REPORT

A macroeconomic impact assessment of a policy of land expropriation without compensation in South Africa

Submitted to:

The Constitutional Review Committee, Parliament of South Africa

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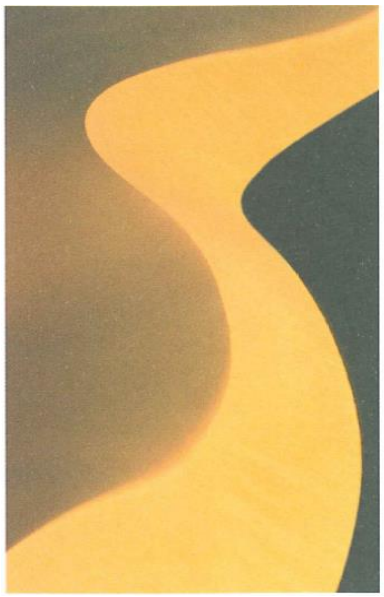
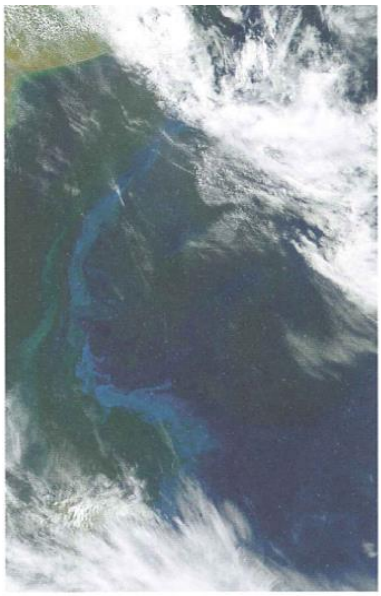
October 2018





GOPA Group
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In Consortium with: Kellaprince Properties
Lowveld Trust
Farmers' Agri-care
InteliGro

Title page

Research topic/themes:

A study to determine the effects of land expropriation without compensation (EWC) on the relationship between capital formation and the gross domestic product (GDP) in a number of country case studies, as a proxy for quantifying the likely impact of EWC on the South African economy. The latter will highlight the effect on the country's GDP and fiscal revenues.

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Abbreviations

ADB	African Development Bank
DBSA	Development Bank of Southern Africa
EIA	Economic impact assessment
EM	Emerging market
EWC	Expropriation of land without compensation
IDC	Industrial Development Corporation (South Africa)
IEF	Index of economic freedom
IIAG	Ibrahim Index of African governance
IMF	International Monetary Fund
SoE	State-owned enterprise
SSA	Sub Saharan Africa
GDP	Gross domestic product
GDFI	Gross domestic fixed investment
FDI	Foreign direct investment
CRC	Constitutional Review Committee (Parliament of SA)
VAT	Value added tax
BoP	Balance of payments
I/O	Input/output (table)
JSE	Johannesburg stock exchange
CPI	Consumer price index
4IR	Fourth industrial revolution
PanSALB	Pan South African Language Board
UN	United Nations

Executive summary

Any doubts over the overwhelming impact that the debate on land expropriation without compensation (EWC) has exerted on South African society has been dispelled by the recent announcement of the *Word of the Year* by the Pan South African Language Board (PanSALB).

Every year, a word (or concept) of the year is announced by PanSALB, based on one that captures the philosophy, mood, or obsessions of that particular year. The choice is based on research conducted by Focal Points and Newsclip, involving factual statistics on keywords tracked for the period January to mid-October. Last year's winner was "state capture". This year it was "land expropriation without compensation".

Unfortunately, these words/concepts have been accompanied by a fairly dramatic decline in confidence levels amongst businesses and consumers alike, with capital formation having declined by more than 7% over the past eleven quarters (in real terms). The importance of capital formation to the well-being of the economy cannot be over-emphasised. It represents the physical assets that are required to produce goods and services and examples include infrastructure (water supply, roads & electricity) and the factories, tractors, machinery and tower cranes that make production and employment by the private sector possible.

In the absence of adequate levels of capital formation, current and future economic growth is curtailed, which compromises fiscal stability via below-optimum taxation revenues. Furthermore, employment growth is also restricted and government's ability to provide basic services to a growing population and to maintain infrastructure is diminished.

Due to the highly contentious nature of the issue of EWC, particularly the destructive and highly visible effect that such a policy can exert on socio-political and economic stability (as witnessed recently in Zimbabwe and Venezuela), it was decided by the lead author to assemble a research team to conduct an objective economic impact assessment (EIA) of EWC.

The study does not reflect on the nature of past practices of land ownership in South Africa, although it implicitly acknowledges the need for land reform – conducted in a pragmatic manner that does not impact negatively on the crucial demand component of capital formation and, ultimately also on the whole economy.

In a nutshell, therefore, the study attempts to complement the array of submissions that have been presented to Parliament's Constitutional Review Committee (CRC). As such, the intention is not to invoke emotional debate on what is perceived as wrong or right with property ownership in the country, but simply to point out a plausible quantitative assessment of the likely effects on the South African economy if EWC is pursued.

The ultimate focus of the EIA conducted in this study is to quantify the impact of a policy of EWC on key economic variables, including GDP, employment and taxation revenues, as a result of a subsequent (and predictable) decline in capital formation as percentage of gross domestic product (GDP). A supporting literature study of countries that have pursued policies similar to EWC reveals an unequivocal trend for capital formation/GDP ratios to decline in the aftermath of such policy interventions. All of them have experienced the debilitating effects

on their economies that follow policies of EWC, whilst some of them have recovered after a subsequent reversal of this policy approach.

The main purpose of the country case studies is to determine a range for the degree to which capital formation/GDP ratios *decline* in the short to medium term, after the implementation of policies linked to EWC, as well as the subsequent *increases* in these ratios that occur after the incentive for productive economic activity inherent in private property ownership has been restored (either fully or partially).

The results of the ratios determined in these case studies yield an average annual decline in capital formation as a percentage of GDP of 13.9% and serves as justification for two scenarios depicting the likely effects of declines in capital formation/GDP ratios in South Africa, assuming that EWC is pursued. These effects are determined via an econometric modelling exercise, with the focus on the impact on the country's GDP and also on fiscal stability, including taxation revenues and the anticipated change to the budget deficit/GDP ratio.

A summary of the results of the quantitative macroeconomic impact assessment of EWC contained in this study is as follows (scenarios 1 and 2 refer to declines in capital formation of 5% and 10% per annum, respectively, which are conservative when compared to the average decline of almost 14% determined in the country case studies):

- Annualised nominal GDP in Q3 2020 will be R270.4 billion less in the event of a 5% decline in capital formation (induced by EWC) – compared to an absence of EWC. In the case of a 10% decline in capital formation, the decline in GDP amounts to R454.8 billion.

- The GDP impact means that South Africa will enter a recession in 2018 (year-on-year basis) and remain in recession throughout the forecasting period (up to Q3 2020). This holds for real GDP growth trends for both scenarios 1 and 2.

- Total fiscal revenues will decline over the forecasting period by R157.5 billion for scenario 1 and by R261.5 billion for scenario 2

- Government's budget deficit/GDP ratio will increase from a 2018/19 budget estimate of 3.8% to 5.3% for scenario 1 and to 6.5% for scenario 2 by the 3rd quarter of 2020

- On the back of a recession and fiscal instability, South Africa's sovereign bonds will in all likelihood be downgraded to junk status by Moody's Investor Services, the only authoritative credit rating agency that continues to rate the country's bonds as investor status

- Over the 10-quarter forecasting period, government's financing requirement will escalate by a cumulative R157.4 billion under scenario 1 and by R261.5 billion under scenario 2. This will inevitably lead to higher money market and capital market interest rates and increase the cost of servicing public debt, leading to a so-called "crowding-out" effect of the fiscal ability to spend funds on poverty alleviation and basic services such as education, health and the maintenance of infrastructure.

- Based on the 2015 input/output table multipliers obtained from *Quantec Data*, the decline in GDP between scenario 2 and a policy-neutral scenario could lead to a loss of more than 2.28 million jobs

- Against the background of the current high level of socio-political unrest in South Africa, the combination of a prolonged recession, higher interest rates and significantly higher unemployment will tend to aggravate the security situation in the country, in general. An escalation of criminal activity can also be expected, which will encourage the emigration of highly skilled people, further eroding the country's international competitiveness.

Empirical evidence confirms the stifling effect on initiative, entrepreneurship and productivity inherent in the plethora of regulations and restrictions that accompany an institutionalised system where private property ownership is not guaranteed and protected by law.

In sharp contrast, the freedom associated with the economic systems that are prevalent in virtually all free enterprise democracies provides individuals with the incentives to open new frontiers in science, product differentiation, welfare creation and the relief of human misery via highly versatile, innovative and efficient economies.

In a worst case scenario of economic hardship that follows policies of land expropriation without compensation, as has occurred in both Zimbabwe and Venezuela, acute food shortages develop and a mass exodus of citizens occurs, to the further detriment of socio-political and macroeconomic stability. It makes no sense, therefore, to attempt the implementation of land reform policies that have proven over and over again to exercise a destructive influence on the economy and threaten the livelihoods of the most vulnerable members of society – those that cannot sell their skills in other jurisdictions.

It is regarded as a matter of some urgency to move the debate on land reform beyond a discredited ideology and backward-looking approach to one that attempts to maximise new economic opportunities for securing a better future for South Africans, based on an inclusive process of negotiation and a sensible approach to land reform – preferably on similar lines to Codesa.

This study confirms imminent socio-economic disaster for South Africa in the event of EWC being pursued. It is clear from international evidence that a strategy aimed at land reform should be based on market principles and pragmatism, with a detailed and comprehensive land audit as starting point. Politicians and bureaucrats cannot repeal the fundamental laws of economics that have been proven in this study, try as they might. Capital, which is an indispensable prerequisite for economic development, job creation and growth, acts just like a gazelle in the African bush – if you scare it, it runs away.

1 Introduction

In February 2018, South Africa's Parliament voted in favour of a motion to investigate the feasibility of a constitutional amendment to allow for the expropriation of land without compensation (EWC). Parliament's Joint Constitutional Review Committee (CRC) is currently investigating this issue and its findings are due to be submitted in November.

In April, the Committee called for written public submissions and requests for oral presentations around the issue of whether section 25 of the Constitution, and any other sections, need to be changed.

Several prominent business leaders; property developers; employer organisations in the agriculture sector; and spokespersons of political parties opposed to the motion have warned that in the event of EWC being adopted, there would be unforeseen consequences that are not in the best interests of South Africa.

Due to the highly contentious nature of the issue of EWC, particularly the destructive and highly visible effect that such a policy can exert on socio-economic stability (as witnessed in Zimbabwe and Venezuela), the CRC undertook to conduct public hearings in all of the provinces. The oral submissions at these hearings were often fraught with high emotions and the general impression gleaned from media reports indicated an absence of detailed and accurate information substantiating the plethora of sweeping statements on the need for radical land reform.

Having benefited from an involvement with the discipline of economics for the past 45 years and the privilege to have addressed more than 300,000 decision-makers and students during approximately 1,500 conferences, seminars and lectures, it became apparent to the lead author of this study that the land reform debate requires more robust and factual inputs. Empirical and quantifiable data should be assessed for the sake of objectivity in making decisions on land tenure regulations that could have a major bearing on South Africa's future. Subsequent discussions with the executive leadership of Kellaprince Properties; Lowveld Trust; Farmers' Agri-Care and InteliGro resulted in a joint venture to conduct a study on the likely economic implications of EWC.

This study represents an attempt to present an objective economic impact assessment (EIA) of the suggested EWC policy. As such, the brief of the study is essentially non-political (although a modicum of criticism is levelled at policies designed to harm economic output and lead to fiscal instability).

The study does not reflect on the nature of past practices of land ownership in South Africa, although it implicitly acknowledges the need for land reform – conducted in a pragmatic manner that does not impact negatively on the crucial demand component of capital formation and, ultimately also on the whole economy.

In a nutshell, therefore, the study attempts to complement the array of submissions that have been presented to the CRC. As such, the intention is not to invoke emotional debate on what is perceived as wrong or right with property ownership in the country, but simply to point out a plausible quantitative assessment of the likely effects on the South African economy if EWC is pursued.

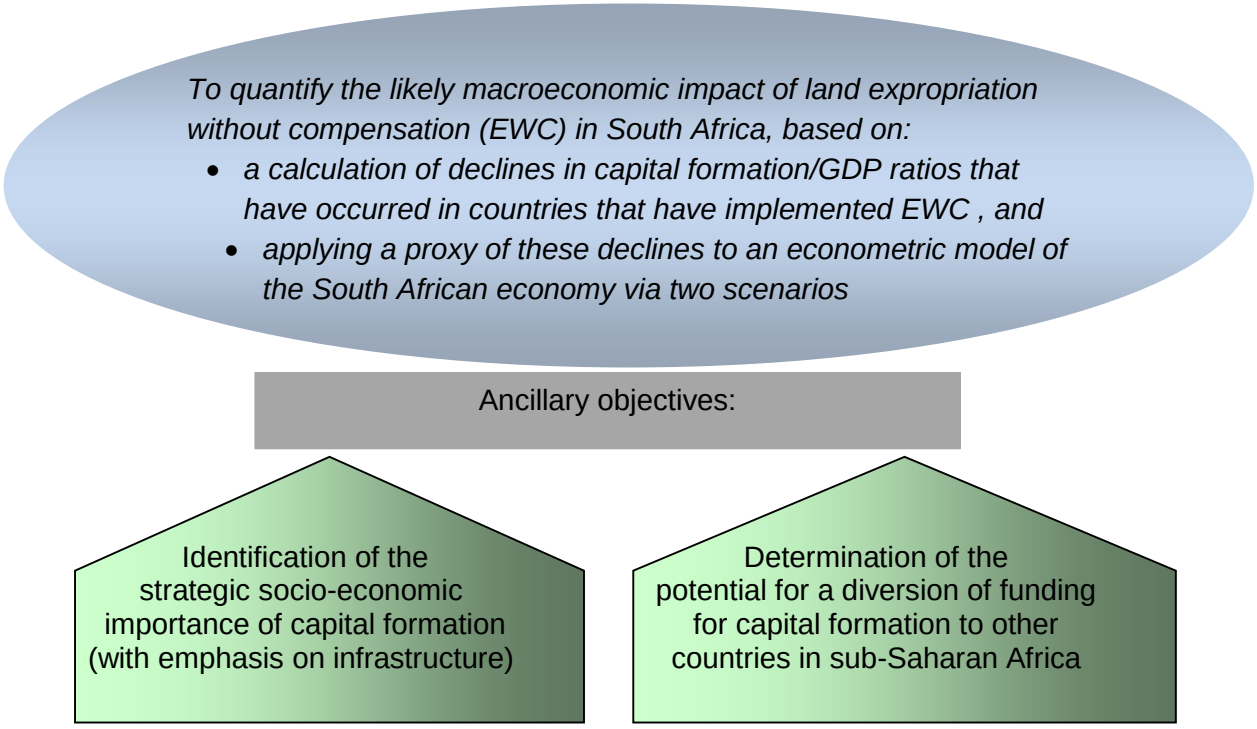
2 Objectives and structure of study

Substantial empirical research has been conducted in developing countries and advanced economies alike over a period spanning several decades that confirms a strong causality between capital formation and economic output (GDP). Capital formation occurs via infrastructure (roads, electricity supply, dams & water reticulation systems), which is the domain of the public sector and via the investment in productive assets of private business enterprises (land, buildings, machinery, vehicles and computers).

One of the reasons for the strong relationship between capital formation, on the one hand, and economic growth & employment creation, on the other hand, is related to the sheer size of this major component of aggregate demand, which typically ranges between 35% and 40% of GDP in developing countries and around 20% of GDP in advanced economies. This gap is obviously related to the fact that a critical mass of infrastructure has already been created in most advanced nations, which essentially only require maintenance, upgrading and adaptation to new technological advancements. In 2017, the world average for capital formation was 23.3% of GDP. At a level of 19.7%, South Africa is lagging substantially behind its peers and the real value of capital formation in 2017 was lower than in 2014. The National Development Plan (NDP) states that South Africa needs a capital formation/GDP ratio of 30% to secure growth of above 6%.

Legitimate concern exists over the potential negative effects that a policy of radical land reform could exert on the economy of South Africa, especially due to the long-term damage that a lower propensity for capital formation could inflict on the country's ability to grow at rates commensurate with creating adequate employment opportunities and generating the taxation revenues necessary for poverty alleviation.

