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The Threshold Level of Fiscal Policy Instruments that can Promote Economic Development in Mexico, Indonesia, Nigeria and Turkey

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Abstract: *The paper determined the threshold level of fiscal policy instruments that can promote economic development in the MINT countries between 1981 and 2022 by the use of Dynamic Ordinary Least Squares (DOLS) technique to derive the estimates for threshold values of fiscal instruments. It was revealed that the MINT countries exhibit symmetric relationship between government expenditure and unemployment, with positive shocks stimulating economic activity and negative shocks decreasing unemployment. The results also exhibited asymmetric relationship between fiscal variables and poverty rates as shocks to government expenditure, government revenue and public debt confer both positive and negative non-linear impact on poverty levels on these countries. Policymakers across the MINT countries should prioritize spending on programmes directly impacting poverty reduction, unemployment reduction and improving the well-being of the citizens.*

Keywords: threshold levels, fiscal instruments, economic development, DOLS and MINT

INTRODUCTION

As the nexus between fiscal policy and economic development continues to gain the interest of researchers and policy makers, the threshold of fiscal policy instruments (revenue and debt), being high or low, in propelling this relationship has steadily been attracting more attention. From theoretical view, Keynesian economists argue that rising public debt leads to productive spending

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and a positive economic multiplier effect (Leão, 2023). As viewed by New Keynesian economists, debt levels are immaterial as long as interest rates on public debt are lower than rates of economic development (Blanchard, 2019). However, recent data indicates that significant increases in the debt-to-GDP ratio may result in greater taxes and decreased future earnings, and low standard of living (AfDB, 2017 and Boskin, 2020).

Several empirical studies such as Aghion, (2019) and Esfahani and Ramirez, (2023) have indicated that there is an S-curve pattern in the link between HDI and government revenue. At first, a rise in level of revenue causes the HDI to significantly improve. But at a certain point, additional revenue growth (in form of higher tax rate) produces declining returns on HDI growth. Also, the threshold effect emphasizes that higher revenue has less of an influence on the HDI once a nation reaches a given income level. This is due to the fact that additional HDI increases may be driven more by other criteria, such as the quality of the educational system, access to healthcare, and institutional quality (Batra and Mahmood, 2018). Several non-linear models show revenue-HDI relationship is not usually linear, with low-income countries experiencing substantial improvements in HDI, while high-income countries experience marginal benefits (Cuevas, Lucchetti and Nebiler, 2022). Moreso, countries struggling to generate sufficient revenue for development, with less than 15% of revenue as a percentage of GDP must increase revenue collection to meet basic needs, create job opportunities and ensure growth (IMF, 2022 and 2023).

Similarly, the Debt Laffer Curve suggests an optimal debt level for economic growth and development, with lower levels promoting human development and high interest payments preventing productive investments (Rocha and Divino, 2022). Several studies have suggested thresholds of debt-to-GDP ratio where negative effects on HDI become pronounced, affecting economic growth and HDI (Karagöl and Erbaykal, 2016 and Farayibi and Owuru, 2022). The debt overhang hypothesis also suggests that high debt levels discourage investment and economic development due to fears of high taxes, hindering improvements in HDI-related sectors (Reinhart and Rogoff, 2020). By extension, external debt levels negatively impact HDI, especially in developing countries where government funding for social programs is limited by debt servicing (Erhun and Babajide, 2020). Therefore, high debt levels in heavily indebted countries often lead to austerity measures, reducing social spending, which negatively impacts HDI components like life expectancy, education, and income (Adepoh, 2019).

The behaviours of the fiscal variables are relatively complex and exhibit dynamic patterns of adjustment processes which may not be linear, exploring non-linearity may provide insights into the timing and strength of these adjustments toward achieving desired outcome. Therefore, development outcome of an economy is important not only to generate the resources for antipoverty interventions and human development but also to provide sustainable and productive employment opportunities especially for the poor. If our economic development outcomes do not

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produce sufficient jobs, improve people's welfare and alleviate poverty, the fault does not lie with the outcomes but with our policies (UNDP, 2023).

