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ARTICLE

Smooth Transitioning Growth in Malawi: The Role of Economic Policy

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Abstract

Malawi adopted orthodox neoliberal economic policies in 1981 to replace Keynesian-based demand management, developmental state, and protectionist policies. However, the sub-period from 2004 to 2012 witnessed some reversion to elements of the pre-liberalisation period. This paper analyses the response of the Malawian economy to the critical economic policy shifts experienced since 1960. A smooth transition regression (STR) model is estimated to explain the country's real output, setting its trend as the threshold variable. Augmenting the model with proxies for labour and capital is found to be unrewarding, but the heuristically determined logistic STR model fits the data well. The transition process is subsequently used to explain the response of economic growth to policy changes. We find that Malawi's growth did not transition until after 2004, and the change was practically fully accomplished by 2011. Real output growth was significantly faster during this transition period. The findings of this study imply that the appropriateness of orthodox neoliberal economic policies is questionable in Malawi. This should motivate astute policy-makers seeking to adopt post-neoliberal economic management policies, mutatis mutandis.

Keywords: economic policy, economic growth, smooth transition regression.

JEL classification: E13, E32, E61, E65

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1. Introduction

Malawi adopted orthodox neoliberal economic policies in 1981. Prior to this, the country's economic management was ideologically guided by Keynesian demand management and developmental state theories, as well as protectionist arguments that trace their foundations to mercantilism. The neoliberal policies have been near-persistently pursued since, to conserve the flow of Western development assistance. Nevertheless, the sub-period from 2004 to 2012 witnessed some manifest reversion to elements of the pre-liberalisation period.

This paper analyses the response of the Malawian economy to these critical economic policy shifts by modeling the country's real gross domestic product (GDP) as a smooth transition process, setting its trend as the threshold variable. Diagnostic tests suggest that a first-order logistic smooth transition regression specification is apt to explain real output and that augmenting the model with labour and capital is unrewarding. The analysis shows that Malawi's real GDP growth never transitioned until after 2004 and that the change was fully accomplished by 2011. Economic growth was significantly

faster during this transition period than during any other period. Thus, it was the reversion to pre-liberalisation policies - rather than the adoption of neoliberal policies - that yielded a prolific positive change in the country's growth trajectory, although the policies adopted during the 2004 – 2012 period were criticised for creating internal and external imbalances, such that the authorities were advised by the International Monetary Fund (IMF) to abandon them (International Monetary Fund, 2012). This failure of neoliberal policies to catalyse high economic growth in Malawi provides additional evidence that the policies are ill-fitted for such an economy (Khan and Aftab, 1994; Zaman, 1995), and that a new post-neoliberal development framework is required (Büscher et al., 2021).

The next section provides a contextual background of Malawi's economic policy regimes and a selection of the underlying literature. Section 3 explains the specification, estimation, and evaluation of the smooth transition regression modelling framework used, while Section 4 presents and discusses the findings. Section 5 concludes the paper.

2. Contextual Overview and The Literature

Three vital regimes embody the package of economic development policies adopted by Malawi following self-rule and independence in the early 1960s. The first of these regimes describes the period until the early 1980s, and was founded on both age-old mercantilism and the Keynesian postulation that increased government spending can stimulate growth and economic transformation under conditions of deficient aggregate demand (Armstrong, 2019). Keynesians argue that the government has a responsibility to actively manage the economy in order to achieve full employment, and a deficit capital account budget is the means for doing so; that macroeconomic policies must reflect pragmatism rather than consistency with some doctrine; and that excessive aversion to public debt may lead to bad policies (Keynes, 1936; Lerner, 1943).

On this basis, the Malawi Government adopted a developmental state model – or what Kayuni (2011) distinctively refers to as 'Pragmatic Unilateral Capitalism' - upon the attainment of political independence in 1964. Commercial and industrial development was characterised by strong market intervention achieved through the establishment of a corporate triad of holding companies comprising two parastatals – the Malawi Development Corporation and the Agricultural Development and Marketing Corporation – and the quasi-privately-owned Press Holdings Limited. The number of parastatals or state-owned enterprises (SOEs) rose to 121 by 1992 (World Bank, 1994). Furthermore, monetary and exchange rate policies up to the late 1980s principally involved direct control of interest rates, credit, exchange rates, and foreign exchange, while trade policy was largely characterised by import-substitution and mercantilist protectionism achieved through the imposition of various tariffs and non-tariff barriers on imports (Mangani, 2020). This initial economic management model inevitably hinged on deficit spending against a narrow revenue base, occasioning significant surges in foreign debt and aid. The fiscal deficit reached a record high of 10.2% of GDP in 1981, while net receipts of official development assistance (ODA) and official aid averaged 11.4% of GDP between 1964 and 1980.

