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When Vision Outpaces Data: Dual Model Forecasts of Malawi's Path to Lower Middle Income Status by 2030

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ABSTRACT
Malawi's First Ten Year Implementation Plan aims to lift the country from low income to lower middle income status by 2030, but ongoing inflation, a weakening currency, slow growth in income per person, and repeated economic shocks make this goal look doubtful. This study checks whether Malawi can actually reach that 2030 income target if its current economic path continues. Yearly economic data from 1990 to 2024, along with a shorter set of data from 2005 to 2024 taken after a major shift in the economy, were studied using two forecasting models, a Vector Autoregression (VAR) model and a Dynamic Stochastic General Equilibrium (DSGE) model built for a small open economy. Statistical tests called Chow and CUSUM show that the economy went through a period of instability around 2001 to 2002, and further checks confirm that the models produce reliable and stable results. The forecasts show that Malawi's total economic output in 2030 will likely fall between seventeen point six and twenty three point one billion US dollars using the longer data set, and between fifteen point four and sixteen billion dollars using the shorter one. In every version of the model, income per person is expected to reach only around six hundred thirty seven to nine hundred fifty six dollars, still below the one thousand one hundred seventy six dollar mark needed for lower middle income status. The two models agree most closely when using the shorter, more recent data set, pointing to a more trustworthy estimate of about six hundred thirty seven to six hundred sixty three dollars per person by 2030. These results suggest that Malawi is unlikely to reach lower middle income status by 2030 unless there is a major change from its past growth pattern. This study adds value by comparing two very different types of forecasting models across two time periods, and it points to the need for steady real growth, lower inflation, a more stable currency, more varied exports, and changes that make the economy more productive.

Keywords: Economic Forecasting, Lower-Middle-Income Status, VAR, DSGE, Structural Break

INTRODUCTION

Malawi entered the 1990s as one of the poorest countries in the world, and that status has barely shifted despite three decades of reform. The country moved from a one-party government under Hastings Banda to multiparty democracy in 1994, floated its currency the same year, and subsequently drew up a succession of national development blueprints, from Vision 2020, through the Malawi Growth and Development Strategy I to III, to the most recent, Malawi 2063. Each document promised to lift the country out of low-income status, and so far, each has failed to deliver on that promise. Real GDP growth has averaged slightly below four percent per year since 1990, a rate that, once population growth of roughly two and a half percent per year and near-constant currency depreciation are netted out, has translated into only sluggish, and at times reversing, gains in per capita GDP. Two policy regimes stand out along this trajectory: a period of strong agricultural growth driven by the Farm Input Subsidy Programme from the 2005/06 planting season through 2011, and a series of currency devaluations beginning in 2012 that culminated in a forty four percent devaluation in November 2023. By 2024, inflation stood above thirty percent, the kwacha to US dollar exchange rate had shifted from around 750 in 2020 to around 1,750 by mid-2024, public debt exceeded eighty five percent of GDP, and the World Bank recorded four consecutive years of falling per capita GDP even as the nominal size of the economy, measured in kwacha, continued to grow.

The core problem motivating this study is not merely that Malawi's growth is slow, but that the government's official targets and the economy's actual trajectory are drifting further apart over time. Malawi 2063 assumes that an average annual growth rate of six percent is sufficient to bring the country to lower middle-income status by 2030, as the first milestone toward the aspired upper middle-income status by 2063 (Assessment, 2023). In practice, the African Development Bank projects real growth of only 1.8 to 3.0 percent

for the 2024 to 2026 period (Team, 2011), less than half the pace the vision requires, and a scenario analysis by the Institute for Security Studies concludes that remaining on track for the 2030 target would require annual GDP growth above ten percent, an outcome the study itself judges highly unlikely under the current policy trajectory (Collins, 2022). It is this gap, between the growth rate Malawi needs and the growth rate Malawi has actually been generating, that constitutes the central problem addressed by this research.

The urgency of this study stems from Malawi's current position within the first ten-year implementation plan of Malawi 2063, which runs from 2021 to 2030 and sets lower middle-income status as its first milestone, at a time when the World Bank's economic monitoring reports describe the country as caught in a polycrisis, an overlapping and mutually reinforcing set of fiscal, monetary, and climate shocks (Weltbank, 2023). Without projections built independently of the government's own planning documents, there is a real risk that policy continues to be formulated on the basis of unrealistic growth assumptions. Building on this problem and its urgency, the present study focuses on a single question that is simple to state but consequential to answer: if the trends, dynamics, and volatility Malawi's economy has exhibited over the past three and a half decades continue without a new policy breakthrough, where will the economy end up, and will that trajectory be sufficient to meet the Malawi 2063 milestone by 2030. To answer it, this study projects Nominal GDP and GDP per capita, in both Malawi kwacha and US dollars, for every year from 2025 to 2030, and compares the results against the World Bank's lower middle-income threshold.

The literature on Malawi's development trajectory has largely developed along two paths that rarely intersect. The first is descriptive and policy oriented, comprising periodic reports such as the World Bank's Malawi Economic Monitor and the African Development Bank's Malawi Economic Outlook, which consistently document fiscal imbalances and repeated downward revisions of growth targets. The second consists of evaluative studies of the development blueprints themselves, such as qualitative work comparing the failure of Vision 2020 with the prospects of Malawi 2063, or the system dynamics scenario simulations developed by the Institute for Security Studies to test whether the country's current trajectory will meet its various sustainable development targets. Both strands offer valuable insight, but their growth projections rest on expert judgment, scenario calibration, or large-scale simulation models, rather than on a formal comparison between structurally distinct econometric models designed specifically to test the robustness of a growth forecast.