However, accounting for the threshold values of these policy tools could shed more light on the nexus between fiscal policy and economic development especially in the MINT economies**.** Then**,** investigating the threshold levels of government revenue as a percentage of GDP and debt – to - GDP ratio that could enhance Human Development Index (HDI) in these emerging economies has not been systematically addressed. The study practically determined the threshold levels of fiscal policy instruments in MINT economies which can effectively reduce poverty, create employment and improve the standard of living for citizens.

LITERATURE REVIEW

As policymakers are interested in the relationship between public spending and economic growth, it is impossible to overstate the ideal level of public spending in Côte d'Ivoire. Adepoh, (2019) uses annual secondary data from 1970 to 2016 to estimate the ideal amount of public spending in Côte d'Ivoire. An ideal threshold of 34.50% of GDP was discovered by a quadratic model and is considered detrimental for the economy. Though, the Ivorian government's level of public spending is optimal but social inequalities remain high (46.3%). It is revealed that public expenditure positively influences growth, while private investment and economic openness also positively impact it. Also, In Côte d'Ivoire, the optimal threshold for public expenditure is 34.50, which is detrimental to the economy. The Ivorian State's current level of public expenditure is optimal but with an average GDP growth rate of 8.68%. However, social inequalities remain high at 46.3%.

Gaspar, Jaramillo and Wingender, (2016) employs a two-step approach to identify the tipping point and estimate its impact on growth. It concludes that a nation above the threshold will have a 7.5% greater GDP per capita after 10 years, with an estimated tipping point of about 12¾ percent of GDP. It is revealed that the threshold's impact on growth is constant for the first 5 years, increasing to around 16% after 10 years. After 15 years, countries to the right of the threshold have had 25% greater cumulative growth than those to the left, slightly larger than the contemporary database effect.

Ndoricimpa, (2020) examines public debt's impact on African economic growth using Gonzalez et al.'s panel smooth transition regression approach, estimating a debt threshold of 62-66% for all countries. The study also reveals no universal debt threshold for African countries, indicating that the level is influenced by modeling choices and high debt negatively impacts growth. The study is unique in Africa as it utilizes a unique estimation technique, allowing for heterogeneity and smooth regression coefficient changes, and dividing the sample into low- and middle-income countries.

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The debt-growth nexus has gained attention among economists and policymakers due to potential benefits and concerns about impeded economic growth beyond a certain threshold. It is argued in literature that excessive borrowings harm long-term economic performance and as result, Alsamara, Mrabet and Mimouni, (2023) examine the impact of public debt on economic growth in 14 Middle Eastern and North African (MENA) countries between 1980 and 2021 using the CS-ARDL model and the threshold panel model. The findings reveal a varying relationship between oil and non-oil countries, with non-oil countries showing more favorable implications for economic growth. It also shows a nonlinear relationship, with a threshold value of 90%-91%. Thus, public debt levels below this threshold are positive, while those above are adverse. It is implied that non-oil countries experience more positive borrowing effects on economic growth, while those with high debt levels experience less severe effects, emphasizing the role of energy endowment. More emphatically, the study indicates non-oil countries experience more beneficial economic growth when public debt is below threshold values and less adverse effects when it exceeds thresholds.

Awadzie, Garr, Tsoekeku, (2022) estimate the debt threshold level in Ghana using a threshold autoregressive model and time series data from 1990 to 2020 to determine the country's public debt threshold value. The findings of the study reveal that Ghana's public debt threshold value of 57.09% is a significant structural breakpoint, suggesting a non-linear relationship between public debt and GDP growth, with a positive association below this threshold as it could negatively impact economic growth if it exceeds this level. The study suggests Ghana should maintain low public debt levels for sustainable growth, focusing on monetary policy, reducing external debt compilation, reducing unproductive expenditures, and maintaining efficient debt management to sustain the country's economy.