Against this background, the study objectives are as follows:



Due to the strategic role of capital formation in expanding a country's base for future growth, employment creation and development, it is regarded as prudent to commence the study with a concise overview of the importance of fixed investment (especially infrastructure) to a society's development. Two considerations that are relevant to the EIA are, firstly, the fact that infrastructure creation (and maintenance) requires public sector funding.

Although debt financing of major infrastructure projects is quite common, the costs are ultimately borne by taxpayers and the bulk of taxation revenues emanate from individuals and enterprises in the private sector. Secondly, unless private sector capital formation occurs *pari passu* with infrastructure creation over the long term, the full benefits of such investments will not materialise.

Capital formation represents the pivotal theme for this study. At the outset, therefore, section 3 provides an overview of the definition, composition and nature of capital formation and its over-arching impact on the economy. Reference is also made to the causalities encountered in the domain of the financing required for both infrastructure and productive capacity created by private business enterprises.

The ultimate focus of the EIA conducted in this study is to quantify the impact of a policy of land expropriation without compensation (EWC) on key economic variables, including GDP, employment and taxation revenues, as a result of a subsequent (and predictable) decline in capital formation as percentage of GDP. A supporting literature study of countries that have pursued policies similar to EWC reveals an unequivocal trend for capital formation/GDP ratios to decline in the aftermath of such policy interventions.

All of them have experienced the debilitating effects on their economies that follow policies of EWC, whilst some of them have recovered after a subsequent reversal of this policy approach. In the case of five of the selected countries, a reversal of property expropriation occurred in the aftermath of economic decline, mostly in the form of privatisation and other reforms aimed at strengthening free enterprise principles.

Enhanced levels of economic freedom and the encouragement of private sector business development exerted an equally predictable positive impact on capital formation/GDP ratios, followed by higher economic growth and rising *per capita* incomes. Unfortunately for two of the selected countries, they have not yet had the time to redress the damage inflicted by policies of expropriation, or are at an embryonic stage of reversing such policies.

The methodology that was followed for quantifying the extent to which capital formation/GDP ratios change in response to the implementation and/or subsequent reversal of policies of EWC is described in section 4 (in table format). The data gleaned from changes to capital formation/GDP ratios from selected country case studies that are regarded as relevant to the issue of EWC in South Africa are presented as data-maps (including graphs) in section 5 (concise historical sketches of these countries' experience with radical land reform are presented as annexure A).

The main purpose of the country case studies is to determine a range for the degree to which capital formation/GDP ratios *decline* in the short to medium term, after the implementation of policies linked to EWC, as well as the subsequent *increases* in these ratios that occur after

the incentive for productive economic activity inherent in private property ownership has been restored (either fully or partially).

The results of the ratios determined in these case studies (in section 5) serve as justification for two scenarios depicting the likely effects of declines in capital formation/GDP ratios in South Africa, assuming that EWC is pursued. These effects are determined in section 6 (via an econometric modelling exercise), with the focus on the impact on the country's GDP and also on fiscal stability, specifically the anticipated change to the budget deficit/GDP ratio.

It should be pointed out that both of the scenarios used for the forecasting exercise are based on relatively conservative assumptions of declines in capital formation as a percentage of GDP. The forecasting period covers ten quarters from its commencement in quarter 2, 2018. The choice of duration of this period has been informed by the fact that expenditure on capital formation traditionally acts as a lagging indicator, as also established in the data for the country case studies.

The concluding section will summarise the forecast effects of EWC on South Africa's GDP and indicators of fiscal stability.

A brief discussion of the potential for a diversion of relatively scarce sources of direct foreign investment and capital market funding for infrastructure creation and private sector capital formation to other countries in the SSA region is presented as annexure B.

3 The socio-economic significance of capital formation

3.1 Capital formation defined

According to most authoritative textbooks, capital is a broad term which may be used in either an economic context or a financial context (Botha 2007). To the economist, capital is defined as: *The physical assets that are utilised to produce other goods and services*. Economic capital represents one of the four traditional production factors in a market economy.

Examples are buildings, machinery, computers and transport equipment. Until a decade ago, it was common for capital formation to be described as *gross fixed investment* and the term *fixed investment* is often still encountered in research documents dealing with infrastructure and the expansion of productive capacity by the private sector.

Capital formation occurs when some portion of a country's national income is invested in assets and facilities that serve to augment value added in the economy in future. When combined with the other three sets of production factors (labour, natural resources and entrepreneurship), goods and services are produced and, via a range of taxes on economic activity, this provides government with the fiscal resources required for basic public services (especially public health and education), the maintenance of law and order in society and infrastructure. The latter involves both the creation of new infrastructure to meet the rising demands of a growing population (a key component of capital formation) and the maintenance of existing infrastructure.

Most of the definitions of infrastructure in economic literature, including Todaro (2000) and the World Bank (1994) emphasise the crucially important role of infrastructure in raising productivity, and, by inference, a nation's international competitive advantage. Essentially, this takes place through lowering the costs of production, an issue that is also acknowledged by the Development Bank of Southern Africa (DBSA) in its explanation of the nature of infrastructure.

The DBSA's formal definition of infrastructure (1998) is depicted in box 3.1. It is clear that infrastructure is one component of "capital formation", a term that features prominently as one of the four key demand components in all systems of national accounts. The latter occurs through private sector investments in physical capital stock (also called "production structure") and public sector investments in the services that facilitate and integrate economic activities – infrastructure.

Examples of private sector capital formation include office buildings, commercial vehicles, tractors, irrigation systems, factories, process computers, machinery & equipment.

Examples of public sector capital formation, generally known by the term "infrastructure", are also provided in box 3.1. It is important to point out that capital formation by the public and private sectors requires coordination. Without roads and harbours, processed food factories would not be able to supply domestic or export markets. Schools and universities do not lead to development unless sufficient private sector job creation takes place.

Box 3.1: The Development Bank of Southern Africa's definition of infrastructure

Economic infrastructure is that part of an economy's capital stock that produces services to facilitate economic production or serves as inputs to production (e.g. electricity, roads, dams and ports) or is consumed by households (e.g. water, sanitation and electricity)

Economic infrastructure can be divided into three categories:

- *Public utilities (electricity, gas, water, telecommunications, sanitation, sewerage and solid waste disposal)*
- *Public works (water catchment in dams, irrigation and roads)*
- *Other transport sub-sectors (railways, roads, seaports, airports and urban transport systems)*

Social infrastructure facilitates services such as health, education and recreation and has both a direct and an indirect impact on the quality of life.

To the accountant, capital as defined above also relates to the financing requirements involved. It may, for example, be appropriate for a business concern to finance the establishment of a new factory by a combination of the following three sources of financial capital: retained profits; the issuing of new shares; and external loans. Lockwood (2010) points out that whatever definition of economic capital is adopted, it is fair to say that the quantity and quality of a country's infrastructure has a direct impact on its economy's ability to operate and to expand over time.

Government plays a vital role in augmenting a country's capital stock through expenditures on infrastructure development and also by providing a stable macroeconomic environment and policies that serve to incentivize and support private sector investment in new productive capacity.

When these two sources of capital formation – the state and private businesses – act in harmony to ensure an adequate expansion of a country's fixed capital stock, the capacity of an economy to increase output, employment and fiscal revenues is augmented, both in the short term and the long term. It is important to note that insufficient levels of capital formation in the present ultimately serve to restrict a country's economic growth capacity in the future, as it embodies the expansion of the assets necessary for growth and employment creation. It should also be pointed out that new fixed capital formation needs to exceed the consumption of the existing fixed capital for there to be a quantitative and/or qualitative improvement in the total fixed capital stock of a country. Only when this holds will an increase occur in the production, growth and employment creation capacity of the economy.

Empirical research into the role of capital formation in the process of economic growth provides irrefutable evidence of a causal relationship. In a ground-breaking study published in the *Journal of Economic Policy Reform* by Uneze (2013), titled: *The relation between capital formation and economic growth: evidence from sub-Saharan African countries*, it was found that causality is bi-directional.

The conclusion (that has also been arrived at by research in other regions), is that higher economic growth leads to higher capital formation and that in turn, increases in capital formation result in higher economic growth. These results hold irrespective of whether capital formation is measured with private fixed capital formation or by total capital formation (which includes expenditure on economic and social infrastructure by government and other public sector agencies).

Research into the role of fixed investment in the process of economic development published in *The Journal of Development Studies* by Schatz (1968) pointed out the misconception that factors such as entrepreneurship and technological advances are relatively more important than capital formation. Statistical evidence clearly restates the primacy of capital formation and Schatz makes the point that differences of opinion on the respective roles of all the production factors are often ideological and not based on fact.

Whilst it is true that a high rate of fixed investment represents just one of many requirements for sustained growth and development, any reasonable statement of the capital-emphasis view always acknowledges that other development requirements have to be implemented in tandem for capital formation to have its full effect.

Irrefutable proof nevertheless exists that confirms the indispensable role of capital formation in stimulating economic development. Sufficiently large amounts of investment in infrastructure and private sector productive capacity are necessary for the following reasons (*inter alia)*:

- Capital formation and economic growth are highly correlated
- Capital deepening and capital widening are not possible without large initial amounts of fixed investment
- Technological progress is dependent on a critical mass of relatively sophisticated economic capital, otherwise backward production methods requiring little capital continues to expand the subsistence sector at the expense of a modern market sector with higher value added ratios and a greater positive fiscal impact
- Capital formation is highly correlated with skills development, employment creation and the expansion of fiscal revenues

Due to the limited capacity for sufficient domestic sources of funding for capital formation at any point in time, it stands to reason that foreign direct investment (FDI) has the potential to augment a country's productive capacity without placing undue pressure on the costs of domestic financing (via money market and capital market interest rates).

In an article that appeared in *Cogent Economics & Finance,* Sothan (2017), adds to the literature on the relationship between foreign direct investment (FDI) and economic growth, via a Granger econometric causality test. The empirical results provide strong evidence of the causal impact of FDI on Cambodia's economic growth (GDP). In Cambodia, as in many other developing countries, FDI acts as a strong driver of economic growth.

From the perspective of the contribution made to aggregate output (GDP) by economic capital, it is also useful to distinguish between its major functional causalities, as depicted by table 3.1

Table 3.1: Key factors that influence the level of capital formation in emerging markets and developing countries
The domestic exchange rate
Exchange rates of key global trading partners
Exchange rates of other emerging markets
Domestic interest rates (money market and capital market)
International capital market interest rates
The level of domestic labour costs
The flexibility of the domestic labour market
Physical and monetary asset depreciation
Government's debt profile and debt requirements
Sovereign bond credit ratings
Domestic demand for goods and services
The scope and quality of existing infrastructure
Demographic trends, including urbanisation
Investor confidence (both domestic and global)
Government support via fiscal incentives and policy certainty
Protection of physical and intellectual property rights
Development of new technologies

3.2 Benefits of infrastructure investment

It is regarded as necessary for a study of this nature to expand on the nature and significance of infrastructure, especially as it pertains to its indispensable role in enhancing a developing country's ability to provide a sound basis for incentivising private sector capital formation, including foreign direct investment.

The development of civilisation is directly linked to the development of infrastructure. In the absence of transport and other logistics systems, most markets would cease to exist, employees would not be able to commute, medicine would not be available in clinics and the world would regress back to the pattern of a subsistence economy. In the absence of adequate supplies of water, food production would falter and societies would be faced with the prospect of famine and the rapid spread of diseases.

Like most things in life, infrastructure is not free. Infrastructure facilities mostly exhibit the classic characteristics of public goods, which require fiscal intervention. Taxation revenues and government bond issues are most often utilised to finance the establishment of new infrastructure. These funding sources emanate mainly from economic activity by private business enterprises and individuals, most of whom are employed in the private sector.

The logic behind adequate investment in infrastructure is not difficult to comprehend when one considers the array of advantages that a society derives from adequate investment in appropriate infrastructure, including the following:

i. Unlocking of factor and product markets

The existence of roads in the development of markets, particularly in rural areas, has traditionally enjoyed particular prevalence in establishing infrastructure priorities. Research by Gilles, *et. al.* (1992), confirms that the absence of good roads can increase the cost of producing surplus crops by as much as 100%. Irrigation provides a further example of the powerful effect that infrastructure investment can exert on the productivity of factor markets, whilst a modern, industrialised economy simply cannot function properly in the absence of a reliable supply of electricity.

ii. Contribution to GDP

Public sector capital formation represents an indispensable element of economic activity. The productive investments by the private sector to augment new output capacity through factories and equipment will not yield adequate returns unless they are supplemented by social and economic infrastructure. The latter serves to integrate the economic activities of private businesses. Research by Botha and Lockwood (2005) has shown that GDP increases by 127% for every rand spent on road building (via the input/output table multiplier effect). Detailed World Bank research (2007), based on cross-country analyses, indicate the existence of a direct correlation between infrastructure accumulation and economic growth

iii Economic multiplier effects

Research conducted by Lockwood (2006) to determine an objective estimate of the social and economic impact of a development finance fund similar in nature to the Risk Capital Facility administered by the Industrial Development Corporation (IDC) confirms the existence of strong capital formation multiplier effects in South Africa. Under the assumption that the facility would have an initial capital base of R250 million – matched by a further R250 million, on a project-by-project basis by the IDC, it was concluded that, in total, additional output of up to R2.1 billion could be directly supported over a three-year period. When account is taken of the indirect and induced effects of the leveraged investment, the cumulative impact could rise to potential additional business turnover of around R7.5 billion for all of the direct, induced and indirect multiplier effects.

iv Positive rates of return on investment

Consensus exists that infrastructure investments produce relatively high rates of return. Research by Easterly and Rebelo (1993), covering a large sample of developing countries, confirmed the existence of a rate of return of 63% on transportation and communication projects.

v Alleviation of poverty

As emphasised by the DBSA (2006), developmental infrastructure can make a huge difference to reducing poverty and includes reducing the vulnerability of poor people through health facilities, adequate nutrition, an improved work and study environment, access to information through the media, and more time spent on productive activities.

vi Contribution to employment creation

Beyond a certain level of output growth (depending on the multiplier effects of the different sectors of economic activity), both formal and informal sector employment will be created. According to the World Bank (1994), as long as quality and cost-effectiveness are not compromised, labour-based approaches to infrastructure

development can also be an important instrument for employment-intensive economic growth.

vii Contribution to taxation revenues

A further important macroeconomic effect that was calculated in studies by Botha and Lockwood (2005 & 2007) relates to government revenues (the so-called fiscal backflow effect). In essence, this effect is created as a result of the fact that most of the processes involved with the generation of value added (GDP) in the economy are subject to some form of tax. In the case of the study on the socio-economic impact of a proposed Risk Capital Fund (Lockwood, 2006), it was found that almost R700 million of additional individual tax, company tax and indirect taxes could be supported/generated for the government (over a three-year period) as a consequence of the economic activity induced by an initial capital outlay of R500 million by the proposed Fund.

vii International competitiveness

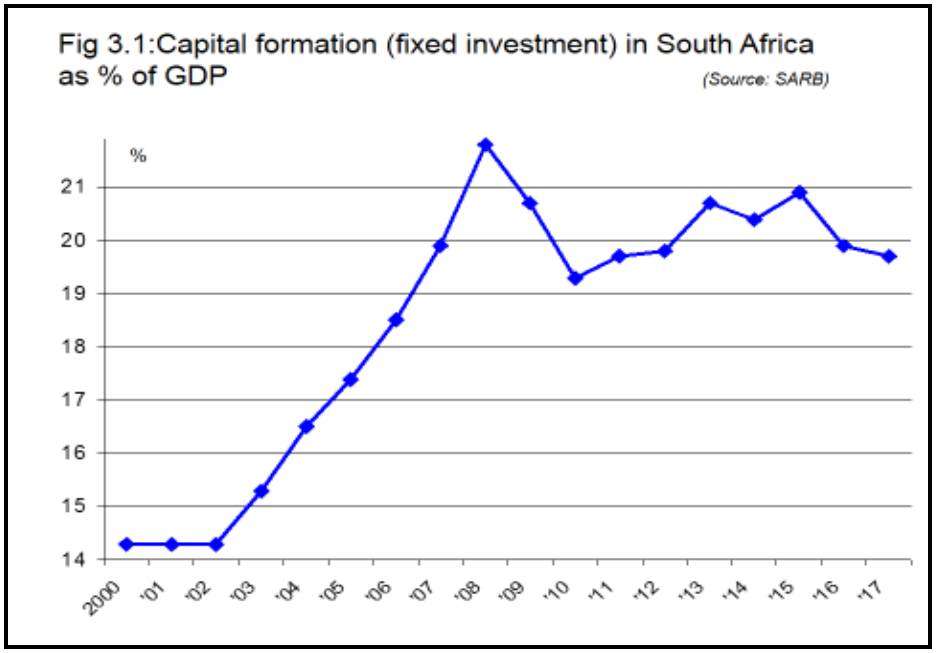
International agencies are continuously producing surveys and reports on the perceived investment risk and competitiveness of advanced economies and developing countries alike. Several authoritative surveys publish data on the perceived quality and scope of basic economic infrastructure, including the annual World Competitiveness Report. Any developing country that embarks on an effective strategy to improve the scope and quality of its infrastructure will almost certainly experience an upgrading of its global competitiveness, which may eventually become manifested in tangible benefits relating to lower public sector debt service costs. The imperative of sufficient and modern infrastructure in enhancing a country's attractiveness as a destination for foreign direct investment is underscored by the World Bank (1994). Surveys by prospective international investors invariably include detailed reference to the range and quality of infrastructure, which is a key factor in ranking potential destinations for foreign investment.

