

**INFRASTRUCTURE DEVELOPMENT IN ECONOMIC CRISIS
AND RECOVERY: THE RAIL CARGO SECTOR IN
ZIMBABWE SINCE 2000**

BY

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Declaration

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Abstract

The study sought to investigate infrastructure development in economic crisis and recovery, with specific regard to the rail cargo sector in Zimbabwe since 2000. The research was prompted by firstly, the need to assess the current situation of the National Railways of Zimbabwe (NRZ), secondly, to examine the root cause of the challenges being faced by the National Railways of Zimbabwe and lastly, to review the plans going forward to resolve the challenges.

In the study, a sample of 17 respondents was selected. Questions were used to guide the interview schedule. The data was collected through semi-structured interviews and was presented and analysed using thematic analysis. The findings were then interpreted in relation to research objectives and questions.

The research findings showed that most of the challenges that were being experienced by the National Railways of Zimbabwe were as a result of the economic meltdown of the Zimbabwean economy. It is evident from the findings that the rail cargo in Zimbabwe can be improved if the parastatal can be given autonomy to run the day to day operations without political interference from the government. The results further suggest that the National Railways of Zimbabwe can be in a position to breakeven or become financially viable if the government, who is the major shareholder, opens up lines of credit and helps secure strategic partners who will bring in capital.

In light of the above findings, the study recommends that the government explore more private sector participation and private concession options as this will help the National Railways of Zimbabwe improve its current challenges. Secondly, the 1997 Railway Act has to be signed and officialised so as to enable the organisation to operate commercially. Thirdly, the staff composition and the election of the Board of Directors should be revisited so as to engage stakeholders in promoting transparency, integrity and efficiency. Lastly, the National Railways of Zimbabwe needs to revive its Railway Motor Services Private Limited because it will help the organisation to cut down on competition from the road sector.

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Abbreviations and Acronyms

ADB	African Development Bank
CCFB	Caminhos de ferro do Beira
CTC	Centralised Train Control
CZI	Confederation of Zimbabwe Industries
BOD	Board of Directors
BBR	Bulawayo Beitbridge Railway
CNR	Chinese National Railways
DBSA	Development Bank of Southern Africa
EAC	East African Community
ESAP	Economic Structural Adjustment Programs
EU	European Union
GMB	Grain Marketing Board
GPS	Global Positioning System
GDP	Gross Domestic Product
HSR	High Speed Rail
IT	Information Technology
ITCS	Integrated Trains Control System
JR	Japan Freight Railway Company
MPTA	Million Metric Tonnes per Annum
NEDLAC	National Economic Development and Labour Council
NEPAD	New Partnership for Africa's Development
NRZ	National Railways of Zimbabwe
NTS	National Transport Strategy
PPC	Pretoria Portland Cement
PIM	Project Information Memorandum

PPP	Public-Private Partnership
PSIP	Public Sector Investment Programme
PSOs	Public Service Obligation
RMS	Railway Motor Services Private Limited
RSZ	Railway Systems of Zambia
SADC	Southern African Development Community
TFR	Transnet Freight Rail
UHF	Ultra High Frequency
UDI	Unilateral Declaration of Independence
USAID	United States Agency for International Development
ZCF	Zimbabwe Commercial Farmers

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Chapter 1: Introduction

1.1. Background and Problem Statement

Much of Africa's colonial experience left it with a combination of predominantly primary commodity export economic activities and the supporting railways that were associated with this production. In fact, for many countries at independence the bulk of their exports (and in some cases imports) moved via rail networks. Across many of these countries these rail systems remain in at least partial operation. Although many have suffered the consequences of some considerable underinvestment, they continue to perform important roles in the domestic and at times the regional economies. This abiding relevance of rail in the mix of transport infrastructure is not uncommon. However, in the context of often weak investment and governance experiences the prospects of rail are far from certain.

The focus of this study will be on the National Railways of Zimbabwe (NRZ) and in particular its cargo business. The thesis will begin with a discussion of how this strategic parastatal has contributed to, and been affected by, the precipitous decline in domestic economic growth and socio-economic development that has characterised Zimbabwe since the disputed elections of 2000 and the drought period of the time. The World Bank (2013a, 2013b) argues that the Zimbabwean economy experienced sustained periods of economic contraction between 2000 and 2010 which resulted in an average annual growth of -3.9%. As a percentage of Gross Domestic Product (GDP) during the same period, gross fixed capital investments averaged 8.8 percent dropping as low as 4.8 percent (World Bank, 2013a, 2013b).

Due to the dilapidation of infrastructure of the NRZ, most countries that were interconnected to its railway network regionally, have been greatly affected (ADB, 2013). According to African Development Bank (ADB, 2011: 6) "between 2000 and 2009 capacity utilization of the rail system dropped from over 50% to below 15% and freight cargo dropped from 9.4 million tons to 2.7 million tons down from 14.3 million tons and 80% utilization in 1990". These statistics provide ample evidence that shows the crucial role played by the NRZ in the country's domestic, regional and international trade as it linked all major commercial farms, heavy industries and major mines.

In addition, it also transported raw materials, finished goods and passengers domestically and regionally. Just like most African railway networks, the NRZ was constructed “to serve as a primary conduit for agricultural and other natural resources” (ADB, 2011: 1).

In considering possible future paths for its rail industry within the broader transport mix, reflecting on the experiences of this crisis period will be very important. During the economic crisis, many key sectors of the economy, for example the mining sector, supported the NRZ through the challenges they were facing by providing capital to maintain some of the locomotives and wagons that serviced them. The mines did this so as to keep their operations flowing since there were no alternatives to best service them. Most importantly, from the period of 1990 to 1999, United States Agency for International Development (USAID) and the World Bank assisted the NRZ with finance and the running of the parastatal.

Zimbabwe has however seen, of late, some economic recovery and a renewed interest, despite continuing policy uncertainty, in mining activities. More recently the Chinese diplomatic efforts and Chinese investors have made far-reaching proposals on investment in mining and rail transport. According to a report that was done by the African Development Bank (2013:8) it was noted that “focusing on infrastructure development could see Zimbabwe gaining 7% growth with a jump in gross domestic product from a 7billion to a 9.5 billion in the next 8 years”.

