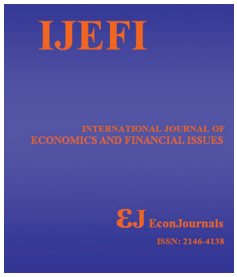

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Rising External Debt and Diminishing Exports: Concurrent Constraints to Economic Progress in Nigeria

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ABSTRACT

The country's strong reliance on oil and gas exports exposes it to the considerable risk of global oil market instability, as external debt continues to rise as exports fall, more attention is being paid to the consequences of this trend. The major goal of this paper is to determine Nigeria's rising external debt and declining exports, using an autoregressive distributed lag (ARDL) model, we investigated Nigeria's rising external debt and declining exports using annual time series data from 1986 to 2020. In the short run across the study period, the study reveals evidence of a negligible beneficial impact of both external debt and export on economic growth meaning that in the short run, both foreign debt and export have a negligible beneficial impact on economic growth, according to the estimates in Nigeria, in reality, in the long run, the impact is negative, with exports having a greater negative impact than foreign debt, as a result, the paper submits that Nigeria's economy is at a fork in the road, based on these findings, it is suggested that external borrowing be restricted until current debt stocks are repaid, that external loans be tied to specific projects to avoid inefficient fund allocation, that domestic capital markets be explored as an alternative to external borrowing, that more export diversification be undertaken to mitigate poor performance of primary commodity exports, and that commodity exchanges be established to attract more speculators, external borrowing should be limited until current debt stocks are serviced in order to achieve economic growth.

Keywords: Economic Growth, External Debt, Export, ARDL, Financial Development
JEL Classifications: F23, F43

1. INTRODUCTION

Nigeria, Africa's largest economy, is experiencing a decline in export profits. The impact of COVID-19, which depressed global demand, as well as falling crude oil prices in the international market and Organization of Petroleum Exporting Countries' (OPEC) recent decrease of Nigeria's production limit, exacerbated the decline in profitability. Crude oil is responsible for half of the government's revenue and nearly all of Nigeria's foreign exchange earnings. Nigeria, as a result, would likely continue to experience income pressure as oil prices fall, leaving it little alternative but to borrow to cover the budget deficit and service current debts, which will have serious consequences on the economy.

Nigeria's economy unexpectedly recovered in the fourth quarter of 2020, with the agriculture and telecommunications sectors compensating for lower oil production. Nigeria's oil revenue is still heavily reliant on crude oil earnings, which have been hit by a series of setbacks in recent years, ranging from crude oil price declines to supply cuts and inability to meet production quotas, all of which have ensured Nigeria's oil revenue continues to underperform. Although non-oil tax collections continue to meet or exceed the objective, they are insufficient to meet unmet demands and, more importantly, pay annual budgetary allocations. Nigeria's public debt has been steadily increasing. Despite obtaining debt relief during the Olusegun Obasanjo administration, subsequent governments have continued to borrow, with the federal government's share of the national debt

increasing by 658 percent to N26.9 trillion during the last 21 years. Nigerians are concerned about the country's debt sustainability due to diminishing earnings to pay debt obligations to creditors. Federal government borrowings (local and foreign debt) increased from N3.55 trillion in 1999 to N26.91 trillion by the end of March 2021 (the country's most recent official figure), according to data obtained by The Cable from the Debt Management Office (DMO). In the 21 years between the administrations of Olusegun Obasanjo, Umar Musa Yar'Adua, Goodluck Jonathan, and the current Muhammadu Buhari, there has been a 658 percent increase.

The rate of external borrowings enjoyed by Nigeria, the overhauling of such borrowings, the future impact on economic growth, and the overall ramifications for the economy are all causing concern. Debt burdens are stifling Nigeria's economic progress, prosperity, and development. During the 1980s, Nigeria was hit by a catastrophic external debt crisis, prompting the International Monetary Fund (IMF) and the World Bank to intervene and use the Highly Indebted Poor Countries (HIPC) model to help the country recover according to study of Edo et al. (2020). The concept was created in 1996 with the intention of supporting developing countries in overcoming unacceptably high rates of external debt crises. The strategy was created to pull and save the world's poor nations from a downward spiral and the challenge of revamping or repaying their massive debt. For debt forgiveness, there are prerequisites to start effective economic operations or initiatives and to reduce poverty Edo et al. (2020).