Government size measures final consumption, including capital and personnel expenditures, to a threshold towards encouraging economic growth, while exceeding this threshold can hinder growth. Abdillah, (2023) analyzes the degree of association between government size and economic growth in Indonesia using the ARDL model. Findings of the study reveal that government size initially positively impacts short-term economic growth, but in the long term, it negatively impacts growth. Hence, the Armey curve hypothesis is supported, suggesting that the government should control budget spending. The Indonesian government's optimal expenditure of 57.9% of national income is recommended, as high spending reduces purchasing power, inefficient budgets, and crowding out due to high interest rates and aggressive bond printing, thereby affecting economic growth. Also, the study recommends government budget control, foreign aid for productive sectors, investment in infrastructure, and trade openness to prevent economic growth, avoid debt overhang, and maintain economic stability.

The need for a stable macroeconomic environment through sound fiscal actions is crucial for economic research, but globalization's challenges to domestic economies pose concerns (Akanni

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and Osinowo, 2019). The study supports the view that macroeconomic instability occasioned by budgetary deficits is quite unfavourable to globalisation and economic growth. It was also found out that macroeconomic dynamics in Nigeria have been overwhelmed in the past by fiscal instability. This is as a result of strong deficit emanating from volatile government revenue.

Fiscal policy is crucial for macroeconomic stability, sustainable growth, poverty reduction and jobs creation. Therefore, fiscal policy plays an indispensable role in engendering inclusive growth, reducing poverty and enhancing peoples' welfare in a country. Cuevas, Lucchetti and Nebiler, (2020) study poverty and inequality impacts on distributional incidence of fiscal policy in Turkey, using World Bank's UMIC and Commitment to Equity methodology by building an all-inclusive incidence analysis through sequential quantification of the poverty and inequality impact on health and education. Three contributions to the literature emanate from the study and they include; firstly, the study examines the cumulative impact of Turkey's entire fiscal system on poverty and inequality, unlike previous empirical studies that focus on specific fiscal interventions. Also, the CEQ methodology, used in over 50 countries, assesses Turkey's performance with upper-middle-income economies. It equally incorporates tax avoidance and Fiscal Incidence Curves to assess economic growth incidence in the Asian country.

The study evaluates Turkey's fiscal policy distribution, finding that it significantly reduces income inequality through increased social expenditure on education and health, direct taxes, and transfer schemes. However, targeted transfers are insufficient to offset tax effects, increasing poverty levels. The study suggests targeting the minimum subsistence allowance program towards the poor to enhance the equity impact of the fiscal package, despite its generality and lack of specific focus, to improve the distributional implications of various fiscal changes in policy debate. Also, too much emphasis is laid on tax revenue component of fiscal policy against other prominent instruments such as non-tax revenue, capital and recurrent expenditure that are likely to influence the poverty and inequality impacts on Turkish economy.

METHODOLOGY

The use of basic fiscal instruments (expenditure, revenue and debt) as key variables in the multivariate modelling framework of fiscal policy – economic development relation is fundamental in accounting for the relative effects of fiscal policy instruments on economic development in the MINT countries. Theoretically and following the empirical works of Buhaerah, (2021a) and Rocha and Divino, (2022), the long-run fiscal policy – economic development relationship can be written as

$$HDI_t = \beta_0 + \beta_1 REV_t + \beta_2 BDT_t + \theta_1 POP_t + \varepsilon_t \qquad 1$$

Where, HDI is a measure of economic development.

Recent studies such as Korkmaz and Güvenoğlu, (2021) and Campbell, Oluwatosin and Ojo, (2022) show that nonlinear specification can improve multivariate models and policy variables

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often undergo regime switches. To determine the optimal public finances, as well as detect trends in the use fiscal policy instruments towards achieving economic development in the MINT countries and following the modification of the works of Coayla, (2021), Qamar, Ghouse, Aslam, Raza and Aziz, (2021) and Abdillah, (2023), the development variable in equation 1 can be expressed as a quadratic function as

$$HDI_t = \beta_0 + \beta_1 REV_t + \propto_1 REV_t^{\,2} + \varphi_1 POP_t + \varepsilon_{3t} \qquad 2a$$

And

$$HDI_t = \beta_0 + \beta_2 BDT_t + \propto_2 BDT_t^{\,2} + \varphi_2 POP_t + \varepsilon_{3t} \qquad 2b$$

Where, $\propto_i < 0$, the sign of the parameter $\propto_i, (for\ i = 1,2)$, for each of the development variables in the MINT economies.