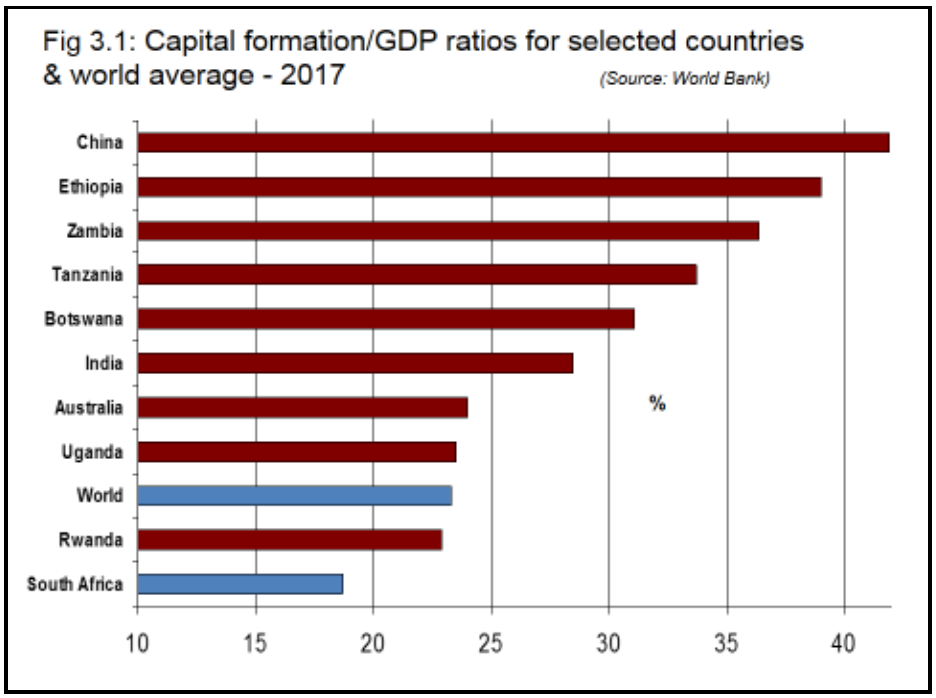
3.3 South Africa's disposition with regard to capital formation

Unfortunately, South Africa's ratio of capital formation to GDP has declined in recent years, as illustrated by figure 3.1.

For the past nine years, the country has not been able to match the record level during the democratic era that was achieved in 2008, mainly due to a combination of fiscal constraints imposed by a lengthy commodity downturn and the worsening standards of corporate governance in the public sector at large, especially at key state-owned enterprises.

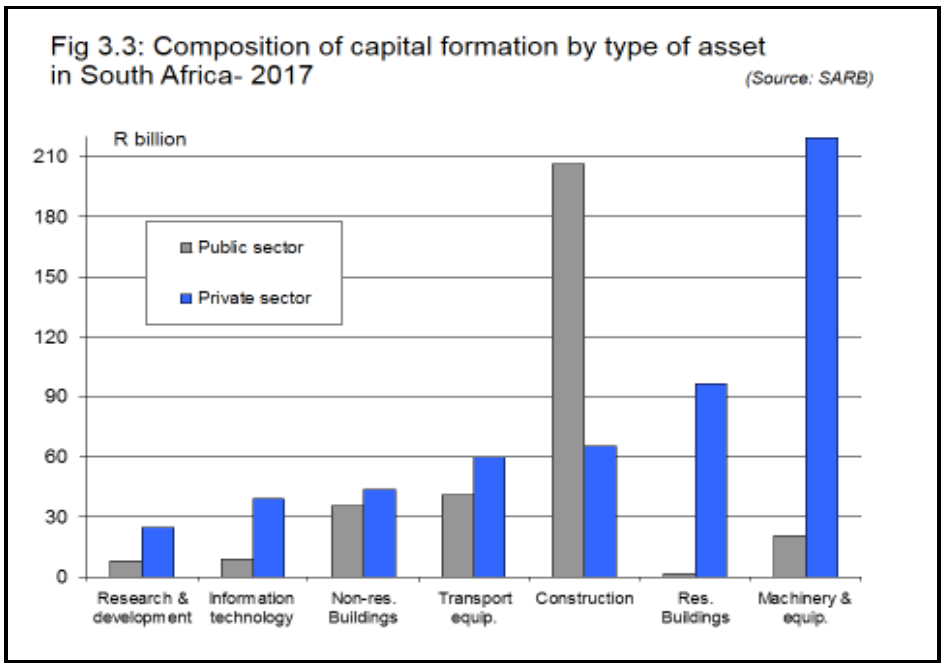
It is also evident from the data in figure 3.2 that capital formation in South Africa is lagging behind most of its emerging market peers. At below 20% of GDP in 2017, South Africa was below the world average and this ratio is also lower than those of several advanced economies, including Australia, which already possess highly sophisticated and extensive infrastructure.



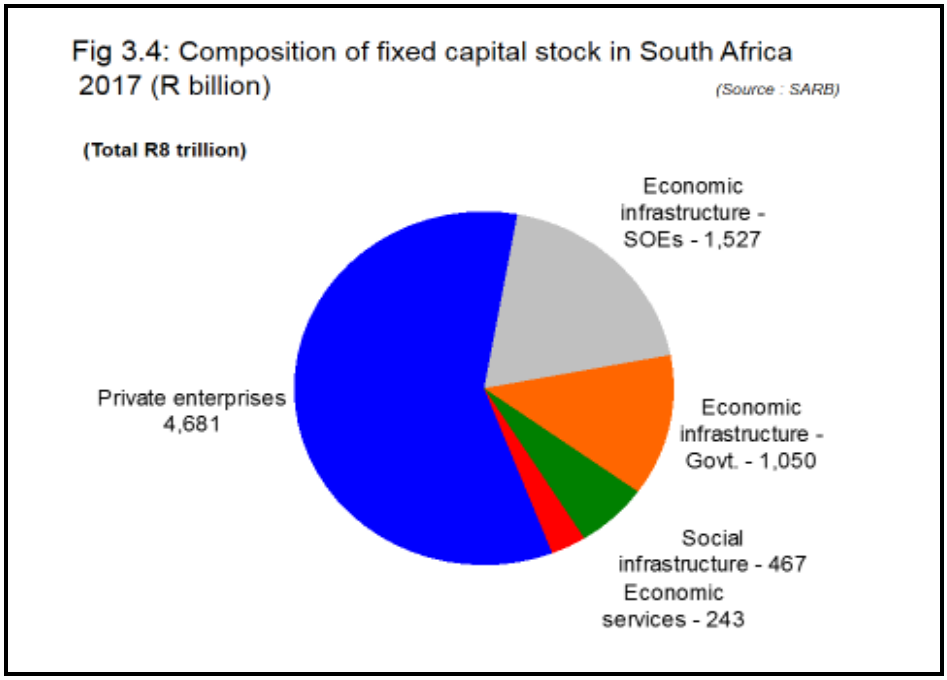


A cursory analysis of the composition of capital formation and the value of fixed capital stock in South Africa in 2017 confirms the dominant role of the private sector (see figures 3.3 and 3.4). It is also evident from the data in figure 3.3 that private enterprises dominate six of the seven key categories of infrastructure creation (by type of asset).

It is clear that, in the absence of a renewed emphasis on incentives for private sector fixed investment, South Africa is likely to experience an erosion of international competitiveness, especially with regard to the need to keep pace with new technologies in the manufacturing sectors.



It is a point of concern that the public sector seems to be neglecting the crucial areas of investment in intellectual property components of capital formation. The private sector spends three times as much as government on research and development associated with capital formation and more than four times as much on information and communication equipment (including software).



In view of these trends, it would be tantamount to self-inflicted economic sabotage to risk the eventual return to a healthier capital formation/GDP ratio by a policy of land expropriation without compensation, which embodies one of the fundamental sources of collateral whereby most of the funding for fixed investment is secured.

4 Methodology utilised for the calculation of a proxy for the effect of land expropriation without compensation on capital formation

Table 4.1: Methodology employed for the macroeconomic impact assessment of a policy of land expropriation without compensation (EWC)

Steps	Methodology
1	Literature study aimed at identifying countries that have implemented policies associated with radical land reform, including the expropriation of land without compensation (EWC)
2	Selection of the following countries, representing four different World regions (some of whom have reversed policies linked to EWC): Spain, Portugal, Romania, Vietnam, Venezuela, Ethiopia and Zimbabwe
3	Literature study of the history of the selected countries, in order to determine the dates upon which policies linked to EWC were implemented and, in certain cases, the dates when these policies were reversed (partially or fully) and/or market reforms were implemented
4	Analysis of time-series data on the capital formation/GDP ratios of the selected countries, in order to determine the extent to which these ratios responded to policies linked to EWC & policies aimed at incentivising private sector capital formation
5	Calculation of the percentage changes to the capital formation ratios determined in step 4. In cases where ratios increased as a result of free enterprise reforms aimed at greater security of tenure and the restoration of private property rights, the reciprocal was utilised for inclusion in the calculation of the average % change
6	Calculation of the average percentage change in capital formation/GDP ratios experienced by the case study countries. This was based on a weighting of each country's ratio changes in terms of the period during which the change occurred
7	Analysis of time-series data for the case study countries on the following key indicators: nominal GDP, real GDP growth, *per capita* GDP; government revenues, terms of trade and global disposition with regard to economic & political freedom - in order to supplement the case studies with notes regarded as relevant to the study
8	Application of two different declines in capital formation/GDP ratios in South Africa to an econometric model. Both these ratio changes are conservative when compared to the average for case study countries determined in step 6 and are described as best case and worst case scenarios.
9	Application of the negative impact on South Africa's GDP over a ten-quarter period (in step 8) to the key macroeconomic indicators of government taxation revenues and the fiscal deficit as a percentage of GDP. This serves to inform the conclusions regarding fiscal stability and the credit rating status of South Africa's sovereign bonds (the specific steps followed are listed in sub-section 6.4).

5 Effect of EWC on capital formation/GDP ratios - country case studies

5.1 Rationale for country case study selection

The decision on which countries to include in the case studies relating to the effect of changes to capital formation/GDP ratios induced by policies of land expropriation without compensation (EWC) was guided by the following requirements for a representative sample group:

- Adequate and reliable data sources on capital formation and GDP
- A clear indication of the implementation of policies of EWC
- Global representation
- Two-directional changes, i.e. negative capital formation trends following policies of EWC (also often referred to as nationalisation) and vice versa (after a reversal of such policies via the full or partial restoration of private property ownership)

Following a preliminary literature study, seven countries were selected, viz. Portugal and Spain (Western Europe), Romania (Eastern Europe), Vietnam (Asia), Venezuela (South America) and Ethiopia and Zimbabwe (Africa).

The advantage of expanding the analysis to also include remedial policy implementation that inevitably follows the fairly predictable negative impact on capital formation caused by EWC is to enlarge the sample size of capital formation/GDP ratio changes used for the calculation of an average ratio (to serve as a proxy for the dependent variable in the econometric modelling exercise). In these cases, the reciprocals of subsequent positive changes to capital formation trends were used in the calculation of the overall average change to the EWC-induced capital formation/GDP ratio (which is a negative value).

In the case of certain countries, positive changes to capital formation/GDP ratios prior to the imposition of EWC were also included in the calculation of the average ratio, which eventually swelled the data sample for the seven countries to a total of 18 values.

The determination of the point in time when policies of EWC were either implemented or abandoned or where economic policy was underpinned by private property ownership for the different countries was guided by a literature study on the modern political and economic history of these countries. To this end, concise historical overviews were prepared and included as annexures to the study.

The rest of this section will provide data-maps for the seven countries, containing all the relevant variables and calculations for the determination of the average decline in capital formation as a percentage of GDP that occurs when a policy of EWC is implemented. For purposes of concise illustration of salient trends identified in the country analyses, a number of graphs have been included.

The section concludes with a summary of the country data-maps.

5.2 Country data-maps and graphs

i. Portugal

Table 5.1: Data map: Portugal
Effects of land expropriation without compensation

Indicator	Period	% decline
Nominal GDP	1980 - 1984	-20.4
Investment/GDP ratio	1981 - 1986	-32.2

Effects of a gradual return to free enterprise

Indicator	Period	% increase
Nominal GDP	1989 - 2009	96.8
Investment/GDP ratio	1986 - 1988	24.4
Per capita GDP (in real terms)	1989 - 2007	81.2
Improvement in terms of trade since the 1982/83 market reforms	1985 - 1992	22.4

Notes:

1. 6th highest annual average rate of growth of GNP per capita in the world (outside Asia) between 1980 and 1992 - 3.1%
2. Decline in cereal imports from 3.4 million tonnes in 1980 to 2 million tonnes in 1992

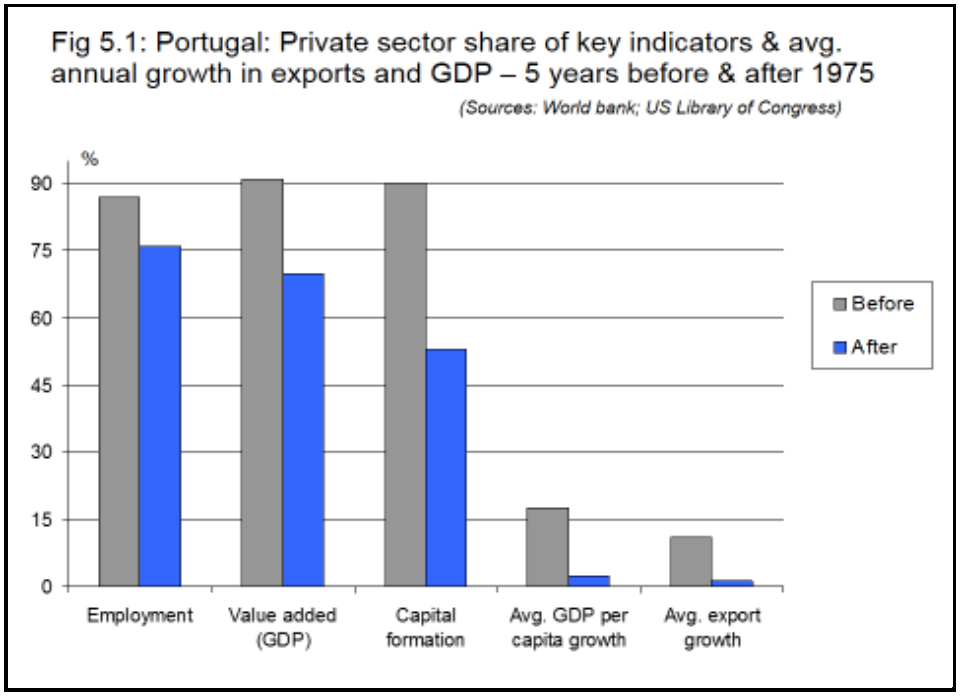
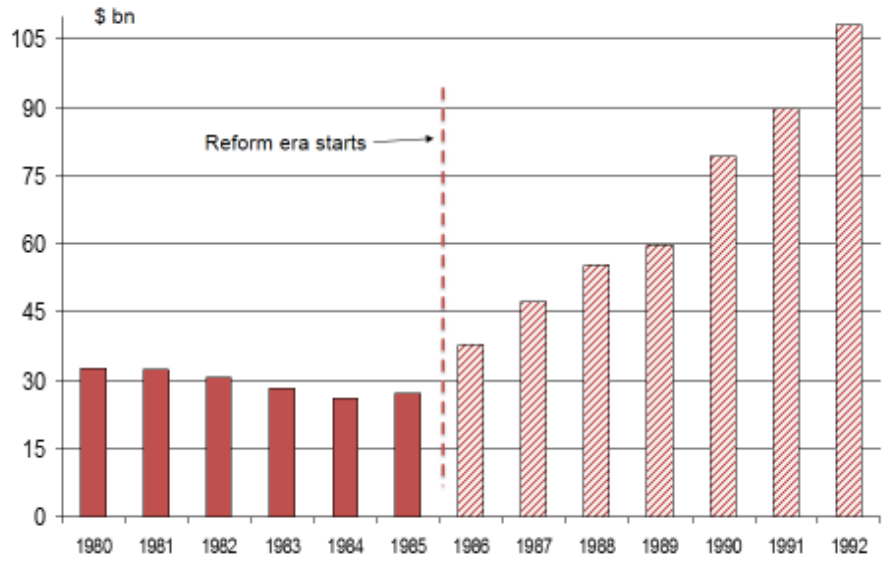