Nigeria was able to meet these obligations by 2005, and her external debts were forgiven. Because of the relatively low rate of revenue on external loans, compared to finance costs on domestic borrowings, Nigeria resorted to massive external borrowing not long after the debt relief. In reaction to this rise of foreign borrowing, the IMF and World Bank issued an early warning about the dangers of accumulating unsustainable external debt. The warning was directed primarily at countries like Nigeria, which are plagued by inevitable debasement and shaky governmental institutions (Edo, 2019).

What has recently stood out in Nigeria is the decline in export trade volume. Nigeria's share in world commerce has steadily decreased over the last decade, resulting in lower foreign earnings and, as a result, more difficult economic planning. In Nigeria, there appears to be an inverse link between rising external debts and declining export commerce — as external debt rises, export trade falls. Attention is turning to the impact of this phenomena on economic growth.

Edo et al., 2020; Shkolnyk and Koilo, 2018; Mohamed, 2018; Onakoya and Ogunade, 2017; and Adegbite et al., 2008 have all attempted to look at the effects of increased foreign borrowings on economic growth. They discovered that external debt has a variety of effects on economic growth. A component of the research found that when funds are effectively directed to profitable sectors of the economy, external debt has a positive impact on economic growth. On the other hand, several of the studies found that when funds are misallocated, external debt has a detrimental influence on economic growth. In this vein, there is still no consensus on the impact of external borrowings on the economy.

Placing foreign debt and export in a model to explain economic growth in Nigeria has received little attention, resulting in a gap that this inquiry attempts to address. The following is a breakdown of the paper's structure. The literature is reviewed in Section 2. The third section provides data and methodology. Section 4 is results and discussion 5 presents the conclusions and recommendations.

2. LITERATURE REVIEW

A number of studies have been conducted to examine the impact of external debt on the economy. Kasidi and Said (2013) used time series from 1990 to 2010 to evaluate the influence of external debt on Tanzanian economic growth. The study found that external debt and debt service had a considerable impact on GDP growth. Debt service payment has a negative effect of around 28.517, whilst total external debt stock has a positive effect of about 0.36939.

Using the ordinary Least Square approach (OLS) to co-integration, Atique and Malik (2012) looked at the influence of domestic and external debt on Pakistan's economic development independently from 1980 to 2010. The results revealed a substantial inverse association between domestic debt and economic growth, as well as a large inverse relationship between overseas debt and economic growth. Pattilo et al. (2004) also looked for non-linearities in the influence of debt on various sources of growth. Between 1996 and 1998, the study looked at 61 developing countries. The findings revealed that high debt has a detrimental influence on growth via a considerable negative effect on physical capital accumulation and total factor productive growth.

In 35 African countries, Amoateng and Amoaka (1996) evaluated the relationship between external debt and economic growth. The Granger causation test was used. Economic development and debt servicing have a unidirectional and positive causal link, according to the findings.

In another study, Sulaiman and Azeez (2012), investigated the impact of foreign debt on Nigerian economic growth, using GDP as the endogenous variable and GDP as a function of external debt to export ratio, inflation, and an exchange rate proxy as the exogenous variables. Data was acquired from 1970 to 2010. The date was analyzed using the ordinary least squares econometric approach. The findings revealed that external debt has benefited the Nigerian economy.

Also, Iya et al. (2013) conducted a similar study with the same results. Ogege and Ekpudu (2010) used time series data from 1970 to 2007 to assess the impact of debt on the Nigerian economy. The relationship between debt burden and Nigerian economic growth was investigated using the ordinary least square (OLS) method. The findings revealed a negative association between internal and external debt stocks, as well as gross domestic product, implying that an increase in debt stock will reduce the Nigerian economy's growth rate.

In a related study, Momodu (2012) investigated the relationship between debt servicing and Nigerian economic growth. Using the Ordinary Least Square multiple regression method, the researchers attempted to uncover a relationship between GDP and gross fixed capital formation of current market prices (GFCF). According to the report, debt repayment to Nigerian creditors has had a major impact on GDP and GFCF. Furthermore, Ezcabasili Isu and Mojekwu (2011) used an error correction approach to investigate the relationship between Nigeria's external debt and economic development from 1975 to 2006. External debt has a negative association with economic growth in Nigeria, according to an error correction estimate.

