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BINDING CONSTRAINTS TO PRODUCTIVE INVESTMENT IN MALAWI: A MODIFIED HRV FRAMEWORK

Themba Gilbert Chirwa¹ and Nicholas M. Odhiambo

Abstract

The paper applies a modified Hausmann, Rodrik, and Velasco (HRV) growth diagnostics framework to analyse Malawi's growth challenges. The study finds five critical binding constraints affecting productive investment and output growth in Malawi. These include land administration, taxation, customs and trade regulations, political governance, and cost-of-finance. Land constraints are evidenced by highly urban and rural population growth, an inverse co-movement between the rural population and investment per capita, and low land administration indices. Tax constraints are evidenced by the negative growth of investment per capita. Customs and trade regulations constraints are evidenced by non-tariff measures, such as high costs and the time it takes to export and import. Political governance constraints are evidenced by rising government debt and the low score on transparency, accountability, and corruption based on the World Bank's Public Transparency Scale. Lastly, high cost-of-finance constraints are evidenced by monetary policy challenges, such as high real interest rates, inflation rate, uncompetitive exchange rate, and foreign aid ineffectiveness. Therefore, we recommend that the formulation of crucial policy strategies to alleviate these five significant binding constraints be encouraged. The government should base such an approach to sound growth therapeutics that fully account for each challenge's root causes.

Keywords: Growth Diagnostics; Investment; Land; Fiscal Policy; Trade; Political Governance; Monetary Policy

JEL Classification Code: E22, F43, O47, R52

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1. Introduction

There are challenges with the existing quantitative approaches used to identify the factors that drive or hinder economic growth. Most existing techniques used to determine the factors that drive or impede economic growth have not provided ways of how policymakers could improve investment without clearly understanding what has been binding investment in developing countries in the first place. In Malawi, for instance, studies have been conducted, which have showcased that investment, human capital, and international trade are positively associated with economic growth. In contrast, population growth and inflation hinder economic growth (Chirwa and Odhiambo, 2016a, 2016b). As much as we can draw policy implications from such conclusions, the process of how to increase investment, human capital, international trade, or even lower population growth or inflation is not usually straightforward in such growth regressions (Agosin *et al.*, 2009).

In a similar study, Chirwa and Odhiambo (2019) employed a conventional Cobb-Douglas aggregate production function with labour augmenting (Harrod neutral) technological progress to test the exogenous growth models in three Southern African countries. In their model, the role of institutions in influencing economic growth, as suggested by North (1990) and Hall and Jones (1999), and those of other macroeconomic variables, were explicitly addressed. In their study, it was found that by incorporating such additional variables in the growth model, low-income economies such as Malawi, which experiences macroeconomic instability, will experience a low elasticity of investment for output compared to other economies that share macroeconomic stability, such as Zambia and South Africa.

It is essential to fully understand what slows economic growth in developing countries such as Malawi and thereby understand the structural heterogeneities they face by going beyond conventional

regression models. This study adopts the Hausmann, Rodrik, and Velasco (HRV) growth diagnostics approach that focuses on private investment's role in sustaining long-term economic growth (Hausmann *et al.*, 2005). Their system has several advantages. Firstly, the HRV approach helps decouple the importance of economic growth in alleviating poverty from a country's perspective. Secondly, the HRV approach is an essential strategy that allows an economy to identify the most binding constraints, policies, and other factors that hinder or constrain the growth of investment and output in an economy. Thirdly, it helps a country to prioritize the numerous constraints identified to avoid a 'wholesome' approach to reform, which does not consider the administrative or political limitations of policy-making capital (Hausmann *et al.*, 2005). Fourthly, the HRV approach assumes that growth strategies are likely to differ depending on the domestic environment, opportunities, and constraints therein – one economics, but many recipes (Rodrik, 2007). Lastly, it follows an objective approach that focuses on a country's limited resources towards addressing the critical or binding constraints to economic growth within a specified period.

This study aims to make a significant contribution to the growth literature. Firstly, the HRV growth decision tree has been modified to consider the numerous criticisms it has faced over the years, both from a theoretical and empirical perspective (see Felipe and Usui, 2008; Agosin *et al.*, 2009). Secondly, bordering on the methodology proposed by Hausmann *et al.* (2008), we have increased the number of tests based on recent data.

The rest of the paper is structured as follows. Section 2 outlines the HRV methodology to be adopted, as well as the proposed five tests used. Section 3 discusses the empirical results based on international and country-specific data. Lastly, Section 4 concludes the paper and offers some policy recommendations on improving productive investment in Malawi.

2. Modified HRV Methodology

The fundamental question that we ask in this study is threefold: ‘*Why is Malawi’s investment growing more slowly; why is agriculture value-added so high, and why is industry value-added growing slower than its peers?*’ This section discusses a methodology on how to respond to these questions using a modified HRV framework.

According to the HRV framework, two distinct factors that influence private investment include the cost of finance and investment returns. The challenge with the HRV approach of 2005 is that it assumes a top-down approach and that the limiting factor is a private investment rather than productive investment. Much as private investment is an essential factor, productive investment, regardless of its source, constrains economies not to grow. According to Solow (1956), what matters in an economy is the coefficient of the elasticity of output for capital stock and the factors that could reduce its value, regardless of whether it is private or public investment. Given this modification, we can consider additional policy factors beyond those that just constrain private investment. Furthermore, the assumption that a starting point should be what constrains private investment is flawed as decisions to invest starts from an identified and productive value chain.

A well-developed value chain outlines how profitable or productive a particular investment will be from inputs, production, processing, logistics, and marketing. In the HRV framework, the value chain is linked to information asymmetries or ‘self-discovery’ and expects to start from a market-failure point of view. For this value chain to successfully materialize, it may be essential to control several underlying issues, such as transaction costs or constraints. For instance, low human capital development (returns to education, population growth, unemployment, skills), and inadequate infrastructure (production-related – mechanized equipment, irrigation, electricity, water supply, or

logistics related – rural feeder roads, markets, telecommunication) could affect inputs and production. Other factors include market failures (coordination externalities in State-Owned Enterprises, conflicting policies, lack of cooperatives), government failures (micro risks – property rights, corruption, land fragmentation, price controls), costly domestic finance (low savings culture and weak financial intermediation – lack of capital or futures markets), and expensive international finance (allocation of aid, lack of foreign direct investment, real exchange rate misalignment). Thus, a selected value chain's profitability will be subject to the degree of transaction costs they face, thereby contributing negatively towards low appropriability or high finance cost. Such high transaction costs affect productive investment and entrepreneurship as a critical ingredient to economic growth. We present an illustration of this process in Figure 1.

Hausmann *et al.* (2008) suggest investigating four general properties of a constraint for it to be potentially binding. We add a fifth one that draws on the perception of economic agents on which constraint is binding to their investment as the starting point based on improvements in data collection from the World Enterprise Survey (World Bank, 2014b). These properties, which are also tests or clues, respond to the following hypotheses:

- TEST 1: Are there perceptions of economic agents that allow them to identify which constraints are most binding to their business(es)?
- TEST 2: Is the constraint's indicator (shadow) price high?
- TEST 3: Are changes in the constraint leading to significant changes in the objective function (e.g., economic growth, production growth, investment growth, employment growth, etc.)?

TEST 4: Are there attempts by economic agents to circumvent, bypass, or overcome the constraint?

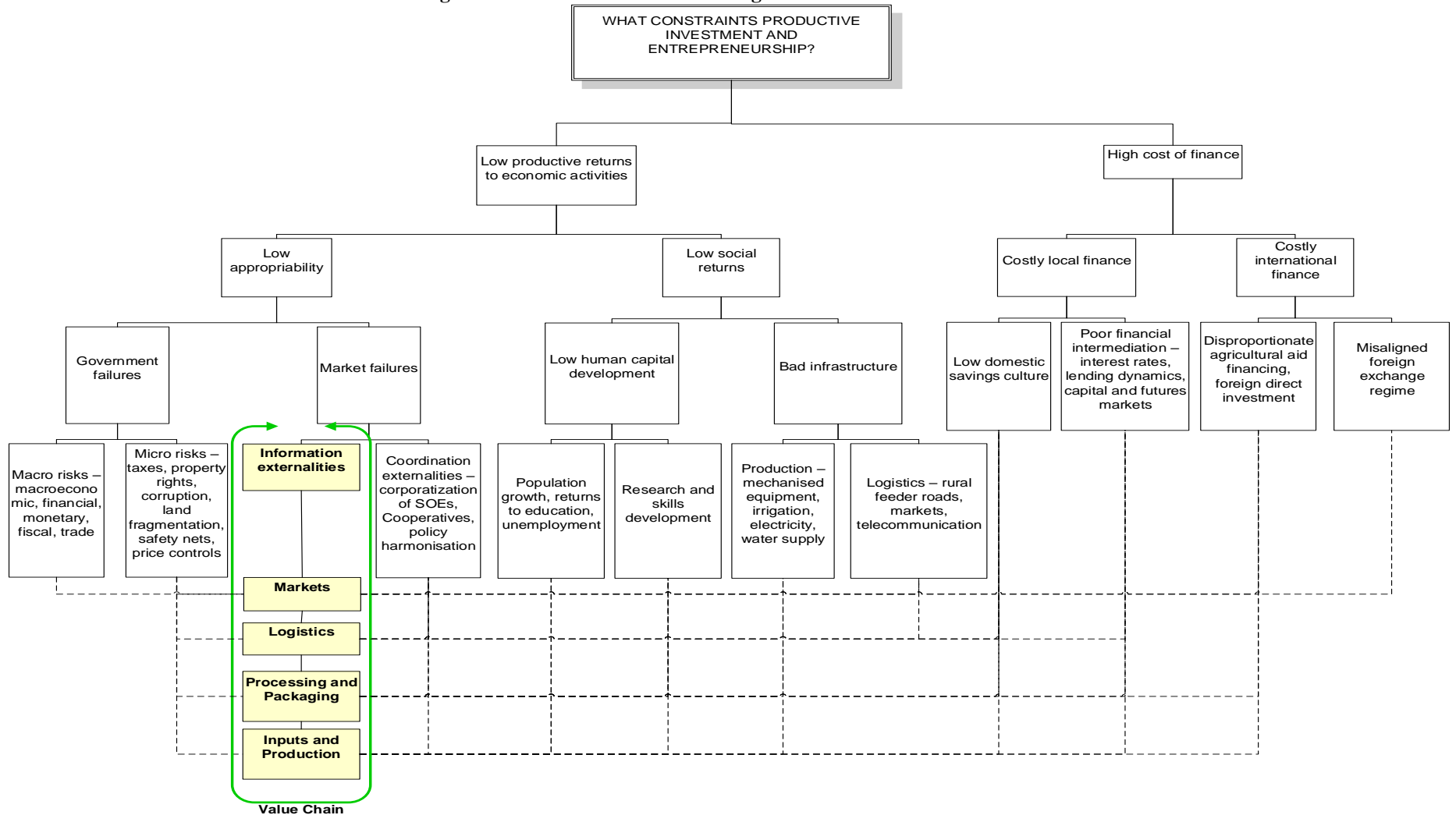
TEST 5: Are there agents who are less intensive in the constraint more likely to survive and thrive, or are those who are more intensive in the constraint struggling to survive or collapse?

The identification of constraints is critical as it provides more guidance on which policy recommendations that policymakers ought to adopt and implement. Since constraints directly affect the decision to invest in a productive value chain, which is, in turn, affected by policy changes, output growth is thus indirectly affected by policy changes (Hausmann *et al.*, 2008). In this case, we also modify the growth trajectory presented in Hausmann *et al.* (2008) as follows:

$$\frac{\partial Growth}{\partial Policy_j} = \sum_{i=1}^N \frac{\partial Growth}{\partial Investment_i} \cdot \frac{\partial Investment_i}{\partial Constraint_i} \cdot \frac{\partial Constraint_i}{\partial Policy_j} \dots \dots \dots (1)$$

The importance of equation (1) relates to how a constraint can affect the elasticity of output for capital stock or investment, which Solow (1956) termed as temporary shocks. Hausmann *et al.* (2008) propose that the most binding the constraint is, the more impact it has on economic growth.

Figure 1: Modified HRV Growth Diagnostic Decision Tree



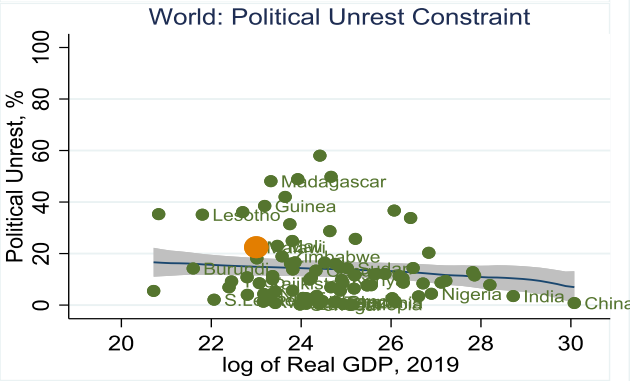
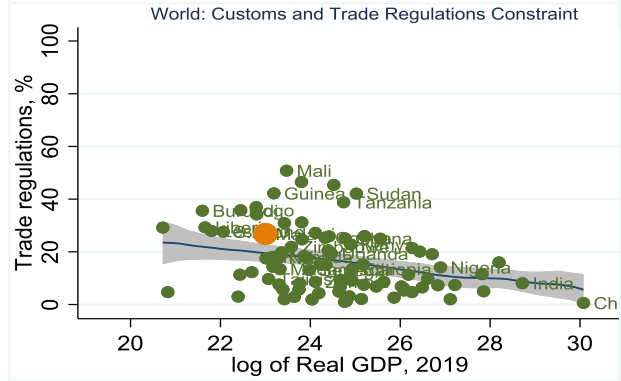
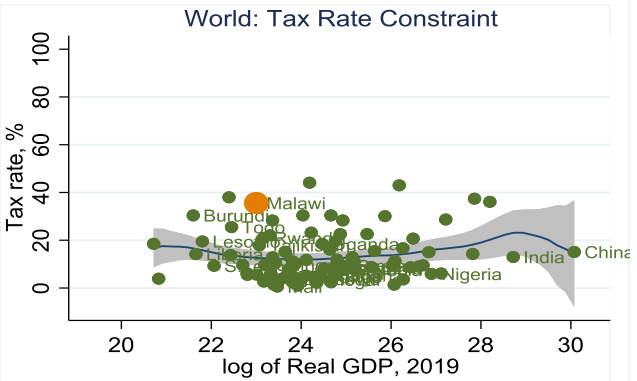
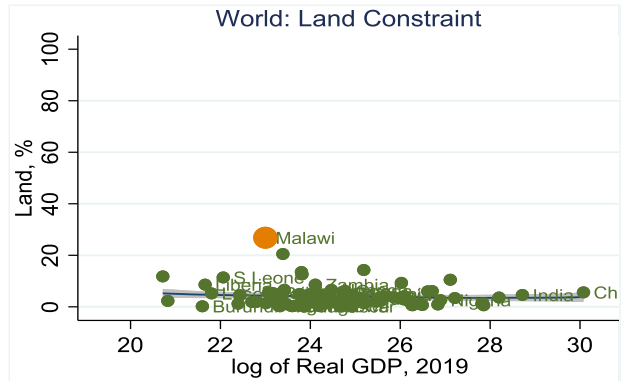
Source: Author modifications based on Hausmann et al. (2005) framework.