Calculating the threshold level of the fiscal variables requires maximizing each of development variable equations. Then, differentiating respectively with respect to $REV_t\ and\ DBT_t$ and setting each of equations 2a and 2b equal to zero to generate the following relations for determining the "threshold" level of fiscal policy instruments:

$$REV_t^{\,*} = \frac{-\beta_1}{2 \propto_1} \qquad 3$$

$$DBT_t^{\,*} = \frac{-\beta_2}{2 \propto_2} \qquad 4$$

Equations 3 and 4 give the threshold values of each fiscal policy instruments (revenue and debt) to HDI in the MINT countries.

The objective which is to investigate the threshold level of fiscal policy instruments that can promote economic development in the MINT countries was achieved by employing Dynamic Ordinary Least Squares (DOLS) introduced by Stock and Watson, (1988). The incorporation of threshold effects allows the model to capture non-linear dynamics in the relationship between fiscal policy instruments and economic development. DOLS, with its ability to address non-stationarity, contributes to a more robust estimation of cointegrated relationships (Stock and Watson, 1988). Also, the flexibility of threshold models is valuable in capturing structural changes in the nonlinear relationship between fiscal policy and economic development.

RESULTS AND FINDINGS

The threshold levels of fiscal policy instruments among the MINT countries can vary significantly based on the countries' unique economic conditions, institutional framework and policy priorities. The effectiveness of fiscal policy instruments in Mexico, Indonesia, Nigeria, and Turkey depends on their unique peculiarities. The fiscal policy instruments of interest in this study are revenue and debt while the economic development variable is Human Development Index (HDI). As a result, the threshold level of revenue depends on a country's revenue capacity, compliance and balance

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between equity and efficiency. Also, the country's borrowing capacity, debt service burden, and external shock vulnerability may determine the threshold level of fiscal deficits and public debt.

From the results in Tables 1a to 1c, the coefficients of either REV_t or square of REV_t variable and either DBT_t or square of DBT_t variable hare either negative or positive. After maximizing each of development variable (HDI) equations in 2a and 2b, the equations are then differentiated respectively with respect to REV_t *and* DBT_t.The threshold values of each fiscal policy instruments (revenue and debt) on HDI in the Mexico, Indonesia, Nigeria and Turkey are the generated from the estimates of Dynamic Ordinary Least Squares (DOLS) introduced by Stock and Watson, (1988).

Table 1a: Estimates of the threshold levels of fiscal policy instruments that can improve Human Development Index in Mexico

Method: Dynamic Ordinary Least Squares (DOLS)				
Dependent Variable: HDI				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
REV	0.0656	0.0116	5.6221	0.0014
REV^2	-0.0013	0.0003	-4.4293	0.0044
DBT	-0.0299	0.0028	-10.527	0.0000
DBT^2	0.0003	0.0266	11.547	0.0000
POP	-0.0635	0.01961	-3.2373	0.0177
c	1.0286	0.0805	12.772	0.0000
R-squared		0.93		
Adjusted R-squared		0.97		
D-W Stat		1.85		
F-statistic		6.55		

Source: Authors' estimations

The estimates of Dynamic OLS in Table 1a indicate that threshold level of government revenue as a percentage of GDP to achieve higher HDI in Mexico is 24.4 percent. This implies that the hypothetical requirement of a government revenue threshold of 24.4% of GDP to boost Mexico's Human Development Index (HDI) is crucial for economic and social reasons. This includes investing in education, healthcare, social welfare and infrastructure, which improve HDI indicators like life expectancy and income per capita. It is indicated that adequate government revenue also supports targeted poverty reduction programmess, infrastructure development, equitable distribution of wealth, long-term planning and sustainability and global competitiveness. The goal is to reduce inequality, attract investment and innovation and promote sustainable development. This is in consonance with the IMF, (2023) benchmark that countries struggling to generate sufficient revenue for development, with less than 15% of revenue as a percentage of GDP must increase revenue collection to meet basic needs, create job opportunities and ensure growth.