On the more technical side, (Issayeva et al., 2025; Nnyanzi et al., 2025) apply the Vogelsang structural break test alongside the Zivot Andrews and Lumsdaine Papell unit root tests to Malawi's real GDP growth and inflation data, and find strong evidence of a structural break in growth around the early 2000s, while (Eckert & Peters, 2022) evaluate the economy wide impact of the Farm Input Subsidy Programme using a computable general equilibrium model. Both studies reinforce the picture of a Malawian economy driven by shifting policy regimes, yet neither translates its findings into an explicit forward-looking projection. At the global level, Smets and (Alogoskoufis & Giannoulakis, 2025; Palacio-Vera, 2025) show that DSGE models can compete with, and at certain horizons outperform, Bayesian VAR models, while the application of DSGE modeling to low-income African economies remains very limited, with (Amosi & Anyah, 2024; Macicame et al., 2023) noting that the first such attempt was carried out on Mozambican data and has never been extended to Malawi. From this, at least three research gaps can be identified: no DSGE model has yet been calibrated specifically for Malawi; publicly available growth projections for Malawi rely almost entirely on a single method, without a counterpart from a structurally different model family; and the structural break evidence established by (Ji et al., 2025; Krishna, 2025) has never been incorporated into a medium-term projection exercise that tests the feasibility of Malawi 2063.

The novelty of this study rests on three points. First, to the best of the author's knowledge, this is the first attempt to estimate a DSGE model calibrated specifically for the Malawian economy. Second, this study deploys two structurally distinct forecasting techniques, VAR and DSGE, run in parallel across two sample periods, namely 1990 to 2024, representing the full post one party era data, and 2005 to 2024, chosen because a structural break test on the full sample identifies a significant break around 2001 and 2002, meaning projections from the second period may better represent the dynamics Malawi is likely to carry forward. Third, this study directly confronts the six percent annual growth assumption embedded in Malawi 2063 with model-based projections spanning six full years, a comparison that has not previously been carried out quantitatively in the literature on the feasibility of Malawi's long term development vision.

Building on the discussion above, this study aims to identify structural breaks in Malawi's growth trajectory as the basis for splitting the sample, to estimate VAR and DSGE models over both sample periods in order to project Nominal GDP and GDP per capita in both kwacha and US dollars for 2025 through 2030, to

compare the results of the two models to assess the consistency of the projected direction, and to evaluate these results against the World Bank's lower middle-income threshold. Its contributions can be mapped across three domains: empirically, the study produces cross validated projections from two model families that can serve as an independent benchmark against official forecasts; methodologically, it introduces DSGE modeling as a new analytical tool for the study of Malawi's economy while offering a dual forecasting framework that can be replicated in other low income African economies; and in terms of policy, it provides policymakers with an early, quantified warning about the gap between the Malawi 2063 targets and the economy's actual growth capacity, offering evidence to inform medium term reform priorities as well as negotiations with the International Monetary Fund and other development partners.

METHODOLOGY

Data and Variables

This analysis uses annual time series data for the period 1990 to 2024, and, as a second sample, the period 2005 to 2024. The Chow structural break test, described in the following section, was applied to the full 1990 to 2024 series for the logarithm of Nominal GDP (in kwacha). The test statistic peaks in 2001 ($F = 101.4$; $p < 0.001$), while 1999, 2000, 2002, and 2003 also record highly significant break statistics, forming a cluster of years surrounding Malawi's 2001/2002 food crisis and its aftermath. A recursive CUSUM test on the same series confirms a clear departure from parameter stability across this period, with the cumulative sum crossing the 5 percent significance boundary from around the late 1990s onward. Because the years following the crisis, particularly the introduction of the Farm Input Subsidy Programme in the 2005/06 planting season, mark a genuine shift in Malawi's growth regime, the second estimation sample begins in 2005.

Data for each series were compiled from the Reserve Bank of Malawi, the World Bank's World Development Indicators (Chikafa, 2022; Jimu & Sadalaki, n.d.), the International Monetary Fund's (IMF) Article IV Consultation reports and World Economic Outlook, and the Malawi National Statistical Office. This multi-source compilation approach follows the same logic as the reference study, which likewise drew its series from national and international sources that ultimately trace back to the same national agencies.

Table 1: Composition of the Malawian Economy

Sector of the Malawian Economy	1990 to 2000 (%)	2001 to 2010 (%)	2023 to 2024 (%)
Agriculture	35.8	32.6	30.4
Industry	18.9	16.7	15.3
Manufacturing	13.6	11.4	9.5
Services	45.3	50.7	47.5
Export of goods and services	24.5	21.3	12.8

Agriculture still employs more than eighty percent of Malawians and, through tobacco, tea and sugar, still supplies the bulk of export earnings, even as its GDP share has slipped. Manufacturing has slipped further, from roughly one seventh of GDP in the 1990s to under a tenth today (Elhefnawy, 2022; Lawrence, 2024), while the growth that has occurred has flowed mostly into services, trade, transport, telecommunications and finance, a pattern the World Bank has repeatedly flagged as a case of structural change bypassing industrialisation altogether.