1.2. Objectives of the study

This study seeks to achieve the following main objectives:

1. To assess the current situation or state of the NRZ.
2. To examine the causes that resulted in the challenges being experienced by the NRZ.
3. To review the plans to fix the problems.

1.3. Research questions

It is against this background and the objectives above that the study seeks to answer the following questions:

1. What were the patterns of rail use in Zimbabwe before 2000 and what are the current patterns of rail use in 2000 till present day?
2. How has the total cargo handled by the NRZ, that is, main type of cargo and passengers changed from 2000 to 2013?
3. What has been the availability and utilization of locomotives and wagons?
4. What are some of the challenges that the NRZ faces and what has caused them? (Probes on causes include: Internal constraints: The National Railways of Zimbabwe Act; brain drain; poor management; inter-parastatal debt, availability of rolling stock; track and communications infrastructure; operators and workers; bureaucracy; external constraints: demand, politics, hyper-inflation, electricity shortages, fuel shortages and unstable currency exchange rate.
5. How has policy towards rail evolved in Zimbabwe, with specific reference to the post 2000 period? What responses have been proposed by various stakeholders for addressing shortcomings and what has been done about these proposals?
 - 5.1 What factors or actors influenced policy changes?
 - 5.2 How have these policy changes influenced patterns of cargo handling in the rail sector?
6. What are the present institutional arrangements governing rail activities in Zimbabwe and how have these changed over time? This would include changing economic structure, investment and management of the rail system (also compared to other modes), governance etc.
7. What should be solved to improve railway accessibility and efficiency in Zimbabwe?

1.4. Justification of the study

The National Railways of Zimbabwe has an extensive railway network and since 2000 till present day, the railway infrastructure has been in a deteriorating state. With the country going through a challenging socio-economic and political phase, the way the National Railways of Zimbabwe has been performing dismally has had a great impact on economic growth.

This study is aimed at identifying some of the factors that might have contributed to the present state of the rail infrastructure in Zimbabwe. Additionally, the study will investigate how these factors have affected the patterns of rail use in Zimbabwe since 2000 till present day. Also, to identify performance dimensions within the cargo and transport divisions of the NRZ and how this has changed over time especially with regard to the economic downturn that Zimbabwe has faced as a country.

Important to note, is that the study will aim to focus on a narrow aspect of efficiency, that is, due to the limitations of this research but a fuller study would appreciate that there are many other dimensions to efficiency. This complexity around different types of efficiency means a complex role for a parastatal as it has to deliver to tax payers now and into the future and to customers in an environment where they have other choices.

This dissertation involved a qualitative study of the National Railways of Zimbabwe which will be supported by relevant quantitative data. An adoptive sampling method was used as a sampling method because the participants are from a specific predefined group. In order to indentify additional relevant respondents, a snowball technique was used. Data was collected through semi-structured interviews and analysed using thematic analysis.

1.4.1. The Government

Macroeconomic policy formulation and implementation of parastatals is the responsibility of the government thus it is against this background that effectiveness and efficiency of NRZ's infrastructure and operation becomes a necessity. There are several challenges that the NRZ is facing, which, if not properly and strategically prioritised and dealt with, would result in the total non-functionality of the NRZ. This would be detrimental to the economic development of the country as a whole.

Infrastructure development, in particular the railways in Zimbabwe, affects all of the three most important sectors of the economy, that is, agriculture, mining and manufacturing industry.

This study will help government and other stakeholders through recommendations for addressing the root causes of the present challenges that NRZ is facing as a parastatal. Developing a clearer strategy for NRZ will also assist with Zimbabwe's interactions with other regional rail players especially South Africa's Transnet Freight Rail (TFR) and growing interest from Chinese investors in a context where plans are for greater regional transport integration as suggested by bodies such as SADC and prior to that the National Economic Development and Labour Council (NEDLAC).

1.4.2 The Private Sector

The economic players in Zimbabwe's economy, that is, in agriculture, mining and industry are directly or indirectly affected or affect the operations of NRZ. Whenever the private sector makes use of the NRZ's services, their main objective is to achieve a win-win situation in which the NRZ improves its services and the private companies gain access to efficient, reliable and cost effective services. The private sector will be enlightened on the likely implications of opting for the road sector and neglecting the NRZ. This will assist in both short and long term strategic planning through recommendations and analysis highlighted by this study.

1.4.3 Academia

Researchers in Zimbabwe have not explored this field of study extensively. Most of the research that has been done in Zimbabwe is on how underperforming sectors of the economy, that is, agriculture, industry and mining have affected economic growth and development. The researchers have at times failed to take into account that Zimbabwe is a landlocked country and for these sectors of the economy to gain from economies of scale and bulk transportation, an efficient railway network is required.

The study aims to present in ordinary language a highly technical subject on the basic principles underlying the importance of transport infrastructural development in developing countries. Studies have shown that under-investment in transport infrastructure affects economic growth and development directly and indirectly.

Scholars should therefore carry out research in this field given the fact that globalisation has made it essential for countries to develop their transport infrastructure so as to enable trade integration between countries.

1.5. Organization of the Thesis

This introductory chapter lays the ground for the presentation of the research. The second chapter reviews both the theoretical and empirical literature that explores infrastructure development as a tool for economic development with specific regard to rail and links transport infrastructure and economic development within the context of Zimbabwe.

The research methodology is presented in chapter three highlighting how information was gathered for this case study. Chapter four presents the results and provides an analysis of the results collected through the semi-structures interviews that were conducted. The final chapter concludes the background, theoretical framework and analysis drawn from the research and provides recommendations for future research.

Chapter 2 - Literature Review

2. Introduction

The importance of an efficient transport infrastructure has been widely acknowledged in the field of economic development. Extensive studies have been carried out to research the impact of infrastructure on long term economic development. This chapter reviews both theoretical and empirical literature on infrastructure development in economic crisis and recovery. The chapter presents the empirical and theoretical literature on infrastructure development as an instrument for economic development. The rationale for countries to invest in transport infrastructure with specific regard to rail is also explored through the assessment and review of the theoretical and empirical literature. The link between infrastructure and economic development within the context of Zimbabwe will be explored and determined in this chapter.