Inefficiencies in the SOE sector, coupled with the slump attributed to the country's economic crisis of the late 1970s, led to questions being asked about the appropriateness of interventionist policies. The crisis itself arose because of Malawi's increased cost of sea access through the Mozambican port of Nacala due to the civil war fought in that country during 1977 – 1992; a rise in oil prices due to the global energy crisis of 1979; a decline in world tobacco prices; and episodes of agricultural failure (Mangani, 2012). The rates of return for commercial SOEs were impressive during the first half of the 1970s, averaging 20.7% per annum, but deteriorated to an annual average of -0.89% between 1979 and 1983 (Chirwa, 2000).

The second regime was instigated by the adoption of neoliberal economic management policy reforms in 1981, as a reaction to the aforesaid economic challenges. Prior to this, in 1980, the heads of state and government of sub-Saharan African (SSA) countries had produced the Lagos Plan of

Action for the Economic Development of Africa for the period 1980 – 2020, thereby endorsing inward-looking policies of African self-reliance as a means for countering the global oil price crisis of the 1970s (Mkandawire, 2005). However, in what would eventually turn out to be a very consequential entrenchment of neoliberalism, the so-called Berg Report (World Bank, 1981) attributed the economic problems of SSA to the countries' failure to manage their economies effectively, and further set out the need for the 'structural adjustment' of these economies. Neoliberalism is a 'theory of political economic practices that proposes that human well-being can best be advanced by liberating individual entrepreneurial freedoms and skills within an institutional framework characterized by strong private property rights, free markets, and free trade' (Harvey, 2005, p.2). Catalysing sustained growth through private investment by 'getting prices right' (Williamson, 1990) and 'getting institutions right' (Carroll and Jarvis, 2015; Springer et al., 2016, p.2; Akinola, 2023) is the declared principal objective of neoliberalism. Hence, in July 1990, the then Managing Director of the IMF unequivocally declared that 'our primary objective is growth ... It is toward growth that our programmes and their conditionality are aimed…,' (Camdessus, 1990, p.235). Neoliberalism constrains government borrowing on the basis that expansionary fiscal policy is a key source of macroeconomic instability (Davig et al., 2011).

In 1981, therefore, Malawi adopted the structural adjustment programmes (SAPs) as its first neoliberal policy reforms. These ran until 1994 and were supported by IMF and World Bank lending facilities. The reforms persisted after the SAPs but under different names. Thus, from 1995, the country implemented three Fiscal Restructuring and Deregulation Programmes and a series of Enhanced Structural Adjustment Facility programmes. By the turn of the millennium, the IMF adopted the Poverty Reduction and Growth Facility (PRGF) arrangement as its main instrument. Several Exogenous Shock Facility and Extended Credit Facility (ECF) programmes were also implemented subsequently, such that the ECF programme agreed upon in May 2018 seamlessly followed the successful conclusion of another a year earlier. In return for the various loans and grants provided by the IMF, the International Development Association (IDA), and other Western bilateral and multilateral aid agencies, Malawi has been implementing extensive economic and social sector reforms. Parastatal reforms started in 1981, while privatisation programmes started in 1984 but were stepped up upon the creation of the Privatisation Commission in 1996 (Magalasi, 2008). Reforms in the agricultural sector included the decontrol of prices and the liberalisation of markets, as well as a repeal of the Special Crops Act in 1995 to lift restrictions on tobacco production. Monetary policy controls were sequentially abandoned during 1989 – 1994 in favour of market-based instruments, notably upward-sticky interest rates set to dampen inflationary expectations (Mangani, 2021). The exchange rate was floated in 1994, following frequent devaluations, but there have been marked experiences of official exchange rate fixing since then. This fixing is occasioned by the persistent inadequacy of foreign exchange reserves with which to defend a flexible domestic currency which, in turn, reflects the country's flagging external trade position and tenacious balance of payments challenges. Major industry and trade reforms were implemented in 1988 through the Industrial and Trade Policy Adjustment Programme which eliminated quantitative restrictions and reviewed trade taxes (Chirwa, 2000; Mangani, 2020). Trade liberalisation continues to be pursued through the country's ratification of various regional, continental, north-south, south-south and multilateral agreements (Malawi Government, undated, a).

Net ODA and official aid received by Malawi increased markedly as a result of the shift towards liberal policies, averaging 19.1% of GDP between 1981 and 2019, and reaching a pick of 39.9% of GDP in 1994. By 2002, some 53 SOEs were privatised (Mangani, 2020), while most of the rest were eventually disposed of or restructured. It is important to emphasise that, although there have been some instances of policy reversal - and despite being off-track with the underlying IMF programmes from time to time - the principal deportment of the country's economic management has remained the same since the implementation of the SAPs.