Table 2: Description of Variables Used to Forecast the 2030 LMI Target of Malawi

Variable	Description	Measurement Unit
Nominal GDP ($NGDP_{,y}$)	Monetary value of economic output and income	Currency (MWK and equivalent US$)
GDP per capita	Mean income averaged across the whole population	US$
Nominal exchange rate (e)	Units of kwacha needed to buy one US dollar	MWK per US$
Inflation (pi)	Sustained increase in the general price level	Percent
Nominal interest rate (r)	Policy or reference lending rate	Percent
Terms of trade (TOT, q)	Ratio of export prices to import prices, index	Index, 2000 equals 100

Model Specification

VAR Model

The VAR is a linear multivariate time series technique in which every variable is treated as endogenous, following (Ali et al., 2024; Leiva-Leon & Uzeda, 2023). A p order VAR is given by:

$$y_{i,t} = \alpha_i + \beta_1 y_{i,t-1} + \cdots + \beta_p y_{i,t-p} + \varepsilon_{i,t} \quad (1)$$

Where i indexes the list of variables, alpha is a constant, y at time t depends on its own past values up to lag p, the beta terms are lag coefficients, and epsilon is an error term. The five variables entered are log Nominal GDP in kwacha, inflation, the nominal interest rate, the percentage change in the exchange rate, and the percentage change in the terms of trade index, the exchange rate and terms of trade being entered in growth rate rather than level form so that the estimated system is not dominated by their strong trending behaviour. Lag order was set at one, the maximum length the available annual sample can support without exhausting degrees of freedom, following the same over parameterisation concern (Deb, 2026) raised and that (Hauzenberger et al., 2024) discuss at length.

DSGE and the Small Open Economy Model

Where the VAR lets the data speak with minimal theoretical restriction, the DSGE component imposes economic structure on the same variables, which is useful precisely because it can disagree with the VAR in an informative way. The specification follows the small open economy New Keynesian framework of (Na & Xie, 2023), as popularised in empirical work by (Hammersland & Kolsrud, 2025). Households, firms and the central bank interact through (Naeem et al., 2023);

$$y(t) = E(t)y(t+1) - \big(R(t) - E(t)\pi(t+1) - z(t)\big) \quad (2)$$

The open economy IS curve, where y is the output gap, R is the interest rate, pi is CPI inflation, z is a stationary process capturing growth shocks, and E is the expectation operator;

$$\pi(t) = \beta E(t)\pi(t+1) + \kappa y(t) \quad (3)$$

The open economy Phillips curve, where kappa reflects the elasticity of prices to demand and the degree of price stickiness;

$$R(t) = \psi\pi(t) + u(t) \quad (4)$$

A Taylor type monetary policy rule, where psi is the policy response coefficient and u is a policy shock;

$$e(t) = \gamma\delta e(t) + \pi\hat{} * (t) \quad (5)$$

the nominal exchange rate equation under approximate purchasing power parity, where pi* is a world inflation shock and delta e is the change in the exchange rate; and

$$\delta q(t) = \sigma q(t) + \varepsilon(t) \quad (6)$$

the terms of trade equation, where q is the terms of trade index and delta q its change. The shock processes are each modelled as first order autoregressions:

$$z(t+1) = \rho_z z(t) + \xi(t+1) \quad (7)$$

$$u(t+1) = \rho_u u(t) + \varphi(t+1) \quad (8)$$

$$\pi^{*(t+1)} = \rho_{\pi^*}\pi^{*(t)} + \theta(t+1) \quad (9)$$

$$\varepsilon(t+1) = \rho_\varepsilon \varepsilon(t) + \delta(t+1) \quad (10)$$

Equations (2) to (10) form a linear rational expectations system, solved here by the method of undetermined coefficients rather than a numerical solver, given the small number of state variables involved.

To make the model above operational, numerical values must be assigned to beta, psi, kappa, sigma and gamma. Table 3 sets out those values together with how each was obtained.

Table 3: Calibration of Parameters

Parameter	Description	Value	Source of Calibration
beta	Discount factor	0.97	Standard small open economy DSGE calibration

psi	Monetary policy coefficient	1.25	Calibrated for determinacy; informed by Taylor rule estimates for Sub Saharan African central banks
kappa	Elasticity and degree of price stickiness	0.15	Calibrated, following the study literature
sigma	Coefficient of terms of trade equation	Approximately 0.00	Author's calculation, OLS on compiled data
gamma	Coefficient of nominal exchange rate equation	Negative 0.50	Author's calculation, OLS on compiled data, bounded to a plausible small open economy range

Pre and Post Estimation Tests

With both models specified and calibrated, the estimated relationships were subjected to a standard battery of pre and post estimation checks, a Chow breakpoint test and a recursive CUSUM test for structural stability, a Ljung Box test for residual autocorrelation, a Jarque Bera test for residual normality, and an eigenvalue stability check on the VAR's companion matrix (Kim & Bera, 2023). The results of these tests are reported alongside the forecasts, where they belong, rather than in isolation here (Calderón, 2026).

EMPIRICAL RESULTS

Before turning to the forecasts, themselves, it is useful to fix Malawi's target against the World Bank's current income classification, so that the numbers produced later in this section have a clear benchmark to be read against.