In a similar study, Bamidele and Joseph (2013) looked at the impact of the financial crisis and external debt management on Nigeria's economic growth, using GDP as an endogenous variable and exogenous variables such as FDI, external debt, external reserve, inflation, and exchange rate proxies as exogenous variables. The study used annual time series from 1980 to 2010. In the analysis, OLS, augmented Dickey Fuller (ADF) unit root tests, and the Granger causality test were used. The findings revealed that FDI and economic growth have a positive association, whereas external debt and economic growth have an inverse link.

Kasidi and Said (2013) looked at the relationship between export and economic growth in the United Arab Emirates from 1980 to 2010. To confirm or deny the presence of a long-run connection between the variables, the researchers used the two-step Engle-Granger cointegration test and the Johansen cointegration method. The investigation used a vector auto regression model to construct the impulse response function and a granger causality test to investigate the relationship between export and economic growth. The findings of the study confirmed that there is a long-term link between industrial exports, primary exports, and economic growth. Furthermore, the Granger causality test revealed that manufactured exports and economic growth are unidirectionally related. As a result, increasing the level of export diversification away from oil could hasten the UAE's financial development.

Using both linear and nonlinear Granger causality tests, Ahdi et al. (2015) explored the dynamic causal relationship between exports and economic growth. From 1911 through 2011, the study examined annual South African statistics on real exports and real GDP. There was no evidence of substantial causation between exports and GDP in the linear Granger causality outcome. As a result, nonlinear approaches were used to assess Granger causation between exports and GDP. It uses nonlinear Granger causality tests developed by (Hiemstra and Jones, 1994; Diks and Panchenko, 2005; Hiemstra and Jones, 1994) test revealed a one-way causal relationship between GDP and exports. The study discovered evidence of considerable bidirectional causality using the Diks and Panchenko (2005) test.

3. METHODOLOGY

3.1. Data

The data comes from the National Bureau of Statistics' Annual Abstracts of Statistics, the World Bank's World Development Indicators database, and the Central Bank of Nigeria, and spans the years 1980 to 2020. The study's empirical analysis is based on time series data of economic growth (EG) in relation to the explanatory variables of external debt (ED) and exports (EX). As control variables, the model includes financial development (FD) and human development (HD). Table 1 above shows the data on Nigeria's external debt stock, and export trade from 1986 – 2019 sourced from World Bank's development indicators and contains the variables as used in the estimation. The period covered was 1986 to 2019.

3.2. Variables Trend

3.2.1. External debt stock trend in Nigeria

External debt is the portion of a country's debt that is borrowed from foreign lenders, including commercial banks, governments, or international financial institutions. These loans, including interest, must usually be paid in the currency in which the loan was made. Figure 1 shows how the external debt in Nigeria has fared.

Figure 1 revealed that the external debt has varied widely and continuous to rise and tended to be higher in recent years. It dropped in the decade of 1980s and rose from the mid-90s. For the entire period 1986-2019, external debt has continues to rise rapidly.

3.2.2. Export trend in Nigeria

Export trade is a sub-division of international trade where goods produced in one country are transported to another country for sale or trade and as a crucial element of a country's economy, exports stimulate economic growth. Export trade is a catalyst for sustainable economic development. Through export trade, Nigeria earns vital foreign exchange, increases its revenue base and may avoid trade deficits. It also helps to consolidate economic diversification.

The Figure 2 reveals the pattern of export and it can be observed that, the export was significant from 1986 to 2000. However, it rose steadily and sharply from 2000 till 2014, which was close to 200% and dropped symmetrically and has been less than 50% till date.

3.2. Unit Root Testing

At the level of estimate, non-stationarity has been a severe setback in time series data. The problem of false inference caused by unit