Fig 5.2: Portugal – value of nominal GDP before & after free enterprise reforms

(Source: World Bank)



ii. Spain

Table 5.2: Data map: Spain
Effects of land expropriation without compensation

Indicator	Period	% decline
Nominal GDP	1980 - 1984	-25.7
Investment/GDP ratio	1980 - 1984	-13.2

Effects of a gradual return to free enterprise

Indicator	Period	% increase
Nominal GDP	1984 - 1990	211.7
Per capita GDP (in real terms)	1981 - 1990	30.7
Improvement in terms of trade since the 1982/83 market reforms	1985 - 1992	25.8
Increase in average annual Investment/GDP ratio since the 1982/83 market reforms	1970 -'80 & 1980 - '92	293.3

Notes:

1. 7th highest level of value added in agriculture for high income and upper-middle income countries in 1992 - $21 billion
2. Decline in cereal imports from 6.1 million tonnes in 1980 to 3.8 million tonnes in 1992

Fig 5.3: Spain – real GDP growth rates before & after free enterprise reforms

(Note: 2-year moving avg; Source: World Bank)

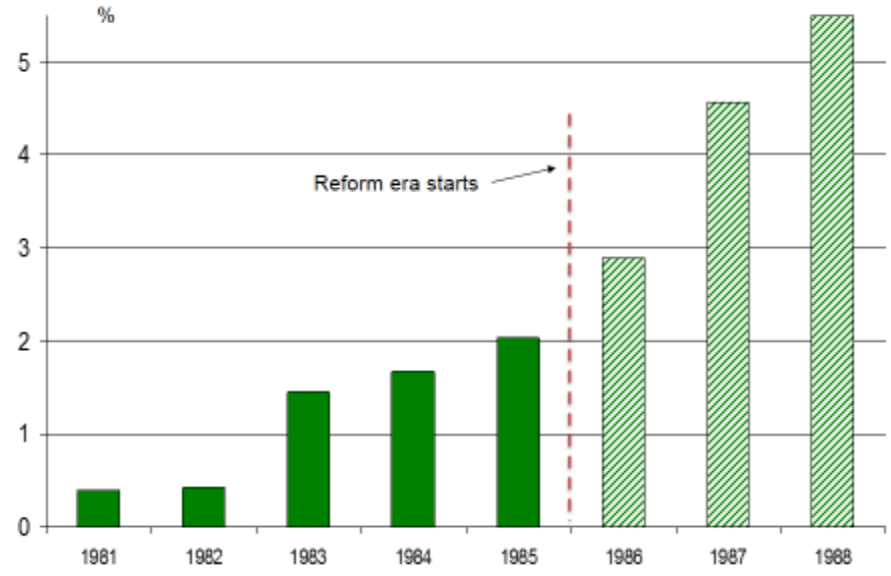
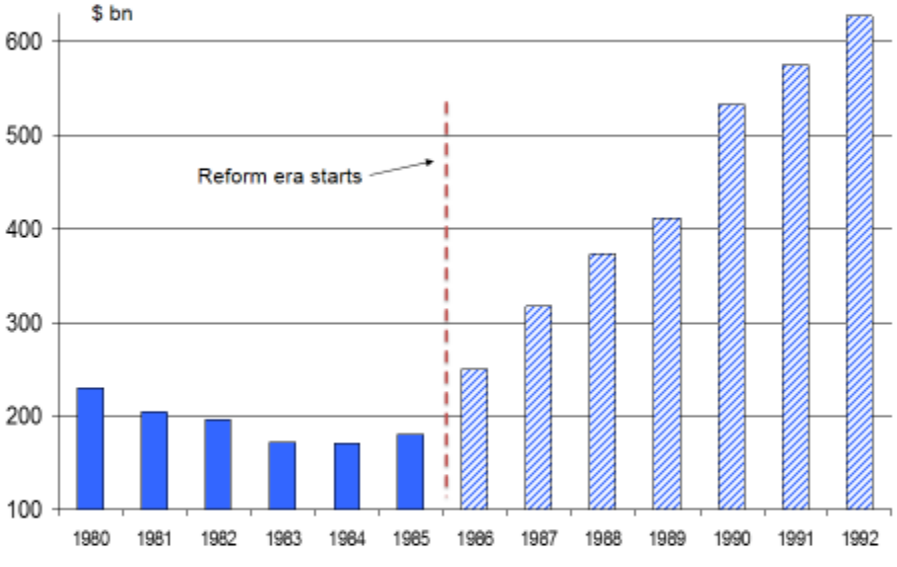


Fig 5.4: Spain – value of nominal GDP before & after free enterprise reforms

(Source: World Bank)



iii. Romania

Table 5.3: Data map: Romania
Effects of land expropriation without compensation

Indicator	Period	% decline
Nominal GDP	1981 - 1992	-64.2
Investment/GDP ratio	1993 - 1999	-45.8
Per capita GDP (in real terms)	1986 - 1999	-24.3
Government revenue/GDP ratio	1991 - 1997	-31.8

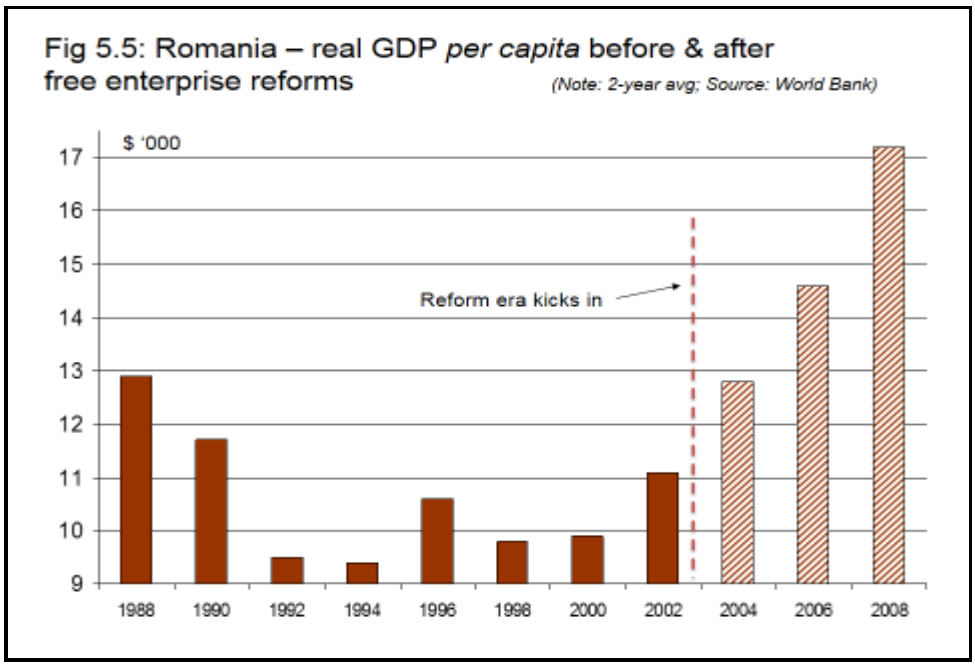
Effects of a gradual return to free enterprise

Indicator	Period	% increase
Nominal GDP	1999 - 2017	484
Investment/GDP ratio	1999 - 2017	57.1
Per capita GDP (in real terms)	1999 - 2017	128.7
Government revenue/GDP ratio	1997 - 2006	14

Notes:

1. In 2014, Romania became a contributing member of the International Development Association (IDA),

through which the Bank provides concessional financing to its lowest-income borrowers, marking a milestone in Romania's evolving role as a donor of the World Bank



iv. Vietnam

Table 5.4: Data map: Vietnam
Effects of land expropriation without compensation

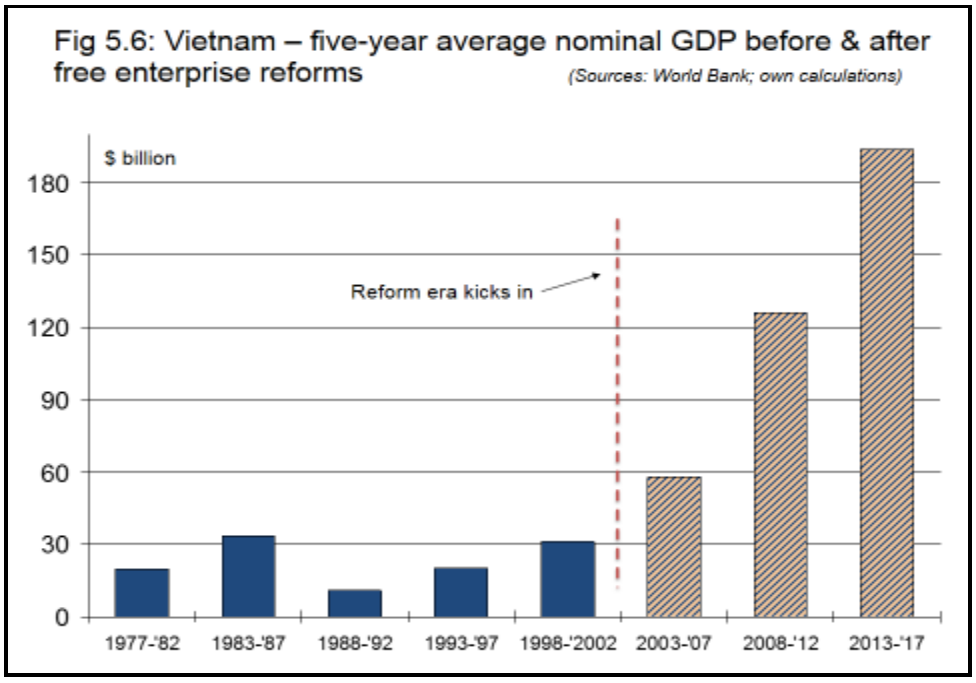
Indicator	Period	% decline
Nominal GDP	1980 - 1990	-76.8
Investment/GDP ratio	1980 - 1991	-40.0

Effects of a gradual return to free enterprise

Indicator	Period	% increase
Nominal GDP	2000 - 2017	607
Per capita GDP (in real terms)	2000 - 2017	79.3
Increase in average annual export/GDP ratio since the 2000 market reforms	2000 - 2017	143.3
Increase in average annual Investment/GDP ratio since the 2000 market reforms	2000 - 2017	142.5

Notes:

1. Since the 2000 reforms towards a free enterprise system, Vietnam has experienced a surge in capital formation in export-orientated industries. The country boasted the 5th highest ratio of exports to GDP in 2017 (more than 100%)



v. Zimbabwe

Table 5.5: Data map: Zimbabwe
Effects of land expropriation without compensation

Indicator	Period	% decline
Nominal GDP	1998 - 2008	-44.6
Investment/GDP ratio (1)	1997 - 2000	-92.0
Investment/GDP ratio (2)	2010 - 2013	-48.5
Per capita GDP (in real terms)	1998 - 2008	-52.2

Effects of an earlier alignment to free enterprise

Indicator	Period	% increase
Nominal GDP	1984 - 1990	59.8
Investment/GDP ratio	1992 = 1997	25.0

Notes:

1. Real GDP shrunk by 51% between 1999 and 2008
2. Ten successive years of real GDP declines between 1999 and 2008
3. Ranked in the bottom 10% for 34 different indicators of international competitiveness
4. Unemployment rate estimated at 95%
5. Domestic currency abandoned in 2009 & demonetised in 2015 (replaced by US dollar & SA rand)
6. More than half of Zimbabwe's population dependent on food aid in 2009
7. 11th lowest life expectancy in the World in 2015 (54.8 years)

Fig 5.7: Zimbabwe real *per capita* GDP since nationalisation of land

(Source: World Bank)

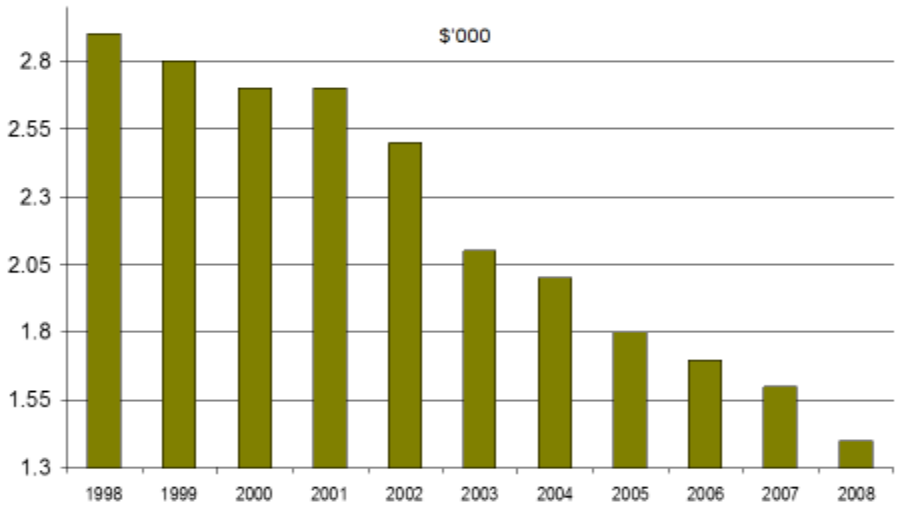
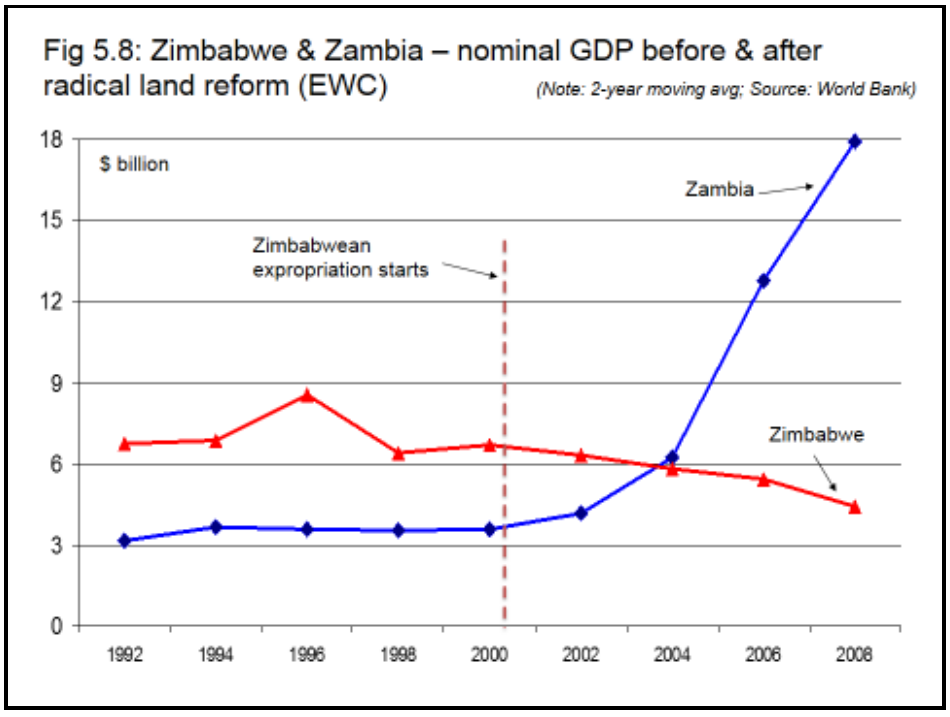


Table 5.6: Indicators of global competitiveness for which Zimbabwe is ranked in the bottom 10% in the World (out of 137 countries)

Property rights	Country capacity to retain talent
Public trust in politicians	Country capacity to attract talent
Efficiency of government spending	Affordability of financial services
Burden of government regulation	Ease of access to loans
Favouritism in decisions of government officials	Soundness of banks
Burden of government regulation	FDI and technology transfer
Government budget balance	Local supplier quantity
Country credit rating	Local supplier quality
HIV prevalence	State of cluster development
Life expectancy	Nature of competitive advantage
Time to start a business	Value chain breadth
Agricultural policy costs	Control of international distribution
Trade tariffs	Production process sophistication
Business impact of rules on FDI	Capacity for innovation
Burden of customs procedures	Quality of scientific research institutions
Flexibility of wage determination	Company spending on R&D
Hiring and firing practices	University-industry collaboration in R&D