3. Empirical Results

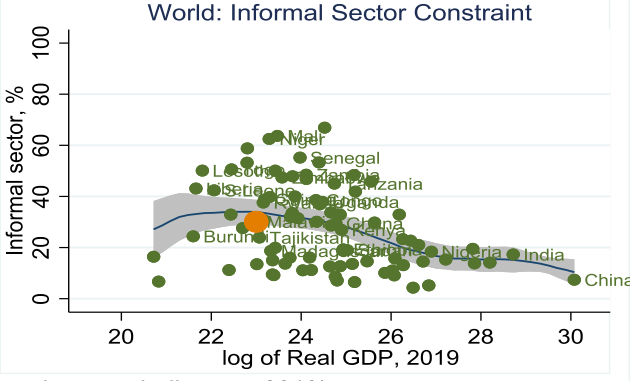
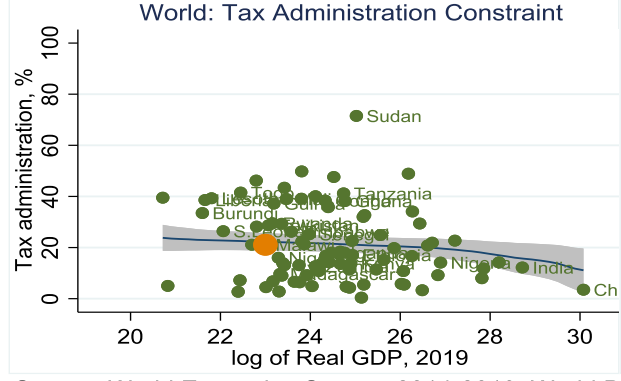
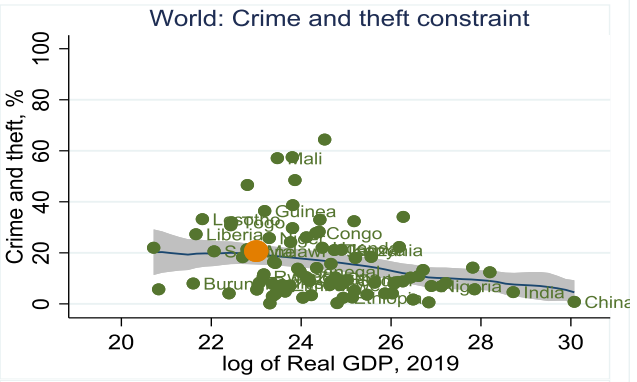
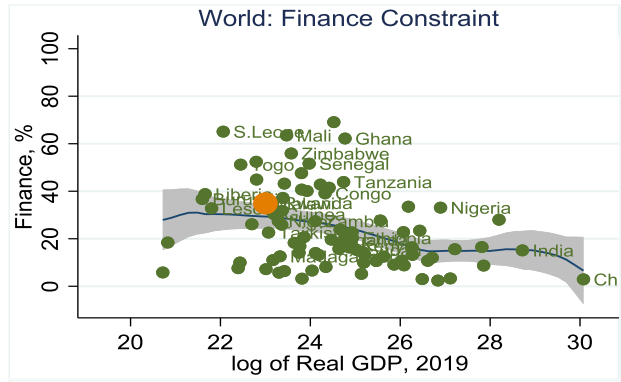
The study uses several data sources such as the World Enterprise Survey (World Bank, 2014b), the Doing Business Survey (World Bank, 2019a), World Development Indicators (World Bank, 2019b), and several anecdotes from various studies and reports to identify such binding constraints. The standard econometric and statistical package used for the analysis is STATA 16.

3.1 Test 1: Identification of the Most Binding Constraints to Private Investment in Malawi

The World Enterprise Surveys include views on firms' perspectives on what binds their growth. There are fifteen key areas investigated as constraints. These include finance; corruption; tax rate; tax administration; electricity; transport; land; court systems; education; business licensing; crime, theft, and disorder; labour regulations; custom and trade regulations; practices of competitors in the informal sector; and political governance (World Bank, 2014b). Figure 2 presents the results of the binding constraints to firm growth in Malawi. Each graph's shaded regression line represents a polynomial prediction plot with confidence intervals calculating the objective function's prediction and the indicator variable. The area of the resulting shaded regression line depicts the confidence interval at the 95% significance level. The plot is also essential as it presents an average where we expect the included observations or comparator countries to lie. The orange dot represents Malawi in each graph.



Source: World Enterprise Survey, 2014-2019; World Development Indicators, 2019b



Source: World Enterprise Survey, 2014-2019; World Development Indicators, 2019b

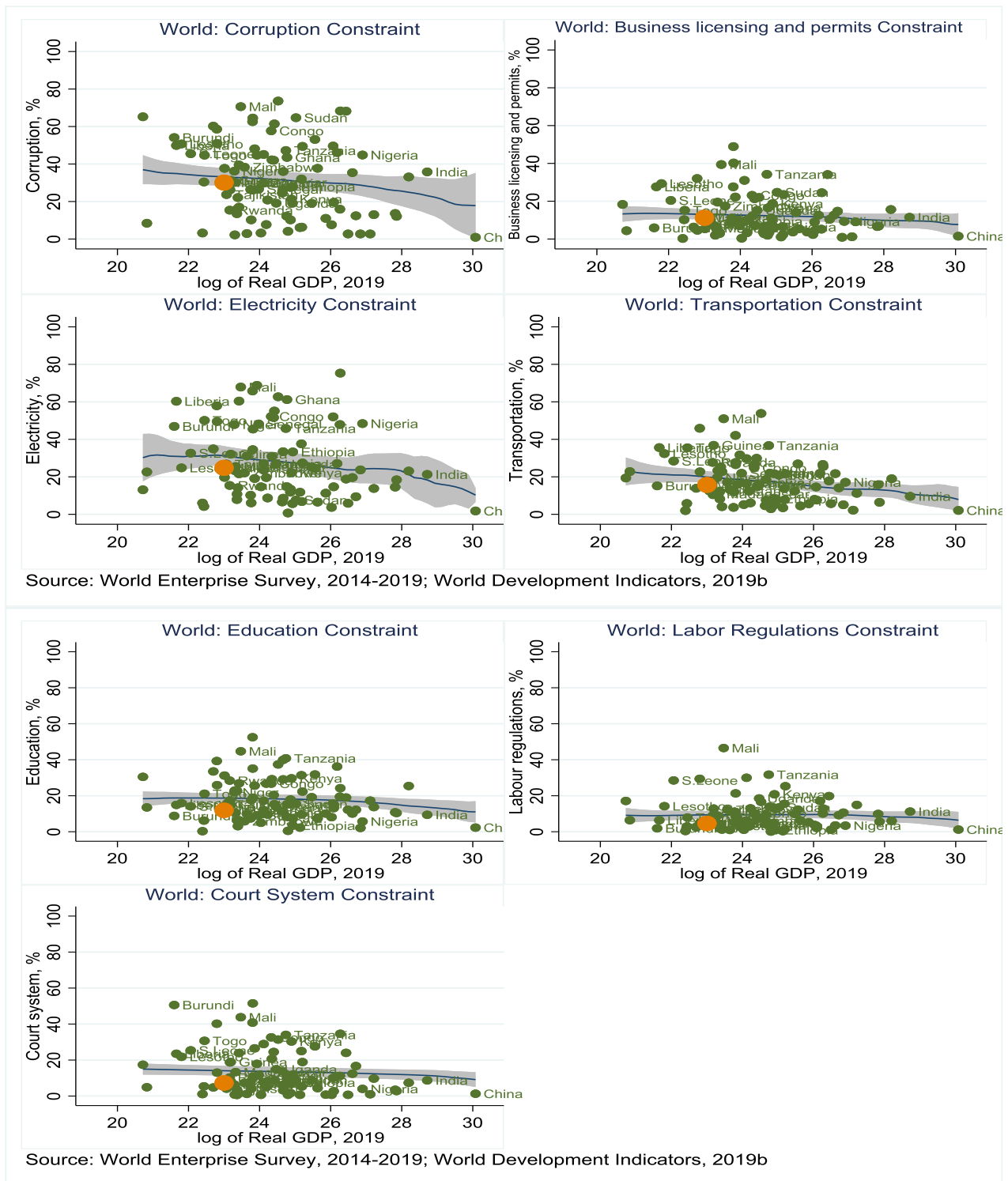


Figure 2: Test 1 Binding Constraints to Firm Growth

The results in Figure 2 show that the major binding constraints to firm growth in Malawi, which are above the 95% confidence interval band, include land, tax rates, customs and trade regulations,

political governance, and access to finance. The rest are all within the confidence interval band, except for electricity, transport, education, labour regulations, and Malawi's court systems, which are not binding and below the 95% confidence interval band (World Bank, 2014b).

3.2 Test 2: Whether Indicator (Shadow) Prices High

This section looks at potential indicators of shadow or real prices that support firms' perceptions of the major binding constraints to economic growth in Malawi.

3.2.1 Land-Related Indicator (Shadow) Prices

According to the World Bank (2017b, p. 28), secure land rights can stimulate more significant investment, increase productivity, and improve land and financial markets' functioning. Price indicators for land are somewhat scarce, but we can use some indicators as shadow prices. These include population growth rates in both urban and rural areas. The display of results is in Figure 3. The results show that urban and rural population growth rates are relatively high in Malawi when compared to its peers within the same income category. In the case of Malawi, overpopulation continues to put a lot of pressure on its natural resources such as land and the provision of basic needs such as housing, transportation, water and sanitation, employment, human capital development, health, and structural transformation (World Bank, 2018, p. 38).

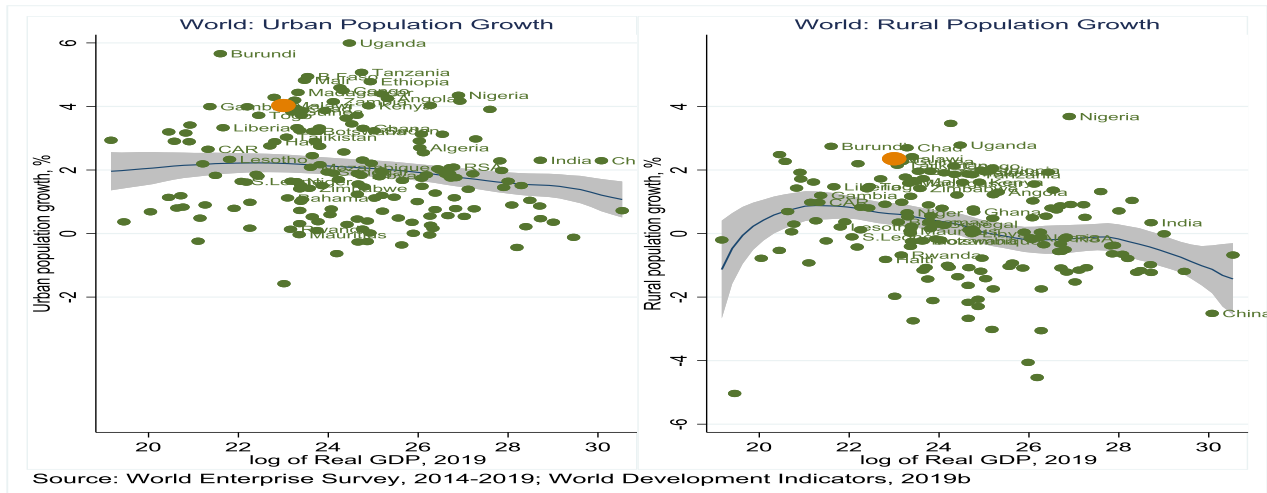


Figure 3: (Shadow) Price Indicators for Land Constraint

3.2.2 Tax-Related Indicator (Shadow) Prices

The application of taxes in an economy lowers the elasticity of output for investment and can have both substitution and income effects on the economy. If economic agents consider taxes high, this may lead to disinvestments and divestments (Pindyck and Somalino 1993; Ramiandrisoa and Rakotomanana, 2016). Price indicators for higher taxes can be proxied by looking at their impact on the level of investment. Figure 4 illustrates such indicators.

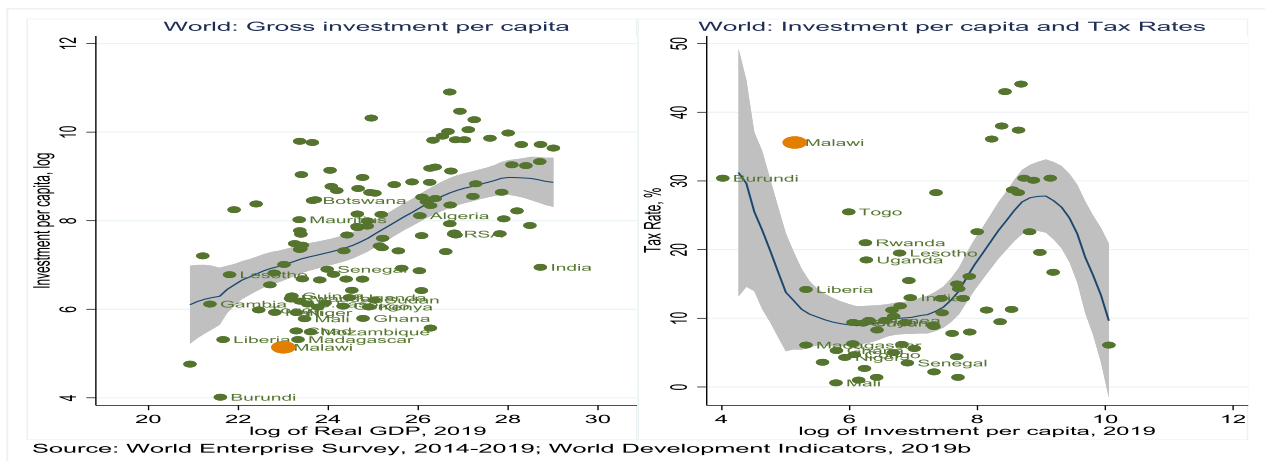


Figure 4: (Shadow) Price Indicators for Tax Constraint

Per capita investment is an important metric as it is a measure of the development of an economy. The larger is the per capita investment, the higher the per capita output in an economy (Engen and

Skinner, 1996). As illustrated in Figure 4, Malawi has a low share of investment per capita. The relationship between per capita investment and the tax level in the second graph shows that higher taxes are a deterrent to per capita investment in Malawi. The results also reveal that all peer or comparator countries to Malawi have lower taxes, and their per capita investment share is more considerable than Malawi.