The third notable economic policy swing locates a sub-period of marked disavowal of the neoliberal model, following the formation of a new government in 2004 until the first quarter of 2012. The general persistence of the neoliberal model since the SAPs implies that this may be considered a sub-period of defiance to heterodoxy, as a reversion to neoliberal orthodoxy was quickly restored thereafter (International Monetary Fund, 2012; Malawi Government, undated, b). This sub-period was characterised by an expansionary economic management policy stance that run counter to the neoliberal prescriptions. Interest rates and inflation plummeted due to improved fiscal discipline, expansionary economic policies, and exchange rate controls. The government also started to re-establish strategic SOEs to compete with private operators, notably the creation of the National Oil Company of Malawi Limited in 2010 to facilitate the importation of petroleum products alongside the privately-owned Petroleum Importers Limited. An expensive government-funded Farm Input Subsidy Programme was introduced in 2005, reflecting a divergence from fiscal austerity. Nonetheless, fiscal deficits after grants declined to 4.2% of GDP in 2009. Moreover, this departure from orthodoxy led to a significant reduction in donor support, creating foreign exchange shortages that were accentuated by the exchange rate controls. As a result, Malawi's total reserves position plummeted to 0.8 months of imports by 2011, and acute shortages of critical imports ensued. This regime, therefore, was criticised for creating both internal and external imbalances (International Monetary Fund, 2012).

In response to the criticisms against the aforesaid heterodox policies, a new government formed in April 2012 restored the neoliberal prescriptions through the implementation of an IMF-dictated Economic Recovery Plan (ERP) which, purportedly, laid out action plans 'over the short-term and medium-term to make rapid progress toward poverty reduction through economic growth and wealth creation' (Malawi Government, undated, a). The key features of the ERP were: a 50% devaluation of the exchange rate and the adoption of a floating exchange rate regime; removal of restrictions on foreign exchange transactions by banks and foreign exchange bureaus; relaxation of surrender requirements on export proceeds, allowing most to flow to commercial banks instead of the RBM; and increases in the retail prices of petroleum products, as well as the adoption of an automatic adjustment mechanism to keep prices in line with import costs. Concurrently, the RBM tightened monetary policy by raising its policy rate and through sales of foreign exchange (International Monetary Fund, 2012). The formulation of the ERP marked a clear policy switch back to orthodox economic management policies. Keynesianism has been credited for effectively clearing recessions and reversing major economic crises, including the great depression of the 1930s (Weir and Skocpol, 1983; Ireland, 2011). On the other hand, although results from wide-ranging research show conflicting effects of neoliberalism on growth (Killick et al., 1992; Balima and Sokolova, 2021), negative effects tend to dominate the literature (e.g., Przeworski and Vreeland, 2000; Barro and Lee, 2005; Mkandawire, 2005; Dreher, 2006). While conditionally positive effects are also reported in countries with improved institutional records (Binder and Bluhm, 2017), there is strong evidence that growth has been slower with neoliberalism than otherwise in most of the developing world (Weisbrot et al., 2020). This has been partly attributed to the deflationary bias inherent in neoliberal programmes, arising from raising the cost of credit and dampening private investment (Mkandawire, 2005). Currency devaluation and indefensible depreciation also mean that any benefits of this strategy are offset by depressing real wages and increasing the cost of imports (Logan and Mengisteab, 1993).

William Easterly notes in his edifying 2005 paper that a country's eligibility for debt relief under the Heavily Indebted Poor Countries (HIPC) initiative, which commenced during the 1990s, was an admission by the IMF and the World Bank that past loans (including adjustment loans) did not bring enough GDP growth in that country to keep debt ratios within reasonable bounds. Moreover, recognition of the failure of orthodox policies to grow economies and reduce poverty is evident in the adoption of the PRGF programming framework adopted by the IMF at the turn of the century. The Poverty Reduction Strategy Papers associated with the PRGF framework were central elements

in qualifying countries for IMF and World Bank lending. The ineffectiveness of structural adjustment loans in generating growth and broadening recipient countries' debt servicing space is also evident in the fact that such loans had to be provided repeatedly. As Easterly (2005) further shows, seventeen of the eighteen IDA countries that were in the top half of adjustment loans received in the early 1980s became eligible for HIPC debt relief, compared to less than 50% of the IDA countries in the bottom half of adjustment lending. Moreover, none of the top 20 recipients of adjustment lending over 1980–99 was able to achieve reasonable growth and contains policy distortions. Furthermore, Evrensel (2002) notes that programme countries tended to enter a new programme in a worse macroeconomic condition than they entered the previous programme.

Neoliberalism currently shows no signs of waning off, despite the significant contestation and challenges thrown at it by the global community of scholars and practitioners (see Harvey, 2005; Peck et al., 2012; Della Porta, 2017). It is one of the most powerful concepts to have emerged within the social sciences in recent times (Springer et al., 2016) which endures despite being ideologically exhausted (Aalbers, 2013; Bruff, 2014). However, heterodox critics perceive neoliberalism's stern condemnation of deficit financing by orthodox economists as a worrisome limitation on a government's ability to pursue public purpose (Armstrong, 2019). Economists and others are, once again, stressing the need to move away from the current orthodox neoliberal idea of development (Arsel and Dasgupta, 2015; Hickel, 2017). In this regard, the resurgence of interest in Keynesian reasoning among policy-makers following the last global financial crisis was anticipated to catalyse an end to neoclassical domination. Active and expansionary fiscal policy was pivotal in resolving the crisis (Skidelsy, 2010), as it has recently been in assisting economies to intervene massively against the coronavirus disease 2019 (COVID-19) pandemic (Obeng-Odoom, 2020; Warner et al. 2022). Importantly, the pandemic has revived the quest to answer some fundamental questions regarding the future role of austerity in economic management. For example, as asserted by Ferragina and Zola (2021), is the end of austerity not just a matter of common sense? Given the world's lack of preparedness for large-scale emergencies as evidenced by the onset of the COVID-19 pandemic, is it not obvious that the return of austerity after the extensive additional public funding to strengthen pandemic preparedness and response systems in low-income and middle-income countries could imperil public service delivery in such economies (see Stubbs et al., 2023)? Büscher et al. (2021), therefore, suggest new priorities for a post-neoliberal and post-COVID-19 development framework, emphasising that development should be a vehicle for promoting well-being, social cohesion, and environmental sustainability. Against this background, we hypothesise that Malawi's historical performance does not provide credible support for the perpetuation of neoliberal economic policy interventions.