In analyzing the empirical literature on infrastructure development in economic crisis and recovery, the intention of the chapter will be to examine the following bodies of literature: infrastructure and development or economic growth, infrastructure and private sector development, transport infrastructure and economic growth or private sector development with a particular sub-focus on rail (including the roles of different actors and trends in how these roles are proposed).

2.2. Analysing International Experience of Rail and Development

Before analysing the empirical literature on infrastructure development with specific regard to rail infrastructure, the study will firstly analyze international experience of rail and development. This will allow for a clearer sense of where rail has thrived, why it has thrived and what have been its economic benefits. The chapter will start by looking at the historical development of railway and factors influencing this development, how rail changed over the 20th century and recent issues facing rail (challenges and opportunities). Specific matters such as infrastructure, technology, institutional matters and regulatory reform as well as changing economic circumstances will be taken into cognisance.

2.3. Historical development of railway and factors influencing this development

Rail transportation proved to be a highly effective suitable mode of transport for the movement of bulk and dense raw materials and labour that was needed for the industrial revolution that was taking place in different parts of Europe. According to Thompson and Kohon (2012) railway infrastructure in The Americas dates back to the 19th century and the main reason for its construction was to provide bulk land transport as well as to provide transportation for all the disconnected areas within the Americas. Important to note with regard to railway infrastructure in the Americas, is that “the standard model was a vertically integrated monopoly, usually providing both passenger and freight services” (Thompson and Kohon, 2012:52).

This vertically integrated structure characterized the industry in many parts of the world for much of its development until the later part of the 20th century. However, shifts began to occur within the railway transport sector during the 1970s. This was mainly attributed to new technological advancements within the transport sector that saw the rise of use of haulage trucks, air and water transportation and automobiles. Likewise, Thompson and Kohon state that “railway transportation faced a drastic decline because of aggressive and populist regulations and promotional policies for other modes that harmed the railways” (2012:52). Amos and Bullock in contrast argue that most railway companies were forced to configure mainly because “each country has been heavily influenced by history, geography and most importantly by the nature and dispersal of their transport markets” (2011:3). Such scenarios forced most governments to intervene and make changes so as to address the crisis.

Most developed countries that have been making use of rail networks and systems have been forced to change their rail use patterns over the years because of economic trends in their countries. According to Thompson (2010), when the former Soviet Union collapsed, Russia and the countries in the European Union (EU10) experienced low growth rates which affected both the freight and passenger rail. However, as from 2000 both passenger and freight rail in Russia began to gain momentum again while the European Union still experienced slow freight growth and shrinking passenger traffic (Thompson, 2010).

Notwithstanding these changes to the demand for rail, technological and policy innovation from 1970 to 2000 fostered improved efficiency in both freight and passenger rail while enhancing rail service and quality.

According to Amos and Bullock (2011), in Australia, Canada, Germany, Russia and the USA, the policy decisions that were made with regard to rail mostly favoured competition within rail freight which resulted in the existence of multiple rail freight operations. Thompson (2010) on the other hand, argues that in 1970, it was the creation of Amtrak in the US, followed by VIA in Canada and JR (Japan Freight Railway Company) freight in Japan that paved the way for new ways of operating an effective and efficient railway. According to Thompson (2010:10), “these companies were minor users of the system infrastructure and operated as tenants”. This meant that for the companies to use the rail network and system that were provided by the dominant provider, they had to pay a fee which in turn the dominant provider would use to upgrade and sustain the existing rail networks. Such policy innovations, according to Amos and Bullock (2011) and Thompson (2010) managed to break down the existing monolithic relationship where only one unitary organisation had control over all the railway activities and services. Breaking down this relationship saw great improvements at clarifying costs and improving market share as can be witnessed by the revolutionary innovation by the EU beginning in 1991 (Thompson, 2010). Important to note, was that they were less successful at improving financial performance (Thompson, 2010).

Amos and Bullock (2011) also note that with the policy innovations that were put in place, Australia, Brazil, Canada, Japan and the US have nearly all their freight and passenger rail being run by different companies. Policy innovations also paved the way for the private sector to come into play by introducing franchising, concessioning and full privatisation (Thompson, 2010). According to Thompson and Kohon (2012), the US and Canada decided to separate passenger services from freight management and provide public funding to government. Mexico on the other hand, concessioned its railway networks and “its strong connections with the US and Canada have produced an efficient system throughout North America” (Thompson and Kohon, 2012:52). Additionally, Latin America with very few exceptions privatised both its freight and suburban passenger railway by breaking down its networks and systems into smaller systems.

In their concluding remarks Thompson and Kohon (2012) stated that concessioning of railway systems and networks differed from country to country, and respective governments still felt there was need to assess the proposed approach of concessioning the railways.

According to Thompson and Kohon (2012), some of the vertically integrated concessions and private railways, especially Brazil, Argentina and Mexico, were still unable to earn enough interest because of rigorous trucking competition. In order to deal with these hurdles, most governments “are considering a number of new approaches including direct public investment in the concession, extending the term of the concession and reforming the concession to provide competitive multiple access” (Thompson and Kohon, 2012:53).

Technologically, there has been a significant improvement from the 1970s till present day especially with rail freight. According to Thompson, there has been significant innovation in rail freight where “heavy haul techniques, diesel technology signalling and intermodal systems have been introduced which have reduced the cost of rail freight services by as much as half” (2010:5). Additionally, passenger rail extended its competitive range of rail services through the High Speed Rail (HSR) and improved its energy efficiency through the three-phase AC traction which is used to power electrical rail vehicles (Thompson, 2010). The Global Positioning System (GPS) and Information Technology (IT) innovation also saw enormous improvements in both freight and passenger rail. Thompson argues that GPS and IT “enabled much closer integration and control of system operations, reduction of costs and improvements of service, quality and safety” (2010:5). Moreover, the maritime sector saw the revolution of containerisation which prompted the railway to become a major source of transportation for the containers especially in the US, Canada, Russia, India and China (Thompson, 2010).

With regard to private sector involvement in rail transport, studies show that this has been occurring since the construction of railways. When most of the railways were constructed, private investors were the main funders and were the operators of the different concessions that were signed. According to Thompson, Budin and Estache (2001), most of the railways that were built in Africa and Latin America were constructed by private investors and operated under different contractual agreements. In as much as the private sector was involved right from the beginning, the railway was still a state owned enterprise.