3.2.3 Customs and Trade-Related Indicator (Shadow) Prices

Under customs and trade regulation constraints, the price indicators relate to tariff and non-tariff barriers to trade. They both hurt potential exporters by providing high market entry costs, especially for small and medium-sized enterprises (World Bank, 2014a, p. 48). Some of the common indicators that are a non-tariff barrier relate to the number of days it takes to clear exports and imports in a country, while a tariff barrier that is commonly in use is the cost to import and export. Figure 5 reports these two indicators. According to Figure 5, Malawi takes relatively longer to clear either exports or imports than some of its comparators. According to the World Bank (2019a), it takes Malawi 34 days to clear exports and 39 days to clear imports. Malawi's biggest challenge relates to lengthy and costly customs procedures at its borders, including cumbersome testing procedures, sanitary and phytosanitary (SPS) measures, lack of adequate information, export certification, and restrictions on imports (World Bank, 2014a, p. 48).

Also, the transport costs of exports and imports in Malawi are not among the lowest in the world, as shown by the bottom two graphs in Figure 5. Much as Malawi being landlocked drives up the trade costs, government regulations also drive-up transport costs. These regulations restrict competition in the transport sector and favouring mostly road freight (World Bank, 2014a, p. 125).

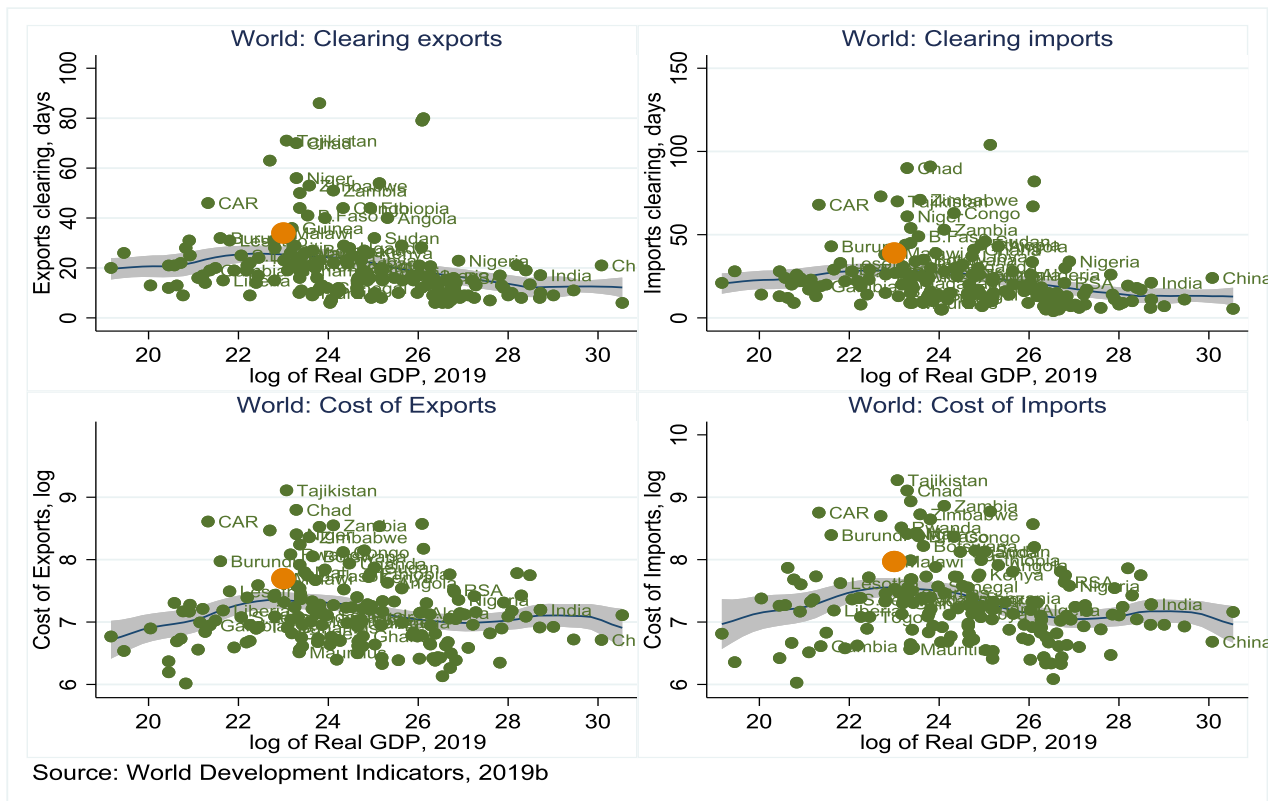


Figure 5: (Shadow) Price Indicators for Customs and Trade Regulations Constraint

3.2.4 Political Governance-Related Indicator (Shadow) Prices

The indicators commonly used to assess a nation’s policies are related to the quality of economic management, structural, social inclusion and equity, and public sector management and institutions’ quality. The World Bank has identified 16 indicators, of which we find four indicators as the most binding for Malawi (World Bank, 2019b). These include fiscal policy, debt policy and management, transparency, accountability, corruption in the public sector, and trade. Figure 6 illustrates the findings. The first indicator we find relates to the state of the stabilization and allocation functions of fiscal policy. The score for Malawi in 2017 was 2.5, which is below average, which implies Malawi is facing a high-risk of fiscal space rigidity to adapt to shocks. The debt policy rating reports an average score of 3. This means that the government faces a moderate-

high risk of external or domestic debt distress and detrimental to growth (Tchereni *et al.*, 2013; Ndoricimpa, 2017).

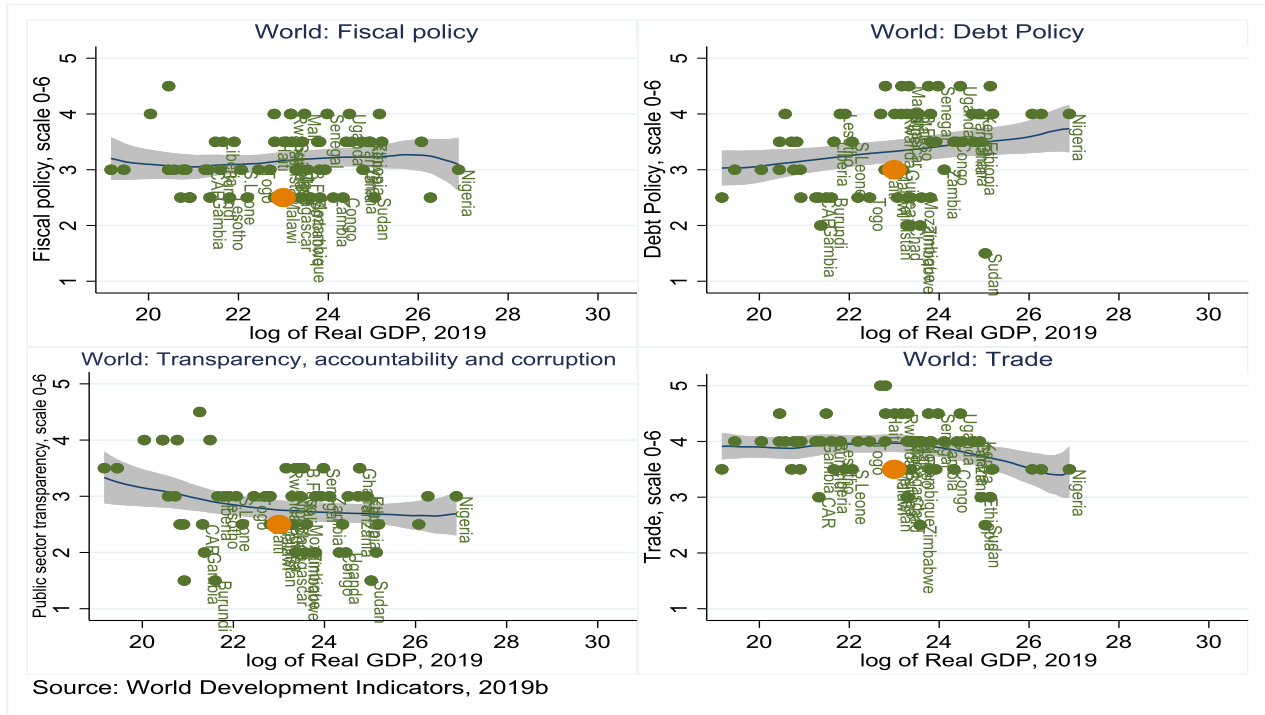


Figure 6: (Shadow) Price Indicators for Political Governance Constraint

The score on transparency, accountability, and corruption in the public sector was also 2.5 below the average mark. The score means that checks and balances on executive power may not be as sufficient as expected, anti-corruption efforts are relatively not significant, and there is a relatively low level of transparency in decision making. Lastly, the trade criteria look at a country’s trade regime and trade facilitation processes. For Malawi, the trade rating score is 3.5, which is above average: however, it is still below the confidence interval at the world stage. The score entails moderate to substantial use of non-tariff barriers to trade and high and variable taxation of imports and exports averaging 10-20% (World Bank, 2017a).

3.2.5 Finance-Related Indicator (Shadow) Prices

If access to finance in Malawi is a constraint, there should be evidence of local finance's high cost and increased international finance costs. We investigated the four key prices: inflation, real interest rates, real effective exchange rate, and foreign aid. Figure 7 displays the results.

As illustrated, inflation and real interest rates in Malawi are relatively high when compared to many other countries. According to the Power Purchasing Parity and Uncovered Interest Parity conditions, one expects the real interest rates to be equalized across countries (Feenstra and Taylor, 2012). However, in the case of Malawi, real interest rates are far from the estimated confidence interval, representing the real interest parity band. On the other hand, inflation is an additional tax that investors face confirming what other studies have found (Chirwa and Odhiambo, 2016b). The evidence highlights the problem of high foreign aid allocation in Malawi and low exchange rate, as shown by the bottom two graphs in Figure 7.

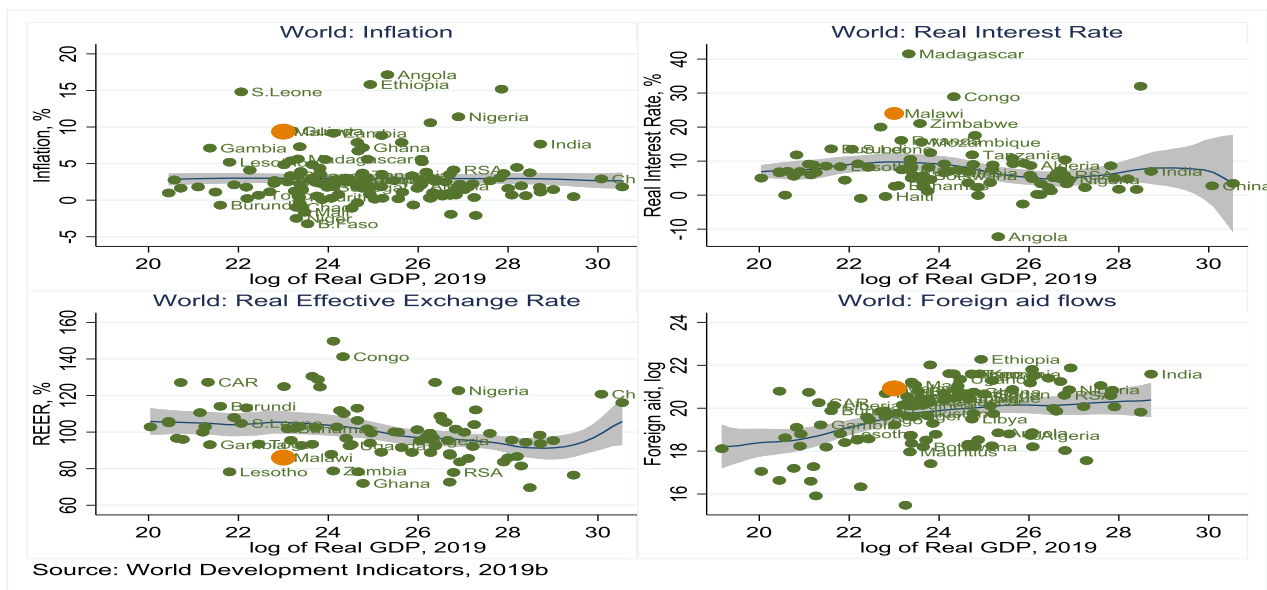


Figure 7: (Shadow) Price Indicators for Costly Finance Constraint

As in the real interest rate case, the real exchange rate is a relative inflation-adjusted exchange rate that reflects a country's competitiveness relative to other countries in the world. According to the

Power Purchasing Parity, one expects real exchange rates to converge and reach a steady-state within the confidence interval band in the long run (Feenstra and Taylor, 2012). The real effective exchange rate (REER) position for Malawi, as illustrated in Figure 7, is relatively low when compared with many other countries. This low real exchange also hurts Malawi's balance-of-payment position, as will be evident in the indicators for test 3.

3.3 Test 3: Whether Changes in Indicator (Shadow) Prices are Associated with Changes in the Objective Function

The next set of tests in the growth diagnostic framework is to see whether changes in the critical variables identified under test 2 lead to significant objective function changes. We recognize the objective functions related to real GDP and investment per capita growth, as indicated in equation (1). Hausmann *et al.* (2008) also recommend looking at whether there is any association or correlation between the indicator variable and the objective function of interest.