3. Methodology

3.1 Approach

Economic methodology is a broad issue. Debates around what economists do and how they do it often dominate research outlets such as the Journal of Economic Methodology. Leaning more towards normative economics (i.e., assertions of what "ought to be"), development economics has long used value judgments as well as narratives of historical accounts of policy interventions and their perceived relations with economic outcomes to present persuasive theoretical arguments on economic management, as illustrated by Bordiss and Rossouw (2022). For instance, a wealth of theoretical propositions for the new-fangled neoliberal economic management model quickly became available to support the prescribed policy-making processes (see, e.g., Nelson, 1990; Haggard and Kaufman, 1992, 1995; Williamson, 1994; Snyder, 2001; Weyland, 2002). However, it is reasoned that the methodology of economic analysis must combine theoretical plausibility with empirical verifiability (Obeng-Odoom, 2023), suggesting an important role for positive economics (i.e., objective data analyses of "what is") alongside the normative stance. In this regard, systematic data-based assessments

of the economic, social and political consequences of the adoption of liberal economic policies could not be made until much later, in order to allow the reform experiments to run a reasonably long course (Weyland, 2004; Walton, 2004). This paper, therefore, adopts a quantitative approach to evaluate the performance of Malawi's economic management policies by interrogating the period-specific policy outcomes evident in the data four decades after the adoption of neoliberalism.

3.2 The Model

It is common to assume that the introduction of an economic reform programme induces a sudden change in the performance of the economy and that such a change would occur at or immediately after the commencement point for the reforms. On this basis, the commonest approach towards analysing the impacts of reforms has been to augment standard macroeconomic models with dummy variables in order to capture changes in intercept and/or slope parameters between the pre-reform and post-reform periods (e.g., Faini, et al., 1992; Greenaway and Sapsford, 1994; McGillivray et al., 1995). However, economic reform programs are typically implemented gradually, and one sequence of reforms tends to succeed another. This is particularly the case with neoliberal reform programmes since programme-based lending is characteristically provided repeatedly (Easterly, 2005). As discussed, Malawi has been a constant recipient of IMF and World Bank programme-based financing since 1981. Anticipating a unique structural break point in the macroeconomic series to warrant the application of piecewise regression techniques may, therefore, be unreasonable. Instead, the effects of such reforms are likely to occur gradually and non-linearly, if at all, and the speed of the performance adjustment as the economy progresses from one policy regime to another may be dependent on the efficacy of the programmes in influencing market forces. Smooth transition regression (STR) appears to be a more feasible modelling approach for such an adjustment process (McGillivray, 2003). Although the application of this approach has popularly used panel data involving many countries (e.g., Jude, 2010; Wu et al., 2013; Nguedie, 2018; Bi et al., 2019), this is quite restrictive because the exact nature of such adjustments tends to be economy-specific (Abbott et al., 2010).

The STR approach for evaluating the economic effects of policy reform from one regime to another was originally proposed by Bacon and Watts (1971), and further developed by Teräsvirta and Anderson (1992), as well as Granger and Teräsvirta (1993). It has since been widely applied to access the efficacy of various policies (e.g., Teräsvirta, 1994; Greenaway et al., 1997; Leybourne et al., 1998; McGillivray, 2003; Chiou-Wei et al., 2010; Suhendra and Anwar, 2021).

Following McGillivray (2003), the primary regression model adopted in the present study is:

$$g_t = \alpha_1 + \beta_1 t + (\alpha_2 + \beta_2 t) S_t + \lambda x_t + \nu_t, \quad t = 1, \ldots, T, \tag{1}$$

where g_t is real GDP in year t, α_1 and α_2 are intercept terms, β_1 and β_2 are slope coefficients, t is a time trend, S_t is a transition term, while x_t is a vector of standard capital and labour variables that explain output in a typical production function. The corresponding vector of coefficients for x_t is denoted λ. The final term, ν_t, is a desired white noise error term. The transition term may follow any one of at least three possible specifications. McGillivray (2003) assumes that S_t follows a monotonically increasing logistic specification - hence (1) becomes a first-order logistic STR model, which we denote LSTR1 - as follows:

$$S_{1t} = [1 + \exp(-\gamma(t - \tau T))]^{-1} \tag{2}$$

In (2), γ determines the speed (or velocity) of transition from one regime to another, while τ determines the timing of that transition. Respectively, γ and τ are the slope and threshold parameters. Taking values between 0 and 1, τ gives the proportion of g_t before the transition mid-point. This mid-point occurs at $t = \tau T$. Clearly, the transition function approaches unity when $\gamma \to 0$, hence

