

Understanding the sincerity nexus between nationalisation and economic prosperity

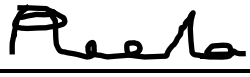
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DECLARATION

I, , declare that this research article is my own work except as indicated in the references and acknowledgements. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration in the Graduate School of Business Administration, University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

Princess Makone Meela

Signed at ...Wits Business School, Parktown

On the 19th day of June 2018

DEDICATION

To my family – I love you!.

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- I pass my sincere gratitude to my research supervisor for the technical advice on my research. Thank you for your time, positive criticism and all the knowledge you have imparted unto me.
- I would also like to say thank you to Sethunya Lubinda and Kgosi Mmoloke for the friendship during our tenure as MBA students at WBS. From the days of strategy to submitting our research reports. It was not easy but we pulled through.
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Abstract

The purpose of this study was to investigate the impact of nationalisation of mineral resources to economic development post nationalisation, by giving a balanced perspective across developing countries that have nationalised. The hypothesis of the study is that changes in macroeconomic variables before and after nationalisation has an impact on economic development. The research used the Generalized method of moments (GMM) and Granger causality model to understand the sensitivity of economic development from these macroeconomic indicators (commodity prices, government effectiveness, regulatory quality and exchange rate) pre and post nationalisation. The results show that prior nationalisation, all macro-economic variables were not statistically significant in driving economic development. Post nationalisation, government effectiveness, regulatory quality and exchange rate were still not statistically significant in driving economic development however the impact of commodity prices was significant in driving economic development. This suggests that post nationalisation; commodity prices movement is key in driving development. The second part of the analysis explored the granger causality impact of macroeconomic variables responsible to sustain economic growth post nationalisation. The results show that government effectiveness post nationalisation is significant in driving economic development. This implies that nationalisation improve economic development for as long as it is linked with improvement in government effectiveness and there is upswing in commodity prices.

Keywords: Nationalisation, economic development, GMM model, Granger causality model, government effectiveness, regulatory quality, commodity prices, exchange rate, panel data

1. INTRODUCTION

Nationalisation is the process of transferring private assets into public assets by bringing them under the public ownership of a national government or state for inclusive developmental of society (Bremmer & Johnston, 2009). According to Pellegrini (2018), nationalisation of natural resources is a development model that envisions a central role for such resources in the development of a country.

The purpose of this study was to investigate the impact of nationalisation of mineral resources to economic development, post nationalisation, by giving a balanced perspective across countries that have nationalised. Several scholars suggest that nationalisation hardly archives the intended growth of an economy. Pellegrini (2018) in his study on imaginaries of development through extraction, reiterate that history has shown that nationalisation produces fantasies of development rather than actual goals of development. Kohl & Farthing (2012) suggests that the structural path-dependent economy constraints created by an extractive economy make the goal of directing resource wealth to generate economic development impossible to achieve over the short to medium term.

When Argentina nationalised YPF (Yacimientos Petrolíferos Fiscales) oil company in 2012, Mario Vargas Llosa, a Nobel prize-winner in literature was quoted saying “We believed that those terrible times of economic nationalism, inward-oriented development and state intervention in the economy which caused us so much violence and misery were behind us” (Moreno, Ortiz, & Sanz, 2013, p 55). There is also a view by Mursa (2012) that the economic crisis of 2008 was a result of excessive intervention by governments to spontaneous market processes. This is despite most economists of the world believing that the source of the 2008 crisis was the gradual withdrawal of the state from economic activities. These views by the aforesaid scholars do suggest nationalisation is a hindrance to economic development.

Case studies on resource nationalism, which is the seeking of greater economic control of natural resources by states, reveal differences in the governance and management of natural resources amongst countries. Some of the countries that have nationalised their natural resources are also perceived differently by the international community. As examples of the aforementioned statements, developed countries such as Australia and Canada still exercise resource nationalism by imposing higher royalties and taxes (Bremmer & Johnston, 2009). According to Andreasson (2015), South Africa is perceived to be failing to benefit from its natural resource endowments with one of the lowest royalty rate in the region. This suggests that a room does exist for the country to improve potential benefits from its mineral resource base. Because of oil nationalisation in the country and how the process was handled, Argentina is said to be internationally alienated due to its records of violating international laws and agreement (Moreno, Ortiz, & Sanz, 2013).

The differences in governance and management of natural resources certainly influence the economic performance of countries. For this study, we decided to model the sensitivity of economic development (proxied by GDP per capita) to macroeconomic variables governance (proxied by both government effectiveness and regulatory policy), exchange rate volatility and commodity prices movement, pre and post nationalisation. The paper uses the above-mentioned fundamental macroeconomic variables (as supported by literature) because they are critical in influencing economic development that is supported mainly by natural resources.

The problem statement is that there are commonly two schools of thoughts regarding resource nationalism through nationalisation. The one school of thought says that nationalisation is bad for countries' economic development as it drives away the much needed foreign investments and deprives mainly developing countries of technologies that could be adopted to improve outputs (Bremmer & Johnston, 2009). Corruption is also often cited as the main contributor to failures of nationalisation. The other school

of thought says that nationalisation presents potential to maximise wealth distribution within a society. According to Narula (2018), nationalisation has proved to be a positive driver of economic prosperity; a possibility through the establishments of stable institutions in the form of functional government agencies.

The motivation for this study is drawn from the very fact that there are conflicting views regarding the nationalisation narrative and its impact on economic development. These opposing views are most likely due to nationalisation studies seemingly investigating countries in isolation. Different research approaches are also used, with the case study method being the common approach. Such different approaches influence the biasness in the scholars' views. This study was conducted to contribute to the debate by focusing on the sincerity nexus between nationalisation and long run economic development, by grouping and analysing multiple countries, with the Generalized method of moments (GMM) parameter estimation enabling such a study to be conducted.

The study was further conducted to assist resource rich countries, and particularly emerging economies which are embroiled with the idea of nationalisation. The work will speak to policy makers in shaping the debate about what needs to be done and what body of evidence to rely upon. The significance of this study is that economies that have appetite of embracing the nationalisation policy could be assisted. By executing this research, we contributed in advancing the nationalisation debate by giving international evidence that cut across different countries.