3.3.1 Changes Associated with Land-Related Indicator Prices

We identified population growth in urban and rural areas as too high relative to Malawi's GDP level for land-related changes. Of the two indicators, significant changes are only observed in the rural population, as illustrated in Figure 8. Malawi's gross output is driven by the rural population's growth, as shown in the first graph. The relationship between the growth of the rural population and output growth reveals a negative co-movement. On the other hand, the rural population's growth shows a positive co-movement with the growth of per capita investment, as illustrated in the second graph.

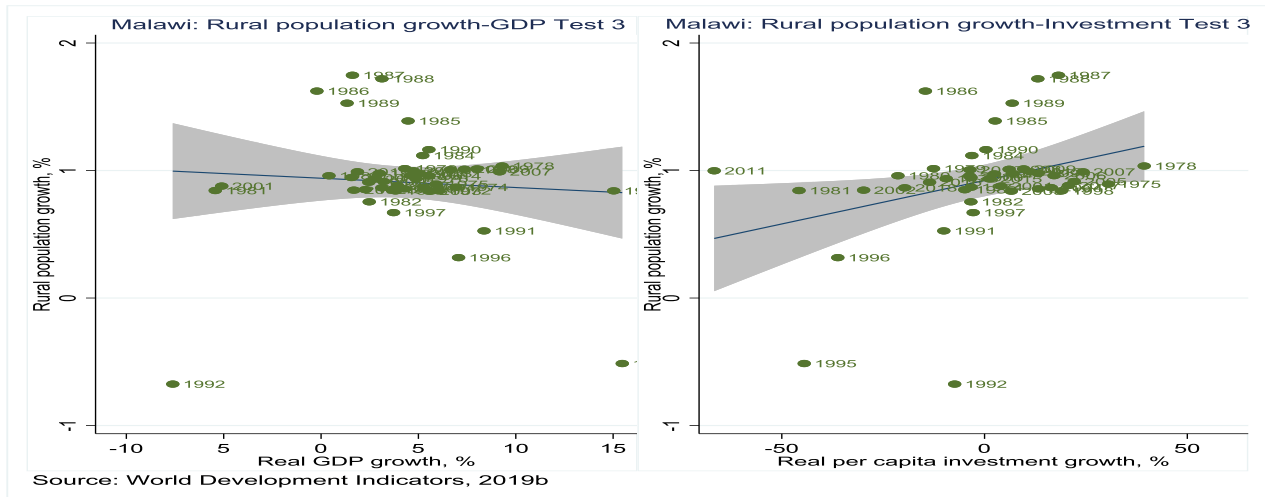


Figure 8: Growth in Land-Related (Shadow) Price Indicators

Thus, higher rural population growth is associated with more increased per capita investment and vice-versa.

3.3.2 Changes Associated with Tax-Related Indicator Prices

Taxes, just like inflation, reduce the elasticity of output for investment, and therefore we expect that if taxes are high, the investment growth should be small. Figure 9 illustrates this trend.

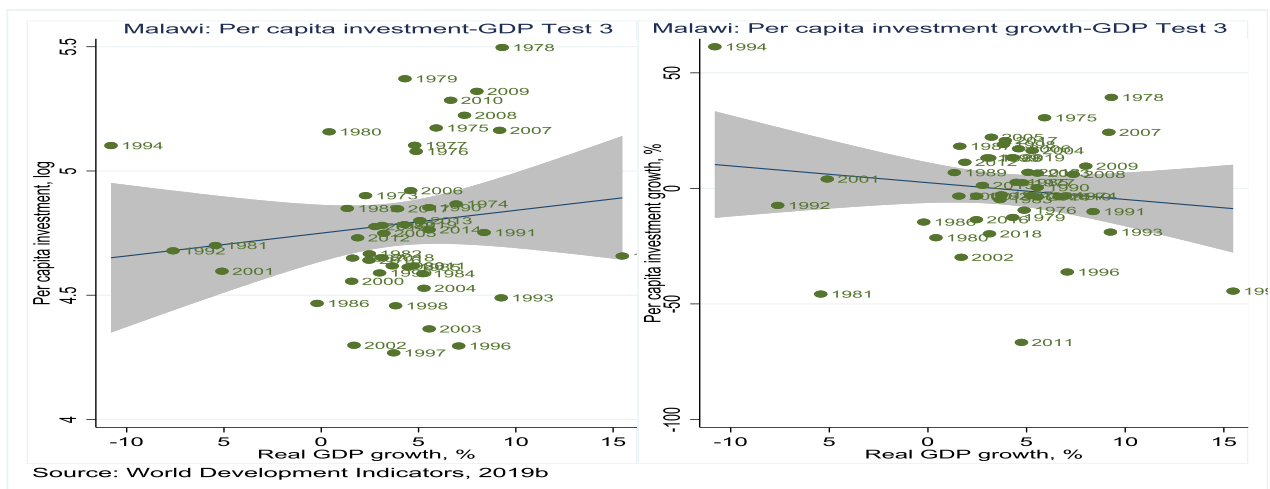


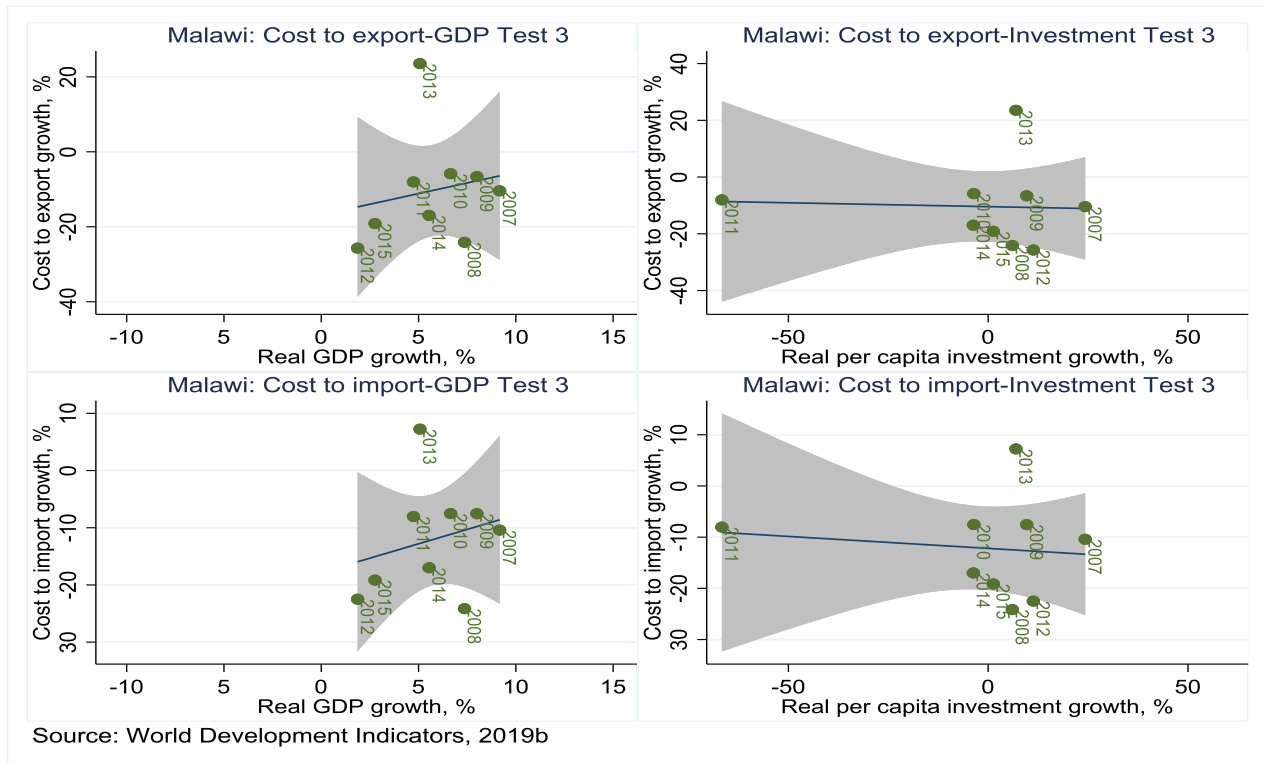
Figure 9: Growth in Tax-Related (Shadow) Price Indicators

The association between the log of per capita investment and real GDP growth reveals a positive correlation as expected. However, when we consider the growth of per capita investment to GDP,

the results indicate a negative correlation showing that the elasticity of output for capital accumulation decreases as the Malawi economy improves.

3.3.3 Changes Associated with Customs and Trade Regulation-Related Indicator Prices

The customs and trade regulation related indicators used in this study include the cost and time to import and export. We expect improvements in these indicator prices as non-tariff measures to reveal a negative correlation with the growth of income or per capita investment over time. Figure 10 illustrates how these indicators have been performing over time. Much as there appears to be a positive correlation between the customs and trade-related variables and economic growth, the relationship between the customs and trade-related indicators and per capita investment reveals a negative correlation.



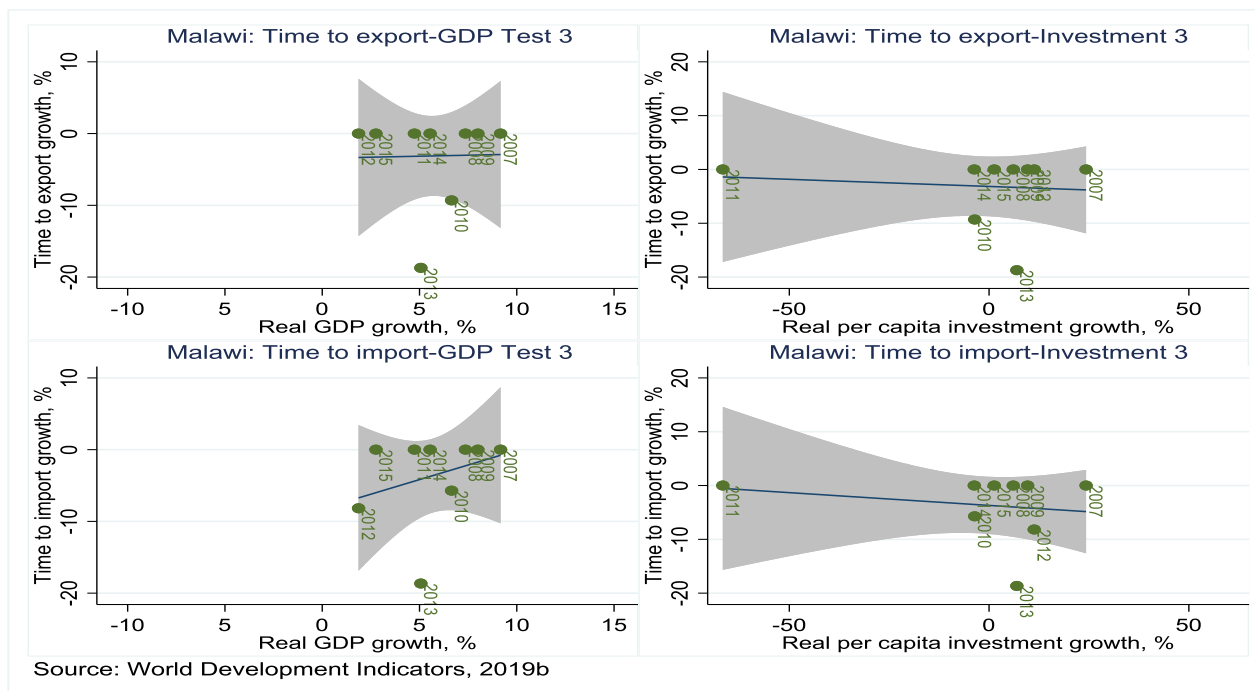


Figure 10: Growth in Customs and Trade Regulation-Related (Shadow) Price Indicators

3.3.4 Changes Associated with Political Governance-Related Indicator Prices

In this section, the critical indicator used include government debt and domestic credit. As anticipated, we expect political governance indicators to be negatively associated with economic growth as political uncertainty leads to disinvestments and divestments. Figure 11 illustrates the trend in these indicator prices. One of the price indicators used is government debt growth, which is negatively correlated with income growth over time. However, when we compare the change of government debt to the growth of per capita investment, no relationship exists. On the other hand, the results reveal a negative correlation between private credit and real income growth, showing the impact of reducing output elasticity for investment when government debt crowds out private investment (see Mbate, 2014).