Although private role players did develop some railways it was with considerable public support and over time the railways became the exclusive preserve of the public sector right through to the 1980s, with Latin America introducing reforms to involve the private sector at that point.

2.4. Recent Issues Facing Rail (challenges and opportunities)

China has been an exception where rail is concerned. In as much as China has the greatest volume and busiest freight and passenger rail, it has continued to run it as a public entity. According to Amos and Bullock, China “does not have joined-up transport governance, does not separate the roles of policy-making service delivery and the market is not regularised though the industry is regularised” (2011:5). However, China has massively invested in transport infrastructure development, Amos and Bullock (2011) argue the programs have been lacking in coordination and integration since the programs come from individual district plans and are passed on to different modal administrators. In their concluding remarks, Amos and Bullock (2011) suggest that China should use a coordinated National Transport Strategy (NTS) that has been adopted by Germany, France, Russia, US, Canada, Japan, Australia and Brazil. This is plausible if China decides to optimise its existing infrastructure and to distribute future public investment between different railway networks (Amos and Bullock, 2011). However, China has managed to come into the picture as a private investor so as to revamp the deteriorating Tazara railway. According to the Transport Sector Plan (2012), China is involved as the main funder while Zambia and Tanzania still retain ownership of the railway.

Interestingly, Thompson (2010) agrees that most developed countries are now in favour of rail as a mode to transport as it cuts costs over long distances on flat land, cuts on congestion and it is environmentally sustainable. According to Thompson (2010), rail is seen as providing a solution for the high scale of energy related emissions such as carbon. Thompson (2010) however argues that the impact is currently being produced in few systems, that is, North America, China, Russian and India for rail freight. Furthermore, Thompson (2010:8) argues that, “when freight and passenger traffic are combined, just six railway systems (adding EU10 to EU15) account for 90% of the world’s rail activity”.

2.5. Role of Rail in Africa's Development Path (past, present and future)

Having analysed the international experience of rail and development, the next section will look at the role of rail in Africa's development. This will be done by looking at the historical development of railway history (including the Chinese support for the Tazara line – which continues today), contemporary performance, main challenges, the dynamics involved such as attempted concessions (Tanzania, Mozambique) and future prospects between Public-Private Partnership (PPPs) and mining companies.

2.5.1. Historical Development of Railway History in Africa

The role of rail in Africa's development path (past, present and future) has been reviewed by Ranganathan and Foster (2011), Foster and Brceno-Garmendia (2010) Kessides (2004) and Njoh, (2007) and the Transport Sector Plan (2012) drawn up by Southern African Development Community (SADC). In order to get a clear picture of the role of rail in Africa's development, it is essential to first get a clear picture of how it all began. According to Njoh (2007), the relationship between transportation and economic development has always been contested by various scholars, but when it came to Africa, colonialists deemed that investing in transportation would positively influence economic development and also cost saving. Needless to say, this assumption saw the colonialists investing in railway building projects all over the continent (Njoh, 2007).

Under colonial rule the main intentions of colonialists were to penetrate the hinterland of Africa where they could extract raw materials and then transport them by rail to the seaports and off to their host countries. According to Njoh for the colonialist to achieve their objectives, "rail transportation presented itself as the optimal means as well as that of military defending the colonial territory" (2007:3). To further substantiate this argument Mabongunye (1981) [cited in Njoh, 2007] states that when the colonialists constructed railway lines, it was more geared to exploitation of resources and military defence. Additionally, rail transportation was cheap to develop, offered higher returns to their investments and it was easier and cheaper to transport bulk goods as compared to road transportation. Conversely, the colonialists made little or no effort to link the colonies mainly because the colonies were under different authorities (Njoh, 2007).

2.6. Contemporary Performance and Main Challenges

Empirical research done by Njoh (2007) during the post-colonial era suggested that African countries should prioritise meeting basic needs rather than invest heavily in transport infrastructure. According to Pedersen (2001) and Hilling (1996) [cited in Njoh, 2007], transport as a critical determinant of economic and regional development was no longer a viable option as the dated networks, infrastructure and institutional arrangements offered limited economic benefits. This put Africa at a disadvantage because it had inherited most of its transport infrastructure from their colonial processors which was now rendered obsolete (Njoh, 2007).

In Njoh's review of the Africa's transport infrastructure in its development experience, the author makes the case that, "Africa's marginalized position within the global economic system is due largely to the fact that the continent lacks the quality and quantity of transport infrastructure necessary to connect it to the global arteries of commerce and industry" (Njoh, 2007: 1-2). Njoh goes on to point out that, "the railway, a relatively inexpensive means of transportation, has also been neglected" (Njoh, 2007: 1-2). The few tracks that were inherited from the colonial governments have only been barely maintained and in some cases left in a state of disrepair. As in the case of road building, very little, if any extensions have been made to the colonial rail lines. Thus, as was the case during the colonial era, "African countries continue to be isolated from each other" (Njoh, 2007: 6-7). Kessides goes on further to argue that "most African countries' railroads are still vertically and horizontally integrated state monopolies which are still under ministerial control" (2004:1). This monolithic structure of operating a railway has resulted in most freight operations across the continent operating below capacity and experiencing capacity constraints (Transport Sector Plan, 2012).

Veseley (2001) further argues that post-colonial governments were to blame because of mismanagement, and lawlessness. Njoh (2007) looks at Kenya as a case study to illustrate how an effective and efficient railways network deteriorated due to mismanagement, neglect and obsolescence. According to Njoh (2007), Kenya was once the best railway network that provided safe passage to Rwanda, Uganda, Burundi and the Democratic Republic of Congo. However, Curtis notes that "approximately 30% of the length of the rail corridor in Kenya, nearly 2000km, is currently in poor condition and in need of rehabilitation" (2009:16).

Furthermore, in as much as Kenyan government might try to cover the high costs that are needed for rehabilitation, tracks and rolling stock maintenance, the existing traffic volumes are far too low (Curtis, 2009). In order to facilitate trade, existing rail networks are used in the hope of cutting costs of transporting bulk materials. However, Ranganathan and Foster (2011:16) note that trade facilitation has been hampered by “the lack of reciprocal access rights among operators, inadequate operational planning and overall deficit in traction capacity”. Research by Ranganathan and Foster (2011) pointed out how in many rail networks in Africa the axle load of railway lines, for example the one between Djibouti and Addis Ababa is limited, hence hindering full trade facilitation between the two countries.