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Again, the estimates indicate that threshold level of debt-to-GDP ratio to achieve higher HDI in Mexico is 48.7 percent. This indicates that Mexico's hypothetical goal of achieving a 48.7% debt-to-GDP ratio to improve its Human Development Index (HDI) is based on several economic and policy implications. This includes debt sustainability, investment in human capital, infrastructure development, and social safety nets. Therefore, higher debt levels enable governments to expand social safety nets and provide assistance to vulnerable populations. However, effective debt management and fiscal discipline are crucial to achieve long-term planning while strategic use of debt are necessary to address structural challenges and build resilience against economic shocks. The results support the submission of Reinhart and Rogoff, (2020) that the threshold or nonlinear effect theory suggests a nonlinear relationship between public debt levels and economic development, with positive effects on growth when debt levels are low and negative when they increase.

Table 1b: Estimates of the threshold levels of fiscal policy instruments that can improve Human Development Index in Indonesia

Method: Dynamic Ordinary Least Squares (DOLS)				
Dependent Variable: HDI				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
REV	0.0269	0.0410	0.6567	0.0160
REV^2	-0.0008	0.0012	-0.6889	0.0958
DBT	-0.0126	0.0009	-2.8308	0.0080
DBT^2	0.0001	0.0870	2.0221	0.0516
POP	-0.1114	0.0131	-8.4625	0.0000
c	0.2824	0.2515	1.1225	0.2700
R-squared		0.99		
Adjusted R-squared		0.96		
D-W Stat		1.54		
F-statistic		6.75		

Source: Authors' estimations

It is indicated that threshold level of government revenue as a percentage of GDP to achieve higher HDI in Indonesia is 15.2 percent. This implies that the 15.2 percent threshold of government revenue as a percentage of GDP in Indonesia is critical for achieving a higher Human Development Index (HDI). This threshold level is essential for funding healthcare, education and improving the standard of living. The implication is that adequate revenue is necessary for funding healthcare systems, enhancing life expectancy and investing in social protection programmess like affordable housing, clean water, and sanitation. The 15.2 percent threshold can ensure sustainable financing, economic stability, and development. To meet this threshold, the government must implement efficient taxation and revenue collection mechanisms by ensuring a progressive and equitable tax system. Additionally, revenue at this level can support redistributive fiscal policies that reduce

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income inequality and improve human development outcomes. This is in line with the IMF, (2023) benchmark that countries struggling to generate sufficient revenue for development, with less than 15% of revenue as a percentage of GDP must increase revenue collection to meet basic needs, create job opportunities and ensure growth.

The results also show that threshold level of debt – to - GDP ratio to achieve higher HDI in Indonesia is 35.8 percent. The result shows that the threshold of 35.8 percent debt-to-GDP ratio in Indonesia indicates that the government can sustain this level of borrowing to finance human development initiatives. This threshold level of borrowing can be used to improve health, education, and standard of living, which require significant public investment. Also, borrowing can fund healthcare services, education, infrastructure projects, and social programmes that enhance the standard of living. These investments can stimulate economic growth and job creation, leading to improved living standards and HDI. The 35.8 percent threshold indicates a manageable and sustainable level of debt for Indonesia, thus allowing for consistent investments in health, education and infrastructure. Policymakers must ensure that borrowed funds are used effectively and efficiently to maximize their impact on HDI while a sound debt management strategy is required, balancing debt and revenue, and maintaining long-term fiscal health. Comparing Indonesia's debt-to-GDP ratio with other countries can provide insights into its debt sustainability and its ability to finance human development. The results uphold the submission of Reinhart and Rogoff, (2020) that the threshold or nonlinear effect theory suggests a nonlinear relationship between public debt levels and economic development, with positive effects on growth when debt levels are low and negative when they increase.