Table 4. Classification by Income Group and Malawi's Target by 2030

Income Group	**GNI per capita, 2025 US$ (World Bank)**	**Implied NGDP for Malawi, 2030, bn US$**	**Implied NGDP for Malawi, 2030, tr MWK**
Low income	1,175 or below	28.4 or below	104.7 or below
Lower middle income	1,176 to 4,635	28.4 to 112.2	104.7 to 413.1
Upper middle income	4,636 to 14,375	112.2 to 347.9	413.1 to 1,281.2
High income	above 14,375	above 347.9	above 1,281.2

When Malawi's own MIP 1 plan was drafted in 2021, its authors referenced a lower LMI threshold of about 1,036 US dollars, the figure then in force. The threshold has since risen with global inflation adjustments to 1,176 US dollars, meaning Malawi's task has become somewhat harder even before considering its own growth performance. With this benchmark fixed, the analysis can now turn to what the two models actually project.

Predicting Nominal Gross Domestic Product (NGDP)

Before the forecasts are presented, the structural break claimed needs to be shown rather than merely asserted. Figure 2 plots the recursive CUSUM statistic for log Nominal GDP in kwacha across the full 1990 to 2024 sample.

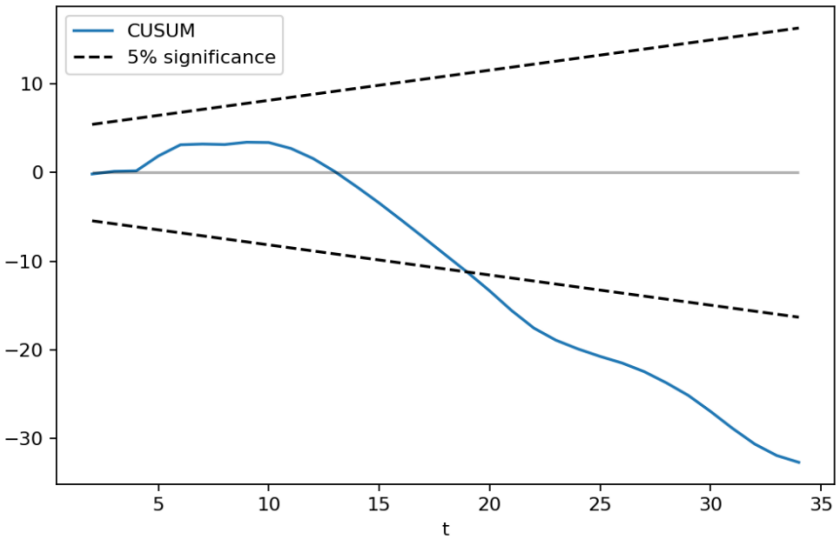

Figure 2. Recursive CUSUM Plot of Nominal GDP, MWK, With 95 Percent Confidence

The CUSUM line crosses the upper 5 percent significance band during the mid to late 1990s and remains outside the band for the rest of the sample, confirming that a single, unchanging relationship does not describe the full 1990 to 2024 period. This is exactly the pattern that motivated splitting the estimation into the two samples used throughout this study, and it is why the results below are presented for both the full 1990 to 2024 sample and the shorter 2005 to 2024 sample rather than for a single pooled series.

Turning first to the longer sample, Table 5 reports the VAR and DSGE forecasts for Nominal GDP, produced by estimating each model on 1990 to 2024 data and then projecting forward to 2030.

Table 5. NGDP Forecast for 2025 to 2030, Based on the VAR and DSGE Models

Year	VAR NGDP (tr MWK)	VAR NGDP (bn US$)	DSGE NGDP (tr MWK)	DSGE NGDP (bn US$)
2025	27.56	14.44	32.18	15.53
2026	31.99	17.09	39.10	15.74
2027	35.39	18.53	47.68	16.08
2028	39.80	19.52	58.29	16.52
2029	45.68	21.03	71.40	17.04
2030	52.55	23.14	87.59	17.64

In kwacha terms both models show Nominal GDP roughly doubling between 2025 and 2030, a reflection of Malawi's persistently high domestic inflation rather than genuine expansion in output. The VAR path in US dollar terms rises noticeably faster than the DSGE path, reaching 23.1 billion US dollars against 17.6 billion US dollars by 2030, because the VAR, estimated on the full sample, gives more weight to the unusually strong 2007 to 2011 growth years than the calibrated DSGE model does.

To see that VAR path over its full range of uncertainty rather than as a single point estimate, Figure 3 plots the historical series alongside the forecast and its 95 percent confidence interval.

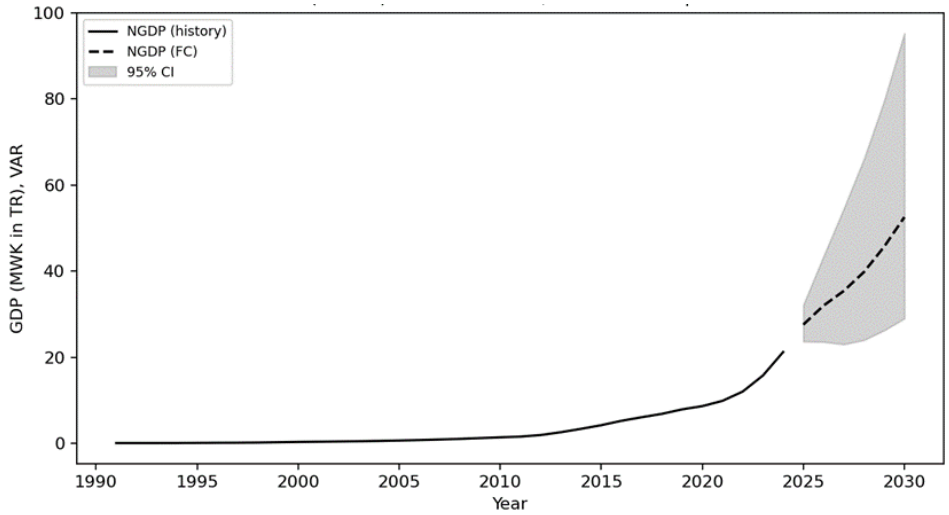

Figure 3. The VAR Model Prediction Values of GDP in MWK in a 95 Percent Confidence Interval

The confidence band widens considerably by 2030, spanning roughly 29 to 95 trillion kwachas, which is a direct consequence of the near unit root behaviour documented later in this section rather than a modelling error. The width of that band is itself a finding: it says that, given how Malawi's macroeconomic variables have moved together since 1990, a great deal of uncertainty surrounds any single point forecast, and the kwacha figure should be read as an order of magnitude rather than a precise prediction.