In as much as the governments inherited the colonial rail transport networks and systems, Foster and Brceno-Garmendia (2010) argue that the transportation networks and systems that were left behind were already modest but it was often the conflicts occurring in Africa that led to the deterioration of these transport networks. For Foster and Brceno-Garmendia (2010), the fragile states in Africa are the ones experiencing rail transport challenges.

However, Brceno-Garmendia, Smits and Foster (2008) argue that when looking at Africa, the rail infrastructure challenge differs from country to country. According to Ranganathan and Foster (2011), compared to East Africa, which barely has an existing railway network, Southern Africa Development Community (SADC) has an extensive railway system which forms an integrated regional network. The Transport Sector Plan (2012) drawn up by SADC also states that the way the region’s railway was constructed, it was flexible and allowed interconnectivity which allowed landlocked Copper Belt countries to have access to ports.

SADC as a region has also been experiencing problems with regard to operating an effective, efficient and interconnecting railway network. Therefore, Dr John Tambi and Mr Adama Deen from New Partnership for Africa’s Development (NEPAD) acknowledged that regional integration was not going to take place without effective and efficient transport infrastructure across Africa (SADC, 2012). As a result, transportation revamping has been prioritised so as to create viable transportation to enhance economic, technological and social renaissance in Africa.

According to Ranganathan and Foster (2011) SADC has been facing poor operational performance and experiencing low passenger and freight traffic, with the exception of South Africa. With regard to poor operational performance, this has been largely attributed to an increase in competition from other modes of transport, from example, trucks, and aggravated by lengthy delays at border posts and interconnection services (Ranganathan and Foster, 2011). Compared to other railway networks and systems, the South African Transnet Freight Rail (TFR), “has a much larger and viable system which carries more than 200 million metric tonnes per annum (mpta) of freight, which is more than the combined rail volumes of Eastern and Southern African systems” SADC, 2012:22). In as much as TRF has profitable rail lines, low density and unprofitable branches have been concessioned or decommissioned (Transport Sector Plan, 2012).

However, Ranganathan and Foster (2011) argued that transport infrastructure that was left behind by colonial power is still relevant for Africa. If transport infrastructure is maintained and upgraded, it will help African integration of trade. Ranganathan and Foster substantiate this point by stating that “integrating physical infrastructure is both a precursor to and enabler of deeper economic integration, thereby helping countries to gain scale economies and harness regional public goods” (2011:3).

In order to summarise on the contemporary performance, main challenges and levels of transport investment in selected countries Table 1 shows data on railway, institutional agreements, locomotive and wagon productivity and the main capacity constraints.

Table 1: Contemporary Performance across African Railways

Railway	Institutional Agreements	Locomotive productivity	Wagon productivity	Main Capacity Constraints
NRZ -BBR	385 km of the rail is privately owned by BBR. by BBR/NLPI.	8	195	Since the track and equipment are poor condition, \$US 150 million is needed for NRZ to be viable again.
TAZARA	1,760 km of the railway line is jointly owned by Tanzania and Zambia	-	-	Lack of equipment and there is lack of working capital.

	Railway Authority (Tazara).			
CCFB Beira (Mozambique) – Malawi/Moatize	Link to Malawi not yet operational.	13	476	If the railway line is to upgrade from 7 million metric tonnes per annum (mpta) to 12 million metric tonnes per annum (mpta) so as to have 4 -5 trains per day and increase coal traffic, US\$150 million is required.
Namibia-Transnamib	The agreement was for the upgrading of the Kranzburg – Tsumeb section.	25	805	The main constraint has been the limited number of locomotives and wagons.
CDN/CEAR Nacala (Mozambique)	-	25	260	Availability of equipment is poor and the 77km section is operating below capacity.
CCFB (Mozambique) – Harare (Zimbabwe)	-	13	476	The track is very poor, equipment is unavailable and demand is very low. The track requires huge investment.
BR Botswana	-	41	987	The track is in very good condition but there is need for rehabilitation of locomotives and equipment.
RSZ Zambia	Concession planned for +3 mpta. The previous maximum was up to 5 mpta, while only 2 mpta prior to concession.	25	377	Poor track.
SNCC DRC	-	4	317	US\$250 million funding is required to rehabilitate the railway network because the track and equipment are very poor.
Railway concessions		23	491	

Source: AICD (2012) and Transport Sector Plan Railways Database (2012).

Note: Labor productivity = _000s traffic units per employee; locomotive productivity = millions of traffic units per locomotive; wagon productivity = _000s net tonne-km per wagon.

The table above serves as evidence to show that most of the main railway lines in Africa are facing difficulties and the levels of transport investment is very high. To further substantiate the evidence presented by the table and to show what the rail investment backlog might look like, Mumbero notes that “with 7,363km of rail lines, the East African Community (EAC) requires US\$29bn to revamp and upgrade the existing dilapidated infrastructure” (2012:1).

Important to take note is the Chinese involvement in the railway history in Africa. According to the IRIN News (1999), between the year 1976 and 1980, Zambia and Tanzania jointly owned a 1,760 km railway line which was constructed with the aid of a US\$5 billion loan from China. The Chinese still support the Tazara line. However, in as much as these railway networks are facing challenges; China has become a major player in revamping the deteriorating railway networks, with specific regard to the Tazara railway.

According to Mumbero (2012), China gave both Tanzania and Zambia US\$42mn to upgrade their joint Tazara railway because it has mining interests in both countries. Tanzania is strategic because it has ports, so it is easy to ship for example, copper from the Copper belt in Zambia to China through Tanzania’s ports. In 2012, the African Development Bank (AFDB) loaned Rift Valley Railway US\$40mn so as to promote intra-African trade and to cut down on transportation costs. It is therefore important to consider the dynamics that have been put in place so as to tackle the challenges faced by the different railway networks in Africa.