Table 1c: Estimates of the Threshold Levels of Fiscal Policy Instruments that can improve Human Development Index in Nigeria

Method: Dynamic Ordinary Least Squares (DOLS)				
Dependent Variable: HDI				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
REV	0.0254	0.0122	2.0805	0.0827
REV^2	-0.0006	0.0003	-2.0394	0.0875
DBT	0.1921	0.0006	3.3239	0.0159
DBT^2	-0.0022	0.0028	-2.8896	0.0277
POP	-0.2811	0.1124	-2.4999	0.0465
c	0.8248	0.1736	4.7487	0.0032
R-squared		0.92		
Adjusted R-squared		0.95		
D-W Stat		1.69		
F-statistic		6. 57		

Source: Authors' estimations

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The estimates from the Table 1c indicate that threshold level of government revenue as a percentage of GDP to achieve higher HDI in Nigeria is 14.4 percent. The result indicates that a threshold level of 14.4% of GDP to is set for the Nigerian government to achieve a higher Human Development Index (HDI), which is critical for enhancing human development. This level of government revenue can enable substantial investments in health, education, and living standards. The revenue collected at this level can significantly support healthcare spending, education, infrastructure, and social services while this investment can lead to better life expectancy, education quality and better living conditions. Additionally, it can ensure fiscal stability by allowing for consistent funding of human development initiatives. This level of revenue can also ensure government implement long-term development plans without compromising fiscal health. This is in line with the IMF, (2023) benchmark that countries struggling to generate sufficient revenue for development, with less than 15% of revenue as a percentage of GDP must increase revenue collection to meet basic needs, create job opportunities and ensure growth. Also, the findings are supported by the conclusion of the work of Aizenman, Jinjarak, Nguyen and Park, (2019) which affirm that every economy needs an optimal government revenue level to fund social spending, improve health, education, and living standards, and achieve higher HDI.

Also, it is revealed that threshold level of debt – to - GDP ratio to achieve higher HDI in Nigeria is 43.1 percent. This implies that the threshold level of debt-to-GDP ratio in Nigeria is 43.1%, which could lead to higher Human Development Index (HDI). This threshold level could be used to finance investments in human capital and infrastructure, such as education, healthcare, and basic infrastructure and this would improve HDI indicators, attract investment, and diversify the economy. It could also facilitate targeted poverty reduction programs. However, achieving this level requires careful fiscal management in terms of debt repayment, monitoring borrowing costs and promoting fiscal discipline to ensure sustainability. This could enhance productivity and stimulate economic activity, and investing in human capital and infrastructure can enhance resilience to external shocks and economic downturns. The results uphold the submission of Reinhart and Rogoff, (2020) that the threshold or nonlinear effect theory suggests a nonlinear relationship between public debt levels and economic development, with positive effects on growth when debt levels are low and negative when they increase. The results are also supported by the findings of Boskin, (2020) which suggest that there is an optimal debt-to-GDP ratio which is crucial for enhancing HDI and ensuring fiscal space for critical investments in health, education and infrastructure.

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Table 1d: Estimates of the threshold levels of fiscal policy instruments that can improve Human Development Index in Turkey

Method: Dynamic Least Squares (DOLS)				
Dependent Variable: HDI				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
REV	-0.0884	0.0212	-4.1669	0.0059
REV^2	0.0015	0.0003	4.0025	0.0071
DBT	-0.2812	0.0026	-1.5017	0.0000
DBT^2	0.0036	0.0030	5.2173	0.0020
POP	-0.1817	0.0424	-4.2811	0.0052
c	2.2679	0.2830	8.0136	0.0002
R-squared		0.98		
Adjusted R-squared		0.93		
D-W Stat		2.21		
F-statistic		7.65		

Source: Authors' estimations

Results from Table 1d indicate that threshold level of government revenue as a percentage of GDP to achieve higher HDI in Turkey is 28.9 percent. The result implies that the increase in government revenue to reach a higher Human Development Index (HDI) in Turkey could lead to enhanced social investments, improved education and skills development, improved healthcare access and quality, infrastructure development projects, poverty reduction and social inclusion, fiscal sustainability and efficiency, and a long-term development strategy. This would enable greater investment in human capital, infrastructure, and social services, leading to improved productivity, quality of life, and socio-economic inclusivity. The government revenue would also be directed towards infrastructure projects, reducing transportation costs and attracting investments, and promoting social inclusion. This underscores the importance of robust public finances and strategic investments in human capital, infrastructure, and social services. This is in line with the IMF, (2023) benchmark that countries struggling to generate sufficient revenue for development, with less than 15% of revenue as a percentage of GDP must increase revenue collection to meet basic needs, create job opportunities and ensure growth.