Figure 1: Trend of external debt stock in Nigeria

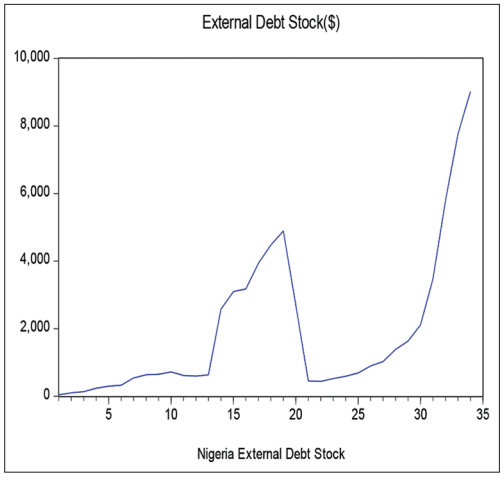
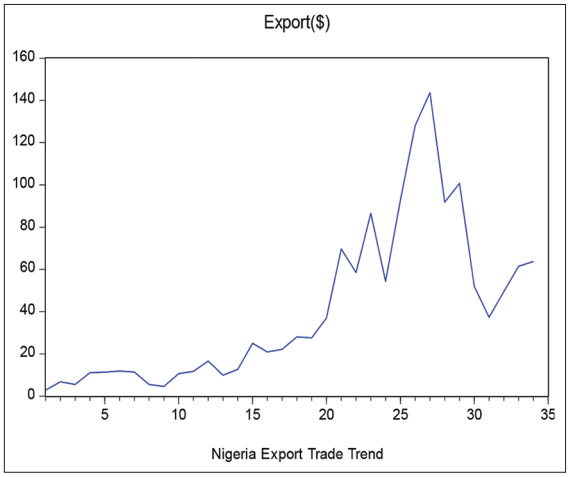


Figure 2: Trend of export in Nigeria



root is avoided using the Engle and Granger (1987) methodology of taking first difference. Because the data are time series, they were checked for stationarity using the augmented Dickey–Fuller (ADF) test method to see if the time series variables had a unit root. The significance of this stems from the fact that estimation in the presence of non–stationarity in variables frequently results in skewed and inconsistent estimates of the standard errors of the coefficients, which can lead to incorrect inference if the problem is not addressed properly. A non-stationary time series is one that has a unit root.

It is clear from Table 2 that all of the variables are of order 1 or 1(I). In other words, at first difference, all of the variables are considered to be stationary. As a result, we can fairly infer that for modeling the time series used in this study, first differencing is sufficient.

3.3. Bounds Testing and Model Specification

The data was analyzed using the econometric approach of bound co-integration analysis. The choice of the ARDL model is informed by the fact that ARDL model can be used to forecast and separate long-term linkages from short-term changes. Despite the fact that individual time series may move significantly, equilibrium factors bind them together. An autoregressive distributed lag (ARDL) model is an ordinary least square (OLS) based model that may be used to represent both non-stationary and mixed order of integration time series.

The co-integration testing technique is based on Im et al. (2003) It's a method for determining whether a regress and a vector of regressor have a level relationship when the underlying set of regressors is trend stationary or first stationary. The method is based on the formulation of an ARDL model (autoregressive distributed lag). The endogeneity problems and inability to test hypotheses on the estimated coefficients in the long run associated with the Engle and Granger (1987) method are avoided, the long and short-run parameters of the model under study are estimated simultaneously, and the econometric methodology is free of the task of establishing the order of integration among the variables and of pre-testing hypotheses on the estimated coefficients in the long-run. By implication, whether the underlying regressors are purely I (0), purely I (1), or fractionally integrated, the ARDL approach to testing for the presence of a long-run relationship between the variables in levels is applicable.

In practice, the limits testing approach permits a combination of I (1) and I (0) variables to be used as regressors, implying that the order of integration of variables may not be substantially the same. As a result, the ARDL technique offers the benefit of not requiring a precise identification of the underlying data order Im et al. (2003). In a univariate equilibrium error correcting mechanism, the technique is to test the significance of the lagged values of the variables. Im et al. (2003) produced two sets of asymptotic critical values, the first for exclusively

Table 1: Data on Nigeria external debt stock, and export trade from 1986 to 2019

Year	Export ($)	External debt stock ($)
1986	2.88	41.45
1987	6.77	100.79
1988	5.55	133.96
1989	11.11	240.39
1990	11.33	298.61
1991	11.91	328.45
1992	11.46	544.26
1993	5.57	633.14
1994	4.58	648.81
1995	10.64	716.87
1996	11.76	617.32
1997	16.60	595.93
1998	9.91	633.02
1999	12.67	2577.37
2000	25.02	3097.38
2001	20.91	3176.29
2002	22.17	3932.88
2003	28.07	4478.33
2004	27.62	4890.27
2005	37.05	2695.07
2006	69.69	451.46
2007	58.53	438.89
2008	86.52	523.25
2009	54.38	590.44
2010	92.75	689.84
2011	128.05	896.85
2012	143.70	1026.90
2013	91.82	1387.33
2014	100.78	1631.50
2015	51.92	2111.51
2016	37.30	3478.91
2017	49.49	5787.51
2018	61.55	7759.20
2019	63.73	9022.42