(1) reduces to a linear (non-transitioning) model once $\gamma = 0$. On the other hand, any $\gamma \neq 0$ yields a non-linear transition process and, when $\gamma > 0$, the economic adjustment occurs smoothly from the initial state of no reforms (hence no transition, or $S_{1t} = 0$) in (3) below, to a state of full transition (or $S_{1t} = 1$) in (4):

$$g_t = \alpha_1 + \beta_1 t + \lambda x_t + \nu_t, \quad t \to -\infty; \tag{3}$$

$$g_t = (\alpha_1 + \alpha_2) + (\beta_1 + \beta_2)\, t + \lambda x_t + \nu_t, \quad t \to \infty. \tag{4}$$

It follows that the level of g_t changes smoothly over time from α_1 to $\alpha_1 + \alpha_2$, while its rate of growth over time changes from β_1 to $\beta_1 + \beta_2$. Thus, the model embodies two transitions: one in the intercept term (represented by $\alpha_1 + \alpha_2 S_{1t}$), and the other in the growth rate (represented by $\beta_1 + \beta_2 S_{1t}$). The directions of the transitions are clearly determined by α_2 and β_2. The transition is completed within a short period of time when γ is large, such that the model approaches one with an instantaneous transition (i.e., a discrete threshold model) as $\gamma \to \infty$. Thus, $\gamma > 0$ is an identifying restriction. Converse effects arise when $\gamma < 0$ in terms of the initial and final states (e.g., when the economy transitions from a state of reforms to a state of no reforms).

In order to ensure that the smooth transition process is not unduly imposed on the data, this study also considers the second-order logistic STR (LSTR2) model and the exponential STR (ESTR) model for (1), in addition to the LSTR1 model described above. The LSTR2 model allows a non-monotonic quadratic logistic smooth transition function of the form:

$$S_{2t} = \left[1 + \exp\left(-\gamma\,(t - \tau_1 T)\,(t - \tau_2 T)\right)\right]^{-1}. \tag{5}$$

This transition function is especially useful in the event of regime re-switching (as when the economy reverts to pre-reform period conditions), and nests the three-regime discrete threshold regression model. As $\gamma \to \infty$ and when $\tau_1 T$ and $\tau_2 T$ are distinct thresholds with $\tau_1 T < \tau_2 T$, it is the case that S_{2t} approaches 1 when $t < \tau_1 T$ and when $t > \tau_2 T$, and approaches 0 when $\tau_1 T \leq t \leq \tau_2 T$. The deviations from the economic liberalisation path experienced in Malawi during the study period make the LSTR 2 model worth considering.

Further, the equally non-monotonic ESTR model allows small absolute values of the transition variable to be related to small values of the transition function when $\tau T = 0$, as follows:

$$S_{3t} = 1 - \exp\left(-\gamma(t - \tau T)^2\right) \tag{6}$$

where S_{3t} increases with absolute deviations of t from the threshold. Moreover, $S_{3t} = 0$ when $t = \tau T$, and approaches 1 as $t \to \infty$ and as $t \to -\infty$. The ESTR model does not nest the discrete threshold regression model, since the specification becomes linear as $\gamma \to 0$ or as $\gamma \to \infty$.

3.3 Data and Estimation

In the ensuing examination, g is GDP in billions of constant local currency (Malawi kwacha); k is gross capital formation, expressed as a percentage of GDP; l_1 is the population between the ages of 15 and 64 in thousands of people; and l_2 is years of life expectancy at birth. Thus, k, l_1 and l_2 characterize the vector of exogenous variables denoted x in (1), the latter two being interchangeably usable proxies for the labour force. The data on all these variables are sourced from the World Bank's World Development Indicators (WDI) database. They are recorded annually from 1960 to 2019, giving a total of 60 observations.

Three limitations regarding the time series data used in the study may be highlighted. First, the data on the variables described above are not available at a higher time frequency for Malawi; only annual data are available. Second, the WDI database is arguably the only comprehensive

composite source that provides comparable macroeconomic data based on credible data sources for most countries, including Malawi. Lastly, continuous time series of labour force and employment data are unavailable in Malawi, and only proxies may be used. Our choice of l_1 and l_2 follows McGillivray (2003). These three limitations, for which there are no immediate solutions, may affect the results of the analysis, and present themselves as areas that may be improved upon in future research. Nevertheless, l_1 and l_2 are interchangeably used in the study as a robustness check.

The estimation of the model is conducted using the EViews 12 software, and proceeds as follows. First, the standard ADF unit root test is conducted to determine whether g is $I(1)$ against the alternative hypothesis of a linear trend-stationary process. Second, if the null may not be rejected, the LSTAR model is estimated to test for its appropriateness compared with the linear, LSTR2 and ESTR models.