Source: *World Economic Forum*



vi. Ethiopia

Table 5.7: Data map: Ethiopia
Effects of land expropriation without compensation

Indicator	Period	% decline
Nominal GDP	1992 - 2002	-46.6
Per capita GDP (in real terms)	1992 - 2002	-30.1
Investment/GDP ratio	1988 - 1991	-49.5

Effects of a preliminary return to free enterprise

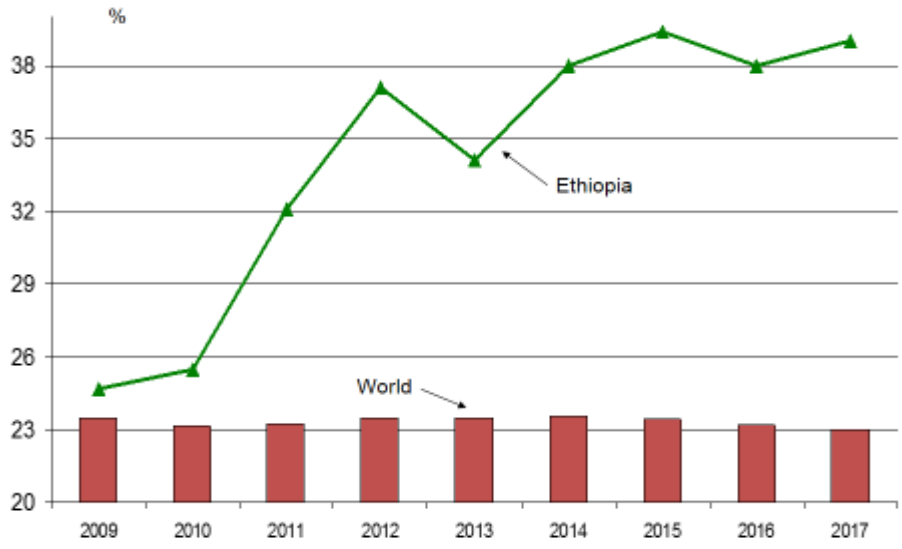
Indicator	Period	% increase
Nominal GDP	2002 - 2017	930.1
Per capita GDP (in real terms)	2003 - 2017	216.8
Investment/GDP ratio (phase 1)	1992 - 1996	65.3
Investment/GDP ratio (phase 2)	1999 - 2004	64.8

Notes:

1. 2nd poorest country in the world in 1992 (GNP *per capita* of $110)
2. In 2017, GDP *per capita* had increased to approx. $2,000 (at PPP)

Fig 5.9: Capital formation/GDP ratios since market reforms in Ethiopia and world average

(Source: World Bank)



vii. Venezuela

Table 5.8: Data map: Venezuela
Effects of land expropriation without compensation

Indicator	Period	% decline
Nominal GDP	2000 - 2003	-28.9
Investment/GDP ratio (1)	1998 - 2003	-50.4
Investment/GDP ratio (2)	2013 - 2017	-63.2
Per capita GDP (in real terms)	2012 - 2017	-38.7

Effects of an earlier alignment to free enterprise

Indicator	Period	% increase
Nominal GDP	1984 - 1990	10.9
Investment/GDP ratio	1990 - 1992	132.1

Notes:

1. Cattle herd size declines from 13 million head in 2013 to 8 million in 2018
2. Domestic production of rice, corn & coffee declines by 60% between 2007 and 2017
3. Food imports per capita increases from $75 in 2004 to $370 in 2017
4. Venezualan currency (bolivar) depreciates by 99% between 2013 and 2018
5. In 2010, after the government nationalized the port at Puerto Cabello, more than 120,000 tons of food sat rotting at the port

Fig 5.10: Venezuela - real *per capita* GDP since nationalisation of land *(Source: World Bank)*

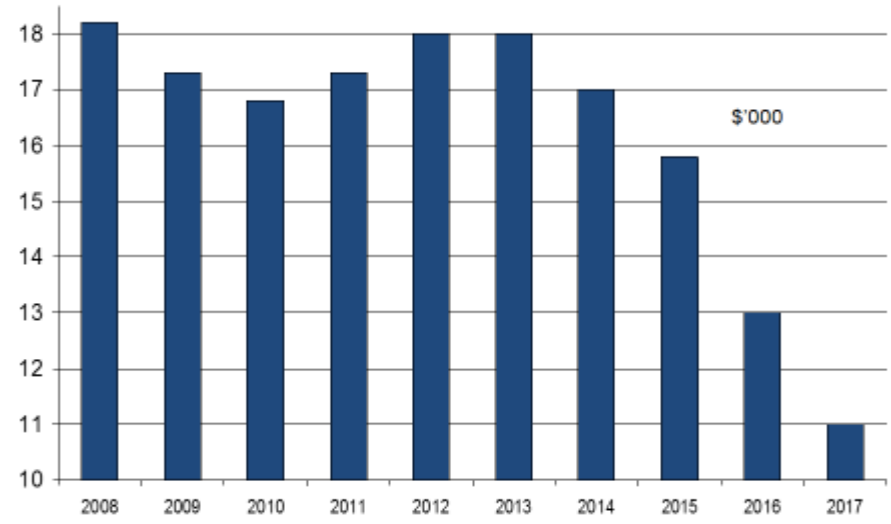
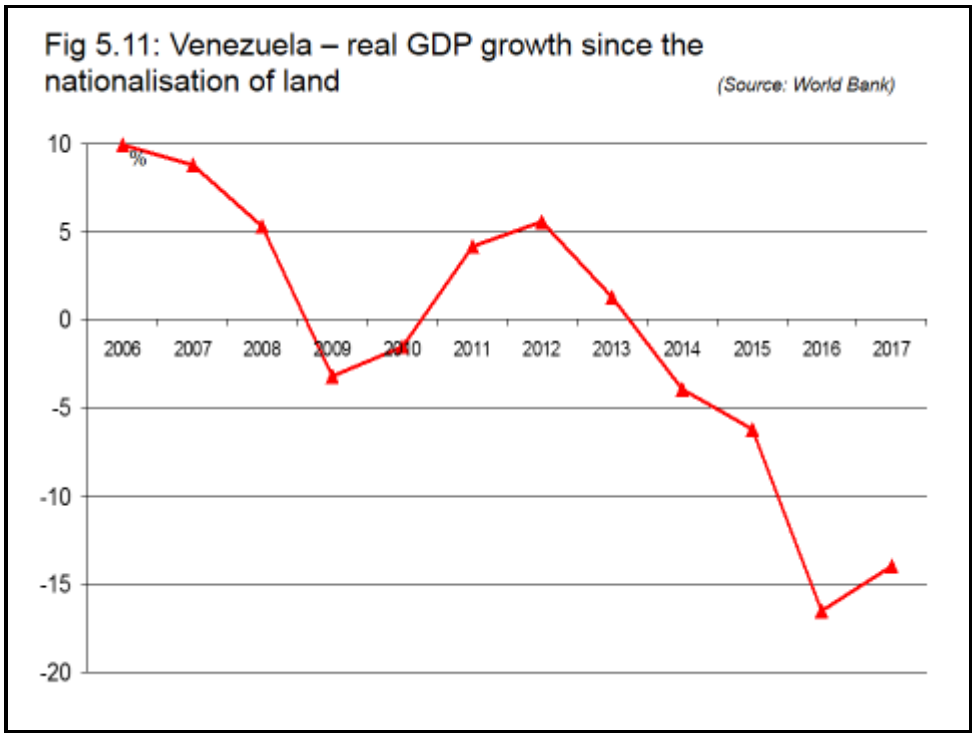


Table 5.9: Indicators of global competitiveness for which Venezuela is ranked last in the World (out of 137 countries)

Property rights	Inflation
Intellectual property protection	Intensity of local competition
Diversion of public funds	No. of procedures to start a business
Judicial independence	Time to start a business days
Favoritism in decisions of government officials	Agricultural policy costs
Burden of government regulation	Imports
Efficiency of legal framework in settling disputes	Hiring and firing practices
Efficiency of legal framework in challenging regulations	Country capacity to retain talent
Transparency of government policymaking	Country capacity to attract talent
Reliability of police services	Local supplier quantity
Ethical behavior of firms	

Source: *World Economic Forum*



5.3 Summary and calculation of proxy for EWC-induced capital formation decline

Table 5.10: Calculation of the proxy for the decline in capital formation as % of GDP following policies of nationalisation as well as the reciprocal of the increase in the capital formation/GDP ratio after the adoption of market reforms

Country	Period	% decline	Term (years)	Average % per annum
Spain				
Decline	1982 - 1984	-10.4	2	
Reciprocal of increase	1984 - 1987	-11.6	2	-5.5
Portugal				
Decline	1981 - 1986	-32.2	4	
Reciprocal of increase	1986 - 1988	-24.4	2	-9.4
Vietnam				
Decline	1989 - 1991	-36.8	2	
Reciprocal of increase (1)	1991 - 1998	-238.3	7	
Reciprocal of increase (2)	1999 - 2007	-43.2	8	-18.7
Ethiopia				
Decline	1988 - 1991	-49.5	3	
Reciprocal of increase (1)	1992 - 1996	-65.3	4	
Reciprocal of increase (2)	1999 - 2004	-64.8	5	-15.0
Venezuela				
Decline (1)	1998 - 2003	-50.4	5	
Decline (2)	2013 - 2017	-63.2	4	
Reciprocal of increase	1990 - 1992	-132.1	2	-22.3
Romania				
Decline	1993 - 1999	-45.8	6	
Reciprocal of increase	1999 - 2001	-42.6	2	-11.0
Zimbabwe				
Decline (1)	1997 - 2000	-92	3	
Decline (2)	2010 - 2013	-48.5	3	
Reciprocal of increase	1992 - 1997	-25	5	-15.1
Mean country average				-13.9

6 Quantifying the impact of a decline in fixed capital formation on the GDP and fiscal stability in South Africa (via econometric modelling)

6.1 Purpose, data and sample group

The purpose of the econometric analysis is to determine the impact of gross domestic fixed capital formation (GDCF) on the GDP of South Africa. Three different scenarios are used for the analysis, namely:

- Scenario 0: Similar trends assumed for all the variables as in the preceding 10 quarters
- Scenario 1: Assuming a decline in GDCF of 5% per annum (forecasts for 10 quarters ahead - GDCF1 in the model)
- Scenario 2: Assuming a decline in GDCF of 10% per annum (forecasts for 10 quarters ahead - GDCF2 in the model)

The data sources utilised for the econometric modelling of the impact of changes to gross domestic capital formation (GDCF) on gross domestic product (GDP) in South Africa are the South African Reserve Bank (SARB) database (obtained from *Quantec Data*). The sample data covers the period from the first quarter of 1995 up to the first quarter of 2018. The forecast period is from the second quarter of 2018 to the third quarter of 2020.

The dependent variable is the GDP at current prices and the independent variable is GDCF at current prices in. The control variables are exports (X) at current prices, the consumer price index (CPI) and the prime interest rate in percentage terms. Similarly, a model at constant prices (2010=100) is also used to produce forecasts in real terms.

All the data series were transformed into logarithmic form except for the prime rate. A control model (in nominal and real terms) is also used to produce forecasts for a scenario where no policy of land expropriation without compensation (EWC) is implemented (scenario 0) and where EWC is implemented, resulting in declines in GDCF (scenarios 1 and 2).

It should be noted that the 5% assumption modelled for scenario 1 represents merely 36.1% of the average decline in capital formation/GDP ratios determined in section 5 above, whilst the 10% decline modelled for scenario 2 represents 72.2% of the average decline experienced by the case study countries. Both of these assumptions may therefore be regarded as conservative.

6.2 Method and results of regression functions

A simple regression was fitted initially, i.e. only one explanatory variable explaining the dependent variable (GDP). The purpose of this preliminary analysis is to confirm whether a significant relationship exists between GDCF on GDP.

Thereafter a multivariate regression function is specified for the GDP. The relevant second order diagnostic testing was done on the residuals (autocorrelation and heteroscedasticity), and the necessary corrections were done for all functions.

The results for the single regression model for estimating nominal GDP are presented in table 6.1.

Table 6.1: Single regression model for GDP - nominal

Sample: 1995Q1 2018Q1
Included observations: 93
HAC standard errors & covariance (Bartlett kernel, Newey-West fixed bandwidth = 4.0000)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.005163	0.216367	13.88916	0.0000
LOG(GDCF)	0.884452	0.019054	46.41698	0.0000

R-squared	0.985801	Mean dependent var	13.00274
Adjusted R-squared	0.985645	S.D. dependent var	0.668644
S.E. of regression	0.080112	Akaike info criterion	-2.189516
Sum squared residual	0.584029	Schwarz criterion	-2.135052
Log likelihood	103.8125	Hannan-Quinn criter.	-2.167525
F-statistic	6317.919	Durbin-Watson stat	0.155950
Prob(F-statistic)	0.000000	Wald F-statistic	2154.536
Prob(Wald F-statistic)	0.000000		

Table 6.1 shows that GDCF explains GDP significantly (p-value=0.0) and when GDCF changes by 1%, GDP will change with 0.88%, *ceteris paribus*. The R-squared indicates that 98.58% of the variation in GDP can be explained by GDCF.

The results for the single regression model for estimating real GDP are presented in table 6.2.

Table 6.2: Single regression model for GDP - real

Sample: 1995Q1 2018Q1
Included observations: 93
HAC standard errors & covariance (Bartlett kernel, Newey-West fixed bandwidth = 4.0000)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	6.687499	0.237991	28.09982	0.0000
LOG(GDCF)	0.572166	0.020541	27.85475	0.0000

R-squared	0.965740	Mean dependent var	13.30247
Adjusted R-squared	0.965363	S.D. dependent var	0.204939
S.E. of regression	0.038141	Akaike info criterion	-3.673781
Sum squared resid	0.132381	Schwarz criterion	-3.619317
Log likelihood	172.8308	Hannan-Quinn criter.	-3.651790
F-statistic	2565.144	Durbin-Watson stat	0.430644
Prob(F-statistic)	0.000000	Wald F-statistic	775.8872
Prob(Wald F-statistic)	0.000000		

Table 6.2 shows that GDCF explains GDP significantly (p-value=0.0) and when GDCF changes by 1%, GDP will change with 0.57%, *ceteris paribus*. The R-squared indicates that 96.6% of the variation in GDP can be explained by GDFC at constant prices.

The results for the multiple regression model for estimating nominal GDP are presented in table 6.3.

Table 6.3: Multiple regression model for GDP - nominal

Sample: 1995Q1 2018Q1
Included observations: 93
HAC standard errors & covariance (Bartlett kernel, Newey-West fixed bandwidth = 4.0000)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.979166	0.180827	27.53555	0.0000
LOG(GDCF)	0.269225	0.034913	7.711341	0.0000
LOG(CPI)	0.767200	0.069264	11.07654	0.0000
LOG(X)	0.175274	0.030625	5.723303	0.0000
PRIME	-0.012067	0.001461	-8.260592	0.0000

R-squared	0.999021	Mean dependent var	13.00274
Adjusted R-squared	0.998977	S.D. dependent var	0.668644
S.E. of regression	0.021388	Akaike info criterion	-4.799748
Sum squared resid	0.040254	Schwarz criterion	-4.663587
Log likelihood	228.1883	Hannan-Quinn criter.	-4.744770
F-statistic	22457.91	Durbin-Watson stat	0.735498
Prob(F-statistic)	0.000000	Wald F-statistic	19270.06
Prob(Wald F-statistic)	0.000000		

Table 6.3 shows that gross fixed capital formation (GDCF), inflation (CPI), exports (X) and the prime rate are used to explain GDP. All these variables explain the GDP significantly (p-value=0.0). The adjusted R-squared (used in multiple regressions) indicates that 99.9% of the variation in GDP can be explained by these variables jointly (confirmed with the significant F-statistic).

For one percentage increase in GDCF, GDP will change with 0.27%, *ceteris paribus*. Similarly, when CPI increases with 1%, GDP will increase with 0.77%, *ceteris paribus* and when exports increase by 1%, GDP will increase by 0.18%, *ceteris paribus.*

The prime rate has a negative effect on GDP and hence when the prime rate goes up by 1%, GDP will decline with -0.1%, *ceteris paribus.*

The results for the multiple regression model for estimating real GDP are presented in table 6.4, which shows that gross fixed capital formation (GDCF), inflation (CPI), exports (X) and the prime rate are used to explain GDP. All these variables explain the GDP significantly (p-value=0.0). The adjusted R-squared (used in multiple regressions) indicates that 99.4% of the variation in GDP can be explained by these variables jointly (confirmed with the significant F-statistic).