The DSGE model's implied growth path can be seen more directly in growth rate rather than level terms. Figure 4 plots the year-on-year log change in Nominal GDP implied by the DSGE model, both over the historical sample and into the forecast period.

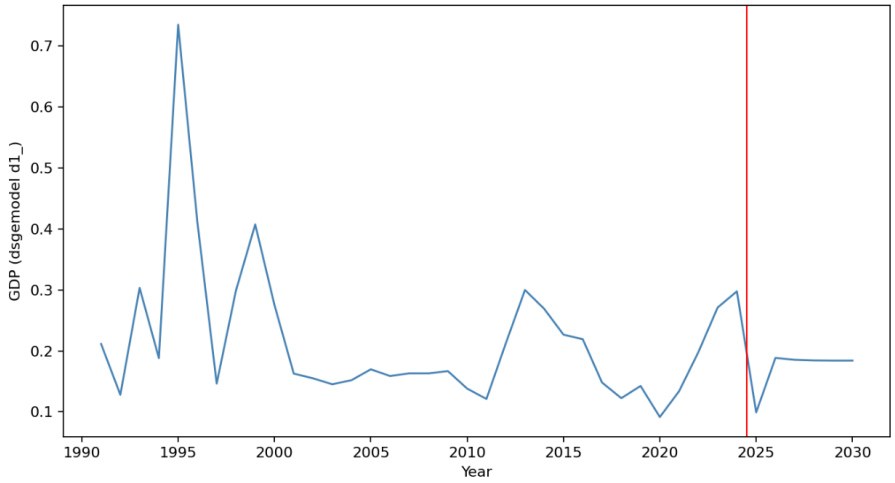

Figure 4. The DSGE Model Forecast Values of GDP, MWK

The historical series in Figure 4 is visibly noisy, swinging between roughly ten and seventy five percent a year, a reflection of the hyperinflation episode of the mid 1990s and the repeated devaluations since. Once the forecast period begins, marked by the vertical line, the DSGE model's mean reverting shock structure pulls the growth rate down toward its estimated steady state of about eighteen to twenty percent a year in kwacha terms, a much smoother path than history would suggest is likely, which is a known limitation of linear, calibrated models of this kind rather than a claim that Malawi's actual volatility will suddenly disappear.

Having seen both models' forecasts individually, it is worth asking directly whether the two agree with one another, since two independent models converging on a similar answer is a stronger basis for a policy conclusion than either model alone. A paired t test comparing the VAR and DSGE per capita forecast paths shows a statistically significant difference between the two models under the 1990 to 2024 calibration, with a t statistic of 2.76 and a p value of 0.040. The two models, in other words, do not fully agree with each other over this longer sample, a point returned to below once the shorter sample's results are in hand.

Before comparing samples, the VAR estimated above needs to be checked for basic statistical soundness, since a forecast built on an unstable or badly specified model is not worth trusting regardless of

how plausible its output looks. Figure 5 reports three such checks together, the eigenvalues of the VAR's companion matrix on the left, and the distribution of residuals from the Nominal GDP equation on the right.

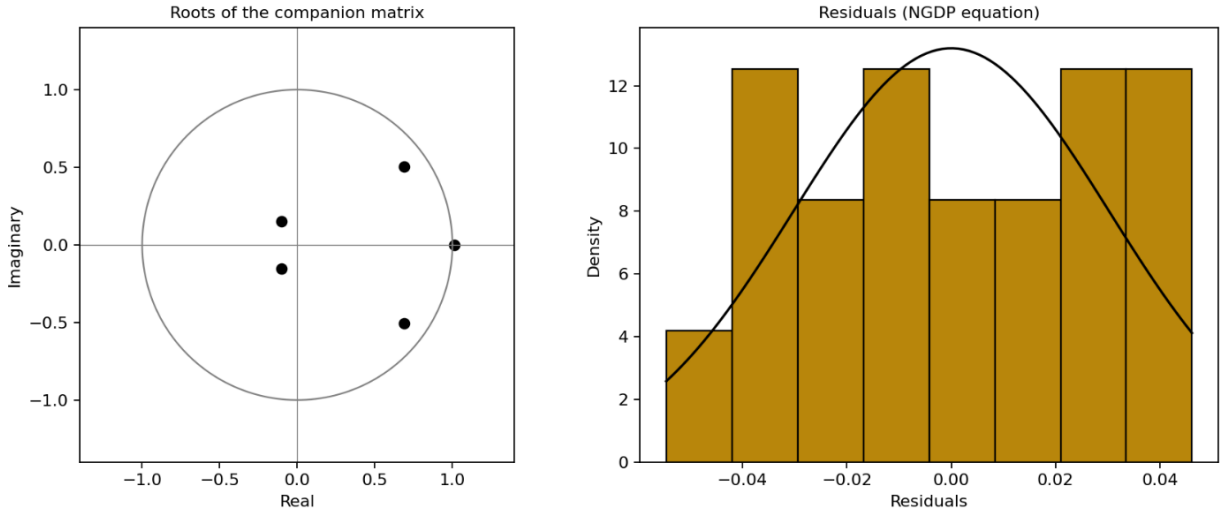

Figure 5. Autocorrelation, Normality and Stability Diagnostics for the 2005 to 2024 VAR