Data Source: World Bank

Table 2: Augmented Dickey-Fuller unit root stationarity test

Variables	ADF statistics	Critical value	Stationary status
Economic growth	−7.4603	−3.55297	I (I)
External debt	−8.3825	−3.55297	I (I)
Export	−600983	−3.55297	I (I)
Financial development	−6.0099	−3.55297	I (I)
Human development	−5.86021	−3.55297	I (I)

Source: Authors' computation from Eviews Version 10

I (1) regressors and the second for strictly I (0) regressors. We construct the vector auto-regression (VAR) of order p, abbreviated VAR (p), for the following growth equation, as described by Pesaran et al. (2001):

$$G_t = \Theta + \sum_{i=1}^{p} \delta_i Z_{t-i} + \upsilon_t \quad (1)$$

Where *Z* is a vector containing both the regressors and the regress and's lagged values, and t is a time or trend variable. The regress and must be an I(1) variable, that is, first differenced stationary, according to Im et al. (2003), although the collection of regressors might be either I(0) or I(1). As a result, the related vector error correction model (VECM) is as follows:

$$\ddot{A}G_t = \alpha + \phi t + \theta G_{t-1} + \sum_{i=1}^{p-1} \lambda_t \ddot{A}\text{Æ}_{t-i} + \sum_{i=1}^{p-1} \lambda_t \Delta G_{t-i} + \upsilon_t \quad (2)$$

Where Δ is the first-difference operator, G is the regressand defined as economic growth (EG), and Z is the regressor vector defined as external debt (ED), export (EX), financial development (FD), and human development (HD) in this study (HD). t is a time (trend) variable, and t is a Gaussian stochastic disturbance term, as is customary. The long-run multiplier matrix Θ is written as follows:

$$\Theta = \begin{pmatrix} \Theta_{YY} & \Theta_{YX} \\ \Theta_{XY} & \Theta_{XX} \end{pmatrix} \quad (3)$$

Because the matrix's diagonal elements are unbound, the chosen series can be either I (0) or I (1). (1). If 0 *YY* =, then *Y* is equal to I. (1). If 0 *YY*, on the other hand, *Y* is *I*. (0). In order to test for at most one co-integrating vector between the regress and the vector of regressors, the VECM approach is required. Thus, imposing the conditions *YY* = 0, 0 and = 0 as in Im et al. (2003), Case III with unconstrained intercepts and no trends, our unrestricted error correction ARDL unrestricted error correction model can be obtained as follows:

$$\Delta(EG)_t + \beta_0 + \beta_1(ED)_{t-1} + \beta_2(EX)_{t-1} + \beta_3(FD)_{t-1} + \beta_4(HD)_{t-1} + \sum_{i=1}^{P} \beta_5 \Delta(EG)_t + \sum_{i=1}^{P} \beta_6 \Delta(ED)_{t-1} + \sum_{i=1}^{P} \beta_7 \Delta(EX)_{t-1} + \sum_{i=1}^{P} \beta_8 \Delta(FD)_{t-1} + \sum_{i=1}^{P} \beta_9 \Delta(HD)_{t-1} + \upsilon_t$$

Economic growth is predisposed to be determined by its own lag, the lag values of economic growth (EG), external debt (ED), export (EX), financial development (FD), and human development (HD), according to equation (3.3), which is ARDL of order (p, q, m, l, j) (HD). The structural delays are traditionally calculated using Akaike's minimum information criteria (AIC).

The long-run elasticities are the coefficients of one-period lag of the regressors (multiplied by a negative sign) divided by the coefficient of the one-period lagged value of the regress and from the estimate of the ARDL unrestricted error correction model (Bardsen, 1989). The long-run elasticity impacts of economic growth, foreign debt, export, financial development, and human development are computed as $\left(\frac{\beta_2}{\beta_1}\right), \left(\frac{\beta_3}{\beta_1}\right), \left(\frac{\beta_4}{\beta_1}\right)$ and $\left(\frac{\beta_5}{\beta_1}\right)$ respectively, as in our ARDL model. In the ARDL model, the short-run effects are immediately obtained as the estimated coefficients of the first-differenced variables.