The test statistic for linearity is commonly derived under the null hypothesis $H_0 : \gamma = 0$ against the alternative $H_1 : \gamma > 0$ in (2). Equivalently, using (1), these null and alternative hypotheses correspond to $H_0' : \alpha_2 = \beta_2 = 0$ and $H_A' : \alpha_2 \neq 0; \beta_2 \neq 0$, respectively. However, because the parameters τ, α_2 and β_2 are identified under the alternative hypothesis but not under the null hypothesis, the standard likelihood ratio, Lagrange multiplier and Ward tests are inapplicable (Luukkonnen, et al., 1988; Lexbourne et al., 1998). Luukkonnen, et al. (1988), therefore, propose an approach that replaces S_t with a Taylor series expansion of the general form:

$$b_0 + b_1 S_t \left[+ b_2 S_t^2 + \ldots + b_j S_t^j \right]$$

which can be estimated under the null. Thus, terms representing the interaction of the linear regressors with the polynomial terms in the Taylor expansion are added to the linear portion of the model, and the procedure involves testing for the statistical significance of sets of the interaction coefficients. Moreover, when the null is rejected in favour of a non-linear process, the framework also facilitates the choice between the aforesaid LSTR1, LSTR2 and ESTR models. Detailed discussions are in Teräsvirta (1994), Eitrheim and Teräsvirta (1996), Escribano and Jordá (1999), and van Dijk et al. (2002). Under this framework, we apply two non-linearity tests, both of which are evaluated on the basis of the F-test statistic. The first test is due to Luukkonen et al. (1988), and sets $j = 4$ to test some joint hypotheses for the significance of the elements of the Taylor expansion. Four hypotheses that refer to the coefficients of the expansion series being tested are listed, assuming that the higher order terms are restricted to zero. Thus, under any null hypothesis, say H_{0i}, the test uses the i-th order Taylor expansion, assuming that $b_j = 0; \forall j > i$. For example, the H_{01} null tests $b_1 = 0$ assuming that $b_2 = b_3 = b_4 = 0$. Second, we apply the Teräsvirta (1994) sequential test by setting $j = 3$, and testing the following three null hypotheses: $H_{01} : b_1 = 0 \,|\, b_2 = b_3 = 0; H_{02} : b_2 = 0 \,|\, b_3 = 0$; and $H_{03} : b_3 = 0$. Following a heuristic decision rule approach, the LSTR2 or ESTR models would be preferred if the rejection of the H_{02} is strongest, in which case LSTR2 is further preferred to ESTR if the hypothesis that $\tau_1 T = \tau_2 T$ may be rejected. On the other hand, the LSTR1 model is chosen if the strongest rejection is for H_{01} and H_{03}.

4. Empirical Results

Application of the ADF test on the levels of g against the alternative of a linear trend-stationary process yields a test statistic of 1.203, which is less than the corresponding 5% critical value of 3.488. This suggests the possibility of either a unit root or a nonlinear process for the series. The Schwatz information criterion shows that no augmentation is required to correct for serial correlation in the underlying test equation.

The results of applying the two linearity tests are reported in Table 1, based on the estimation of the LSTAR1 model using (1), but without the vector denoted x_t. The estimation of the model uses the OPG-BHHH optimization algorithm with Marquardt steps. The tests reveal that the hypothesis of linearity is rejected, and that the LSTR1 model is preferred to the available alternatives. Following

McGillivray (2003), the results also suggest that vector x_t is not required. More informatively, we find that the joint inclusion of k and l_1 yields statistically insignificant parameters with p-values of 0.150 and 0.755 respectively, while the model is unable to achieve convergence when l_2 is used in place of l_1. The three exogenous variables are also found to be non-stationary after accounting for a linear trend. Vector x_t is, therefore, omitted from the analysis.

Table 1: Linearity Tests

(a) – The Luukkonen et al. Joint Hypothesis Tests

Null Hypothesis	F-statistic	p-value
$H_{04}: b_1 = b_2 = b_3 = b_4 = 0$	397.884	0.000
$H_{03}: b_1 = b_2 = b_3 = 0$	397.884	0.000
$H_{02}: b_1 = b_2 = 0$	397.884	0.000
$H_{01}: b_1 = 0$	186.170	0.000

Note: These four tests are based on the fourth-order Taylor series expansion: $b_0 + b_1 S_t \left[+ b_2 S_t^2 + b_3 S_t^3 + b_4 S_t^4 \right]$. The H_{0i} test uses the i-th order Taylor expansion with $b_j = 0;\ \forall j > i$.

(b) – The Teräsvirta Sequential Tests

Null Hypothesis	F-statistic	p-value
NA	NA	NA
$H_{03}: b_3 = 0$	NA	NA
$H_{02}: b_2 = 0 \mid b_3 = 0$	143.658	0.000
$H_{01}: b_1 = 0 \mid b_2 = b_3 = 0$	186.170	0.000

Note: These three tests are based on the third-order Taylor series expansion: $b_0 + b_1 S_t \left[+ b_2 S_t^2 + b_3 S_t^3 \right]$. The LSTR1 model is recommended.