Since most of these regional railways are owned by the state, the private sector has not been that significant. In the case of the Tazara, the Transport Sector Plan notes that “the two governments are joint owners, while China is involved as the main funder” (2012:51). However, such an arrangement has been challenging due to management and financial disagreements. Additionally, a seamless railway has been proposed that will run through Malawi from Mozambique because of the Moatize coal export line in Mozambique (SADC, 2012). For this proposal to be carried out effectively and efficiently, the private sector will be both the developer and funder. Conversely, “implementation of this project has been delayed due to institutional and ownership complexities and the absence of an approved railway development strategy and programme” (SADC, 2012:51).

2.7. Future prospects

Foster and Brceno-Garmendia (2010) in their analysis of Africa's infrastructure stated that for governments, the bulk of infrastructure finance was through the national fiscus. Due to the highly constrained nature of public funds they argue that government can focus on regulatory functions and commodification and seek to create space for the private sector to invest. Nevertheless, some governments have tried to focus on this regulatory role where transport infrastructure is concerned, which has resulted in private sector involvement being limited. Kessides (2004) also notes that developing a good regulatory framework remains a major challenge for African governments. Kessides (2004) also offers debates on the modes of infrastructure investments by noting that both public and private sector should agree on how to select what to invest in because a poor performing transport infrastructure reduces profitability for both sectors. The Transport Sector Plan drawn up by SADC (2012) also argues that for strategic partnership agreements with the different national railways to run effectively and efficiently, there is need for private participation.

However, in contrast to some of the other authors, Njoh argues for a very direct role for contemporary governments in driving not only domestic transport infrastructure, but also transport infrastructure to link countries to one another and to global economic processes. Here it is implied that simply retreating to a role of facilitator of private infrastructure and regulation is too limiting a role.

In conclusion, for most countries rail investment remains an issue of debate because the present state of the regional railways is no longer financially viable. The Transport Sector Plan argues that "the income generated is based on market-related tariffs, which are mostly insufficient to cover the cost of operations, maintenance and necessary re-investment" (2012:60). Most governments are now not sure whether to build roads or do rail. It is easier to do roads on a bit by bit basis but one cannot do the same with rail. They struggle to find funds as most networks are making a loss. External investors have remained cautious other than for mining related projects and if the selected operations can be financially ring-fenced with the track (SADC, 2012). In August 1999, the IRIN News reported that the Tazara railway line has been struggling to keep afloat as their profits have diminished over the last 10 years. Looking at their financial year, that is, from 2008 to 2009, the Tazara railways' tonnage fell to about less than 4000,000 tons of cargo (The Guardian, 2010).

With such case scenarios occurring, it further proves that the railway system as a whole is not an attractive investment. Notably, in May 2010, SADC as a region proposed a regional rail fund but the modalities are not yet known (SADC 2012).

2.8. Infrastructure and Private Sector Development

This section will look at infrastructure and private sector development. This will be done by focusing on private sector development with a particular sub-focus on rail (including the roles of different actors and trends in how these roles are proposed) as discussed in the literature. To get a clear direction of transport infrastructure and private sector development, this section will focus on the history of private sector involvement, experiences from private sector participation, and lessons to be learnt from private sector development. Authors on the subject matter such as Kessides (2004), Foster (2010), Sharp (2005), Transport Sector Plan drawn up by SADC (2012), Smith, (2012), World Bank (2007), Oum and Yu (1994) Thompson and Kohon (2012) and Thompson, Budin and Estache (2001) will be explored, and discussed.

2.8.1. History of Private Sector Involvement

In the US during the 1980s with the passing of the Staggers Act with regard to its railway ignited a revolution of full private sector involvement. The US railroad sector began to incorporate private participation as a way to reverse their railway losses. Evidence shows that by involving the private sector, the US railway was rehabilitated. According to Thompson and Kohon, “average freight tariffs are about 46% of their 1981 levels in real terms, with revenue cost ratios falling and remaining well within the regulatory boundary of 180% of variable cost” (2012:54).

Different approaches were taken by Europe to privatize their railway. What Europe did was to make a separation between their rail infrastructure and their rail operations (Thompson, Budin and Estache, 2001). Thompson, Budin and Estache (2001:2) note that, “in New Zealand, Canada and Northern railway (Ferrovior) in Chile, full control over infrastructure was transferred to the private sector”.

Within the context of developing countries with the exception of a few railways, economic crises and structural adjustment programs crippled the ability of most governments to pay for their railway losses. To fully substantiate this point, Thompson, Budin and Estache state that “many governments recognized that the massive losses were due to inefficiency and poor response to competition neither of which seemed particularly deserving of public support” (2001:2). Moreover, Kessides (2004) also argues that the main cause for the decline of railway in developing countries was as a result of underinvestment which was caused by the government’s failure to stipulate cost effective tariffs during periods of hyper inflation. As a result, most of the governments in the developing countries decided to withdraw from public operation so as to pave the way for private sector participation. This they did by retaining ownership of assets while transferring managerial control to the private sector. This move by the governments was plausible because “a key attraction of privatization is that it places the realignment of prices with underlying costs at the centre of a reform agenda” (Kessides, 2004:3).

2.8.2. Experiences of Private Sector Participation

While most countries subscribed to the notion of private sector participation in railway, there are significant variations in the way it was approached and implemented. In America, for example, all railway lines have been privatized and are either owned by shareholders, individuals, municipalities or leased to operators (Thompson and Kohon, 2012). The way America decided to involve the private sector in their railway has yielded massive results. This is substantiated by Thompson and Kohon, who argue that after implementing privatization of the railway, “total freight in traffic grew by 84% between 1980 and 2010 and revenues were US\$378 million annually” (2012:55).

The European Union (EU) approach towards private sector participation has been different from the one that America embarked on and hence they have differing conclusions about railway structure and ownership. In 1993, British Rail underwent total privatization with shares being sold publicly and franchises being granted to private companies (Smith, 2012). However, this decision of total privatization turned out to be an auspicious decision because there was a blurred line between separation of infrastructure and operations (Smith, 2012). Needless to say, there were also operator default problems as evidenced by “sea containers being stripped of its franchise in 2006 after overbidding and National Express being awarded the franchise and bowing out in 2009” (Smith, 2012:1).

This resulted in the Department of Transport getting involved in the matter and hence deciding to nationalize the railway line once again.