The aim of this research was to investigate the impact of nationalisation policy implementation to long run economic development, by studying the relationship between economic development indicator (GDP per capita) and explanatory variables (government effectiveness, regulatory quality, exchange rate volatility, and commodity prices movement) pre and post nationalisation. The objectives of the study included:

- research and listing of countries that have nationalised their mineral resources, taking into account the years of nationalisation.
- the use of a dynamic panel data approach and the Generalised method of moments (GMM) model to examine the sensitivity of economic development (proxied by GDP per capita) to nationalisation policy. The explanatory variables that were used in our model include commodity prices, exchange rate and governance proxied by government effectiveness and regulatory quality. This is secondary data that was available and easily attainable from the International Monetary Fund (IMF) and the World Development Indicators (WDI) database. Due to the fact that the countries have not nationalised in the same year periods, an unbalanced panel was used for the estimations. The GMM model was set up to give fixed effects of the four lags of our explanatory variables in order to understand their impact to economic development pre and post nationalisation. All variables were expressed as percentage changes for the analysis.
- the other objective of the research was to explore which economic variable out of the four (commodity price, government effectiveness, regulatory quality and exchange rate) was responsible for the causality impact in sustaining economic growth post nationalisation. This objective was fulfilled by using the Granger causality model.

The rest of the paper is organized as follows. Section 1.1 gives the literature review and application of prior research on nationalisation of natural resources. The key messages in this subsection of the report are the trends on resource nationalism and the methods of study that various scholars apply when studying nationalisation on natural resources. Section 2 of the paper articulates the research approach that the study followed as well as the statistical methods of analyses adopted. The data set is also presented in this section. Section 3 presents the results and analyses from our

estimations exercises. The discussions of the paper are included in section 4, together with the limitations of the study. Lastly, section 5 of the paper concludes our research.

2. LITERATURE REVIEW

The existing literature on the impact of a nationalisation policy to economic development is mainly case studies of countries that have, at some point in time nationalised. The following literature review looks at the definition (s) of nationalisation by various authors. More importantly, the review highlights some of the views by various scholars regarding the nationalised extractive industries around the globe.

Doman (1948) defines nationalisation as a general, impersonal taking of the economic structure in full or in part for the nation's benefit, with or without compensation. Also according to Doman (1948), nationalisation can resemble either confiscation in the case of refusal of compensation or the offer or granting of inadequate compensation or expropriation in the case of the offer or granting of adequate compensation. The model presents a complete economic policy shift. It is commonly applied in the perspective of restructuring and redistribution, and is often associated with post political events such as war and colonialism (Doman, 1948). According to Davis (1995), there was extensive nationalisation of mines throughout the world in the post war decades, as multinational mining companies were perceived to be one of the causes of poverty.

There are now more evolved arguments on why various states increase participation in the minerals sector. Moran (1992), as cited by Carrion (2015), claims that the increase in resource nationalism and renegotiation of mining agreements in developing countries stems from the reduction in risk and uncertainty after projects requiring large sunk capital prove to be successful. Otto and Cordes (2002), also cited by Carrion (2015), argue that the bargaining powers in the mining sector relates to the structural

vulnerability of mineral investments insofar as they are capital intensive, cannot be relocated, have limited completion and use relatively stable production technologies.

According to Wilson (2015), as cited by Ganbolda & Alib (2017), the structures of governing mineral industries have been experiencing a dramatic shift over the past two decades due to cyclical price volatility of mineral commodities. This leads to views that state participation in extractive industries is usually also fuelled by rising commodity prices and vice versa. Guriev, Kolotilin, & Sonin (2011) support the same views and suggest that oil nationalisation is likely to happen during periods of high prices. There is another school of thought enshrined by the 'Vernon's obsolescing bargain model', as proposed by Ganbolda & Alib (2017). The model depicts dynamic changes in the bargaining power between host governments and mining firms relative to the scale and technological complexity of the industry concerned (Ganbolda & Alib, 2017).

With the evolution of resource nationalism, Bremmer & Johnston (2009) distinguishes between four types of resource nationalism (refer to table 1) depending on their root causes, investment in resource industries and impact on the mining industry.

Type	Aim	Vehicle for state ownership	Country examples
Revolutionary resource nationalism	With this type of resource nationalism, governments seek to increase state control over the minerals sector. They also seek to achieve some certain political goals	Demands transfer of assets from private owners to the state	Mongolia, Venezuela and Russia
Economic resource nationalism	Aims to support economic diversification through the receipt of larger share of resource rents	Negotiation of contracts	Kazakhstan
Legacy resource nationalism	Tied to the historical episodes where nationalist ideology is attached to the political and cultural identity	expropriation	Mexico and Nigeria
Soft resource nationalism	Countries tend to follow a formal set of laws to govern resource industries as opposed to radical expropriation.	Renegotiation of contracts	Observed more in developed countries such as the US, Australia and Canada

Table 1: Four types of resource nationalism (source: compiled using information from Bremmer & Johnston, 2009).

There are clearly several reasons why countries would choose to nationalise their natural resources sector. In South Africa for example, the call for nationalisation of mines by the Economic Freedom Fighters (EFF) political party is claimed to be on the back of an attempt to address the top three economic problems facing the country including inequality, unemployment and poverty (Modisane, 2013). The country is regarded as the most unequal society in the world with a Gini coefficient of 0.66 (based on income per capita), unemployment rate of 26.7% and staggering poverty levels (Statistics South Africa, 2016). The party believes that nationalisation of the mines would be key to fast track the necessary economic development, inclusively (Modisane, 2013).

Most developing countries in the late 1960's and early 1970's followed the advice of Kwame Nkrumah, regarding the concept of "economic kingdom" as a way to express the full permanent sovereignty of the state (Shafer, 1983). Kwame was the first prime minister and president of Ghana, after the state's independence from Britain in 1955. Through Kwame's advice of economic kingdom/nationalisation, the developing governments were hoping to make major positive gains and both in the domestic and in the international realm. The governments were seeking larger share of the economic rents and in conjunction with other national producers, higher, more stable prices for their economic outputs. All these were seen as the major potential gains on an international level (Shafer, 1983). Furthermore in the case of Zaire and Zambia, and as mentioned by Shafer (1983), nationalisation was seen as a policy to replace the profit-driven motive by corporates with a national social welfare motive.

Despite the promising positives of resources nationalisation, there were several factors that led to the expiration of this economic policy in Zaire and Zambia. With nationalisation, Zaire and Zambia lost the buffer of foreign direct investment (FDI), leaving the two countries to find their own financing and depend on their governments which were at the time experiencing unstable fiscal state (Shafer, 1983). Mining is one

industry that constantly requires vast investments. Any under-investments are likely to jeopardise the sustainability of the industry, as evident from Zaire and Zambia's copper industries under nationalisation.

The two copper-rich African countries also possessed weak economic and political systems. At the time of nationalisation, these countries had almost no trained and skilled mining managers. The countries have also suffered the disruptive effects of the struggle against colonisation, soft demand for copper, the oil price surge, high international interest and inflation rates, declining terms of trade and chronic transportation bottlenecks (Shafer, 1983).