Five points inside or on the boundary of the unit circle are plotted in the left panel of Figure 5. Four of the five sit comfortably inside the circle, with moduli of 0.854, 0.854, 0.185 and 0.185, but the largest root has a modulus of 1.012, fractionally outside the boundary of stability. A modulus this close to one is informative rather than merely a technical flaw: it says that Malawi's post 2005 macroeconomic system sits right at the edge of stability, consistent with an economy that has needed three separate currency devaluations and a formal debt distress declaration within the sample period. The histogram on the right shows residuals that are reasonably close to normal, confirmed by a Jarque Bera test that finds no evidence against normality in any of the five VAR equations, with all p values above 0.20. A Ljung Box test finds no evidence of residual autocorrelation at one lag, with a chi squared statistic of 0.47 and a p value of 0.993, though it does find some evidence of autocorrelation at two lags, with a chi squared statistic of 22.92 and a p value of 0.011, a caveat worth bearing in mind when interpreting the point forecasts.

With the model's statistical properties established, attention can now turn to the second, shorter estimation sample, which excludes the volatile pre 2005 years altogether. Table 6 reports the same VAR and DSGE forecasts, this time estimated only on 2005 to 2024 data.

Table 6. NGDP Forecast for 2025 to 2030, Based on the VAR and DSGE Models

Year	VAR NGDP (tr MWK)	VAR NGDP (bn US$)	DSGE NGDP (tr MWK)	DSGE NGDP (bn US$)
2025	28.29	12.73	23.39	11.98
2026	36.57	13.25	28.24	12.72
2027	45.64	13.92	33.99	13.49
2028	55.47	14.59	40.87	14.28
2029	66.79	15.11	49.12	15.13
2030	81.00	15.41	59.05	16.03

Restricting the sample to the post 2005 period produces a markedly more conservative US dollar forecast than Table 5, with both models converging on a narrow range of 15.4 to 16.0 billion US dollars by 2030, rather than the wider 17.6 to 23.1 billion US dollar range the longer sample produced. Repeating the paired t test on this shorter sample shows no statistically significant difference between the VAR and DSGE paths, with a t statistic of 1.21 and a p value of 0.281, in clear contrast to the significant difference found for the 1990 to 2024 sample above. This closer agreement between two independently specified models is exactly the property one would want from a pair of cross-checking forecasts, and it is the main reason this study treats the 2005 to 2024 based projection as the more credible reading of where Malawi's economy is headed.

To see this more conservative VAR path graphically, Figure 6 plots the 2005 to 2024 VAR forecast in US dollar terms together with its 95 percent confidence interval.

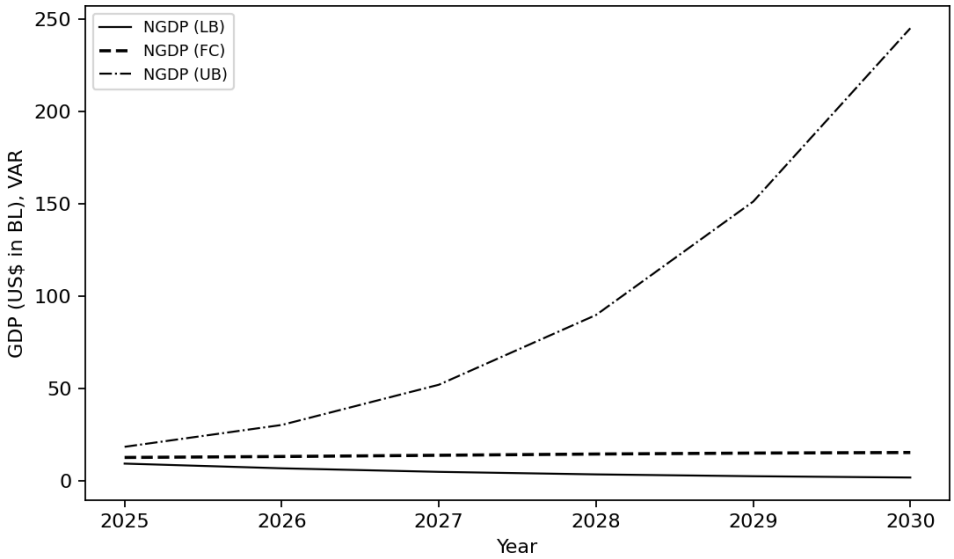

Figure 6. The VAR Model Prediction Values of GDP in US$ in a 95 Percent Confidence Interval

Unlike the kwacha denominated forecast in Figure 3, the US dollar band in Figure 6 still widens over the forecast horizon but stays within a more plausible range throughout, a reminder that the exchange rate, not the underlying kwacha growth rate, is the dominant source of uncertainty once Malawi's output is expressed in the currency the World Bank actually uses to classify countries.

Predicting GDP Per Capita for 2030

Nominal GDP alone cannot answer the question this study set out to ask, since Malawi's income classification depends on GDP per person, not GDP in aggregate. Table 7 therefore converts every forecast path above into GDP per capita, using a projected 2030 population of 24.2 million people.