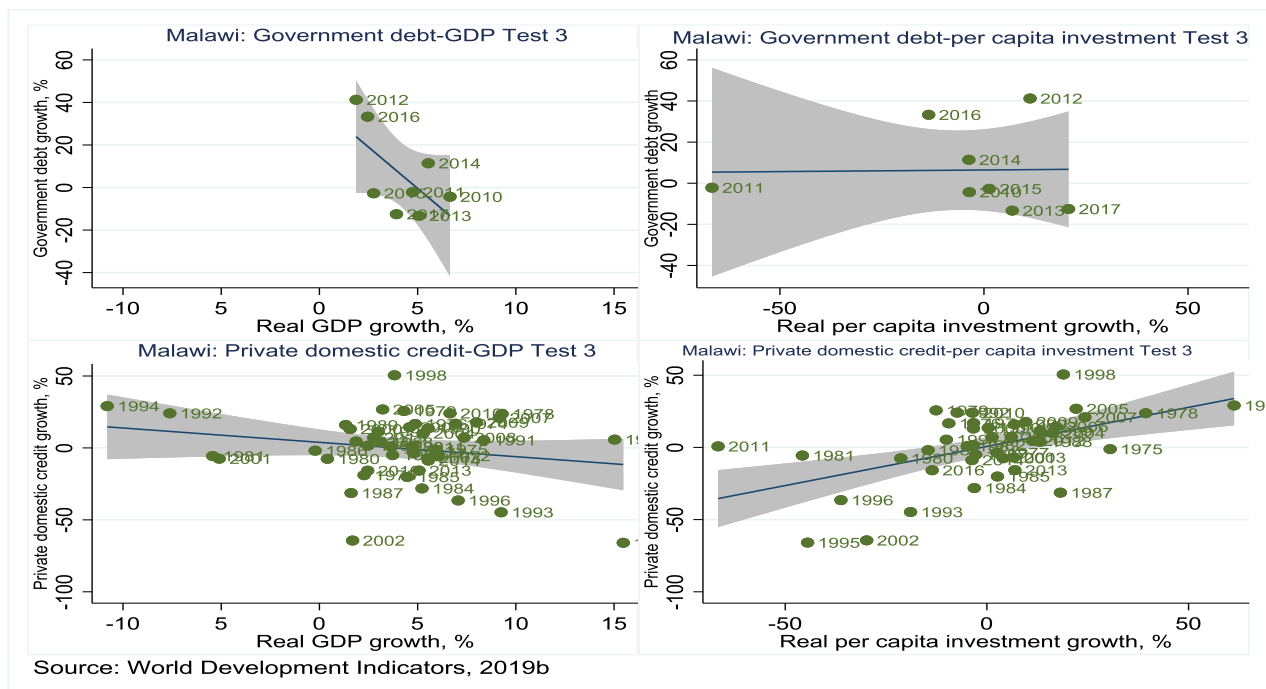


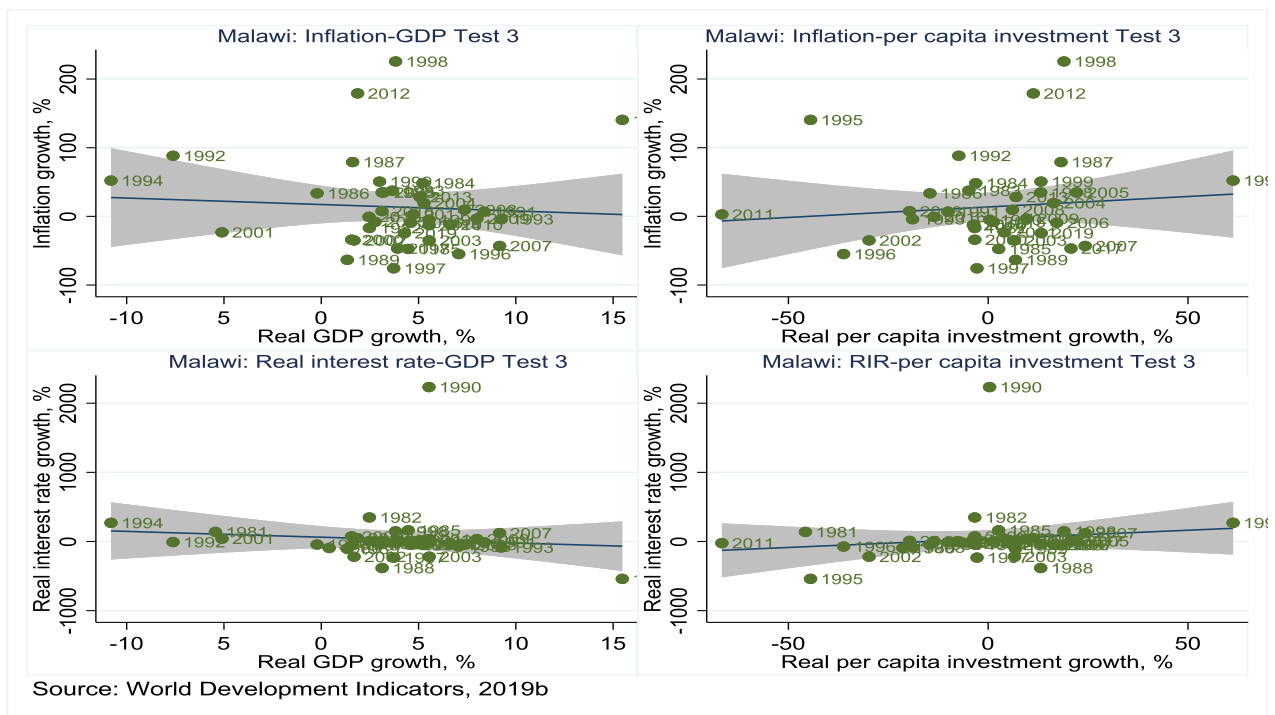
Figure 11: Growth in Political Governance (Shadow) Price Indicators

However, the last graph reveals that private domestic credit growth improves output elasticity for investment per capita as expected.

3.3.5 Changes Associated with Finance-Related Indicator Prices

Figure 12 illustrates the associated changes in finance-related indicator prices, including inflation, foreign aid, real interest rate, and real effective exchange rate. One expects the high inflation rates to be associated with increased investment rates per capita to ensure no negative returns to investment when adjusted for inflation. On the other hand, much as high real interest rates reduce the rate at which economic agents borrow loanable funds from the demand side, they attract the supply of loanable funds. The results in Figure 12 reveal that much as the relationship between inflation, real interest rates, and economic growth are negatively correlated, their relationship with investment per capita is positive.

Real exchange rate stability is one of the essential macroeconomic policies that many economies in the world follow. Empirical evidence has shown that higher levels of real exchange rate instability can suppress economic growth, and policymakers often use it as a proxy for market distortions related to the balance of payments or underdeveloped capital markets (Vieira *et al.*, 2013). A stable exchange rate regime is one of the conducive environments for trade and economic growth.



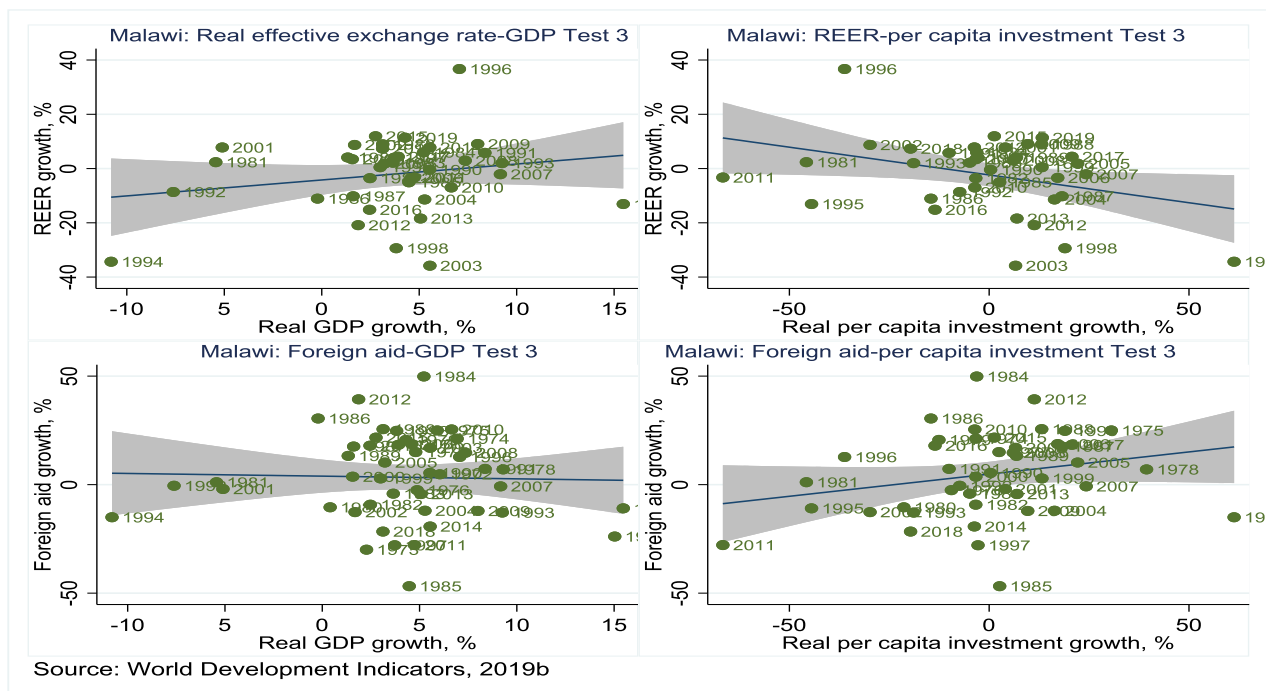


Figure 12: Growth in Finance (Shadow) Price Indicators

The stability is either through eliminating any currency overvaluation or undervaluation, which is necessary if long-run economic growth is sustained (Elbadawi *et al.* 2012). In such cases, one expects a stable exchange rate regime to be positively associated with economic growth (Gluzmann *et al.*, 2012). The results in Figure 13 reveal the same association where a real exchange rate depreciation is associated with more output growth, while a real appreciation is related to low growth. On the other hand, the results reveal that a real exchange rate depreciation is associated with a lower return to per capita investment. In contrast, a real appreciation is found to be associated with a higher return to per capita investment. These results are similar to findings suggested by Serena and Sousa (2017), who conclude that exchange rate depreciation can have contractionary effects on the level of investment.

Several studies theoretically assume the relationship between foreign aid and investment to be positive (see Cai *et al.*, 2018). In Malawi's case, the association revealed in Figure 12 shows a

negative correlation between foreign aid growth and economic development. On the other hand, foreign assistance has been instrumental in increasing per capita investment, as revealed in Figure 13, illustrating that it has effectively expanded its capital stock return.

3.4 Test 4: Whether Firms Circumvent the Constraint

In this section, we provide evidence on how existing firms bypass the constraint. Based on available data, the indicators of interest include the quality of land administration index and transparency of land information index for land-related indicators, wage and salary workers for tax-related constraint, bank, or internally-financed working capital for the finance constraint.

3.4.1 Circumventing the Access to Land Constraint

The indicators accessible include land administration-related indicators available through Doing Business Surveys (World Bank, 2019a). Figure 13 displays these results.

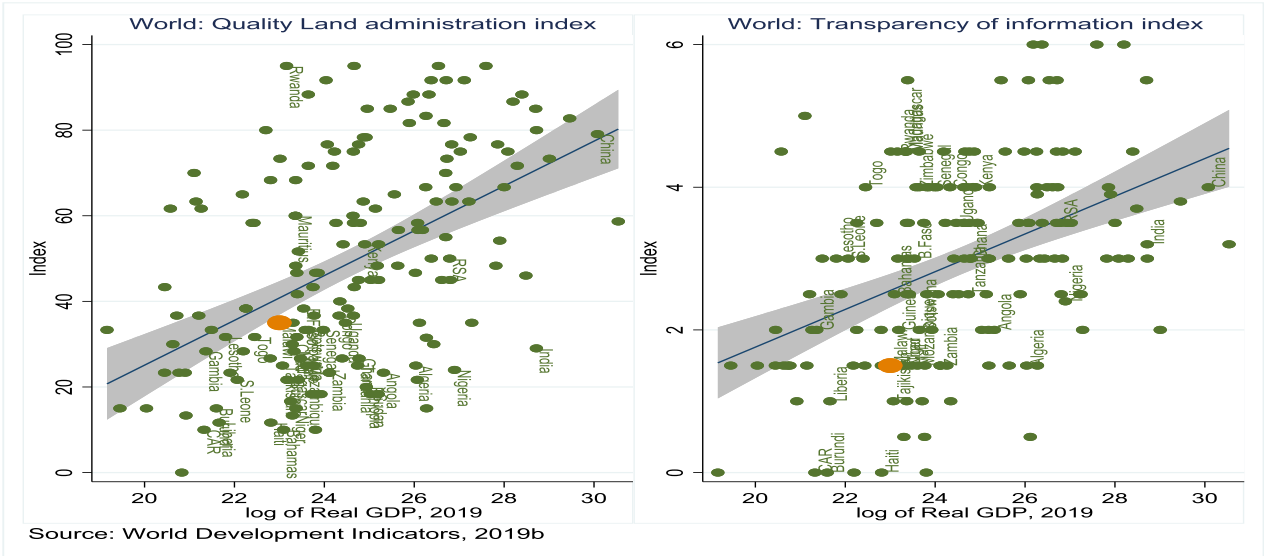


Figure 13: Bypassing the Land Constraint

The results show some weaknesses in land administration processes where Malawi is below average in terms of the quality of land administration index and the transparency of the land

information index (World Bank, 2019a). The lack of clarity on land registry information and low land registry infrastructure reliability has resulted in excessive delays and high costs to conduct a property transfer in Malawi. According to the Doing Business Survey (World Bank, 2019a), Malawi is ranked 83 out of 196 countries in registering property indicators. It takes 69 days to complete land transfer registration compared to Rwanda that takes only two days (World Bank, 2017b, p. 38). Such shortcomings are likely to affect a firm’s decision to invest in a potential value chain.

3.4.2 Circumventing the Tax Constraint

Tax burdens in an economy will lower the coefficient on output elasticity for human capital stock. It can have both substitution and income effects on the economy. Higher taxes can reduce the workforce coefficient by discouraging labour force participation and distort productivity growth if they lead to lower investment in research and development (Engen and Skinner, 1996). If taxes are a constraint to firm growth in an economy, the indicators of interest used can be the wage and salaried workers indicator as a share of total employment. Figure 14 illustrates this indicator.

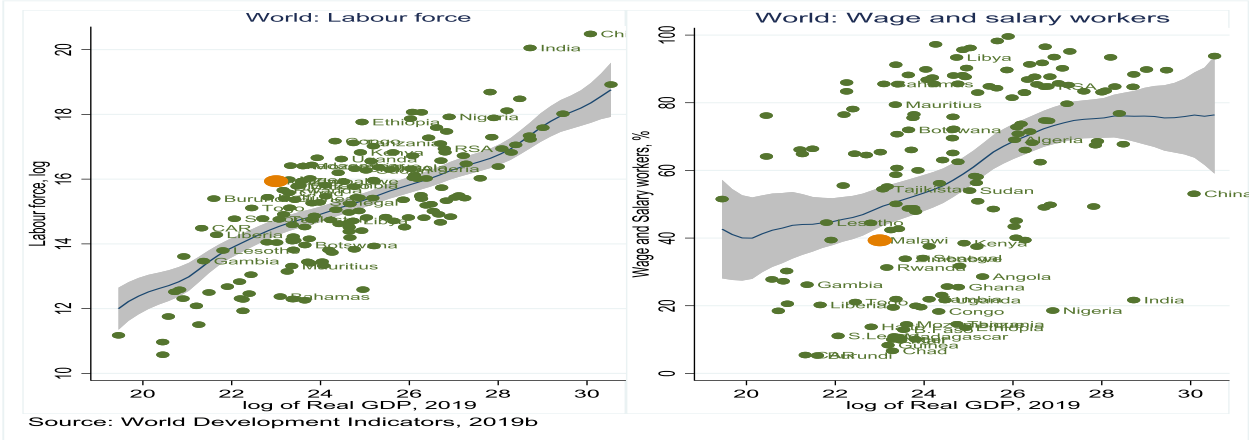


Figure 14: Bypassing the Tax Rate Constraint

The evidence provided in Figure 14 shows that while Malawi’s labour force is, on average, higher than in some countries, Malawi’s salaried workforce and wages are below the world average. The

results show that about 60% of the labour force do not receive wages or salaries and might not pay income taxes (World Bank, 2019b).