In the case of Mongolia in East Asia, the state-led resource development policies paralleled with a dominant trend in the global mining industry, occurring during the period of rising commodities prices. The criticism around nationalisation of the mineral industry in the country has been around the lack of financial and human resources, and practical knowledge to engage directly in large scale projects which pose great risks, if not carried out properly (Ganbolda & Alib, 2017). The state involvement in Mongolia is said to have resulted in poor quality of institutions, bureaucracy, corruption and abuse of power by top government officials, with the majority of state-owned mining companies rating the lowest on the Resource Governance Index (Ganbolda & Alib, 2017).

Ganbolda & Alib (2017) have concluded that the fundamental driving force of state ownership in resource projects is not to exercise sovereign rights over the mining sector, but to gain political advantages, basing their evidence on what transpired in Mongolia. It is however highly critical to note that the Mongolian economy shrunk from a GDP of 17.3% in 2011 to 2.4% in 2015, mainly because of the drop in commodity prices. The downturn indicates the great risk inherent in state overreliance on the minerals sector. The overreliance on the sector also undermines other sectors of the

economy with potential for the “Dutch Disease”; a situation where there is a rise in costly investments in natural resource production, leading to a diversion of capital away from productive investment. A rise in resource exports then leads to an exchange-rate appreciation that undermines the competitiveness of traded good (Bradshaw & Lynn, 1998). In the case of South Africa, du Plessis (2013) states that the resources sector does not dominate the country’s economy nor does it create the risk of a decrease in the competitiveness of the industrial sector via the unintended adverse impact of an appreciating real exchange rate due to a commodity boom. The loose translation is that the Dutch Disease is unlikely to be experienced in the country.

Nevertheless and despite the shrinking economic growth, Mongolia is still acting as a key agent in mineral industries through controlling and holding direct equities in all major resource projects (Ganbolda & Alib, 2017). The reappearance of resource nationalism has been there for more than a decade now with governments in Latin America, Asia and Africa seeking greater share of their mineral wealth (Nyahunzvi, 2014). Resurgence of resource nationalism is also noted in developed countries, mainly in the form of tax reforms. According to the paper by Nyahunzvi (2014), Australia imposed a tax hike to 30% on iron ore and coal profits as of 2012, the UK has in 2011 imposed windfall tax on North Sea profits while in 2010 the Canadian government denied BHP Billiton an offer to purchase Potash Corporation as this was not in the interest of Canada.

Andreasson (2015) rightfully states that the political economy literature tends to emphasise the negative consequence of resource nationalism, even though the outcomes are arguably mixed and presents opportunities as well as risks, for resource companies and producing countries alike. Most governments that do nationalise allude to sovereign rights over natural resources, with the wealth belonging to all people living in that country. This is the common theme amongst most developing nations while they trial out various ways of boosting economic development. According to Bronstein

(2012), Cristina Fernandez, during her tenure as the president of Argentina, reiterated that transnational companies should re-invest in the local country. When her government voted on nationalising YPF oil company, Cristina believed that the corporate interests of the international oil company were not aligned with Argentinean national interests, hence the decision to nationalise.

Nationalisation is also seen as a development model great for wealth redistribution, following decades of neoliberal policies in most previously colonised countries with the government and its institutions ultimately being the rules of the game that govern the behaviour of people and companies.

Ganbolda & Alib (2017) argue that there is limited work that has been done on the role of state participation in mineral development. They suggest that most of the existing studies on nationalisation are designed to address operational performances and growing significances of the global State Owned Enterprises (SOE's). The authors further argue that often the literature neglects the root causes for the emergence of SOE's and do not question the extent to which the role of state ownership in resource development will bring about desired development outcomes. The continuation of nationalisation on a global scale, particularly in Asia and Latin America, does warrant some more understanding of the positives of the model and how these benefits could be realised.

To further understand the trends on resource nationalism, table 2 summarises what recent articles communicate about nationalisation. The motivation to draw up the table was to also understand and clearly highlight the method of study that various scholars use. This was to give guidance on the possible methodology for this particular study.

Table 2: Literature review table summarising some of the articles on nationalisation studies.

Author & Year	Country	Method of study	Summary of the paper
(Pellegrini, 2018)	Bolivia	Juxtaposing a mural with various forms of contemporary discourses	President of Bolivia Evo Morales has stated in 2012 that “the people’s sovereignty is the enemy number one of U.S. policy” and in 2013 that “there can be no sovereignty and economic independence while natural resources are in someone else’s hands” (Pellegrini, 2018, p. 135). The development and intensification of hydrocarbon extraction remain priorities for the Bolivian government, together with the increase the refining capacity. The challenges of diversifying the economy are not explored. The country is big on nationalisation.
(Ganbolda & Alib, 2017)	Mongolia	Institutional approach	Governance and political interference a major concern. Conflict of interest stemming from the government being a formulator and implementer of policies. Drastic drop in GDP from 17.3% in 2011 to 2.5% in 2015 was attributed to plunge in commodity prices. A sovereign wealth fund is recommended with a drive to building more productive assets and adequate financial reserves, especially during times of commodities boom. Otherwise state-participation is still quite high with the state owning 100% of the largest mines. The authors recommend strengthening of the quality of institutions and independency of the state-owned mining companies.
(Andreasson, 2015)	Nigeria, Mozambique, South Africa	Case study	Energy exports are projected to continue to play an important role in fuelling economic growth as new deposits of oil and gas are continuously discovered. Export revenues however, cannot alone guarantee socioeconomic development. Countries seek to enact legislation for greater influence in the sector. There is increasing public pressure to safeguard national wealth. Resource nationalism might play a significant role in shaping state participation in the sector. South Africa is seen to be failing to benefit from its resource base with one of the lowest royalties rate in the region. Corruption challenges in Nigeria & Mozambique are a concern. Current political climates do not favour expropriation. Operations of dominant Western energy companies are increasingly constrained because of competition.

Table 3 cont'd: Literature review table summarising some of the articles on nationalisation studies.

Author & Year	Country	Method of study	Summary of the paper
(Mahdavi, 2014)	National Oil Companies	Longitudinal data analysis	As of 2012, between 73 and 95 percent of global oil reserves were controlled by national oil companies (NOCs). The reasons for leaders to nationalise include: 1. during a period of high oil prices when the risks of expropriation are outweighed by the financial benefits, 2. in non-democratic systems where executive constraints are limited, 3. after other countries have nationalised, reflecting reduced likelihood of international retaliation; and, 4. in political settings marked by resource nationalism.
(Moreno, Ortiz, & Sanz, 2013)	Argentina	Case study	Before privatisation the industry grew in cycles & introduction of private capital was decisive in achieving an increase in production. Mass privatisation in early 1990's, which according to the then president Christina Fernandez, failed to boost oil and natural gas production needed to keep up with local demand. Argentina's public policies are regarded as being volatile leading to less desired social and economic results. The country is said to be internationally alienated due to its records of violating international laws and agreements, after expropriating & nationalising 51% shares of Repsol in YPF oil company. The expropriation was seen as a new step of a broad list of protectionist and interventionist decisions.
(Bremmer & Johnston, 2009)	Developing & developed countries	Case study	With low demand for commodities and falling prices, international companies are better advantaged as they can now afford to be more selective about the fiscal terms and regulatory conditions they are willing to accept from host governments. Resource nationalism can deprive governments of the international technologies and expertise needed to expand, or even sustain, the output and revenue streams imperative for sustainable production and outputs. Developed countries still exercise resource nationalism through imposing higher royalties and taxes. Forced renegotiation was observed in Canada.