It also revealed that threshold level of debt – to - GDP ratio to achieve higher HDI in Turkey is 38.3 percent. The result reveals that a threshold of 38.3% debt-to-GDP ratio is necessary for Turkey to achieve a higher Human Development Index (HDI). This threshold level can allow Turkey to invest in education, healthcare, social infrastructure and improving HDI indicators like life expectancy and income levels. However, higher debt levels pose risks to fiscal sustainability if not managed prudently. To achieve higher HDI through debt, an approach involving sound economic policies, structural reforms, and governance improvements is required. This requires careful planning, effective implementation, and continuous monitoring to ensure debt remains

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manageable and contributes positively to Turkey's long-term development goals. The results uphold the submission of Reinhart and Rogoff, (2020) that the threshold or nonlinear effect theory suggests a nonlinear relationship between public debt levels and economic development, with positive effects on growth when debt levels are low and negative when they increase.

However, the relevant statistics utilised to assess the soundness and consistency of the models are reported in the second part of each of Tables 1a to d. The R-squared and Adjusted R-squared depict the goodness of fit of the models specified. The values of the D-W statistic show that the regressions are not autocorrelated. Generally, the soundness of the model is indicted by some of the statistic, and that the results and conclusions derived are not derailed as they are guided by the theoretical framework of this study.

CONCLUSION

The threshold values of each fiscal policy instruments (revenue and debt) on HDI in the Mexico, Indonesia, Nigeria and Turkey are the generated from the estimates derived from the estimates of Dynamic Ordinary Least Squares (DOLS). The study suggests that hypothetical threshold values of government revenue of 24.4%, 15.2%, 14.4% and 28.9% of GDP could lead to enhanced social investments, improved education and skills development, improved healthcare access and quality. The results also reveal that a threshold of 48.7%, 35.8%, 43.1% and 38.3% debt-to-GDP ratios for these emerging economies can achieve a higher Human Development Index (HDI). Each of the threshold levels can allow the countries to invest in education, healthcare, social infrastructure and improving HDI indicators like life expectancy and income levels.

Government expenditure shocks confer non-linear effects on HDI in the MINT countries, with positive effects in Mexico and Turkey and negative effects in Indonesia Nigeria while government revenue shocks have a positive, non-linear impact on MINT countries' HDI and positive public debt shocks positively impact the HDI of the MINT countries, while negative shocks have a negative non-linear impact in Indonesia and Nigeria. In Mexico and Turkey, both positive and negative shocks to government expenditure significantly impact poverty rates, while in Indonesia and Nigeria, only increased spending can reduce poverty. Both positive and negative shocks to government revenue had a non-linear impact on poverty levels.

Policymakers across the MINT countries should prioritize spending on programmes directly impacting poverty reduction, unemployment reduction and improving the well-being of the citizens. For instance, Mexico should prioritize initiatives aim to provide monetary assistance, health insurance, education and vocational training to citizens through the PROSPERA Programme for Social Inclusion, Seguro Popular, National Crusade Against Hunger, PROSPERA School Meals, PRODEPI, Youth Building the Future and host of others. Indonesia is urged to promote inclusive development and empower marginalized communities through the Keluarga

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Harapan (PKH) program, Raskin subsidized rice program, health insurance, social assistance, rural development, Village Fund Program and Microfinance and small business development programs. Nigeria can support youth employment, entrepreneurship, smallholder farmers, microfinance institutions, and infrastructure development projects by prioritizing among others the National Social Investment Programme, Conditional Cash Transfer, Government Enterprise and Empowerment Program (GEEP), Youth Entrepreneurship Support (YES) Program and the Graduate Internship Scheme (GIS), National Home-Grown School Feeding Program, Anchor Borrowers Program and the Fertilizer Subsidy Program. Turkey can equally prioritize initiatives aim to provide financial assistance, healthcare services, quality housing, employment opportunities, and education support through Conditional Cash Transfer Programmes, Regular Cash Transfer Programs, Universal Health Insurance and Family Medicine System, urban transformation and mass housing projects, employment and vocational training programs and conditional education assistance programmes.

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