3.4.3 *Circumventing the Customs and Trade Regulations Constraint*

We could not find suitable indicators to support how Malawi firms bypass the customs and trade regulations constraint.

3.4.4 *Circumventing the Political Governance Constraint*

The evidence for political governance has shown that government debt crowds out private sector credit. Thus, the evidence should also show that the domestic credit to the private sector in Malawi is relatively low when compared to those reported by most of the countries included in this study.

Figure 15 illustrates this position.

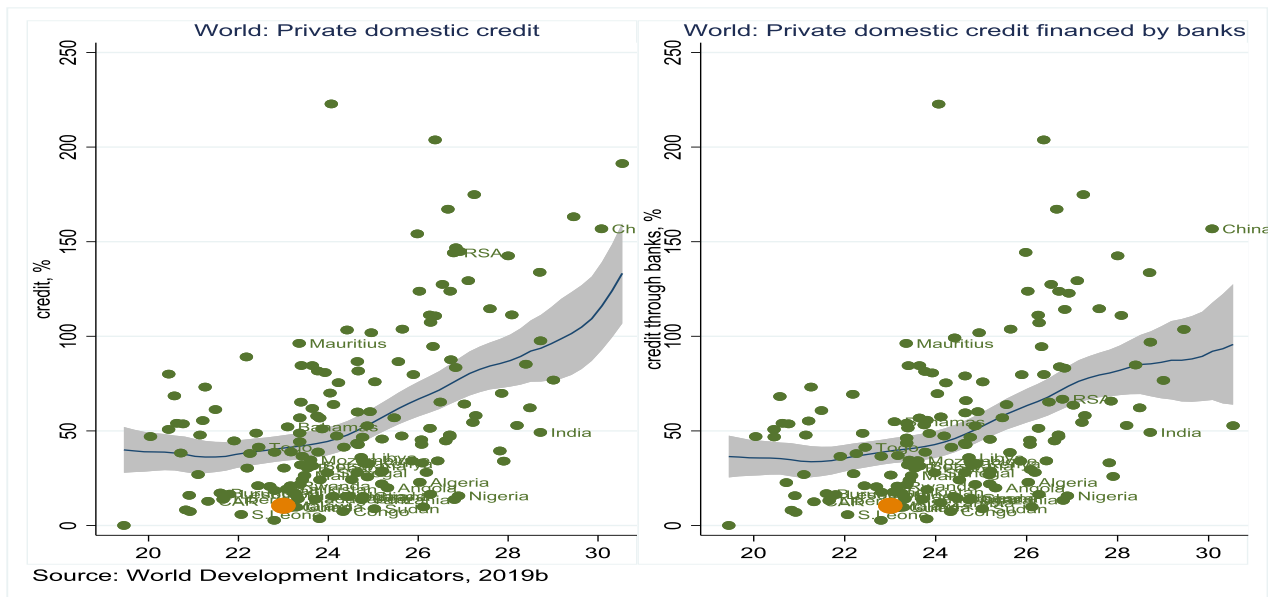


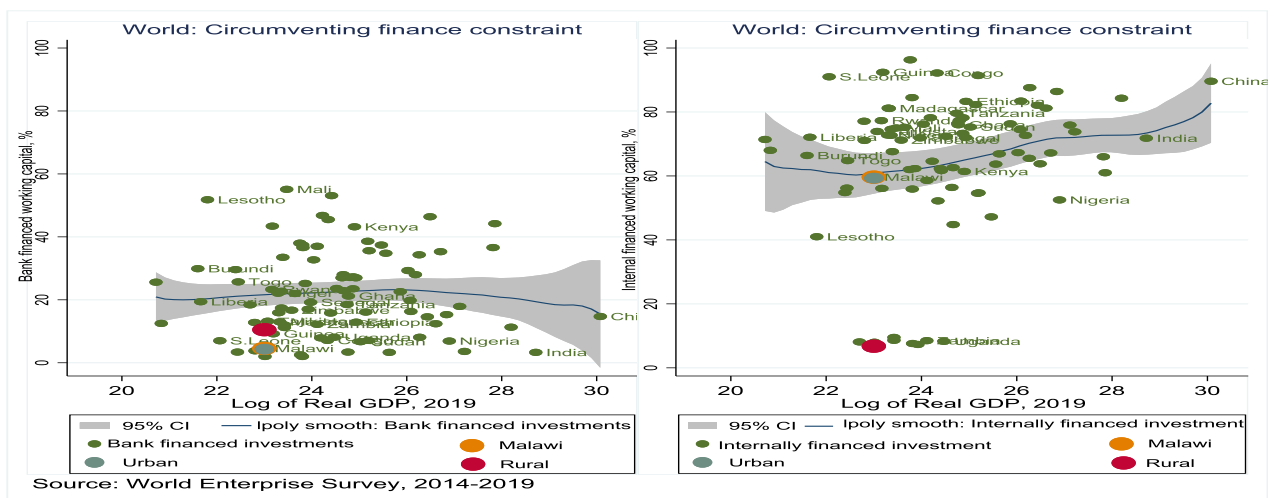
Figure 15: Bypassing the Political Governance Constraint

As illustrated in Figure 16, private domestic credit is relatively low in Malawi when compared with many countries in the world. Malawi appears stuck in a political economy trap with

government policies that have led to the promotion of domestically oriented sectors such as government services, farm inputs, and construction with limited growth opportunities and high rent-seeking behaviour (World Bank, 2018, pp. 3-4). Such low levels of private domestic credit eventually lead to disinvestment and divestment, thereby constraining firm growth.

3.4.5 Circumventing the Finance Constraint

Firms that bypass the finance constraints are expected not to use banks to finance their operations. The two indicators used include bank-financed working capital and internally-financed working capital. Figure 16 illustrates these two indicators based on their location, firm size and industry type. In terms of bank-financed working capital, the results show that most of the surveyed firms in Malawi bypass the finance constraint by avoiding borrowing from banks to finance their operations as expected. This circumvention is regardless of whether the firm is located in urban or rural areas; it is a micro, small, medium, or large enterprise, nor by type of industry. The evidence further shows that most firms would instead use internal resources to finance their working capital: except for firms in the rural areas, large enterprises, and firms in the transport and retail sectors of the Malawian economy (World Bank, 2014b).



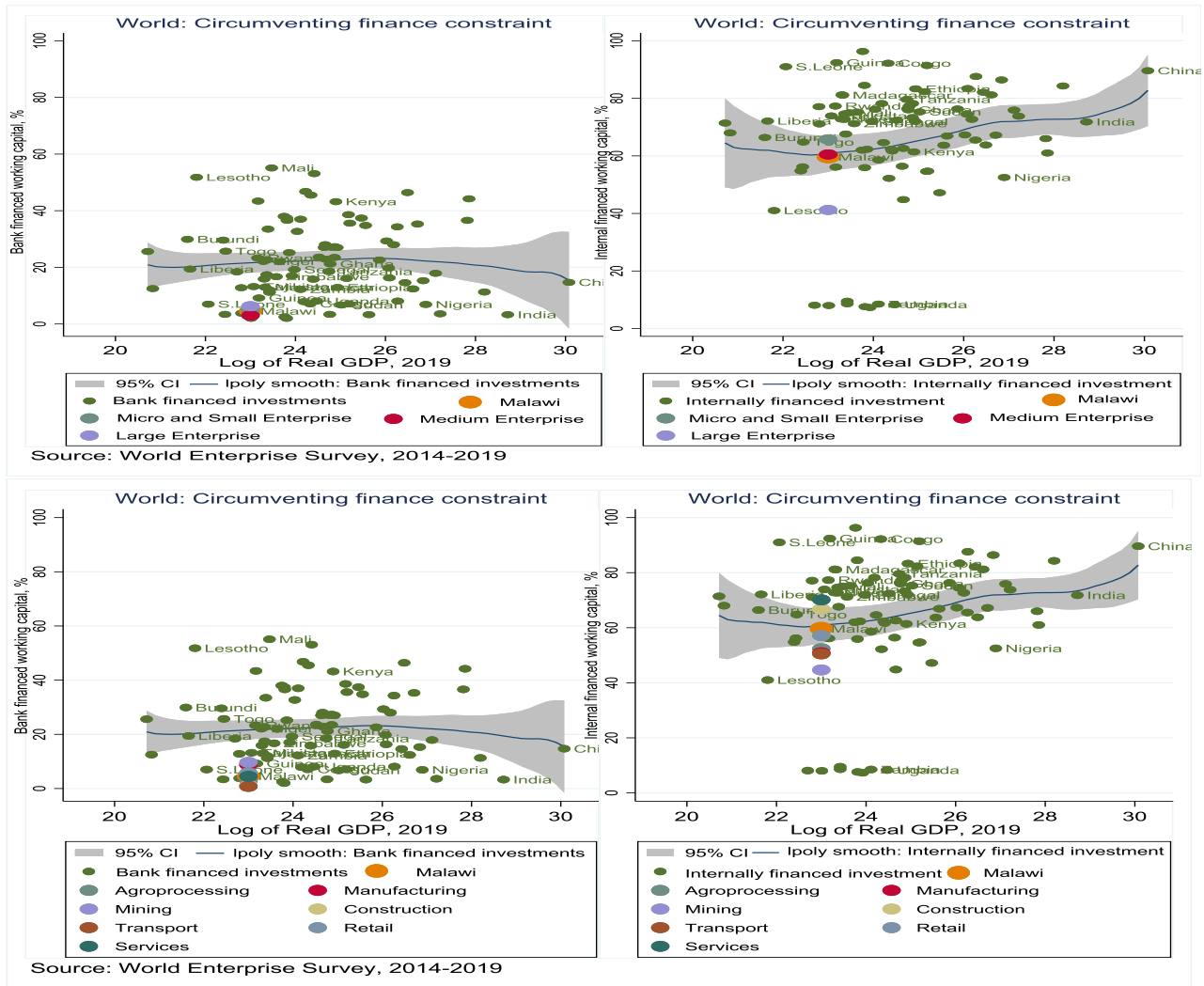


Figure 16: Bypassing the Finance Constraint

3.5 Test 5: Whether there are any ‘Camels and Hippos’

Based on the HRV approach, we extend further by investigating which firms are affected the most by each constraint rather than focusing on the national average. The options available include the firm location (rural or urban), type of enterprise (micro and small, medium or large), and the type of industry (agro-processing, manufacturing, mining, construction, transport, retail, or services).

3.5.1 Firms that Survive the Land Constraint

Figure 17 illustrates the first most binding constraint to economic growth in Malawi: access to land. The analysis identifies the land as the first major binding constraint of Malawi among the countries with the most land-related issues. The World Bank notes that some land-related cases include incomplete legal frameworks, weak institutional capacity, inadequate land-use planning, and imperfect land markets to facilitate rental or land sale. Other challenges are vulnerable land administration systems, weak enforcement of rules and regulations, and inadequate coordination among land agencies (World Bank, 2017b, p. 39).

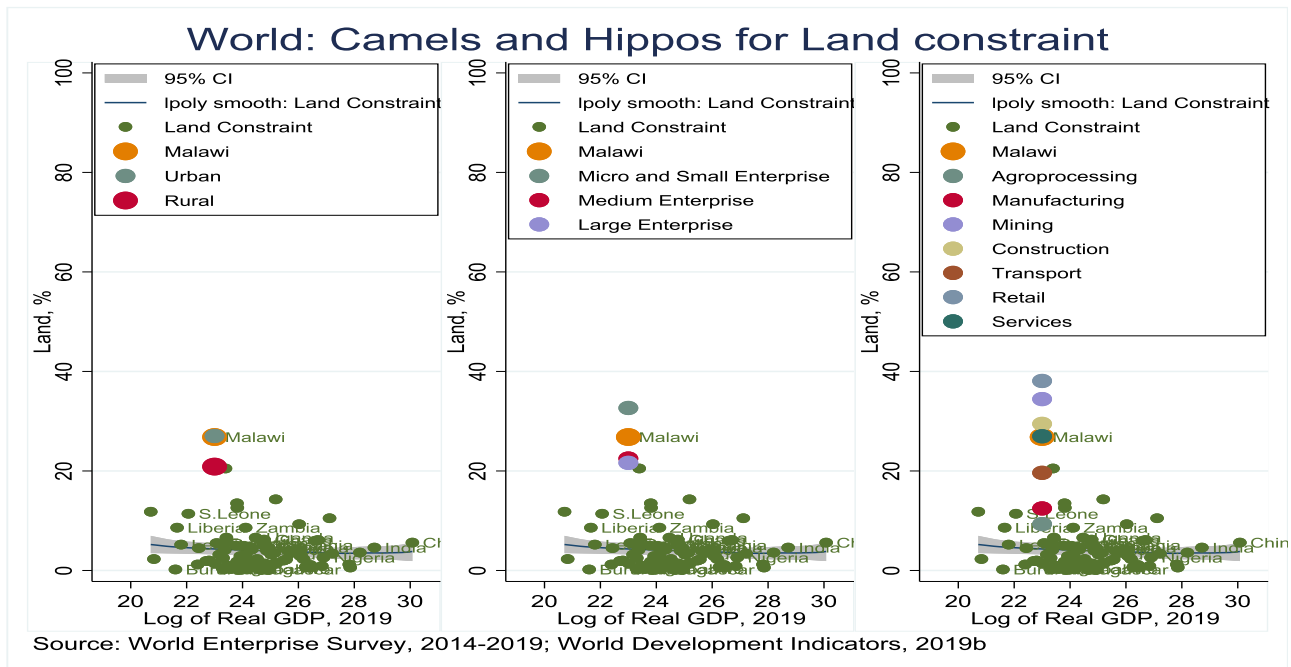


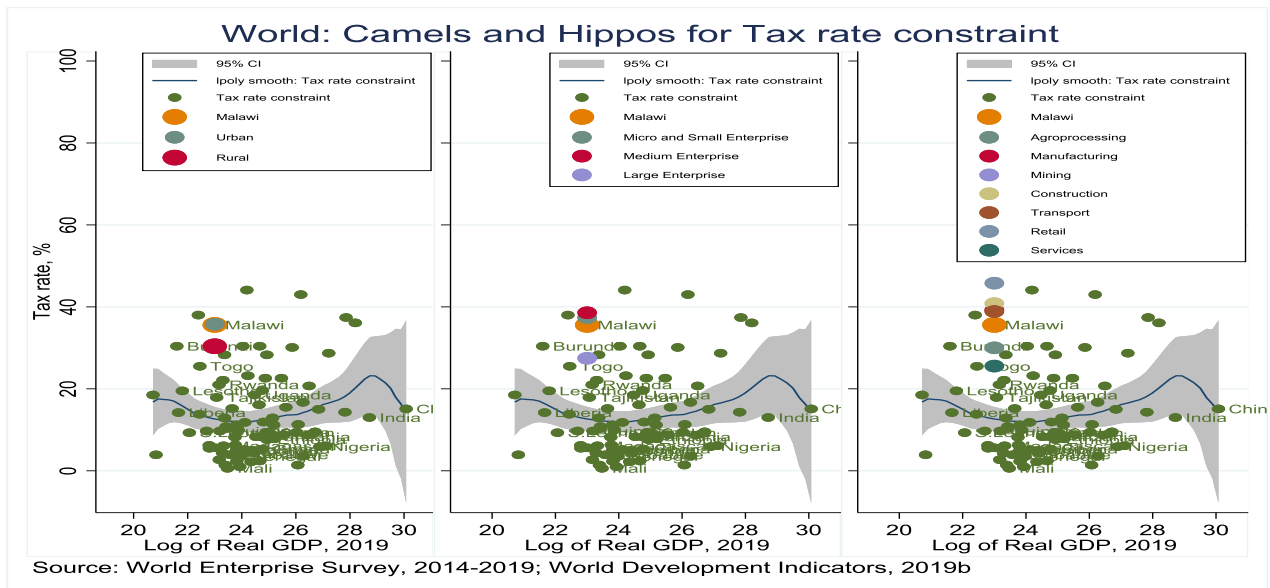
Figure 17: Camels and Hippos on Land-Related Constraint