The table shows that the case study method is the common research approach used by most scholars when studying nationalisation. The table also indicates that there is a trend of emerging economies continuing to increase their state participation in natural resources through nationalisation. Developed countries still exercise state participation through imposing higher royalties and taxes.

For a broader perspective on the history of nationalisation, table 3 gives a list of countries that have once upon a time nationalised their resources. It was the original intention of the study to analyse all these countries, however due to lack of data, this was not possible. More information on the data matrix for the study is given in subsection 2.2 of the paper.

Table 3: World-wide countries that have nationalised their natural resources

Country	Year of nationalisation	Commodity/strategic resource	Comments/reference
Bolivia	2006	Oil & gas	President Evo Morales nationalises oil and gas (Pellegrini, 2018).
Chile	1971	Copper	Subsequent nationalisation of all copper mines (*without compensation), under Salvador Allende (Lagos, 2017).
Peru	1985	Oil	Renationalisation of Belco Corporation under Alan Garcia (Lagos, 2017).
Venezuela	2007	Oil	Hugo Chavez's government took a majority stake in four oil projects in the vast Orinoco heavy crude belt worth an estimated \$30 billion in total (Reuters.com).
Argentina	2012	Oil	YPL oil company renationalized, on the grounds that it failed to boost oil and natural gas production needed to keep up with local demand.by Cristina Fernandez (Bronstein, 2012).
Mexico	1938	Oil	President Lázaro Cárdenas nationalises Pemex oil company (Kobrin, 1985).
Brazil	1953	Oil	Getúlio Vargas nationalises oil in Brazil.
Zaire/DRC	1967	Copper	President Mobutu nationalises copper which traditionally accounted for 60 to 70% of total export earnings (Shafer, 1983).
Zambia	1969	Copper	Kenneth Kaunda nationalises copper which was key to Zambia's economy contributing over 50% of government revenue (Shafer, 1983).
Mongolia	2006	Copper, gold, coal	The new Minerals Act states that the government of Mongolia would have sole control over the country's strategic mining sites, and may hold up to 50% shares of mining projects (Ganbolda & Alib, 2017).
Saudi Arabia	1980	Oil	Guriey, Kolotilin, & Sonin (2011)
Iran	1951	Oil	Mohammed Mossadegh nationalises oil (Kobrin, 1985).
Iraq	1961	Oil	Guriey, Kolotilin, & Sonin (2011).
Egypt	1962	Oil	Guriey, Kolotilin, & Sonin (2011).
Lybia	1975	Oil	Muammar al-Gaddafi nationalises oil (Libya Oil Almanac, 2012).
Algeria	1971	Oil	Algeria nationalises oil (Bird & Brown, 2005).
Indonesia	1963	Oil	Guriey, Kolotilin, & Sonin (2011)
India	1973	Oil	India nationalises oil as reported by Chaudhury (1977).
Russia	2014	Oil	Vladimir Putin' renationalization of Rosneft PJSC (Reuters,2014)
Britain	1946	Coal	Doman (1948)

On the basis of the read articles, the negatives brought up by nationalisation include loss of insulation that private companies are able to provide, weak political and economic systems, lack of trained and skilled managers, ineffectiveness and inefficiencies, inability to control the market by internationalisation of the market through vertical integration, limited scope to raise capital for long term investment and modernisation especially from international capital markets, weak government-labour relations, and lack of vertical integration crucial for managing market volatility risks.

Kohl & Farthing (2012) also suggests that the clash between resource nationalist imaginaries embedded in contentious social movements and the realities of long-term extractive depended economies not only limits government policy options but also fuels continued social protests that forces government to operate in the mood of crisis control. Du Plessis (2013) views the mining sector as competitive and thus making it a poor candidate for public ownership.

On the other side of the coin, nationalisation is argued to be the best framework for building the wealth of a nation; for the benefit of all the people living in that country. Nationalisation places emphasis on creating domestic sectors and maximising local content. Countries like Brazil, Russia, China, India and Malaysia were able to make concurrent investments in their location advantages using mineral resource rents, particularly in infrastructure and education (Narula, 2018). The countries were able to build up a certain degree of absorptive capacity, and a small but impressive set of world-class universities, research institutes and support industries. Nationalisation has proved to be a positive driver of economic prosperity; however, this is possible through the establishments of stable institutions in the form of functional government agencies (Narula, 2018). Countries like Botswana and Norway are great examples and maybe rare economies that were able to transform the developmental state. Norway's state-owned Statoil has been a shining example of state regulation and participation in industrial and economic activities (Claes, 2002), even thou it has been challenged by different aspects of globalisation such as the volatility of commodity prices

spread of political ideology, the role of international organisation, and the changing structure of international industries and multinational companies. Good financial management, governance and responsible investment are key measures that ensured nationalisation “works” in Norway (Mataboge, 2011).

Based on the literature review, I wish to conclude that resource nationalism, particularly nationalisation, continues to be a hot debate particularly in developing countries that have abundant natural resources endowments. While the negatives of nationalisation are well documented, the positives and potential of economic prosperity brought about by nationalisation cannot be overlooked.

As previously stated, the literature on nationalisation is narrow and does not focus at cross countries analyses. Most, if not all case studies do not analyse the various fundamental macroeconomic variables at play during nationalisation. This study therefore brings a unique approach to how nationalisation of natural resources is researched. It is at the back of such a gap to study the sensitivity of economic development (proxied by GDP per capita) to nationalisation policy by using econometric methods which are useful in conducting and interpreting empirical research on economic data. As previously mentioned, the study considered exchange rate volatility, commodity prices movements, governance effectiveness and regulatory quality as explanatory variables for our models.

The hypothesis of the study is that changes in macroeconomic variables before and after nationalisation has an impact on economic development.