Table 6.4: Multiple regression model for GDP - real

Sample: 1995Q1 2018Q1
Included observations: 93

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7.722492	0.241746	31.94472	0.0000
LOG(GDCF)	0.247227	0.017029	14.51827	0.0000
LOG(X)	0.164286	0.025671	6.399678	0.0000
LOG(CPI)	0.196586	0.015277	12.86778	0.0000
PRIME	-0.004449	0.000726	-6.132026	0.0000

R-squared	0.994304	Mean dependent var	13.30247
Adjusted R-squared	0.994045	S.D. dependent var	0.204939
S.E. of regression	0.015815	Akaike info criterion	-5.403444
Sum squared resid	0.022010	Schwarz criterion	-5.267282
Log likelihood	256.2601	Hannan-Quinn criter.	-5.348466
F-statistic	3840.199	Durbin-Watson stat	1.829046
Prob(F-statistic)	0.000000		

Furthermore, for one percentage increase in GDCF, GDP will change with 0.25%, *ceteris paribus*. Similarly, when CPI increases with 1%, GDP will increase with 0.20%, *ceteris paribus* and when exports increase by 1%, GDP will increase by 0.16% *ceteris paribus.*

The prime rate has a negative effect and hence when the prime rate goes up by 1% GDP will decline with -0.004%, *ceteris paribus.*

6.3 Impact on GDP of the forecasting model results

The 1st and 2nd scenarios listed under sub-section 6.1 represent the two assumptions to generate the forecasts for GDP as a result of declines in capital formation (induced by a policy of EWC).

The lagged values (10 quarters) are assumed for the control variables, thus assuming the same trends as the past two and a half years. Scenario 0 assumes that current trends (past two and a half years) will persist in GDCF and the rest of the variables. The forecasts for the three scenarios in terms of GDP and the growth rates for GDP are shown below.

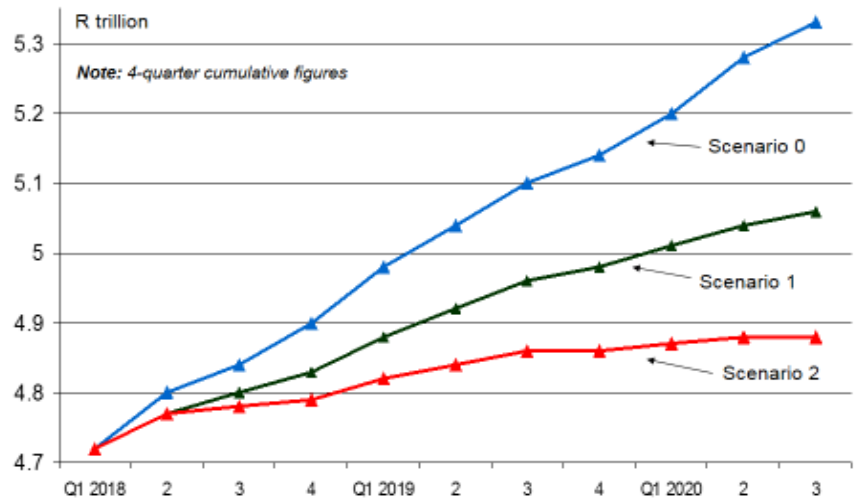
The impact of GDCF on nominal GDP is depicted by table 6.5 and the annualised nominal GDP trends for the different scenarios is illustrated by figure 6.1 (cumulative lagged four-quarter data).

The effect of a 5% decline in GDCF (scenario 1) is a decline in the nominal GDP growth rate from 6.2% to 1.4% over 10 quarters. A 10% decline in GDCF (scenario 2) will cause a decline in the GDP growth rate from 6.2% to -0.3% over 10 quarters. In the process, the increase of 12.6% in the quarterly value of nominal economic output between the first quarter of 2018 and the third quarter of 2020 forecast by the control model (scenario 0) drops to 6.6% under scenario 1 and to 2.1% under scenario 2.

Table 6.5: Forecasts for nominal GDP (quarterly) and the year-on-year growth rates for GDP						
Quarter	GDP forecasts R million			Year-on-year % change		
	Scenario 0	Scenario 1	Scenario 2	Scenario 0	Scenario 1	Scenario 2
Q1 2017	1 114 987	1 114 987	1 114 987			
2	1 149 842	1 149 842	1 149 842			
3	1 178 807	1 178 807	1 178 807			
4	1 208 148	1 208 148	1 208 148	7.7	7.7	7.7
Q1 2018	1 183 886	1 183 886	1 183 886	6.2	6.2	6.2
2	1 232 952	1 201 982	1 196 745	7.2	4.5	4.1
3	1 218 072	1 206 515	1 196 026	3.3	2.4	1.5
4	1 262 532	1 233 324	1 217 275	4.5	2.1	0.8
Q12019	1 269 807	1 235 586	1 214 195	7.3	4.4	2.6
2	1 288 235	1 243 528	1 216 675	4.5	3.5	1.7
3	1 281 264	1 244 736	1 212 551	5.2	3.2	1.4
4	1 302 739	1 254 917	1 217 143	3.2	1.8	0
Q1 2020	1 331 090	1 263 548	1 220 176	4.8	2.3	0.5
2	1 365 065	1 280 476	1 231 135	6	3	1.2
3	1 332 890	1 262 472	1 208 538	4	1.4	-0.3

Perhaps the most concerning aspect of the divergent trends that will be followed by the three scenarios is the significant difference in annualised GDP by the end of the third quarter of 2020. This amounts to more than R270 billion for scenario 1 (compared to the absence of EWC – scenario 0) and more than R454 billion for scenario 2.

Fig 6.1: Nominal GDP forecasts based on a 10-lag model and EWC scenarios 1 and 2 *(Sources: National Treasury; own calculations)*



The impact on real GDP of lower capital formation is depicted by table 6.6, with a 5% decline in GDCF causing a decline in the real GDP growth rate from 0.8% to -0.4% over 10 quarters. A 10% decline in GDCF will cause a decline in the real GDP growth rate from 0.8% to -1.9% over 10 quarters.

Table 6.6: Forecasts for real GDP (quarterly) and the year-on-year growth rates for GDP						
Quarter	GDP forecasts R million			Year-on-year % change		
	Scenario 0	Scenario 1	Scenario 2	Scenario 0	Scenario 1	Scenario 2
Q1 2017	756 919	756 919	756 919			
2	780 384	780 384	780 384			
3	783 289	783 289	783 289			
4	804 295	804 295	804 295	1.5	1.5	1.5
Q1 2018	762 600	762 600	762 600	0.8	0.8	0.8
2	811 079	789 578	786 693	3.9	1.2	0.8
3	799 375	788 943	783 188	2.1	0.7	0.0
4	804 214	790 245	781 615	0.0	-1.7	-2.8
Q12019	807 601	789 552	778 075	5.9	3.5	2.0
2	813 651	789 666	775 344	0.3	0.0	-1.4
3	809 399	788 823	771 687	1.3	0.0	-1.5
4	813 724	788 305	768 363	1.2	-0.2	-1.7
Q1 2020	820 364	787 610	764 880	1.6	-0.2	-1.7
2	825 294	787 990	762 453	1.4	-0.2	-1.7
3	820 538	785 570	757 334	1.4	-0.4	-1.9

It is clear from figure 6.2 that a full-blown recession will ensue in the cases of both scenarios 1 and 2 (a 5% and 10% decline in capital formation, respectively). Scenario 2 represents an exceptionally bleak picture of declining real GDP in the event of the disincentives for capital formation inherent in a policy of EWC taking hold.

Fig 6.2: Real GDP forecasts based on a 10-lag model and EWC scenarios 1 and 2 *(Sources: National Treasury; own calculations)*

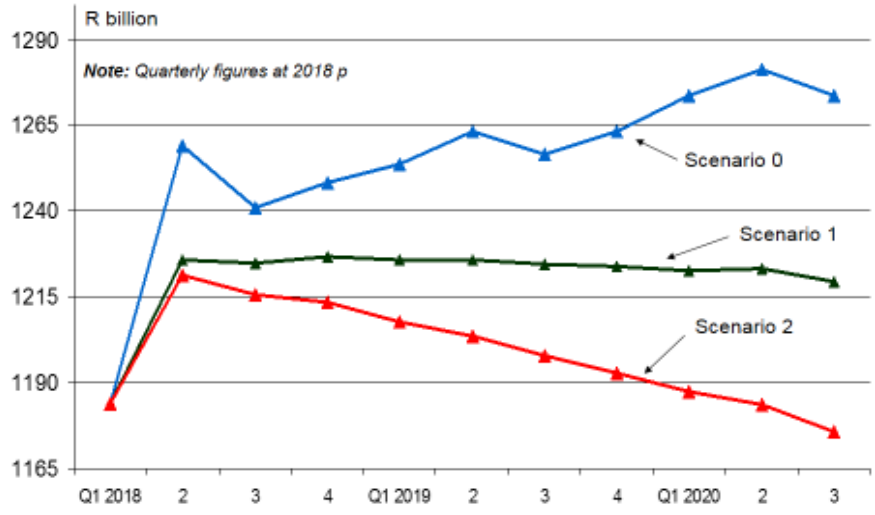
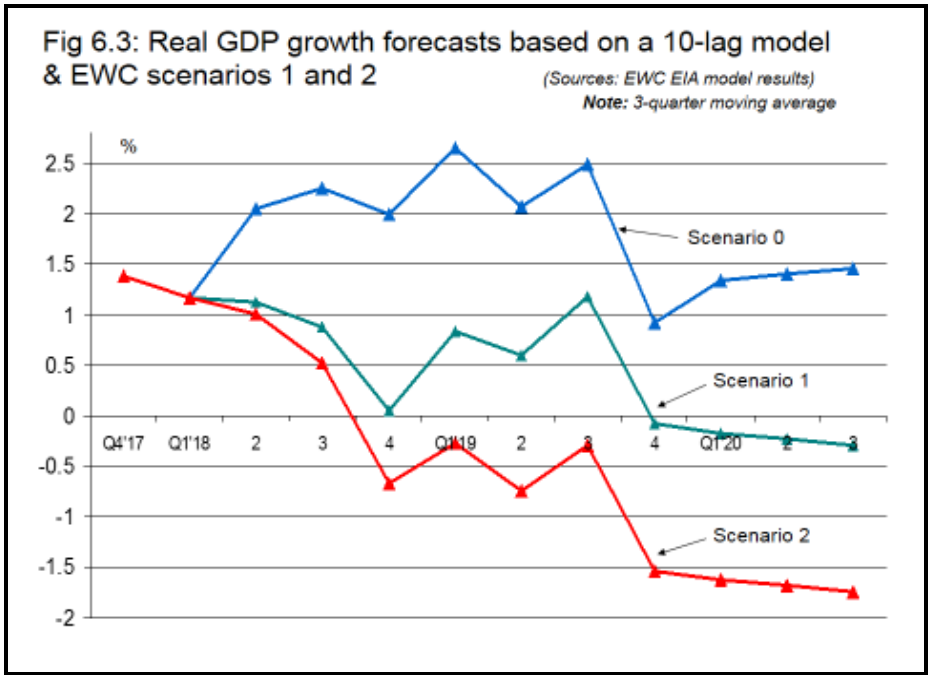


Figure 6.3 illustrates the effect on real GDP growth rates of a 5% and a 10% decline in capital formation over the forecasting period.



6.4 Impact on taxation revenues and on the budget deficit/GDP ratio

The results of the econometric modelling exercise now serve as the basis for calculating the outcomes of the forecasts under scenarios 1 and 2 for key indicators of fiscal stability, including total revenues and the fiscal deficit/GDP ratio. These forecasts are then compared to the relevant data published in the 2018/19 national budget. To this end, nominal GDP trends will be utilised, as the budget figures are also stated in nominal terms.

The starting point for this final element of the study on the likely macroeconomic impact of a decline in capital formation in South Africa is to conduct a fiscal analysis, consisting of the following steps:

i. Determination of the implicit GDP forecasts contained in the *2018 Budget Review* for the 2019 to 2021 fiscal years (ended at the end of the first quarter of each year)

ii. Calculation of the total taxation revenue/GDP ratios for each of the 2019 to 2021 fiscal years

iii. The mean quarterly average of the difference between each annual GDP value (as per the budget) is then utilised to construct an annualised quarterly nominal GDP data series (in line with the practice of annualised GDP figures presented in the national budget data)

iv. Conversion of the quarterly GDP forecasts contained in sub-section 6.3 above (table 6.3) into annualised figures, for purposes of facilitating comparison with the national budget data

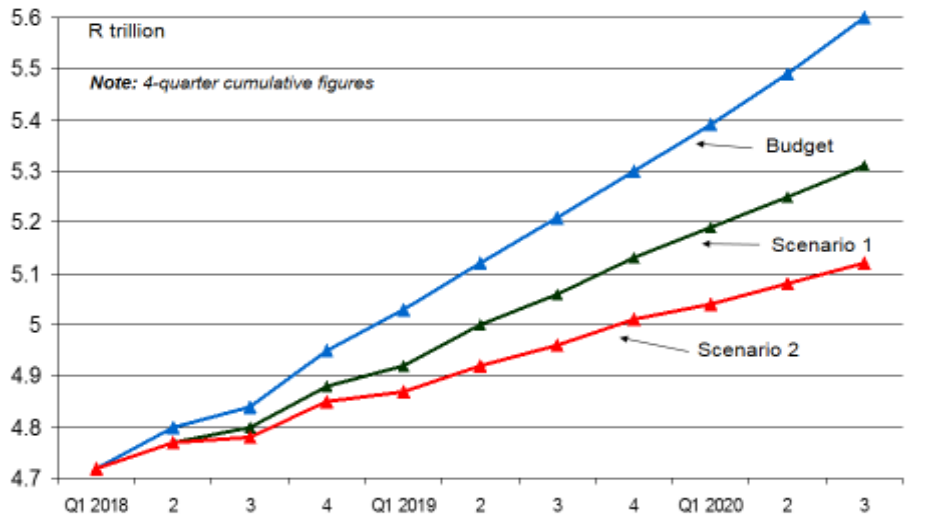
v. The national budget data on forecast GDP postulated under step (iii) above is then compared to the values that were forecast under scenario 0 in the econometric model, in order to determine the degree to which these forecasts for nominal GDP differ

vi. A ratio between the budget figures and scenario 0 is then calculated for each quarter and applied to the forecasts under scenarios 1 and 2 (presented in table 6.7 and figure 6.4)

Table 6.7: Annualised GDP forecasts for scenarios 1 and 2 based on the 2018 National Budget data (R billion)

Quarter	Budget	Scenario 1	Scenario 2
Q1 2018	4 723.9	4 720.7	4 720.7
2	4 803.8	4 772.8	4 767.6
3	4 843.1	4 800.5	4 784.8
4	4 952.7	4 880.1	4 848.0
Q1 2019	5 028.9	4 922.0	4 868.4
2	5 119.1	4 997.5	4 921.5
3	5 209.2	5 061.5	4 963.0
4	5 299.3	5 131.1	5 009.3
Q1 2020	5 389.5	5 185.8	5 040.6
2	5 493.5	5 247.4	5 078.2
3	5 597.4	5 313.6	5 120.0

Fig 6.4: Nominal GDP forecasts based on the 2018 National Budget & EWC scenarios 1 and 2 *(Sources: National Treasury; own calculations)*

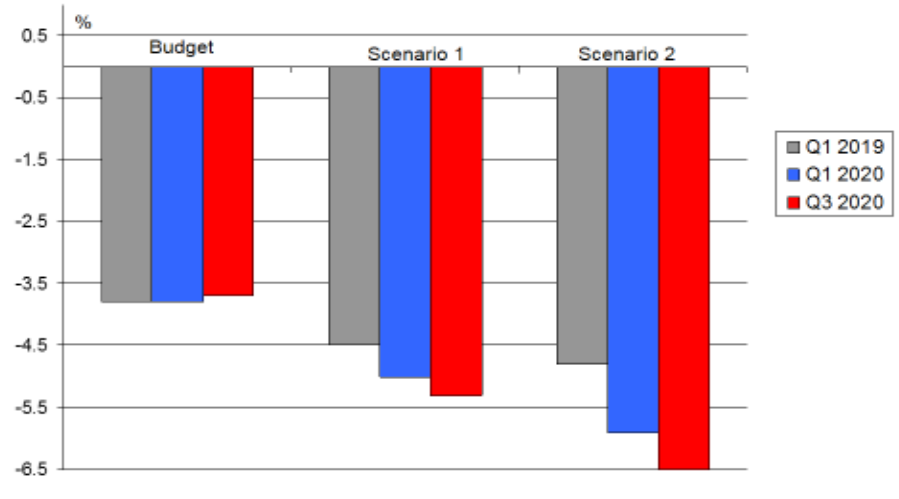


vii. The total taxation revenue/GDP ratios determined in step (ii) are then applied to the adjusted GDP figures for scenarios 1 and 2 and deducted from the budgeted expenditure data (as per the *2018 Budget Review*), in order to determine the budget deficits that would ensue under scenarios 1 and 2 in the econometric model - as adjusted in step (vi) above (see table 6.8 and figure). It should be noted that the budgeted expenditure figures have been replicated in the determination of the budget deficits under scenarios 1 and 2. Due to the dominant expenditure categories related to the compensation of employees, welfare payments and debt servicing costs, this is regarded as a realistic assumption.