The results show that land is more of a constraint to firms located in urban areas than rural areas, though in both locations, the constraint is still high when compared to many of its comparator countries. The evidence also shows that land-related issues affect more micro, small, and medium enterprises than large enterprises. In terms of the type of industry, the land is more of a binding

constraint for all kinds of firms specialized in retail, mining, construction, services, transport, manufacturing, and agro-processing.

3.5.2 Firms that Survive the Tax Constraint

According to PWC (2016), the issues raised related to tax rates are on the tax incentives, which are skewed and do not lead to significant investment attraction. In some cases, tax incentives are not well structured and may be prone to abuse. In contrast, other tax benefits, particularly foreign investors, are specific to priority sectors such as agro-processing, electricity generation, transmission, and distribution (Government of Malawi, 2013). As illustrated in Figure 18, the issues related to tax rates impact all firms regardless of location, type of enterprise, or industry. On the other hand, firms located in the rural areas found tax administration cumbersome and were beyond the 95% confidence interval and hence a binding constraint.



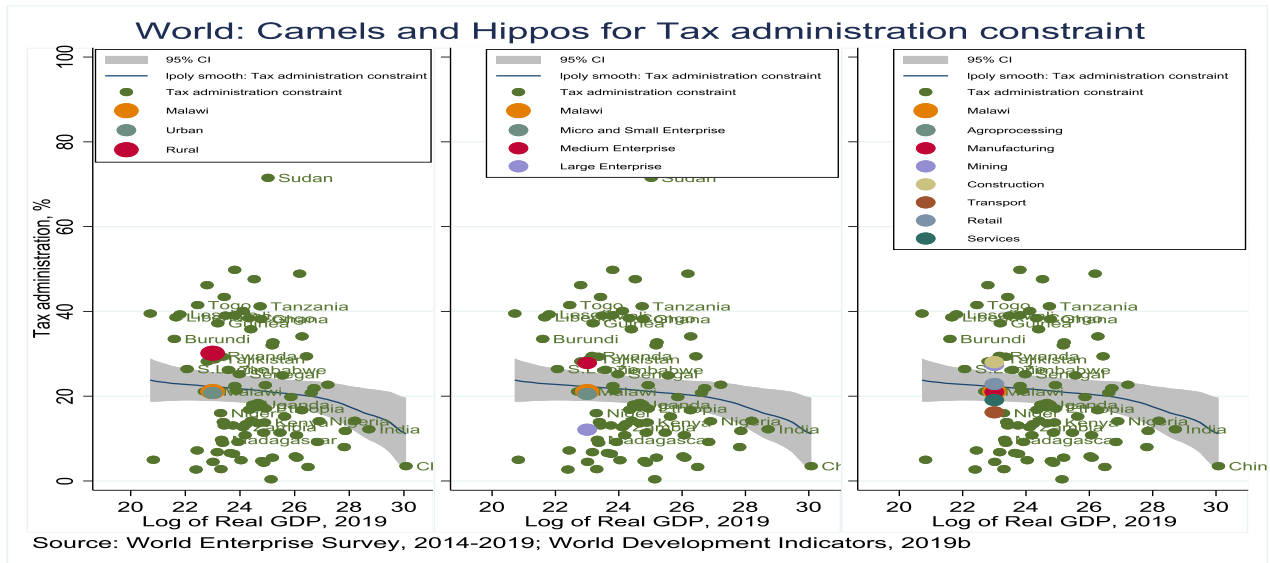


Figure 18: Camels and Hippos on Tax-Related Constraints

3.5.3 Firms that Survive the Customs and Trade Regulations Constraint

The evidence in Figure 19 shows that customs and trade regulations are more of a constraint for firms located in the urban areas, for micro, small and medium enterprises, and firms in retail and services (World Bank, 2014b).

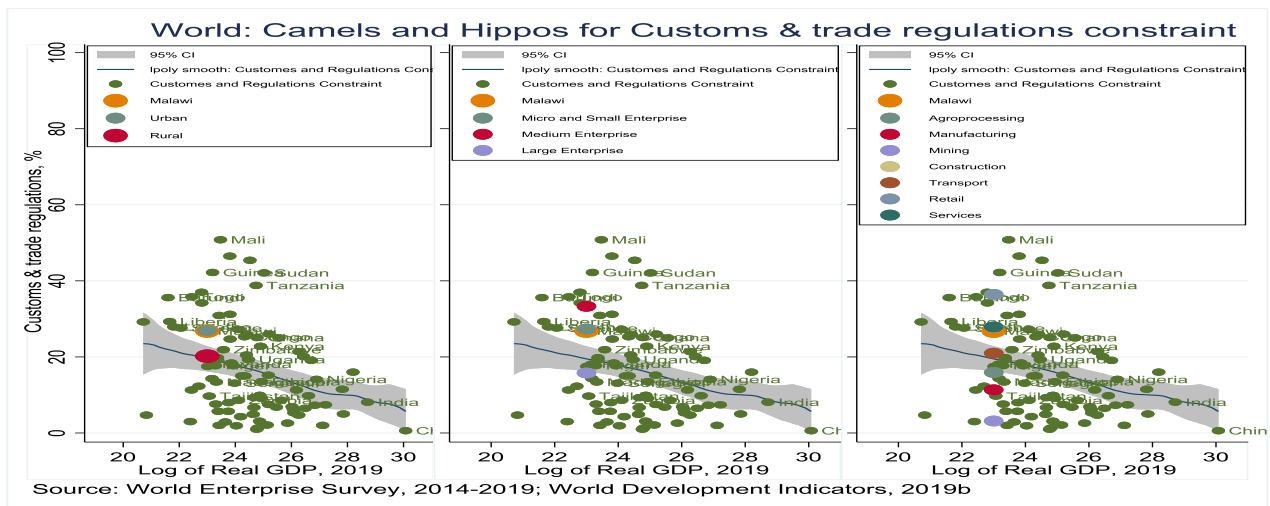


Figure 19: Camels and Hippos on Customs and Trade Regulation-Related Constraints

3.5.4 Firms that Survive the Political Governance Constraint

Figure 20 reveals such a perception where Malawi is one of the countries that identify political control as one of the biggest obstacles to private sector growth (World Bank, 2014b).

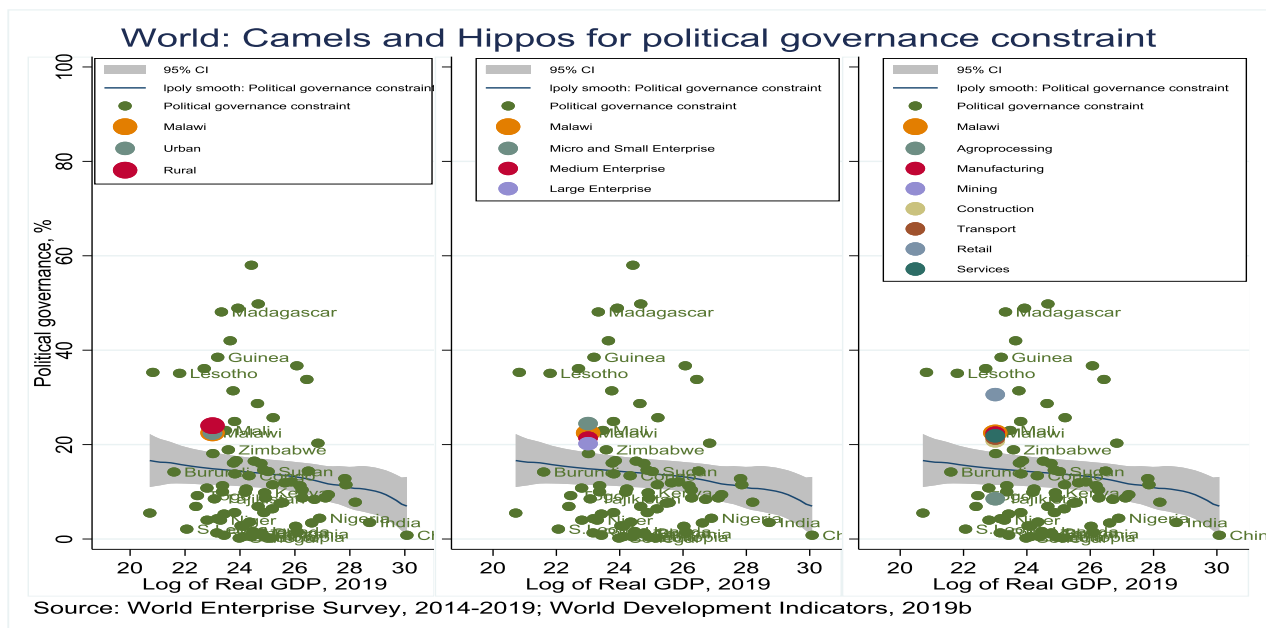


Figure 20: Camels and Hippos on Political Governance-Related Constraints

The results show that both firms located in the rural and urban areas identified political governance as one of the biggest obstacles. However, large firms reveal a slightly lower percentage than micro, small and medium-sized firms. The results are similar if we compare the type of industry, except for agro-processing firms that identify political governance as not an issue. In Malawi, political governance emanates from a competitive-clientelist political-economic model that the country follows, which has created strong incentives for adopting short-term policies (World Bank, 2018, p. 22). According to World Bank (2018, p. 28), such a political economy model has promoted domestically and non-tradeable oriented sectors, such as government services, farm inputs, and construction, which have generated high rent and minimal growth opportunities.

3.5.5 *Firms that Survive the Access to Finance Constraint*

Figure 21 presents the results on which firms survive the finance constraint.

