar	2.7	4.7	6.7	3.5	10.7	52.5	29.1	53.4
Russian Fed.	NA	3	-3.2	1.6	NA	55.7	10.9	15.3
South Africa	NA	-1.5	-5	-4.5	NA	42.2	34.6	55.7
Korea, Rep.	NA	4.1	1.5	2.2	13.3	17.1	30.8	40.3
Thailand	NA	-1.8	-1.3	-0.6	NA	57.8	39.8	41.9
Turkey	NA	-8.4	-3.4	-4	NA	51.5	40	32.3
U. A. Emirates	NA	10.5	0.5	0.5	NA	3	21.9	17.8

Source: World Bank (2020f, 2020g), IMF (2020).

It is seen that the country with highest rate of budget deficit to GDP is Egypt and the ratio is 9.2%. After Egypt come Brazil, India, Pakistan, South Africa and Turkey. These countries should take actions soon to provide budget discipline and to reduce budget deficits. Qatar, Russia, Korea and United Arab Emirates generally give budget surpluses.

Sustainability of Budget Balance in Developing Countries

In order to determine the sustainability of current account balance in developing countries, current account balance to GDP data of each country is analyzed by Kapetanios (2005) unit root test with multiple structural breaks. If the countries being stationary on level values, it is decided that current account are sustainable. Unit root test results are shown in the Table 6.

Table 6: Analysis Results for Sustainability of Budget Balance to GDP

	Period	Test Statistics	Critical Values 1%	5%	10%	Structural Break Dates	Decision
Bangladesh	1980-2019	-10.19***	-5.70	-5.08	-4.82	1994	SS
Brazil	1980-2019	-25.10***	-6.58	-6.11	-5.84	1993; 2013	SS
Chile	1972-2019	-6.97***	-6.58	-6.11	-5.84	1984; 2003	SS
China	1982-2019	-5.82	-6.58	-6.11	-5.84	2006; 2009	US
Colombia	1983-2019	-4.00	-5.70	-5.08	-4.82	1999	US
Czech Rep.	1994-2019	-4.82*	-5.70	-5.08	-4.82	2009	WS
Egypt	1975-2019	-5.94***	-5.70	-5.08	-4.82	1995	SS
Greece	1972-2019	-6.07*	-6.58	-6.11	-5.84	1990; 2008	WS
Hungary	1991-2019	-6.54***	-5.70	-5.08	-4.82	2001	SS
India	1974-2019	-5.42	-6.58	-6.11	-5.84	1990; 2013	US
Indonesia	1972-2019	-5.19	-6.58	-6.11	-5.84	1989; 2003	US
Korea	1972-2019	-8.28***	-6.58	-6.11	-5.84	1997; 2002	SS
Malaysia	1990-2019	-6.28***	-5.70	-5.08	-4.82	2000	SS
Mexico	1972-2019	-8.18***	-6.58	-6.11	-5.84	1987; 2008	SS
Pakistan	1993-2019	-3.74	-5.70	-5.08	-4.82	2006	US
Peru	1972-2019	-6.15**	-6.58	-6.11	-5.84	1990; 2013	SS
Philippines	1989-2019	-6.33***	-5.70	-5.08	-4.82	2003	SS
Poland	1994-2019	-5.37**	-5.70	-5.08	-4.82	2008	SS
Qatar	1990-2019	-5.45**	-5.70	-5.08	-4.82	2014	SS
Russia	1994-2019	-7.29***	-5.70	-5.08	-4.82	2008	SS
South Africa	1972-2019	-7.74***	-6.58	-6.11	-5.84	1993; 2008	SS
Thailand	1972-2019	-38.93***	-6.58	-6.11	-5.84	1987; 1996	SS
Turkey	1972-2019	-5.14	-6.58	-6.11	-5.84	1985; 2002	US
U.A. Emirates	1991-2019	-5.45**	-5.70	-5.08	-4.82	2008	SS

Note: ***, ** and * show that the series is stationary at 1%, 5% and 10% significance levels respectively and that the related policy is sustainable. Those who are stationary in 1% or 5% series are called strongly sustainable and those who are stationary in %10 is called weakly sustainable. SS: Strongly Sustainable, WS; Weakly Sustainable, US: Unsustainable.

According to results of Table 6, budget balance in China, Colombia, India, Indonesia, Pakistan and Turkey are unsustainable. This is because of increasing budget deficit in Colombia, India, Indonesia, Pakistan and Turkey. Budget balance of China is highly volatile. While it is weakly sustainable in Czech Republic and Greece, it is strongly sustainable in other countries. It is seen that the structural break times estimated endogenously by the test are generally the times in which countries faced budget crisis. The budget deficits will increase due to Covid-19 crisis which forces governments to implement expansionary fiscal policies and the production and tax losses in economies. This may cause the budget deficits to become unsustainable in Czech Republic and Greece, where budget balances are weakly sustainable.

CONCLUSION

It is not possible for developing countries to develop and achieve high economic growth without needing external financing, as it is seen. Especially in countries with insufficient domestic savings, high budget and current deficit, external debts rise rapidly. Principal and interest payments of these external debts become a real burden and resources to finance investment are wasted in paybacks. In this case, country's investment, employment and output cannot increase adequately and a sustainable high rate of economic growth could not be achieved. Rising domestic and external debts make the country fragile against crisis, and then domestic and foreign investors will go out of the country, leaving it in worse conditions. Therefore, developing countries should consider the following issues; (i) prevent budget deficits by reducing government expenses and increasing budget revenue, (ii) incentivize the citizens to save more to raise domestic savings, (iii) imply policies to decrease foreign trade deficit and current deficit, (iv) attract more FDI to accumulate capital stock without crediting, (v) create a better market with lesser political and economic risks to incentivize domestic and foreign investor and (vi) if external debt is needed, incoming money should be directed to productive and exportable areas, value added must be increased.

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