Further diagnostic testing shows that the estimated LSTR1 model exhibits second-order serial correlation - the x^2 -distributed Breusch-Godfrey test statistic has a p-value of 0.001 - but no autoregressive conditional heteroscedasticity (ARCH). The corresponding p-value for the ARCH test of order 2 is 0.366 and does not change significantly when the order is sequentially increased. As attempts to include lagged real GDP terms to account for the serial correlation are not fruitful, we apply the Newey-West method to generate standard errors and covariances that are adjusted for this diagnostic challenge.

The estimation results for the LSTR1 model for Malawi's real GDP are presented in Table 2 and in Figure 1. The model has an impressive explanatory power (see also Figure 2), and all the parameters are significantly different from zero at the 95% level of confidence.

Table 1. Estimation Results

Parameter	Estimate	t-statistic
α_1	103.115***	13.108
β_1	12.780***	26.708
α_2	–1178.722***	-8.045
β_2	30.068***	12.502
γ	0.607***	4.502
τT	46.398***	114.876
$\bar{R}^2 = 0.997$		
Note: $***$ denotes statistical significance at 1%.		

The parameters of interest in our case are g and τ, whose estimated values are 0.607 and 0.773. The latter is obtained by recollecting that T = 60. The statistical significance of these parameters confirms further that the null hypothesis of linearity (i.e., constancy in the intercept and trend terms) is strongly rejected. Since we have $\gamma > 0$ and $\beta_2 > 0$, the level of real GDP was higher after the transition than before. Although the value of g is relatively high, Figures 1 and 2 show that real GDP

growth hardly transitioned during the first forty years under consideration. The threshold weights stay equal to 0.000 during 1960 – 1993 and remain below 0.2 up to 2004. In order words, real GDP growth followed a linear trend that remained undisturbed until 1993 and was scarcely disturbed from then to 2004. The transition picks up rapidly from 2005 (threshold weight = 3.00) and is almost fully completed by 2011 (threshold weight = 0.942). The years after this rapid transition period hardly add anything to the transitioning process. The transition mid-point (τT = 46.398) corresponds to the year 2006.

Figure 1: Estimated Real Gdp Growth Transition

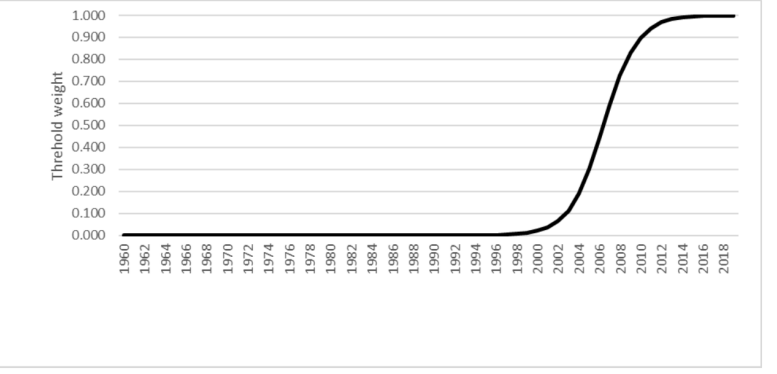
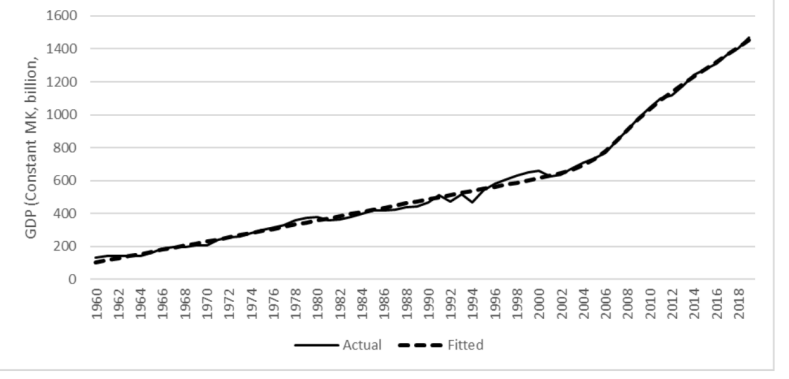


Figure 2: Actual Versus Fitted Real Gdp Series



The findings are consistent with Malawi's actual growth experience. Annual real GDP growth averaged 4.3% during the 1961 – 2019 period. However, the 2005 - 2011 sub-period of departure from neoliberal policies recorded the highest average annual growth ever (6.5%), followed by the 1964 – 1980 pre-liberalisation period (6.1%). More revealingly, real GDP growth only averaged 3.9% per annum from the adoption of the SAPs until 2019, declining even further to 3.4% when the 2005 - 2011 sub-period of rapid growth is netted off.