The literature review has confirmed that nationalisation continues to be a topical economic policy, with mainly Latin American and a few Asian countries continuing to embrace it. Resource nationalism in the form of amendments to tax regimes seems common in developed countries. The literature review also reveals that the method of expropriation during nationalisation varies from one country to the other. Due to the phenomenon of globalisation, contract renegotiations amongst stakeholders, instead of forced

expropriations, are probably the best way to implement nationalisation to avoid international alienation.

Also as previously indicated, academic research on nationalisation generally follows the case study method and focuses on single countries. The next section of the report explains in details the research methodology and analysis approach that the study follows. The section also discusses the data set for our study.

3. METHODS AND DATA

There are two distinct research methods when conducting research. These includes qualitative and quantitative. The literature review for this research has highlighted that the majority of scholars uses the case study method when researching and writing about nationalisation.

Econometric methods are useful and help researchers in conducting and interpreting empirical research on economic data, hence the decision to use such methods for this study. Both the GMM model and Granger causality model were used for the analyses of data. According to Baltagi (2008), the GMM model is sensitive enough to assume that the economics of the explanatory variables that are being studied are not static but subjected to changes based on what the economy is. As opposed to GMM, Ordinary least squares (OLS) model assumes that everything is fixed and extrapolated from a linear form.

3.1 Models

The first analysis of the research adopted a dynamic panel approach as recommended by Xu and Saksena (2011) and Baltagi (2008). This dynamic panel data specification is generally given by equation (1). However the research used its modified version as presented in equation (2) to study the sensitivity of economic development to nationalisation

policy. The model was set up to give fixed effects of the four lags of our explanatory variables (commodity price, governance proxied by government effectiveness and regulatory quality, and exchange rate) in order to understand their impact to economic development pre and post nationalisation. All variables were expressed as percentage changes for the analysis.

$$Y_{it} = \alpha Y_{it-1} + \beta(L) X_{it} + \eta_i + \varepsilon_{it}, \quad |\alpha| < 1, \quad i = 1, \dots, N, \quad t = 1, \dots, T, \quad \text{equation (1)}$$

The subscripts i and t denote the cross sectional and time dimensions of the panel sample respectively. Y_{it} represents the aggregate economic development proxied by GDP per capita, $\beta(L)$ represents the $1 \times k$ lag polynomial vector, X_{it} denote the $k \times 1$ vector of explanatory variables (commodity price, government effectiveness, regulatory quality, and exchange rate) other than Y_{it-1} , η_i represent the unobserved individual country specific effects of nationalisation and lastly ε_{it} represents the error term.

The research estimated equation (1) using the Generalized method of moments (GMM). The GMM estimation is based on the transformation of equation (1) and the subsequent elimination of country specific effects, giving rise to equation 2:

$$\Delta Y_{it} = \alpha \Delta Y_{it-1} + \beta(L) \Delta X_{it} + \Delta \varepsilon_{it}, \quad \text{equation (2)}$$

$$\Delta Y_{it} = \alpha \Delta \pi r^2$$

In equation 2, ΔY_{it} denotes the first difference operator of economic development; ΔY_{it-1} represents the lagged depended variable, ΔX_{it} represents the lagged explanatory variable and $\Delta \varepsilon_{it}$, represents the error term. According to Baltagi et al (2010), for the model to deliver robust results the explanatory variable should be exogenous. In that case, all past and future values of the explanatory variables must be uncorrelated with the error term, implying the following moment condition as described by equation 3.

$E [X_{it} \quad \varepsilon_{it}] = 0 \quad t = 3 \dots T \quad \text{and for all } S$
equation (3)

As reported in the literature review, when the government has strong institution quality, this may be the best way of establishing a consistent economic development despite the volatility of currency and commodity prices. Therefore, the research expect government effectiveness, regulatory quality and high commodity prices to support economic development positively, while a volatile exchange rate is expected to relate negative with economic development .

Our study recognised that the data used for our estimations is cross sectional data with country-specific effects (i.e. different dates of nationalisation). To account for this, an unbalanced panel was used when running the models.

The second part of the analysis explored which economic variable out of the four (commodity price, government effective, regulatory quality and exchange rate) is responsible for causality impact in sustaining economic growth post nationalisation using the Granger causality model described in equation (4). This model was devised by Granger (1980) and is also supported by Al-Sadoon (2017). This causality model was employed to assess how the percentage changes of these variables affect economic development pre and post nationalisation so that we can gain the understanding about the vulnerability of an economy after the nationalisation commencement.

$$Y_1(t) = \sum_{j=1}^p A_{11,j} Y_1(t-j) + \sum_{j=1}^p A_{12,j} X(t-j) + E_1(t)$$

$$X(t) = \sum_{j=1}^p A_{21,j} Y_1(t-j) + \sum_{j=1}^p A_{22,j} X(t-j) + E_2(t)$$

equation (4)

In essence, the Granger causality model is an experiment in which a dependent variable Y (economic development) is lagged on its past values then regressed on lagged past values

of X variables (commodity prices, government effectiveness, regulatory quality, and exchange rate) in a matrix set up denoted as A . The process is then reversed. One then uses some measure of the residual sum squares E to determine whether or not the inclusion of an additional lag of Y (economic development) or X (explanatory variables) helps to explain the percentages of economic development. In the model, X (explanatory variables) is said to cause Y (economic development) if the current value of Y is better predicted from past values of X and Y , than by past values of Y alone. p is the number of lagged observation included in the model (Al-Sadoon, 2017).

In order to improve the accuracy and acceptance levels of the models discussed above, the sample parameters should be normally distributed. Descriptive statistics of our data therefore forms part of the results for this paper, with the Jacque Bera (JB) normality test and its probabilities being of particular interest. The JB tests whether the sample data has a kurtosis and skewness that matches a normal distribution (Jönsson, 2011).

Louzis et al., (2012) provides information about testing the overall validity of the results by implementing the Sargan specification test. This study adopted the recommendation for such a test in order to test the robustness and acceptance of our model. The Sargan specification test thus becomes an important inclusion to our results. The specifications are that Sargan should be greater than 0.5 for the model to be accepted. The M-test is a parametric test that tests whether two or more covariance matrices are equal (Zhang, 1997). The study also adopted the recommendation for such a test. The specifications are that the M-test should be less than 0.05 for a model to be accepted as robust enough. The findings of these tests are presented in section 3 of the paper under robustness estimations subsection.

3.2 Data Set

The study employed an unbalanced panel sample consisting of countries cutting across emerging economies. The study had sought to analyse all countries that have nationalised

their resources sector at some stage (as per table 3 above), however due to data limitation only four countries could be analysed. The main lack of data was the governance index, as these parameters of government effectiveness and regulatory quality started to be officially reported in 1996, and thus excluding all countries that have nationalised before this time in our analysis. Table 4 is our resultant data matrix and shows the list of countries that were analysed due to data availability.