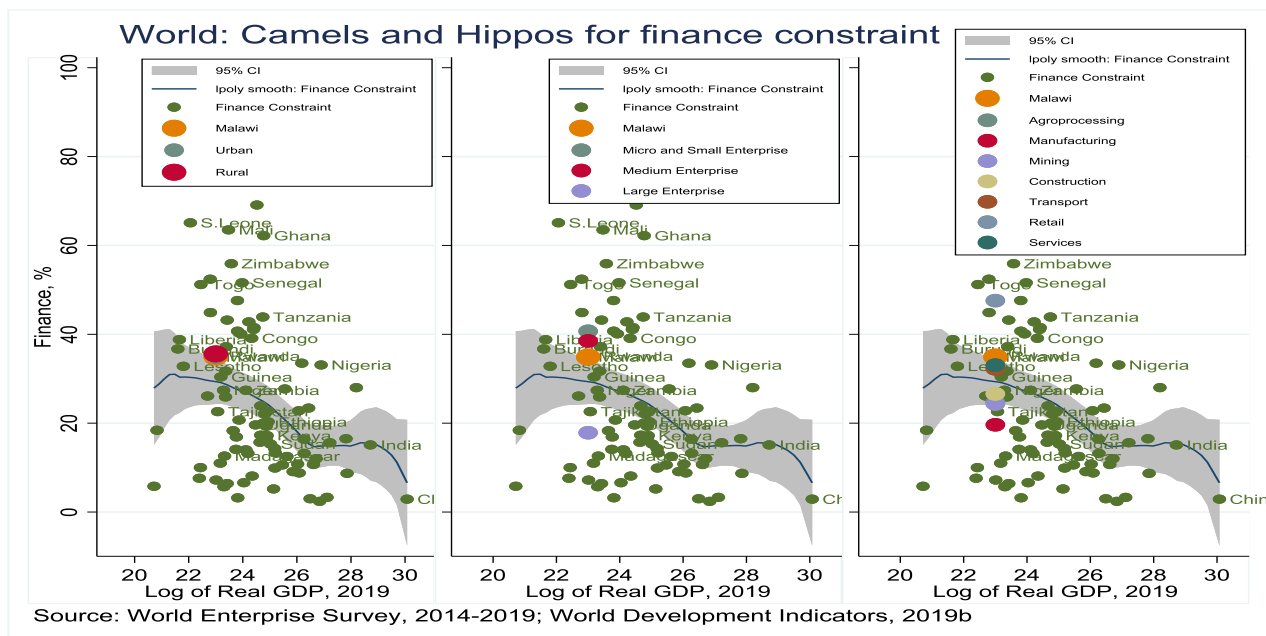


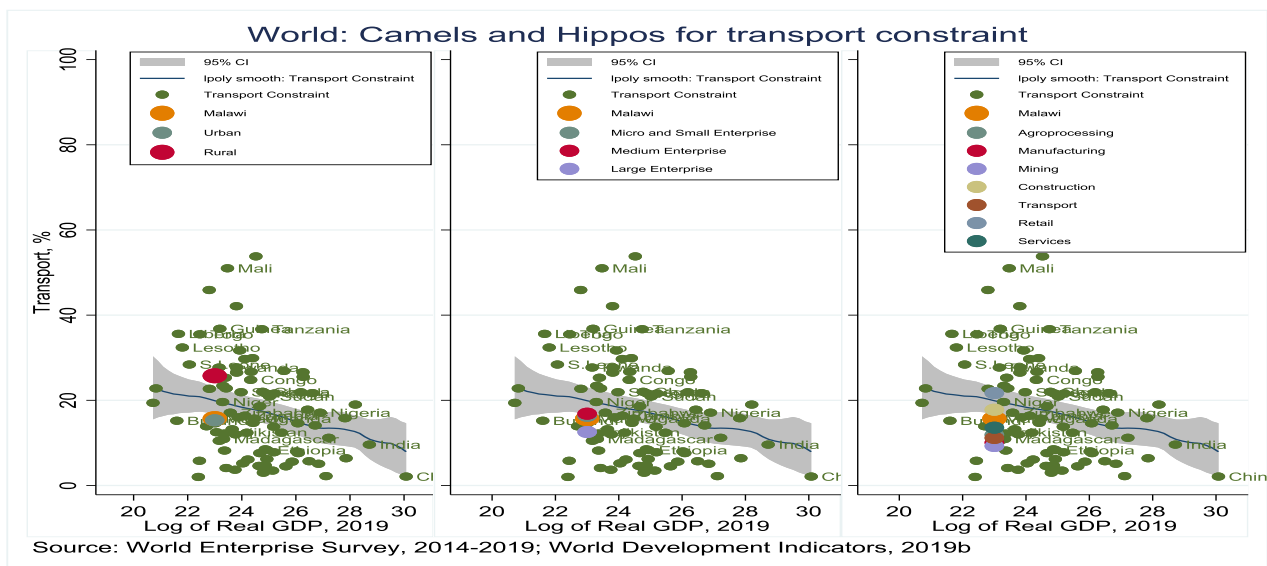
Figure 21: Camels and Hippos on Finance-Related Constraints

Access to finance is marginally a binding constraint to Malawi's growth, especially when compared to Benin, Tanzania, and Zimbabwe. However, when compared with the type of enterprise affected, access to finance is more of a binding constraint for micro, small and medium enterprises and less of a binding constraint for large enterprises. Furthermore, when compared with the type of industry affected, firms that are in retail and services are the most affected by access to finance. In any economy and investment decision, access to and cost of finance is critical. The evidence in Malawi shows that this sector is still in its nascent stages of development. For instance, the financial sector in Malawi continues to be dominated by a few banks, and in 2019 the industry only recorded nine that were registered. Out of these, two large banks own the majority shares of approximately 50% (Reserve Bank of Malawi, 2018). Regardless of such a monopolistic situation, the total bank assets only account for only 14% of GDP. The sector is also affected by high lending rates, and over 80% of loans are short-term. The industry also portrays high-risk coverage, particularly evidenced by high collateral requirements for small and medium enterprises and high

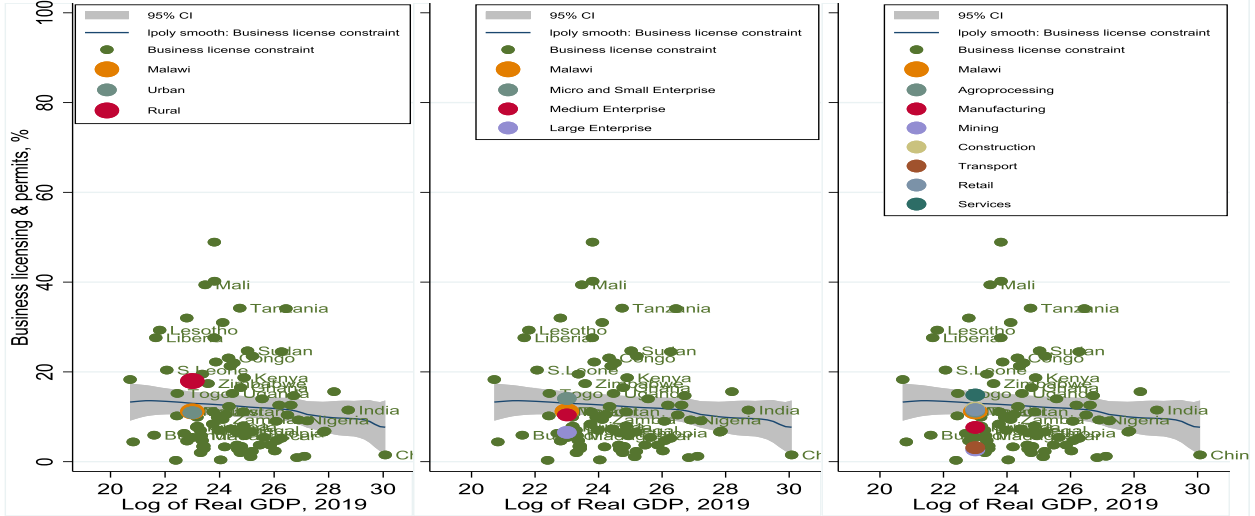
real interest rates. Financial literacy is low, mainly in rural areas, even though villages and savings loans group are becoming popular (World Bank, 2018, p. 46).

3.5.6 Other Binding Constraints

The last category of constraints includes those that are also not binding at the national level but affect one way or the other by a firm’s location, type of enterprise, or industry. Figure 22 illustrates these results. According to the data analyzed in general, transportation is considered not a binding constraint at the national level (see Figure 2). However, when disaggregated by rural and urban locations, firms located in Malawi’s rural areas identify rural transportation as a binding constraint and not in the urban areas. The results also show that this indicator is not binding when disaggregated by type of enterprise or industry. Firms located in the rural areas report business licensing and permits as a constraint compared to those found in the urban areas. Crime, theft, and disorder are more of a constraint for medium enterprise firms and those firms in the construction business. Lastly, competition from the informal sector affects primarily micro and small enterprises and firms in the retail industry.

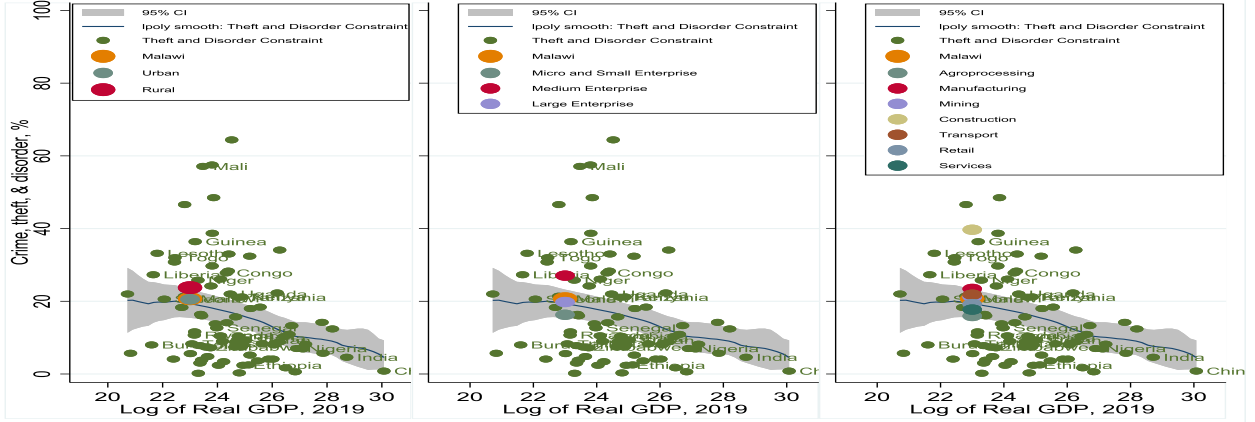


World: Camels and Hippos for Business licensing & permits constraint



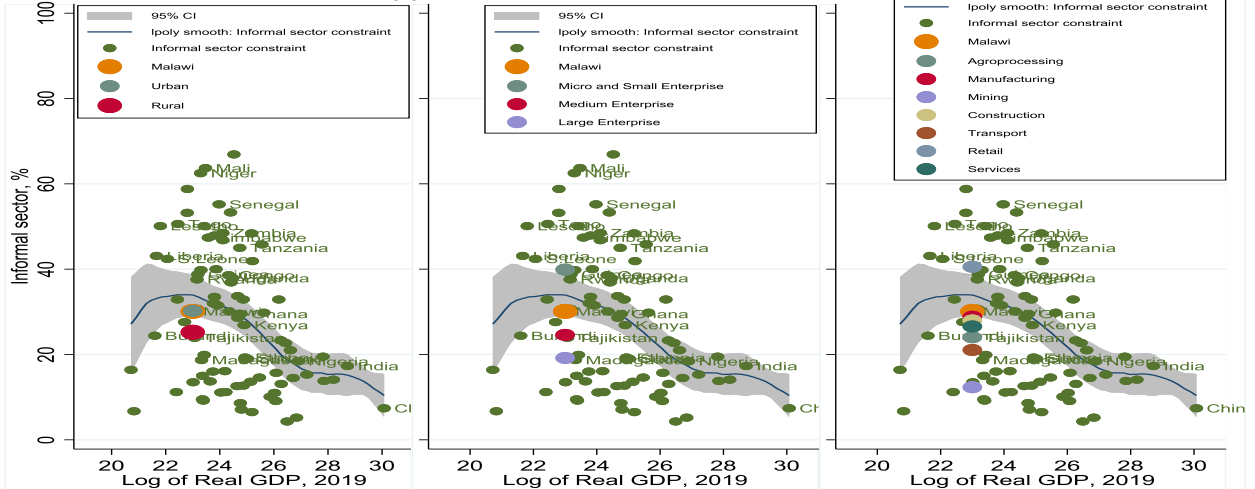
Source: World Enterprise Survey, 2014-2019; World Development Indicators, 2019b

World: Camels and Hippos for Crime, theft, & disorder constraint



Source: World Enterprise Survey, 2014-2019; World Development Indicators, 2019b

World: Camels and Hippos for Informal sector constraint



Source: World Enterprise Survey, 2014-2019; World Development Indicators, 2019b

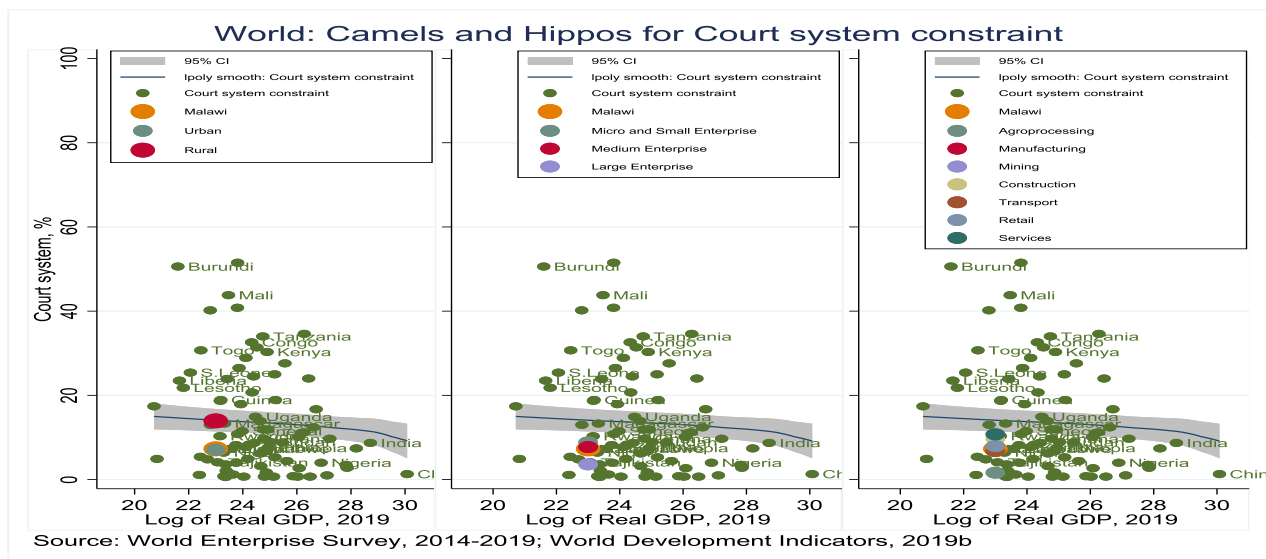


Figure 22: Camels and Hippos on Other Binding Constraints

4. Conclusion and Recommendations

This paper has extensively applied the Hausmann, Rodrik, and Velasco (HRV) growth diagnostics framework to evaluate the most binding constraints to productive investment and economic growth in Malawi (Hausmann *et al.*, 2008). The importance of such an approach to growth therapeutics is that it provides clear and operational growth strategies that policymakers can adopt based on sound economic reasoning. The method also goes beyond complex regression analysis, which may only provide evidence that a critical factor of production contributes positively or negatively to economic growth. Furthermore, in previous research, it has been argued that productive investment is the key to sustainable and long-term economic growth. A guide to such changes is usually through three requirements: a stable macroeconomic environment, an appropriate price mechanism, regulatory structure, and efficient and effective institutions that can convert national savings into productive investments (World Bank, 1990). Therefore, this paper aimed to identify and critically analyse what binds productive investment in Malawi, which eventually led to limited growth episodes. Consistent with some developing countries, we found five critical binding challenges to productive investment and economic growth in Malawi in the study. These include

challenges regarding access to land, tax-related challenges, customs and trade regulations, political governance, and cost-of-finance.

In conclusion, the identified five significant binding constraints to growth provide the underlying factors why the economic development of Malawi and investment are still relatively low when compared with some developing countries. These binding constraints are the likely factors that significantly contribute to reducing the elasticity of output for productive investment, thereby affecting the slow transition of the economy out of low productive sectors, such as agriculture, into either the manufacturing or services sectors that are more productive. Therefore, it is recommended that policymakers devise key policy strategies to alleviate the five significant binding constraints identified in this study based on the Hausmann *et al.* (2008) approach. We also recommend that the government base these new policy strategies on sound growth therapeutics, which fully understand each constraint's root cause.

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