These results have two significant implications for economic management in Malawi. First, the adoption of neoliberal policies in 1981 did not induce the desired change in the trajectory of Malawi's economic growth: neither an instantaneous nor a smooth transitioning growth trajectory effect is attributable to this policy shift. Thus, the envisaged improvement in Malawi's economic fortunes that justified the adoption of such policies did not materialise, and a thesis of maladjustment holds. In particular, the evidence supports Mkandawire's (2005) assertion that the deflationary policies

associated with neoliberalism placed African economies on a low growth path by discouraging investments, trade expansion and diversification.

The second significant implication of the results is that Malawi experienced improved economic performance when it defiantly reverted to a version of the pre-liberalisation economic policies. Post-1980, the only period of rapid real growth corresponds perfectly to the abandonment of the neoliberal prescriptions, while the flattening of the transition weights after 2011 corresponds to the country's reversion to the neoliberal policies, starting with the adoption of the abovementioned ERP in 2012. The key lesson from this is that it is, therefore, possible to reverse Malawi's economic fortunes through the application of appropriate development policies. That the economy could respond so positively within such a short period of time (i.e., 2004 - 2012) creates an exploitable promise for astute policy-makers seeking to adopt post-neoliberal economic management policies. The call for a more pragmatic economic management framework by Büscher et al. (2021) is duly supported.

Why did the adoption of orthodox neoliberal policies fail to turn around Malawi's growth fortunes? The literature is replete with answers based on similar experiences reported for other African economies (see, e.g., Mkandawire, 1995; Zaman, 1995; Lewis, 1996; Obeng-Odoom, 2013; Fosu and Gafa, 2020; Akinola, 2023). Two broad explanations summarise these answers. First, the focus of the neoliberal policy reforms is inappropriate for Malawi, because the initial arguments for a mixed economy and an economically active state – such as infant industry arguments – remain valid (Zaman, 1995). In this regard, austerity generally killed formal-sector jobs, depressed the economy's effective demand, led to massive disinvestments in weak manufacturing sectors, and rewarded the financial sector more than the real, fiscal and external sectors of the domestic economy (Mkandawire, 1995). Because the ardently alleged crowding-out of private investment by government spending was not truly responsible for the low level of investment, government budget cuts did not drive private sector growth (Mangani, 2020). Therefore, the country requires a combination of fiscal discipline and strategic government intervention, exchange rate management, tariff protection and export promotion, as well as public sector investment in both enterprises and traditional social goods. Second, as argued by Khan and Aftab (1994), the underlying behavioural relationships upon which liberal economic reforms depend are non-existent in most SSA countries such as Malawi. For example, the liberalisation of the financial market assumes the existence of a fiscally sound government and a strong regulator, both of which are necessary conditions for ensuring that financial resources are directed to productive use. Instead, a fiscally weak government overburdened by growing demands for delivering public goods and services, combined with recourse to mere moral suasion as the sole means of regulating financial intermediation, create a motivation for the financial sector to direct more resources to relatively risk-free government debt at the expense of economically productive private investment. Without an institutional framework that guarantees the functioning of a market economy, liberal policies simply transfer economic rents from public to private enterprises that have limited regard for sustainable economic growth considerations. This paper show that the adoption of reverse economic management policies following the emergence of a hard-headed government in 2004 in Malawi was consistent with the arguments against neoliberalism. The adoption of a more pragmatic economic management framework than neoliberalism could be gainful in catalysing economic growth in Malawi.

There are several possible caveats to our findings. First, the adopted of neoliberal policies by Malawi has not always been as expected by the IMF and the World Bank: there have been instances of slow implementation and non-implementation of policy prescriptions, as well as policy reversals. These have impacted on the conclusion of IMF programmes and/or the attainment of programme objectives (Mkandawire, 2005). Moreover, the economy has constantly been adversely affected by internal shocks (such as droughts, floods and poor climatic conditions for rain-fed agriculture) as well as external factors (such as global economic and financial crises) that have affected import and export

prices and trade flows (Mangani, 2020). These factors have had both direct and indirect effects on economic performance. It is difficult to draw strong causal conclusions that control for these factors. However, the results in this paper show that the policy – growth nexus is too clear to be ignored on the basis of these controls. At the minimum, the results suggest that the anticipated resilience to economic shocks that motivated the adoption of the Berg Report recommendations in 1981 had not been attained four decades later.

5. Conclusion

Because of the strong footing that it has in geopolitics, neoliberalism has persisted longer than any other development paradigm, remaining dominant for the past four decades in Malawi. Compared with alternative heterodox economic management prescriptions, however, this paper shows that the orthodox liberal policies do not proffer credible solutions to the problem of slow economic growth in Malawi. In making this observation, the paper, agrees with the dominant evidence in the literature already cited. However, the critical contribution that this paper makes is to prove that reverting to pre-liberalisation policies could be rewarding for a country such as Malawi. Therefore, the criticism that such a reversion during the 2004 -2012 period created internal and external imbalances ought to be constrained by the merit that it also generated commendable economic growth. This should motive astute policy-makers seeking to adopt post-neoliberal economic management policies, mutatis mutandis.

Biographical Notes

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Conflicts of interest

The author declares no conflict of interest.

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