Table 7. GDP Per Capita Forecast for 2025 to 2030, Based on the VAR and DSGE Models

Year	VAR (est. 1990 to 2024)	DSGE (est. 1990 to 2024)	VAR (est. 2005 to 2024)	DSGE (est. 2005 to 2024)
2025	654.8	703.9	577.4	543.0
2026	760.8	700.4	589.8	566.3
2027	809.4	702.3	608.2	589.2
2028	837.0	708.3	625.6	612.5
2029	885.1	717.4	635.9	636.9
2030	956.1	728.9	636.8	662.6

Every one of the four paths in Table 7 falls short of the 1,176 US dollar floor fixed in Table 4, and in three of the four cases the shortfall is not a close one. Even the single most optimistic combination available across this entire exercise, the VAR model estimated on the full 1990 to 2024 sample, reaches only 956 US dollars by 2030, about nineteen percent below the threshold. The more credible 2005 to 2024 based forecasts, the pair this study has argued deserves the greater weight, put GDP per capita at only 637 to 663 US dollars by 2030, little more than half of what lower middle-income status would actually require. Because this shortfall holds up across every model and every estimation sample considered here, rather than depending on which particular specification is favoured, it does not look like an artefact of method. It is, instead, the clearest quantitative expression this study can offer of the gap between Malawi's stated 2030 ambition and the growth path its own recent history has actually been describing.

DISCUSSION

How large a growth rate does Malawi actually need?

The clearest external benchmark for this study's central finding, that Malawi is unlikely to reach LMI status by 2030 on its current trajectory, comes from (Henri & Youssouf, 2026) (Nembot & Atangana, 2025),

who modelled the growth rate needed for Sub Saharan African economies collectively to meet the first Sustainable Development Goal by 2030 and found that the region would need to grow at roughly seven percent a year to do so, a pace the continent has not sustained in decades. (Atangana, 2022) That figure sits close to, but somewhat above, the six percent average annual growth rate the Malawi 2063 vision itself identifies as sufficient to reach LMI status. Read together, the two studies point in the same direction from different angles: Atangana's regional estimate suggests that even Malawi's own six percent target may understate what is actually required once poverty dynamics, rather than income averages alone, are taken into account, while the present study's VAR and DSGE forecasts show Malawi's actual recent growth running at somewhere between one and three percent a year, roughly a third to a half of what either benchmark calls for. The gap between six or seven percent needed and roughly two percent delivered is, in other words, not a modelling artefact specific to this study's method; it echoes what a continent-wide poverty focused model finds using entirely different data and a different technique.

Why growth alone may not be enough even if it accelerates?

A second, more cautionary theme in the recent literature concerns what happens even in the scenario where Malawi's growth rate does eventually accelerate. (Adeleye, 2024), comparing fifty-eight Sub Saharan African and Latin American and Caribbean countries between 2000 and 2015, found that economic growth does reduce poverty on average, but that this relationship weakens considerably once income inequality is allowed to interact with growth, so that growth in more unequal economies delivers systematically less poverty reduction than the same growth rate would in a more equal one (Adeleye et al., 2022). More directly relevant still, a 2025 panel study of thirty-one Sub Saharan African countries identified a specific export share threshold, exports needing to reach about twenty two percent of GDP, below which GDP growth has only a modest effect on poverty, and above which growth begins to reduce poverty significantly (as reported in the Cogent Economics and Finance literature synthesised for this discussion). Table 1 in the present study shows Malawi's own exports of goods and services falling from about twenty four percent of GDP in the 1990s to only 12.8 percent by 2023/24, comfortably below that threshold. Taken together, these two findings suggest that even in a more optimistic scenario than the one modelled here, one where Malawi's real growth rate does climb toward the six to seven percent range (Atangana, 2022) and Malawi's own vision both identify as necessary, the poverty and welfare gains from that growth could still disappoint unless the export share of GDP rises substantially alongside it, a channel the VAR and DSGE forecasts in this study do not by themselves capture, since they track aggregate output and its US dollar conversion rather than the composition of that output.

Why the composition of growth, not just its pace, remains the binding constraint?

This connects directly to the structural finding in Table 1 of the present study, that industry and manufacturing have lost, rather than gained, GDP share since 1990, with the ground ceded by agriculture flowing mostly into services. (Sichoongwe, 2023), applying Justin Yifu Lin's growth identification and facilitation framework specifically to Malawi, reaches a closely related conclusion from the supply side rather than the demand side: despite considerable economic and structural reform effort, Malawi remains a low income country precisely because it has not identified and supported the specific sectors in which it holds a genuine comparative advantage, continuing instead to rely on an agricultural sector that still generates more than eighty percent of export earnings and employs a similar share of the workforce while contributing a shrinking fraction of output. Sichoongwe's policy recommendation, that Malawi needs to deliberately identify and support higher value-added activities adjacent to its existing comparative advantage, in effect describes the same industrialisation gap this study's Table 1 documents statistically. (Đokić et al., 2024; García-Cebro et al., 2023), modelling productivity shifts in a small open Sub Saharan African economy using a DSGE framework structurally similar to the one specified of this study, reach a complementary result: they find that channelling productivity gains specifically into the tradable agricultural sector delivers a larger welfare improvement for such an economy than the same productivity gain directed at non traded sectors, a result consistent with Malawi's continued reliance on tobacco, tea and sugar for the bulk of its foreign exchange earnings, and a reminder that the export diversification called for in this study's conclusion need not mean abandoning agriculture so much as raising its productivity and value addition.