Table 4: Data matrix showing countries that were analysed

Country	Year of nationalisation	Commodity	Reference
Bolivia	2006	Natural gas	(Pellegrini, 2018)
Argentina	2012	Oil	(Bronstein, 2012)
Venezuela	2007	Oil	(Reuters, 2012)
Russia	2014	Oil	(Reuters, 2014)

The macroeconomic variables for each country were retrieved from the IMF World Economic Outlook Database. The commodity prices data were retrieved from the World Bank Commodity Prices database. All the four countries are still developing nations and were grouped together for the estimations exercise. The definitions and sources of data for our variables are detailed below.

- *GDP per capita*

GDP per capita is defined as the gross domestic product divided by midyear population, and GDP at purchaser's prices is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products (IMF, 2018). The GDP per capita data used represent the of GDP per capita growth (in annual percentage). The annual percentage growth rate of GDP per capita is based on constant local currency. The aggregates are based on constant 2010 US dollars, and the indicator is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources (IMF, 2018).

- *Government effectiveness*

As defined by Kaufmann, Aart, & Massimo (2010), government effectiveness captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. An estimate figure will be used in the model. The estimate gives the country's score on the aggregate indicator, in units of a standard normal distribution, i.e. ranging from approximately -2.5 to 2.5 (Kaufmann, Aart, & Massimo, 2010).

- *Regulatory quality*

Regulatory quality, also as defined by Kaufmann, Aart, & Massimo (2010), captures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development. An estimate figure will be used in the model. Similar to government effectiveness, the estimate gives the country's score on the aggregate indicator, in units of a standard normal distribution, i.e. ranging from approximately -2.5 to 2.5 (Kaufmann, Aart, & Massimo, 2010).

- *Commodity prices*

The annual prices (nominal) were used and average crude oil prices (in \$/bbl) were used. For natural gas, Natural Gas (U.S.), spot price at Henry Hub, Louisiana (quoted in \$/mmbtu) was used (IMF, 2018). The original sources for these data include Thomson Reuters Datastream, The Wall Street Journal, and World Bank.

- *Exchange rate*

The exchange rate represents the real effective exchange rate index (2010 = 100). The original data source organisation is the International Monetary Fund, International Financial Statistics, and they define the real effective exchange rate as the nominal effective exchange rate (a measure of the value of a currency against a weighted average of several foreign currencies) divided by a price deflator or index of costs (IMF, 2018).

An econometrics software package E-views version 8 was used so to identify possible (dis)similarities in the interaction of economic development indicator (GDP per capita) and explanatory variables (government effective, regulatory quality, exchange rate volatility and commodity prices movement). The results of our estimations and analysis are presented in section 3 of the paper, as follows.

4. RESULTS

Following our parameter estimations, this section of the paper presents the statistical analysis of our data. The following abbreviations were used for our variables (both dependent and explanatory variables) for modelling purposes; GDP (per capita) denotes economic development, GEF denotes government effectiveness, REG denotes regulatory quality, EXR denotes exchange rate and COMP denotes commodity prices. The first subsection of the statistical analysis is the descriptive statistics for our sample data. This analysis was critical to test for the normality of our data for an improvement on the accuracy

of the models. Correlation coefficients of the variables are then presented. The aim of the correlation coefficients was to explore the relationships between variables. The results of our GMM parameter estimations are then presented, followed by the Granger causality estimation. The last subsection of the results touches on the robustness tests for our models.

4.1 Descriptive statistics

The study started the analysis by examining the descriptive statistics of our dependent variable (GDP per capita) and explanatory variables (exchange rate, commodity prices, government effectiveness and regulatory quality). The importance for descriptive statistics is that sample parameters need to be normally distributed to improve the accuracy of the model. The descriptive statistics for the dependant and explanatory variables did not separate the data into pre and post nationalisation periods. The logic behind combining the data is that descriptive statistics give a helicopter view of the database and play an insignificant role in the analysis/estimations. Table 5 shows the results of the descriptive statistics of our variables.

Table 5: Descriptive statistics for the dependent and explanatory variables

	GDP	GEF	REQ	EXR	COMP
Mean	2.109017	-0.550386	-0.832020	64.37851	58.77688
Median	2.534761	-0.486538	-0.875137	79.83589	63.02500
Maximum	16.22569	0.176796	0.059288	108.4566	105.0100
Minimum	-9.394985	-1.190891	-1.623488	3.453500	3.360000
Std. Dev.	4.945887	0.379878	0.425853	39.75070	39.51453
Skewness	0.180040	-0.210260	-0.005446	-0.534761	-0.243882
Kurtosis	4.154688	1.926701	2.309056	1.677009	1.501738

Jarque-Bera	1.950616	1.771744	0.636696	3.858913	3.310271
Probability	0.377076	0.412354	0.727350	0.145227	0.191066
Sum	67.48854	-17.61234	-26.62463	2060.112	1880.860
Sum Sq. Dev.	758.3157	4.473533	5.621867	48983.65	48403.33
Observations	32	32	32	32	32

As previously mentioned, the Jarque-Bera (JB) test is a test for normality based on the sample kurtosis and sample skewness, as well as the sample size. The probability values denote the p-value of the JB test. Probabilities of > 0.05 mean that the data are normal and consistent with having skewness and excess kurtosis zero (Thadewald & Büning, 2007). It is clear from the table that the calculated p-value is greater than any usual significance level to suggest that there is no evidence to reject the null hypothesis of a normal distribution. Considering our sample size, the JB tests confirm that the sample parameters are normally distributed, supporting the accuracy of the models ran.

4.2 Dynamic panel data estimation

The research begins the panel estimation by exploring the relationships between our variables (dependent and explanatory variables). Table 6 shows the correlation coefficients of the variables.

Table 6: Correlation coefficients between the sets variables

	GDP	GEF	REQ	EXR	COMP
GDP	1	0.233222	0.00018	0.062706	0.001856
GEF	0.23322	1	0.6619	-0.40576	0.116906
REQ	0.00018	0.661949	1	0.200712	-0.185330
EXR	0.06270	-0.40577	0.20071	1	-0.35154
COMP	0.001856	0.11690	-0.18533	-0.35154	1

The correlation coefficients indicate that there are positive relationships between our dependent variable (GDP per capita) and explanatory variables (government effectiveness, regulatory quality, exchange rate and commodity prices). Government effectiveness has the strongest correlation. The positive correlations are in line with our expectations following the literature review. The expected basic relationship was that if commodity prices are positive, government effectiveness and regulatory quality are positive, and the exchange rate is stable, economic development will be positively influenced and vice versa.