Looking at Railtrack for example, it was awarded private ownership of the railway in 1996, but “by 1999, 38 people were killed and over 600 injured in two major crashes on the Great Western Main Maine and in 2000, four more people were killed” (Smith, 2012:1). It is such incidences that have led countries in the European Union to approach private sector participation with great caution. According to Smith “the European Union wants member countries to separate rail infrastructure and train operations, although most countries outside of the U.K. have only imposed a superficial barrier between the two” (2012:3).

However, Sharp (2005) offers a different view of when looking at the results of private sector participation in Latin America’s railway. Sharp (2005) argues that it cannot be concluded that private sector involvement has contributed much to solving railway problems as anticipated because there is still under-investment of transport assets and the need for public investment in railway capacity has not been eliminated. On the other hand, Kessides (2004) argues that Latin America has paved the way in railway privatization for most developing countries. According to Kessides, “during 1990 to 1997, seven countries in the region awarded private entities 26 rail contracts worth US\$6.5 billion” (2004:5). At times these privatisations were linked to IMF and the World Bank sponsored economic development plans for countries emerging from economic crisis. Gaining access to finance for rail projects was made conditional at least in some cases on greater private sector involvement. It was however not always the first choice of governments.

In conclusion, Estache and Serebrisky (2004) [cited in Sharp, (2005)] argue that Latin America’s experience with privatization simply concludes that privatization is useful and broadly successful in restoring the rail sector but it is not always the right answer. Privatisation has led to most freight operations across the continent operating below capacity and experiencing capacity constraints (SADC, 2012).

Most African governments do want to involve the private sector so as to rehabilitate their existing railway but the challenge is to find funds as most networks are operating at a loss. According to IRIN News (1999), Tazara railways' tonnage fell from 1.2 million to 550,000. External investors remain vigilant other than for mining specific projects and if the selected operations can be financially ring-fenced with the track (Transport Sector Plan drawn up by SADC, 2012). With such challenges in place, it hinders private sector participation because the railway system as a whole becomes an unattractive investment.

Moreover, their existing rail systems are not competitive enough to be an attractive proposition for private investors in a very high investment cost business. The only real private interest is linked to rail for mining projects although stronger economic growth in many African countries might generate some longer term interest in rail rehabilitation for passenger and general freight.

2.9. Lessons

Despite the assertion of a more intensive role for governments in transport infrastructure development, the dominant discourses remain those of the neo-liberal school where government is seen more as an obstacle than as an enhancer of infrastructure. For instance, the World Bank (2007), Oum and Yu (1994), and Thompson and Kohon (2012) argue that if the private sector is more involved in transport infrastructural development there is better performance and service in the transport sector. This can be achieved if a balance between public and private sector reforms is created. On the other hand, Foster (2010) argues that there is need to recommit the process of reforming state owned enterprises. Foster puts forward the argument that “the recognition that private sector will never be a ubiquitous service provider has come with the realization that state-owned enterprises are here to stay” (2010:17).

However, Kessides (2004) notes that when looking at rail reforms in developing countries with specific regard to Africa, it is essential to take into consideration that most of these reforms of private sector involvement are still at an infant stage and therefore do not permit clear assessments of longer term impacts. As a result, Kessides (2004) argues that it is not plausible to conclude that state-owned enterprises in developing countries are here to stay. Fortunately, Foster (2010) notes that if the state-owned enterprises are better governed, performance can be enhanced hence justifying future state-owned enterprises.

In conclusion, after the British Rail's era of total privatization faced vast challenges because of failure of vertical separation, some of the EU members only imposed superficial vertical separation between rail infrastructure and train operations (Smith, 2012). Since private sector participation raises several difficulties, Kessides argues that "ownership and market structure form a continuum in the rail industry and choosing one of these options is a complex policy decision" (2004:204). At the end of the day when governments decide to involve the private sector, it is important to take into account industry specific characteristics. This is because "countries differ significantly in size, level of development, institution capacity, density of the rail network, condition of fixed rail facilities, strength of intermodal competition and efficacy of public finances" (Kessides, 2004:204).

2.10. Zimbabwe's Infrastructure

This section will be focusing on the National Railways of Zimbabwe (NRZ) and in particular its cargo business. Firstly, the section will begin with a discussion on the historical development of Zimbabwe's railway and factors that influenced this development. Secondly, an analysis will be done as to how this strategic parastatal has contributed to, and been affected by, the precipitous decline in domestic economic growth and socio-economic development that has characterized Zimbabwe since the disputed elections of 2000 and the drought period of the time. Lastly, the section will discuss the future prospects of the NRZ. With specific reference to Zimbabwe's own experience with infrastructure, and more especially rail, the section will make use of reports from the Parliament of Zimbabwe (2012), African Development Bank (AFDB) (2011) and African Infrastructure Country Diagnostic (2011), Smith (1987), Mbohwa (2008) and Njoh (2007).

2.10.1 Historical development of Zimbabwe's railway and factors influencing this development

Despite Rhodesia being a landlocked country, the British South Africa Company decided to construct a railway line that was to benefit the colony because the railway line was a pivotal mode of transport as it would serve to link the towns that they had settled in and the sectors of the economy that would best serve their interests, i.e. mining, industry and agriculture. According to African Development Bank, "the Zimbabwean railway system served as a primary conduit for agricultural and other natural resources" (2011: 1).

Colonial Zimbabwe, Rhodesia at the time saw the birth of the Beira Railway Company and the Bechuanaland Railway Company from 1892 to 1893. These two companies were then divided into two separate companies which were Mashonaland Railway Company (Southern Rhodesia: Zimbabwe) and Rhodesia Railway (Northern Rhodesia: Zambia). A takeover by Rhodesian Railways Limited took place and saw Mashonaland Railway Company become incorporated into the new company. According to Smith (1987), 1949 saw the purchase of the entire share of the Rhodesian Railways transforming it to a parastatal. This then saw the split of the union between the different countries and left the Rhodesian Railways operating as a single entity in Southern Rhodesia. Upon the Unilateral Declaration of Independence (UDI) in 1965, this saw amendments that would prepare Rhodesian Railways to then ultimately become the National Railways of Zimbabwe.