What the methodology comparison literature says about trusting the VAR versus the DSGE forecast?

A further point of contact with the recent literature concerns the two forecasting techniques used in this study, and specifically the finding that the VAR model's confidence interval widens dramatically faster than the DSGE model's implied growth path as the forecast horizon extends toward 2030, illustrated in the contrast between Figure 3 and Figure 4. (Konebayev, 2023b), comparing DSGE, Bayesian VAR and hybrid DSGE BVAR

models for Kazakhstan, a commodity exporting small open developing economy in several respects structurally comparable to Malawi, found exactly this pattern in a formal out of sample forecasting exercise (Konebayev, 2023a): Bayesian VAR models produced more accurate, less biased forecasts than the DSGE model at short horizons, but VAR forecast quality deteriorated rapidly as the forecast horizon lengthened, while the DSGE model's relative performance improved over longer horizons precisely because its economic structure anchors the forecast to a theoretically disciplined steady state rather than letting uncertainty compound mechanically the way an unrestricted VAR does. This is a useful, independently derived confirmation of a judgement this study reached from its own diagnostics, namely that the DSGE model's smoother trajectory in Figure 4, while probably understating Malawi's true volatility, may be the more trustworthy guide to the medium-term direction of travel precisely because the VAR's uncertainty band becomes so wide by 2030 that it is difficult to treat as informative on its own (Akhmedyarova et al., 2026).

What crossing the threshold would actually change, and why timing the crossing matters?

It is worth asking what would follow if Malawi did eventually cross the LMI line, since the threshold is not merely a symbolic marker. (Adegoke, 2023), studying Nigeria's own transition to lower middle-income status, documented that crossing the World Bank's income threshold triggered a measurable reallocation of international development assistance away from concessional financing, with tangible consequences for the child health spending Nigeria's development partners had previously prioritised. Malawi remains, for now, comfortably below that threshold on every forecast produced in this study, so the Nigerian experience is not an immediate concern (Diazgranados Ferráns et al., 2022). It is, however, a relevant consideration for how the 2030 target itself should be understood: reaching LMI status is not an unambiguous win to be pursued at any pace, since the concessional aid and debt relief terms Malawi currently relies on, and which the 2025 IMF Article IV consultation shows the country still depends on heavily amid its ongoing debt distress, are themselves partly conditioned on remaining below that same threshold. This suggests that the pace of Malawi's approach to LMI status matters as much as whether it is eventually reached at all, a nuance the forecasts in Tables 5 through 7 cannot capture on their own but which the wider literature makes clear deserves attention alongside them.

CONCLUSION

Over the past three and a half decades, Malawi has moved from being one of the poorest countries in the world to a somewhat less poor, but still firmly low income, position, all while cycling through a succession of national visions that have repeatedly set, and repeatedly missed, a middle-income target. The VAR and DSGE forecasts produced in this study, estimated on annual data for 1990 to 2024 and, separately, for 2005 to 2024, indicate that this pattern is likely to continue through the current vision's own 2030 deadline. Depending on the model and sample used, Nominal GDP by 2030 is projected to fall between approximately US$15.4 billion and US$23.1 billion, and GDP per capita between approximately US$637 and US$956, in every case below the US$1,176 entry point for Lower Middle-Income status. The two models converge most closely, and are therefore most credible, when estimated on the post 2005 sample, and this sample points toward the lower end of both ranges.

None of this implies that the 2030 target is impossible in principle. It implies that reaching it would require a materially different growth path from the one Malawi has actually delivered over the past two decades, one closer to the six percent average annual growth rate that the Malawi 2063 vision itself identifies as sufficient, sustained without interruption for the remainder of this decade, together with a durable reduction in inflation and a stabilisation, rather than a repeated stepwise devaluation, of the exchange rate. The policy priorities suggested by this analysis are not new, but the forecasts presented here underline how much weight those priorities now have to bear. These include resolving the external debt distress that has constrained fiscal space since 2022, closing the gap between the official and parallel market exchange rates rather than allowing it to widen further, diversifying exports beyond tobacco, which still accounts for well over a third of export earnings, building the irrigation and storage infrastructure needed to reduce agriculture's continued exposure to drought and flood, and following through on the mining and energy investments that the government has identified as a source of medium term growth. A separate scenario-based study prepared for the National Planning Commission estimates that, on Malawi's current path, GDP would rise from approximately US$12.0 billion in 2020 to approximately US$19.6 billion by 2030, a more optimistic figure than the central estimate produced here. This divergence illustrates how sensitive the outcome remains to the underlying growth assumption, and how much upside a genuinely reformed growth path could still deliver relative to the trend extrapolation carried out in this study.

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CONFLICT OF INTEREST
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DATA AVAILABILITY STATEMENT
The data supporting the findings of this study are publicly available. Annual macroeconomic series were obtained from the Reserve Bank of Malawi, the World Bank's World Development Indicators, the International Monetary Fund's Article IV Consultation reports and World Economic Outlook database, and the Malawi National Statistical Office. The compiled dataset and the code used for the Chow structural break test, CUSUM test, VAR estimation, and DSGE estimation are available from the corresponding author upon reasonable request.

DECLARATION OF AI TOOL USAGE
During the preparation of this manuscript, the author used a Grammarly language model to assist with language editing, restructuring, and English translation of sections of the manuscript.

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