Acknowledging that our results resemble a panel analysis, great individual country examples supporting our correlation coefficients is the government effectiveness, in Botswana and Norway, which ensured strong GDP performance as stated by Claes (2002). Volatile commodity prices have negatively affected the economic development of Mongolia from highs of 17.3% in 2011 to lows of 2.4% in 2015 (Ganbolda & Alib, 2017). The next subsection of our results delves deeper into the GMM parameter estimations.

4.3 GMM parameter estimation

The GMM parameter estimation was aimed at understanding the sensitivity of economic development to nationalisation policy. The results are for the lags (all variables) and are depicted in table 7 and table 8 for pre and post nationalisation periods.

Table 7: GMM parameter estimation coefficient for the lags (all variables), pre nationalisation

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GEF	27.62340	129.8247	0.212775	0.8337
EXR	0.354658	1.283468	0.276328	0.7851
COMP	0.902779	2.093706	0.431187	0.6709
REQ	-36.93493	91.02443	-0.405769	0.6892
Effects Specification				
Cross-section fixed (first differences)				
Mean dependent var	0.639627	S.D. dependent var	7.497200	
S.E. of regression	22.15608	Sum squared resid	9817.834	
J-statistic	3.58E-23	Instrument rank	4	

Following the GMM parameter estimations, the observations are that pre nationalisation, government effectiveness (GEF) supported economic development. However; this variable was not significant in improving economic development, which is GDP per capita. The strengthening of the domestic currency (EXR) also supported economic development (GDP per capita). However; this was also not significant. Commodity prices (COMP) had a positive relationship to economic development (GDP per capita), thou statistically insignificant. Government regulatory quality (REQ) had a negative relationship with economic development, and the variable was also not statistically significant.

The observed results of statistical insignificance could be attributed to sample size. However, if the results still holds with higher sample size, what this would then imply is that there is no difference at a given significance value and that economic development (as proxied by GDP per capita) is not sensitive to the above explanatory variables, at least pre nationalisation.

Table 8 specifies the results following our GMM parameter estimation. The results are for the lags (all variables) post nationalisation.

Table 8: GMM parameter estimation coefficient for the lags (all variables), post nationalisation

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GEF	51.04453	78.39909	0.651086	0.5224
EXR	-0.028970	0.126103	-0.229736	0.8206
COMP	0.257333	0.054598	-4.713236	0.0001
REQ	24.39683	10.97862	2.2219318	0.0502
Effects Specification				
Cross-section fixed (first differences)				
Mean dependent var	0.639627	S.D. dependent var	7.497200	
S.E. of regression	11.57517	Sum squared resid	2679.691	
J-statistic	2.04E-24	Instrument rank	4	

The observations from the estimations are that, post nationalisation; government effectiveness (GEF) supported economic development (GDP per capita) though the correlation was not statistically significant. This observation is similar to pre nationalisation sensitivity of economic development to government effectiveness. The exchange rate (EXR) did not support economic development and the impact of the variable was statistically insignificant; a similar observation of statistical insignificance to pre nationalisation. Government regulatory quality (REQ), did support economic development (GDP per capita), however, the impact was statistically insignificant.

The impact of commodity prices (COMP) was statistically significant, in contrast to statistical insignificance pre nationalisation. The implications of these observations are that lagging forward post nationalisation; commodity prices were significant in driving development.

The next subsection of the reports looks at the results of our second main analysis of the research, as highlighted in section 3 of the paper. The analysis was aimed at exploring which fundamental macro-economic variable out of the four is responsible for causality impact in sustaining economic growth post nationalisation.

4.4 Granger causality model

The Granger causality model was used to explore which economic variable out of the four (commodity price, government effectiveness, regulatory quality and exchange rate) was responsible for causality impact in sustaining economic growth post nationalisation. Table 9 shows the results of the analysis. The Granger model was derived by Granger (1980) and is supported Al-Sadoon (2017).

Table 9: The long run Granger causality impact of nationalisation policy to economic development

Null Hypothesis:	Obs	F-Statistic	Prob.
GEF does not Granger Cause GDP	20	3.97567	0.0326
GDP does not Granger Cause GEF		2.25309	0.1306

The observations from the Granger causality model are that in the long run, government effectiveness (GEF) post nationalisation is significant in driving economic development. The null hypothesis is rejected since F-statistics and P-values are significant. This implies that nationalisation improve economic development for as long as it enhances government effectiveness. The next subsection looks at robustness tests for our models.

4.5 Robustness estimations

Statistical analysis requires robustness test for models. Table 10 shows the results of the Sargan specification test and M-test. The results indicate that our GMM models for both pre and post nationalisation are reasonable and can be accepted with the Sargan greater than 0.5 and M-test less than 0.05 for both periods.

Table 10: Sargan specification test and M-test results for GMM models robustness estimations, pre and post nationalisation.

	Pre nationalisation	Post nationalisation
Sargan specification test	(0,66)	(0,61)
M-test	(0,05)	(0,04)

The robustness tests for our models conclude the data presentation and analysis parts of the report. The section that follows discusses the whole research paper from introduction and literature review, to the findings and their significance following the GMM parameter estimations and Granger causality modeling.

5. DISCUSSION

The purpose of this discussion chapter is to briefly highlight what the research was about, the methodology that was followed, as well as the findings of the research and their meaning and significance. The chapter also highlights how the findings could be used and by whom. What was even more important to discuss also is what has gone wrong with the study. The section also discusses how the limitations of the study had affected the findings.

The definition of nationalisation as the process of transferring private assets into public assets by bringing them under the public ownership of a national government or state for inclusive developmental of society, gives a pertinent distinction between nationalised assets versus state-owned/controlled assets. Based on this definition, it is a misconception that Norway is a great example of a nationalisation model, as commonly stated. The country has never nationalised its oil industry, but instead the country invented the company (Statoil). Nationalisation involves expropriation of 51% or more controlling interest. This clarifies that Botswana has also not nationalised its diamond mining industry. The government operates in a 50:50 joint venture agreement with DeBeers Consolidated Mines to form Debswana. Methods of expropriation during nationalisation differ from one jurisdiction to another. These may range from renegotiations of contracts and payments methods arrangements, to the volatile expropriation without compensation. It is usually the head of states and members of cabinet who adopt the nationalisation policy and decide which form of expropriation to adopt. Whichever route a country chooses to follow when implementing nationalisation, it is

advisable that due processes are followed to afford alienation by the international community.

The literature review for this study has revealed a number of interesting facts encompassing nationalisation as an economic development model. There are two main commodities that countries nationalise. This includes oil and copper. The understanding is that countries nationalises minerals/resources that are strategic to their economic development goals. In essence, these would be the resources that contribute significantly to the GDP of the country, and/or resources that serve as feedstock to the industrial/manufacturing sector in that local country.