4. RESULTS AND DISCUSSION

Table 3 shows the bounds results for the ARDL model with unconstrained error correction. The methods used clearly demonstrate the pattern of short- and long-run correlations that exist between economic growth and the explanatory factors of interest (external debt and export). The strategy created positive short-run external debt and export effects, but they are negligible at 5%. However, the short-run results suggest that the explanatory variables are mostly positive, with human development having the largest positive impact, followed by external debt and export, in order of importance. Long-run effects, on the other hand, are overwhelmingly negative, with export having the largest negative impact, followed by external debt and human development. Human development has a substantial long-term positive impact. Human development is still the only factor that has a long-term positive impact. The computed error correction model can thus be evaluated statistically fit and robust after degrees of freedom have been adjusted. 15.998 is the F-statistic. This is quite important. It denotes the calculated model's overall relevance. This is a reaffirmation of the estimated error equation's goodness of fit. At the conservative half-percent threshold of significance, the stated F ratio passes the significance test. This goes a long way toward demonstrating the existence of significant long-run linear correlations between economic development and the primary explanatory variables (external debt and export). This only adds to the fact that the findings are important for policymakers. The limits co-integration test rejects the hypothesis that there is no

Table 3: Bounds results

Regressor	Coefficient	t-value
Constant	4.095*	25.605
Log (EG-1)	0.0269*	13.436
Log (ED-1)	0.826*	4.662
Log (EX-1)	-0.002	-0.228
Log (FD-1)	1.052***	2.999
Log (HD-1)	1.228	5.656
Panel B: Short-Run Estimates		
Δ Log (EG)	0.224***	2.688
Δ Log (EG-1)	0.556*	4.082
Δ Log (ED-1)	0.426***	2.255
Δ Log (ED-2)	0.222***	2.856
Δ Log (EX-1)	0.244	1.452
Δ Log (EX-2)	0.244***	2.652
Δ Log (FD-1)	0.698*	2.226
Δ Log (FD-2)	1.062	9.466
Summary Statistics		
R^2	0.683	
Adj R^2	0.625	
Sum of Squared Residuals	0.0066	
Standard Error of Regression	1.0222	
F-Statistics	15.998	

Source: Authors' computation from Eview 10. ***, ** denotes statistical significance at the 1% and 5%levels

co-integrating relationship between Nigeria's economic growth, external indebtedness, and exports. In basic terms, the findings suggest that there is a long-term association between the variables and Nigerian economic growth. The upshot of this finding is that the accumulation of external debt puts pressure on economic growth because the repayment and maintenance of external debt diminishes the country's foreign exchange revenues. Except for the external debt service variable, all of the variables in the equation kept their apriori expected signs. The corrected R^2 value indicates that the model can account for around 68% of changes in economic growth. Our empirical findings are consistent with those of Udeh et al. (2016) and Ugbaka and Oseigbemi (2020), implying that a significant stock of external debt slows the pace of economic growth.

5. CONCLUSION AND RECOMMENDATIONS

We empirically investigated rising external debt and declining exports as important concurrent obstacles to Nigerian economic advancement in our article. Other regressors, such as foreign debt, export, and human development, of all the aforementioned variables with economic growth were examined on the basis of an estimated econometric model, with economic growth being the core variable under research. As a result of the empirical findings, Nigeria's expanding external debt is potential of causing a significant debt service burden due to declining exports, which are a major source of revenue for debt servicing. The main finding is that the negative effects of external debt and export have the potential to stifle Nigeria's future economic progress. As a result, strategies to boost export-driven activities are needed, with the ultimate goal of supporting a sustainable increase in the rate of economic growth.

According to these findings, external borrowing should be limited until current debt stocks are repaid, external loans should be tied to specific projects to avoid inefficient fund allocation, domestic capital markets should be explored as an alternative to external borrowing, more export diversification should be undertaken to mitigate poor performance of primary commodity exports, and commodity exchanges should be established to attract more speculators. To achieve economic growth, external borrowing should be limited until current debt stocks are serviced. This is quite desirable, given the pressing need to improve the economy's growth prospects.

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