Table 6.8: Government deficit analysis and forecasts 2018 Budget Review & EWC Impact Study scenarios 1 and 2			
	Budget	**Scenario 1**	**Scenario 2**
Q1 2019		**R billion**	
Total revenue	1 321.1	1 293.0	1 278.9
Total expenditure	1 512.2	1 512.2	1 512.2
Deficit	-191.1	-219.2	-233.3
		%	
Deficit/GDP ratio	-3.8	-4.5	-4.8
Q1 2020		**R billion**	
Total revenue	1 427.8	1 373.9	1 335.4
Total expenditure	1 632.6	1 632.6	1 632.6
Deficit	-204.8	-258.7	-297.2
		%	
Deficit/GDP ratio	-3.8	-5.0	-5.9
Q3 2020		**R billion**	
Total revenue	1 487.4	1 412.0	1 360.6
Total expenditure	1 694.5	1 694.5	1 694.5
Deficit	-207.1	-282.5	-334.0
		%	
Deficit/GDP ratio	-3.7	-5.3	-6.5
Sources: *2018 Budget Review; EWC Economic impact Study*			

It is abundantly clear from the forecasts contained in table 6.8 and figure 6.5 that any meaningful decline in South Africa's ratio of capital formation to GDP will exert significant pressure on the country's public finances and the ability to cover the debt service costs without inflicting harm on government's ability to maintain its operational expenditures. Scenario 2 will undoubtedly lead to further downgrades of South Africa's sovereign bonds and risk elimination from Citigroup's World Government Bond Index.

Fig 6.5: Budget deficit/GDP ratios as per 2019 national budget and EWC scenarios 1 & 2 *(Sources: National Treasury; EWC EIA study)*



7 Conclusion

Economies cannot grow and develop without capital formation by the public and private sectors alike. Investment in new infrastructure and the expansion of a country's productive capacity by private enterprises require an adequate supply of finance to enable a comprehensive growth and development effort. Government's role in the design and implementation of economic development policies should focus, *inter alia*, on establishing a clear framework for the rules of the game (underpinned by sound corporate governance standards), the absence of favouritism and corruption amongst public officials, and creating an enabling environment for private businesses to produce goods and services and create jobs.

Individual decision-makers in the private sector will always react to incentives and disincentives. Whatever the size of their election mandate, politicians cannot repeal these fundamental laws of economics, try as they might. Capital, which is an indispensable prerequisite for economic development, acts just like a gazelle in the African bush – if you scare it, it runs away. It has been comprehensively argued in this study that the presence of constitutional guarantees for private property rights represents one of the most powerful incentives in a society for innovation, invention, creativity and risk-taking via business ventures, ultimately leading to sustained economic growth and welfare creation.

Modern economic history provides comprehensive and overwhelming empirical evidence in support of this causality, especially in the proven positive correlation between the level of economic freedom and *per capita* GDP.

It seems ironic that the Parliament of South Africa should consider a policy of radical land reform at the same time that the Venezuelan economy is imploding as a result of similar policies. It is even more ironic that a neighbouring country, Zimbabwe, is in the process of reversing several aspects of its policy of expropriation without compensation, due to its debilitating effects on the country's agriculture sector and the economy. Land grabs in Zimbabwe, which had been sanctioned by Mr Mugabe's oppressive regime, has led to widespread food shortages and economic ruin. Zimbabwe has an unemployment rate estimated at 95% and literally millions of its citizens have fled destitution, most of them finding a new home (and employment) in South Africa.

Modern history has taught the world that policies of radical land reform are fraught with the dangers inherent in an excessive role of the state in the affairs of a country's citizens. Marxist-Leninist socialism has proven in practice to rely heavily on the prescriptions of an incompetent and often clumsy bureaucracy. Empirical evidence confirms the stifling effect on initiative, entrepreneurship and productivity inherent in the plethora of regulations and restrictions that accompany an institutionalised system where private property ownership is not guaranteed and protected by law.

In sharp contrast, the freedoms associated with the economic systems that are prevalent in virtually all free enterprise democracies provides individuals with the incentives to open new frontiers in science, product differentiation, welfare creation and the relief of human misery via highly versatile, innovative and efficient economies.

Ensuring that an economy maximises its productivity on the back of individual initiative, creativity and business formation holds huge advantages for a government, as the effect immediately manifests itself in a broadening of the taxation base. In turn, this allows the public sector with the funds necessary to conduct the tasks that it is responsible for and that augments the efficiency of the private sector.

These tasks relate, *inter alia,* to maintaining law & order, maintaining & creating infrastructure, providing public education, health facilities and a social welfare net, and other basic services. In an environment of sufficient fiscal revenues and the presence of accountability and sound corporate governance standards, these tasks should be conducted with the necessary diligence and success to ensure a broad enough level of satisfaction amongst the electorate for the incumbent government to stay in power. It is clear that a measure of enlightened self-interest exists amongst a country's political leadership to ensure that such a fortuitous cycle is pursued.

The macroeconomic impact assessment conducted for this study confirms a strong causality between capital formation and GDP. The country case studies confirm the predictable negative impact of radical land reform policies on capital formation trends, which ultimately lead to a decline in GDP and several other key indicators, most notably those related to fiscal stability. Lower levels of GDP result in lower levels of taxation revenue, which serve to erode a government's ability to fulfil its electoral mandate to improve the welfare of all members of society.

It is clear from this study that a policy of EWC holds the threat of diminishing the process of economic development and growth in South Africa and eroding the substantial progress that has been made with reaching higher levels of welfare during the democratic era (in terms of *per capita* GDP, which has increased to just below R50,000 in 2017 – an improvement of more than 44% since 1994, in real terms).

A summary of the results of the quantitative macroeconomic impact assessment of EWC contained in this study is as follows (scenarios 1 and 2 refer to declines in capital formation of 5% and 10% per annum, respectively):

- Annualised nominal GDP in Q3 2020 will be R270.4 billion less in the event of a 5% decline in capital formation (induced by EWC) – compared to scenario 0, which assumes an absence of EWC. In the case of a 10% decline in capital formation, the decline in GDP amounts to R454.8 billion.

- The GDP impact means that South Africa will enter a recession in 2018 (year-on-year basis) and remain in recession throughout the forecasting period (up to Q3 2020). This holds for real GDP growth trends for both scenarios 1 and 2.

- Total fiscal revenues will decline over the forecasting period by R157.5 billion for scenario 1 and by R261.5 billion for scenario 2

- Government's budget deficit/GDP ratio will increase from a 2018/19 budget estimate of 3.8% to 5.3% for scenario 1 and to 6.5% for scenario 2 by the 3rd quarter of 2020

- On the back of a recession and fiscal instability, South Africa's sovereign bonds will in all likelihood be downgraded to junk status by Moody's Investor Services, the only authoritative credit rating agency that continues to rate the country's bonds as investor status

- Over the 10-quarter forecasting period, government's financing requirement will escalate by a cumulative R157.4 billion under scenario 1 and by R261.5 billion under scenario 2. This will inevitably lead to higher money market and capital market interest rates and increase the cost of servicing public debt, leading to a so-called "crowding-out" effect of the fiscal ability to spend funds on poverty alleviation and basic services such as education, health and the maintenance of infrastructure.

- Based on the 2015 input/output table multipliers obtained from *Quantec Data*, the decline in GDP between scenario 2 and the policy-neutral scenario 0 could lead to a loss of jobs of more than 2.28 million

- Against the background of the current high level of socio-political unrest in South Africa, the combination of a prolonged recession, higher interest rates and significantly higher unemployment will tend to aggravate the security situation in the country, in general. An escalation of criminal activity can also be expected, which will encourage the emigration of highly skilled people, further eroding the country's international competitiveness.

In a worst case scenario of economic hardship that follows policies of land expropriation without compensation, as has occurred in both Zimbabwe and Venezuela, acute food shortages develop and a mass exodus of citizens occurs, to the further detriment of socio-political and macroeconomic stability. It makes no sense, therefore, to attempt the implementation of land reform policies that have proven over and over again to exercise a destructive influence on the economy and threaten the livelihoods of the most vulnerable members of society – those that cannot sell their skills in other jurisdictions.

It is regarded as a matter of some urgency to move the debate on land reform beyond a discredited ideology and backward-looking approach to one that attempts to maximise new economic opportunities for securing a better future for South Africans, based on an inclusive process of negotiation on a sensible approach to land reform – preferably on similar lines to Codesa.

The dissatisfaction with the existing pattern of land ownership in the country amongst many South Africans is understandable, but has developed over several centuries. Measures to redress this issue in such a way that economic stability is not compromised cannot be implemented overnight by a simple legislative change. It will require protracted negotiations between all stakeholders, ideally through the establishment of a Land Reform Secretariat, styled on the Codesa model.

A detailed and thorough land audit should be the starting point for such deliberations, which can then provide the factual information basis for a pragmatic case-by-case approach to the utilisation of unproductive land in the country, including business plans for possible re-zoning and subsequent spatial development projects via public/private partnerships, within the ambit of market principles.

Annexure B

The reality of regional competitiveness for investment in capital formation

Competition for inward investment

African countries, like all other developing nations, are constantly in competition with one another in attempting to attract FDI as well as so-called portfolio investment (via bonds and equities). These investments fulfil a key role in assisting the process of socio-economic development and also to secure higher rates of economic growth and employment creation. To this end, appropriate domestic policy initiatives are often crucial in securing consistent inflows of investment from abroad.

Essentially, investors, both domestic and international, seek guarantees for the repatriation of returns on their investments (when regarded as feasible) and also for the repatriation of capital amounts (as determined by various contractual arrangements for bonds and the absence of foreign exchange restrictions for equities and FDI).

A practical example of the positive correlation between risk perceptions and the cost of borrowing may be found in the higher premiums that are often paid on sovereign bond debt servicing costs by governments that fail to convince the international credit ratings agencies of the soundness of their domestic macroeconomic policies.

These premiums are in the form of higher interest rates and currency risk, a cost that is ultimately borne by taxpayers. In certain cases, it may also threaten fiscal stability in general and impede the quest for attaining a higher international credit rating.

In the context of sub-Saharan Africa (SSA), few countries can match South Africa's attractiveness as a destination for investment. This is mainly due to superior infrastructure, the second-largest market (by the size of total consumption expenditure), high levels of *per capita* income, a Constitution that is closely aligned to the United Nations (UN's) Charter of Human Rights, an independent judiciary, statutory protection of private property rights and a financial services sector that is widely regarded as international best practice. The latter is borne out by South Africa's exceptionally high rankings for financial sector stability, as contained in the latest Global Competitiveness Report (WEF 2018)

Care should be taken, however, not to be lulled into a false sense of security, as a number of countries in SSA may be on the verge of also attaining investor-grade status for their sovereign bonds (South Africa is currently the only one in the region that enjoys this sought-after status – by Moody's Investor Services).

Care should also be taken to guard against the regressive trend in South Africa's economic freedom rankings during the Zuma administration, which has reached a new post-democracy low as a result of an increasingly cumbersome regulatory environment and the threat of land expropriation without compensation.

The purpose of this annexure is to indicate the growing attractiveness of a number of other countries in SSA to foreign investors. Improved perceptions of sound macroeconomic policy formulation and economic freedom (especially the protection of property rights), combined with rising *per capita* incomes and relatively high GDP growth rates in other SSA countries may divert inflows of FDI away from South Africa, whilst also raising the cost of debt financing.

As macroeconomic convergence continues in SSA, the focus of investors will inevitably start to focus more on a policy environment that incentivises the inward flow of both direct and portfolio investment.

The selection of a relevant peer group for purposes of comparing key socio-political and economic indicators was done by combining the rankings of GDP and population sizes for SSA countries. Two filters were then introduced, namely a minimum GDP of US$ 9 billion and a minimum population of 12 million people.

Furthermore, island states were excluded (which only affected Madagascar). A total of 20 countries were selected, which included Rwanda, a country that has recently joined the ranks of SSA countries that have managed to issue sovereign bonds at relatively low yields to boost infrastructure spending and assist with economic stabilisation objectives.

Size of the economy

Table B1 lists these countries (in terms of the value of gross domestic product at current US dollars – in billions). This group will be referred to as SSA peer group #1.

Table B1: Top-20 economies in sub-Saharan Africa (minimum population of 12 million)

Country	GDP ($bn)	Country	GDP ($bn)
Nigeria	376.28	Uganda	26.35
South Africa	349.30	Zambia	25.50
Angola	124.21	Zimbabwe	17.49
Ethiopia	80.87	Senegal	16.46
Kenya	79.51	Mali	15.32
Tanzania	51.73	Mozambique	12.68
Ghana	47.03	Burkina Faso	12.57
DR Congo	41.44	Chad	9.87
Côte d'Ivoire	40.36	Guinea	9.72
Cameroon	34.01	Rwanda	9.14

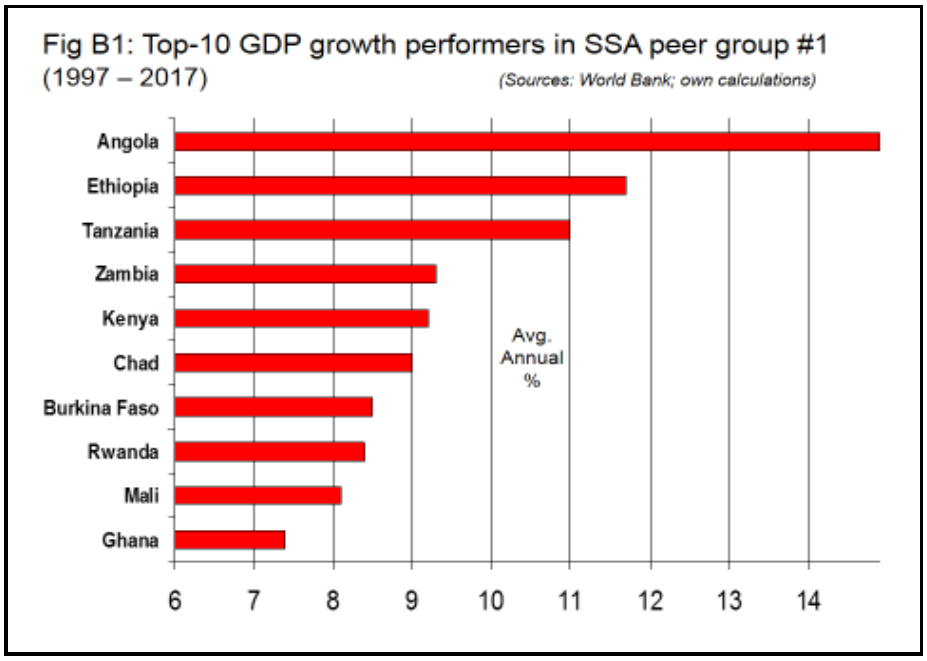
Source: *World Bank*

It is clear from this ranking that a large gap still exists between the top-five and bottom-five countries that may be on the radar of foreign investors. In several cases, however, gaps are closing due to significant variations in long-term growth economic rates.

Growth of the economy

Although market size remains an important consideration in the quest to attract foreign investment, as confirmed by the World Economic Forum's *Global Competitiveness Reports*, it is by no means the only consideration.

Figure B1 contains rankings of the SSA peer group #1 in terms of average annual real growth in economic output over the past two decades. The stellar growth of the Angolan and Ethiopian economies over this period has been the driving force behind their ascension to the third and fourth-largest economies in SSA, respectively.