The literature review also revealed that a number of Latin American countries, with their current political leadership, continue to drive the nationalisation debate. There is also an increasing trend of Asian countries such as Mongolia and Russia continuing their efforts to have their natural resource industries nationalised. Mineral-rich African countries are not expressing intentions of nationalising their resources sector, however, resource nationalism is big on the political agenda of countries such as the DRC, Ghana and Zambia who are seeking greater economic control of natural resources, in the form of higher rents.

Despite the vocals of nationalisation by some opposition parties in South Africa, the ruling party (the ANC) is still adamant to say nationalisation is neither the government's policy nor that of the party. There are arguments that South Africa is yet to fully benefit from its mineral resource endowments. The country is thus challenged to formulate policies that will enable it to maximise the benefits that could be derived from its world class natural resources wealth. Alternative to nationalisation, there are other forms of resource nationalism such as mineral tax regimes that could be reviewed and renegotiated, to ensure increases in benefits derived. The crux of any policy formulation is the implementation process followed by rigorous planning, monitoring and continuous improvement. Developed countries such as Canada and Australia are seen to still exercise resource nationalism through enacting higher

royalties and taxes. This indicates other potential avenues that developing countries can consider in ensuring satisfactory benefits from natural resources.

A number of state heads advocate for nationalisation to be a great policy for economic development as it capitalises on the country's natural wealth. Conflicting views remain to say nationalisation is bad as it hinders economic development. Nationalisation is seen to be driving away foreign investment that is essentially for a capital intensive mining sector. Mineral resource-rich nations are said to be denying themselves opportunities to access world class technologies that will positively drive production and efficiencies.

Most studies on nationalisation uses the case study method as a research approach and focus on individual countries. To fill the gap of individual country focus, this study sought to conduct a cross country analyses to give a more balanced perspective. The study has used a dynamic panel data method to examine the sensitivity of economic development proxied by GDP per capita to nationalisation policy. The GMM model was central to this study because it is sensitive enough to assume that the economics of the explanatory variables that were being studied are not static but subjected to changes based on what the economy is. The model is also superior especially because it factors in the Granger causality aspect.

Four countries that have nationalised their resource sectors were analysed. These included Bolivia, Argentina, Venezuela and Russia. Our analysis was limited to only these four countries due to lack of data on other countries. This is the greatest limitation that the study was subjected to. The limitation hampered the opportunity to analyse more data which could have yielded better representative results, for a better view on the sincerity nexus between nationalisation and economic prosperity.

The descriptive statistics for our sample data highlighted the p values of the Jarque-Bera (JB) test for normality. The probabilities were > 0.05 implying that there is no evidence to reject the null hypothesis of a normal distribution. The JB tests confirmed that our sample parameters were normally distributed and thus supporting the accuracy of the models.

The findings of our GMM parameter estimations and analysis, for the pre nationalisation period, were that government effectiveness, regulatory quality, commodity prices and exchange rate were statistically insignificant. The statistical insignificance could be attributed to sample size. Post nationalisation, the exchange rate, government effectiveness and regulatory quality were statistically insignificant. Only commodity prices were statistically significant, suggesting that lagging forward post nationalisation; commodity prices movement is key in driving economic development.

The Granger causality model indicated that nationalisation will improve economic development in the long run for as long as it enhances government effectiveness. This finding ties up with the narrative by Narula (2018), who shares that the nationalisation policy has proved to be a positive driver of economic prosperity through the establishments of stable institutions in the form of functional government agencies.

Our statistical analysis also included robustness estimations for our models. Robustness tests are necessary to test the reasonability of models. The two tests that were run included the Sargan specification test and M-test. The specifications are that Sargan should be greater than 0.5 for the model to be accepted. The M-test should be less than 0.05 for a model to be accepted as robust enough. The findings of the robustness test are that for pre nationalisation, the Sargan specification test was 0.66 and the M-test 0.05. For post nationalisation estimations, the Sargan test was 0.61 and the M-test 0.04. The results of these tests indicate that our econometrics models were reasonable and could be accepted with confidence.

The results from our GMM parameter estimations and the Granger causality test suggest that lagging forward post nationalisation; commodity prices drive economic development especially when government effectiveness is decent. This implies that nationalisation improve economic development for as long as it is linked with improvement in government effectiveness and there is upswing in commodity prices. The study does enhance the

theoretical models that nationalisation policy can be good for economic development, if regulatory quality and government effectiveness holds.

We believe that this study has, to a reasonable extent, succeeded in providing that unique analyses of cross countries balanced perspective, despite the limited data conundrum. We were able to analyse four countries using econometric methods, compared to what the literature revealed regarding single country focus with case study method being the predominant research methodology by scholars.

5.1 Limitations

As expected with most research, our study was subjected to a number of limitations. The major limitation was the lack of data on most other countries that have previously nationalised.

The study had sought to analyse the long run impact of nationalisation to economic prosperity, however due to limited countries and data, the analysis was short run especially with the GMM parameter estimations.

The countries that were analysed did not nationalise during the same periods, however the use of unbalanced panel in our models did correct for this.

6. CONCLUSION

The purpose of this study was to investigate the impact of nationalisation of mineral resources to economic development post nationalisation, by giving a balanced perspective across countries that have nationalised. Due to data limitation, only four countries were analysed. The research was carried out through the use of a dynamic panel (unbalanced panel) approach. The Generalized method of moments (GMM) parameter estimation model

was used to study the sensitivity of economic development (proxied by GDP per capita) to nationalisation policy.

The main finding of the study is that pre nationalisation; government effectiveness, regulatory quality, commodity prices and exchange rate were statistically insignificant. The statistical insignificance could be attributed to sample size. Post nationalisation, the exchange rate, government effectiveness and regulatory quality were statistically insignificant. Only commodity prices were statistically significant, suggesting that lagging forward post nationalisation; commodity prices were significant in driving development. The overall conclusion is that commodity prices indeed drive economic development especially when government effectiveness is decent, as supported by the Granger causality test. The implication of the findings are that nationalisation improve economic development for as long as it is linked with improvement in government effectiveness and there is upswing in commodity prices.

Nationalisation as a policy seeks to put the state in charge of economic development for less reliance on private business. It is the very same state that must ensure government effectiveness and regulatory quality, as defined by the World Bank research groups, specifically in the natural resources industry and if benefits are to be expected. The study found that copper and oil and gas are the top commodities nationalised by the willing national governments. The question of which minerals and natural resources countries may nationalise is beyond the scope of this research. Future studies on nationalisation may entail country-specific, feasible natural resources to nationalise if any government wishes to consider the policy. An important take away point also is that nationalisation does not mean exactly 100% ownership by government, but anything above 51% controlling interest. It may be wise for governments that contemplate on nationalisation to consider partnerships with the private sector, for risk diversification.

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