Demographics

Table B2 lists the population sizes of the countries in SSA peer group #1

Table B2: 20 largest populations in sub-Saharan Africa

Country	Million	Country	Million
Nigeria	190.9	Madagascar	25.6
Ethiopia	105	Côte d'Ivoire	24.3
DR Congo	81.3	Cameroon	24.1
Tanzania	57.3	Niger	21.5
South Africa	56.7	Burkina Faso	19.2
Kenya	49.7	Malawi	18.6
Uganda	42.9	Mali	18.5
Angola	29.8	Zambia	17.1
Mozambique	29.7	Zimbabwe	16.5
Ghana	28.8	Senegal	15.9

Source: *United Nations*

According to the *World Population Prospects – 2017*, published by the United Nations (UN) Population Division, several countries in Africa enjoy above-average population growth rates. From a macroeconomic perspective, a relatively high population growth rate secures a rising demand for goods and services, whilst also guaranteeing a growing supply of labour.

Per capita GDP of countries with a speculative grade credit rating

In order to facilitate objective regional comparisons of investor attractiveness, it is necessary to refine the chosen SSA peer group. *Per capita* GDP represents one of the most important measures for gauging the state of a country's economy, whilst also providing a useful guide as to the robustness of the revenue side of the fiscal equation.

It is also necessary to adjust the SSA peer group via a third filter, namely a sovereign credit rating of above B3 (with Moody's Investor Services), which is only speculative grade, but is nonetheless regarded as a relatively safe distance from the dreaded "default" rating of C.

Table B3: Moody's rating classification

AAA Aa A Baa	Investment grade
Ba B Caa Ca	Speculative grade
C	Default

Table B4: SSA peer group #1 countries with a higher sovereign debt rating than B3 *(Source: Moody's Investor Services)*

Country	Rating
South Africa	Baa3 (stable)
Côte d'Ivoire	BA3 (stable)
Senegal	Ba3 (stable)
Ethiopia	B1 (stable)
Kenya	B1 (stable)
Nigeria	B1 (stable)
Angola	B1 (negative)
Cameroon	B2 (stable)
Rwanda	B2 (stable)
Uganda	B2 (stable)

Table B3 lists the different sovereign credit ratings assigned by Moody's, whilst table B4 lists (and ranks) the SSA peer group #1 countries that meet the requirement of a rating above B3. This will be referred to as SSA peer group # 2.

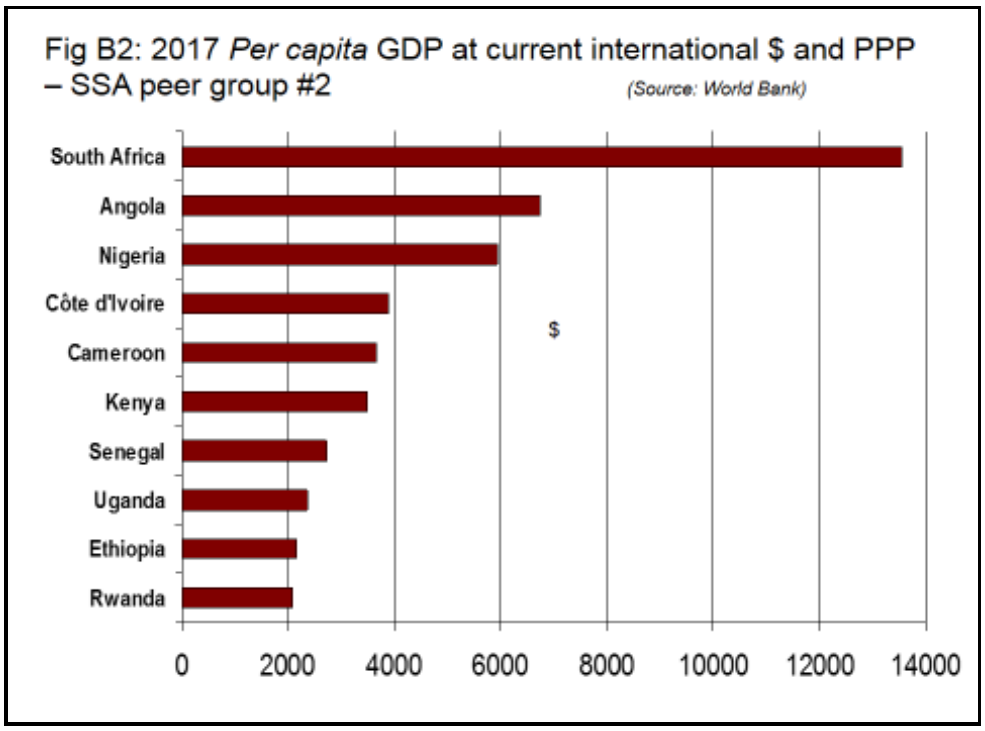


Figure B2 ranks the SSA peer group #2 countries in terms of *per capita* GDP in 2017 (at purchasing power parity), confirming South Africa's position as the richest economy in the group. Over the past two decades, however, a number of countries have been narrowing the gap with South Africa, due mainly to GDP growth rate differentials.

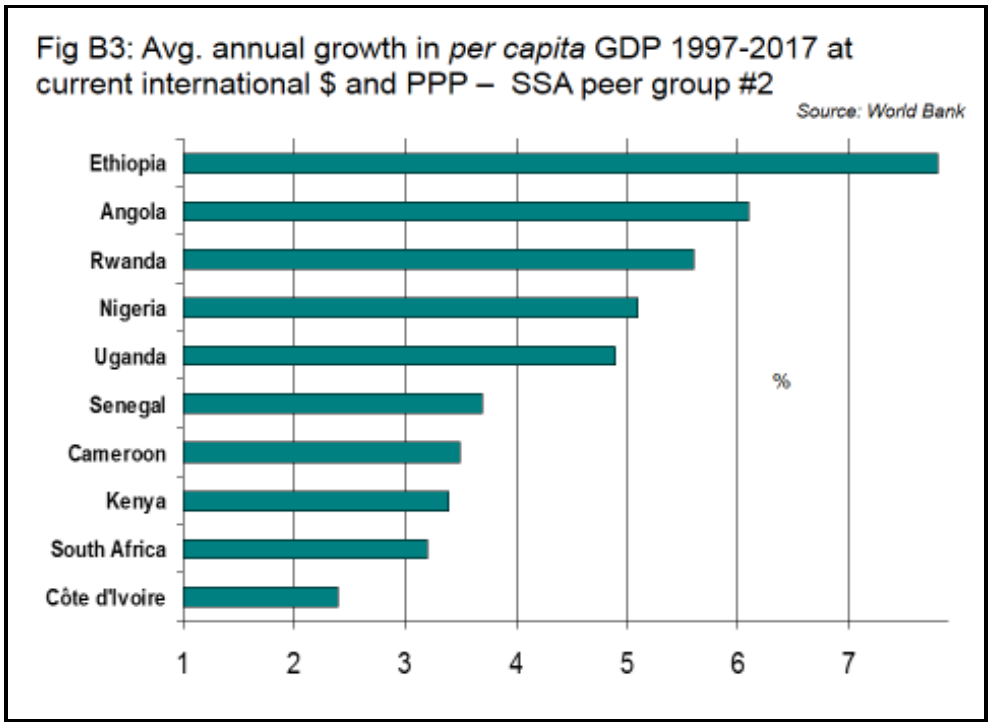


Figure B3 illustrates the average annual growth in *per capita* GDP for the SSA peer group #2 over the past two decades, with South Africa only in ninth place.

African bonds in demand

Over the past decade, international capital markets have warmed to sovereign bond issuance by African countries like never before. The Heavily Indebted Poor Country (HIPC) initiative began in 1996 and has played a major role in restoring debt sustainability in many low-income countries (LICs).

Together with a continued search for yield and desire for portfolio diversification by investors in a decade-long record low interest rate environment in advanced economies, it has increased the range of viable financing options, including international bonds, for many emerging markets (EMs) and LICs.

Table B5: International bond issues by the SSA peer group #2 since the end of the 2008/09 global recession

Country	Year of issue	Term years	Coupon %	Amount $ million
Angola	2012	7	7.19	1 000
Angola	2015	10	9.5	1 500
Angola	2018	10	8.25	1 750
Angola	2018	30	9.375	1 250
Cameroon	2015	10	9.75	750
Côte d'Ivoire	2014	10	5.375	750
Côte d'Ivoire	2015	13	6.375	1 000
Côte d'Ivoire	2017	8	5.125	728
Ethiopia	2014	10	6.625	1 000
Kenya	2014	5	5.875	500
Kenya	2014	10	6.875	1 500
Kenya	2014	5	5.9	250
Kenya	2014	10	5.9	500
Kenya	2018	10	7.25	1 000
Kenya	2018	30	8.25	1 000
Nigeria	2011	10	6.75	500
Nigeria	2013	10	6.375	500
Nigeria	2017	10	6.5	1 500
Nigeria	2017	30	7.625	1 500
Nigeria	2018	12	7.143	1 250
Nigeria	2018	20	7.696	1 250
Rwanda	2013	10	6.625	400
Senegal	2011	10	8.75	500
Senegal	2018	10	4.75	1 165

Notes: *Excluding South Africa; Euro issues converted to $ at rate of 1.1655*

Sources: *C-Bonds; Bloomberg; Financial Times; Tyson, JE*

Since 2006, several SSA countries have succeeded in issuing sovereign bonds on the international capital market at favourable yields, due to large oversubscriptions becoming the norm (see table B5).

Other sub-Saharan African (SSA) countries other than South Africa that have since issued international bonds at relatively favourable yields include Gabon, Senegal, Ivory Coast, Congo Republic, Nigeria, Namibia and Zambia.

The role of bonds in facilitating development

In the event of ring-fencing a particular bond issuance for specific development initiatives, the task of generating sufficient fiscal revenues to service the debt may be quite easy, depending on the successful implementation of such projects, the existence of a well-functioning taxation system and whether downstream economic activity is facilitated.

An example that is relevant to most countries in SSA is a bond-financed project aimed at providing the basic infrastructure and other support measures required for surplus food production, including water, irrigation, transport, storage, subsidies and market facilities for end consumer demand or further processing.

The combination of individual income taxes (flowing from increased employment), company taxes (flowing from potentially higher profits) and VAT (flowing from the value added within each linked sector of economic activity) should be more than sufficient to not only finance the repayment of debt, but also to lead to a larger extent of fiscal stability.

In this regard, it is important to point out the following:

- The chain of activity resulting from the initial spending on infrastructure will progress far beyond the sectors that are directly impacted. Higher employment will lead to increased consumer expenditure on goods and services in other industries, with a ripple effect on economic output and on taxation revenues (so-called indirect effects which gives rise to the value added multiplier)

- The resulting increase in the GDP will automatically reduce the public debt/GDP ratio (*ceteris paribus*)

Prudent application of public debt management allows governments to augment domestic funding for purposes of infrastructure creation, including schools, roads, dams and electricity generation.

Not only does this lead to economic growth and employment creation, but it also broadens the tax base and facilitates private sector business development (in the absence of an overly regulated environment).

Box B1 summarises the potential advantages of a foreign bond issue that is secured at a reasonable yield.

Box B1: Impact on a developing country's economy of an international bond issue ring-fenced for specific infrastructure projects

1. Inflow of foreign exchange
2. Strengthening of the balance of payments
3. Augmentation of domestic savings
4. Greater exchange rate stability
5. Increase in the level of capital formation in the economy
6. Easing of short and medium term pressure on the public finances
7. Since 2010, the pricing of coupon rates have often been at a discount to domestic debt servicing costs
8. Realisation of the objectives contained in the business plans for the specified projects, which could range from the socio-political domain (enhanced delivery of basic services) to traditional macroeconomic stabilisation goals (employment creation)
9. Stimulation of business development
10. Positive impact on domestic consumer & business confidence levels
11. Broadening of a country's portfolio investor base
12. Attracts the intention of foreign direct investors
13. Allows for easier access to international capital markets for the corporate sector and state-owned enterprises
14. Provides an incentive to government's economic policy makers to pursue fiscal and monetary discipline
15. The increase in capital formation exerts a multiplier effect on GDP via its direct impact on aggregate demand in forward and backward linked industries as well as indirect effects resulting from higher consumption expenditure
16. Increase in employment (also via an above average multiplier effect)
17. Increase in taxation revenues
18. Broadening of the tax base

The impact of market reforms and good corporate governance

Recent bond issues by countries in SSA, most notably South Africa, Angola and Ethiopia, serve as illuminating examples of two of the key behavioural characteristics of institutional investors, namely an emphasis on long-term expectations (based mainly on a track record of high growth and rising *per capita* incomes) and responses to political change.

Little doubt exists over the positive influence of the commitment to market reforms that have been announced in these three countries in the wake of new heads of state having been elected over the past year. Evidence of this reaction is provided by healthy levels of over-subscription and the coupon rates on recent bond issues.

In South Africa, National Treasury announced in May 2018 that it had successfully placed US$2bn worth of 12 and 20 year notes in the international capital markets, hailing it as a sign of the international market's confidence in South Africa's new unfolding economic policy framework (under Pres. Cyril Ramaphosa). The 12-year bond priced at a coupon rate of 5.875 per cent, which represents a relatively small spread of 280.5 basis points above the 10-year US Treasury benchmark bond, well below the country's current benchmark prime overdraft rate of 10%. Demand emanated from across all the major financial centres in the United States, Europe, the United Kingdom, Middle East and Asia.

Commentators have attributed the favourable coupon rate as a sign that global capital markets have faith in the declared commitment by South Africa's new president to stamp out the mismanagement of the public sector at large that occurred during Mr Jacob Zuma's term of office.

The latter includes corruption, huge losses by several key state-owned enterprises (SOEs), bankruptcy of dozens of municipalities (especially in the North-West and Limpopo), a growing disconnect between the private and public sectors, policy uncertainty, a rising public debt/GDP ratio and evidence of state capture.

Rising national income remains crucial

The global recession of 2009 provided ample proof that a deflationary economic environment poses a much bigger problem for policy makers than short-term price instability. Higher, but still moderate inflation raises a country's nominal GDP and lowers the public debt/GDP ratio (in the absence of any new bond issues).

Domar (1993) correctly points out that the proper solution of any public debt problem does not lie in excessive fiscal austerity, but in achieving faster growth of the national income. As long as there is spare capacity in the economy or unemployment, higher fiscal deficits add to purchasing power and do not exert any upward pressure on interest rates or inflation on their own, nor are they the cause of large current account deficits.

The claim by some economists that high public debt causes lower growth is also not grounded in robust empirical evidence, as proven by country comparisons of such correlations, conducted by the IMF (2010-1). It is also incorrect to claim that higher public debt today places a burden on future generations via higher taxes.

As long as the interest paid on the debt is less than the annual increase in nominal GDP, the debt will be a shrinking fraction of GDP and will not require additional taxes in the future.

It is crucial, therefore, that South Africa embarks on a macroeconomic policy approach that prioritises growth and employment creation and not ideological objectives that act as disincentives for the private sector capital formation required for higher growth.

The role of international credit ratings agencies

A point that needs to be emphasized is the relationship with international credit rating agencies. Econometric testing for externalities in foreign debt and reserves by Hawkins & Turner (2000) suggests that government credit ratings are more closely related to government debt than overall national debt.

The dependent variable in the regressions by Hawkins & Turner was a measure of Standard & Poor's sovereign credit ratings, which had been transformed into numbers by assigning values to the ratings notches (diminishing with every lower rating notch). Data was gathered for 20 emerging markets. Explanatory variables included per capita GDP (on a PPP basis) and inflation, which studies such as Cantor and Packer (1996) have shown to have an important influence on ratings.

The conclusion was that an increase in government debt of 8 to 11 percentage points of GDP causes a one notch deterioration in credit ratings (e.g. from B+ to B), which could lift

borrowing costs by around 40 basis points. The results of a specification based on government debt implies that sovereign credit ratings are more closely related to public sector debt than overall national debt.

When this specification is considered in isolation from the other variables, however, the impact is very much smaller. An increase in national debt of 43 percentage points of GDP is necessary to cause a one-notch deterioration in credit ratings (and, as an inference, a 40 basis points increase in borrowing costs).

South Africa provides a recent and relevant example of the manner in which improved prospects for economic stability flowing from a change in political leadership can influence the sentiments of credit rating agencies.

Within a mere six weeks after Mr Cyril Ramaphosa's inauguration as South Africa's new president, ratings Agency Moody's Investor Services affirmed South Africa's investment-grade rating and also revised its credit outlook from negative to stable. The confirmation of investment grade status for South Africa's sovereign bonds reflects Moody's view that the previous weakening of the country's institutions will gradually be reversed under a more transparent and market-friendly policy framework, which is expected to support a meaningful economic recovery in 2019.

A shift to a policy of land expropriation without compensation will almost certainly threaten the investment grade status of South Africa's bonds and damage the goodwill shown to the country by Moody's in the aftermath of Mr Cyril Ramaphosa's appointment as the new president and his declared commitment to eradicate corruption and improve corporate governance standards in the public sector, especially at state-owned enterprises.