When Zimbabwe gained independence in 1980, it took over most state-owned enterprises and the National Railways of Zimbabwe was one of them. The National Railways of Zimbabwe did not make any changes to the systems that were in place because it simply adopted the standards and routing systems that were previously in place. Evidence shows that adopting the standards and routing systems that had been left in place by the previous government helped the present government in managing the operations of the railways system effectively and efficiently, that is, from 1980 to 1990. This is clearly substantiated by a summary report done by the Africa Development Bank (ADB) which stated that “in 1990, the total amount of freight carried by rail was 14.3 million tons, which translated into a capacity utilization rate of about 80 percent” (2011:5).

2.10.2. NRZ operational performance from 1990s – 2013

During the 1990s, however, the NRZ began to experience problems and this was mainly because of the Economic Structural Adjustment Programs (ESAP) that Zimbabwe had adopted. These programs saw the truck haulage sector as being a substitute for the railroad sector because one of the requirements of ESAP was to cut down on government spending. Since NRZ is a parastatal, budget cuts were made, hindering it from functioning effectively and efficiently to its full capacity. There might also have been efficiency short-comings in NRZ that made ongoing investment choices harder to secure. The ESAP was clearly a major factor but it did not help that many parastatals were poorly run.

Additionally, other factors the NRZ did not have any control began to emerge during the 1990s, for example, the oil pipeline that was constructed between Harare and Mutare, which adversely affected the operations of the NRZ because it was a major income generator. Also, ZISCO STEEL began to face problems and this had a major blow on NRZ as it was reliant on transporting steel domestically and regionally (ADB, 2011).

In the early 2000s, socio- economic and political changes began to surface and this saw the downward spiral of the economy. This greatly affected the NRZ which was already facing challenges from the ESAP era. During this same period, commercial farms were being invaded for land redistribution and this also affected the NRZ because the commercial farmers formed a large clientele. Most importantly, the elections in 2000 were so chaotic that they had a trickledown effect on the NRZ which recorded massive losses in 2001. These losses saw the NRZ operating mostly within the confines of its borders. The number of import and export operations declined significantly and this resulted in less train mileage and tonne per kilometre. To add weight to this argument, Mbohwa notes that “the number of passengers transported declined by 14.9% from 1999 to 2000 and the net tonne-kilometres by 24.1% during the same period, reflecting the immediate chaos during the 2000 parliamentary elections” (2008:28).

The Zimbabwean economy experienced sustained periods of economic contraction (World Bank, 2013a), which were sustained for the bulk of the decade leaving the country with average annual growth of -3.9% between 2000 and 2010 (World Bank 2013b). Gross fixed capital investment as a percentage of GDP during this same period averaged 8.8% dropping as low as 4.8% between 2002 and 2008 (World Bank 2013c). The African Development Bank (2013) stated that the effectiveness and efficiency of the National Railways of Zimbabwe had fallen drastically to such an extent that it affected most countries that were interconnected to it regionally. Between 2000 and 2009 “capacity utilization of the rail system dropped from over 50% to below 15% and freight cargo dropped from 9.4 million tons to 2.7 million tons down from 14.3 million tons and 80% utilization in 1990” (ADB, 2011: 6).

The relevance of these figures is reflected when it is noted that in historical terms and through to the late 1990s, the National Railway of Zimbabwe has been critical to the growth of the country's domestic, regional, and international trade as it connects all major economic centres and provides transport for bulk raw materials, finished goods, and passengers. To show the importance of the NRZ, the World Bank (2006) [cited in the ADB, 2011:10] stated that “by restoring utilization to previous levels and with the same availability, NRZ could have carried close to 7 million tons in 2004 and 8 million tons in 2005”.

During the economic crisis, many key sectors of the economy, for example the mining sector, supported the NRZ through the challenges they were facing by providing capital to maintain some the locomotives and wagons that serviced them. The mines did this so as to keep their operations flowing since there were no alternatives to best service them. Most importantly, from the period of 1990 to 1999, USAID and the World Bank assisted the NRZ with finance and the running of the parastatal.

There have been many attempts to revive the NRZ but the continuous interference by government has seen many of these attempts failing. A report by the USAID and World Bank provides evidence to show that NRZ was financed in 1990 for Regional Transport Development II Project in an attempt to revive and expand existing railway infrastructure and networks. However the project failed due to continuous management changes which frustrated the investors of the project. More recently the Chinese diplomatic efforts and Chinese investors have made far-reaching proposals on investment in mining and rail transport (Business Week, 2011).

In order to summarize the contemporary performance, Table 2 shows data on NRZ traffic volumes and financial performance from 1990 to 2002.

Table 2: NRZ Traffic Volumes and Financial Performance from 1990 – 2002

Year ending June	Operating Surplus (deficit) in thousands	Net surplus (deficit) in thousands	Number of passengers (thousand)	Revenue earning tonne (thousand)	Gross tonne kilometres (million)	Net tonne kilometres (million)
1990	(36 427)	(227 913)	2 862	13 888	11 045	5 590
1991	163 834	515 158	1 975	12 928	10 930	5 413
1992	304 886	58 057	2 355	13 038	11 913	5 887
1993	228 648	(130 915)	2 200	10 464	9 649	4 581
1994	230 585	(161 658)	2 034	11 250	9 397	4 489
1995	335 740	(55 961)	1 670	18 448	13 440	7 180
1996	472 163	180 946	1 651	11 878	10 099	4 990
1997	467 580	(69 883)	1 461	10 163	9 989	4 100
1998	561 334	(71 522)	1 787	12 421	9 244	4 546
1999	1 263 080	153 501	1 896	11 028	8 962	4 381
2000	1 789 916	(351 369)	1 614	9 422	6 953	3 326
2001	346 655	(2151 912)	1 334	8 843	6 667	3 100
2002	1 478 798	4 143 902	2 315	11 154	8 588	4 086

Source: Zimbabwe Central Statistical Office (2001, 2004)

2.10.3. Future Prospects

In considering possible future paths for its rail industry within the broader transport mix, reflecting on the experiences of this crisis period will be very important. Zimbabwe has seen, of late, some economic recovery and a renewed interest, despite continuing policy uncertainty, in mining activities. According to a report that was done by the African Development Bank (cited in Odendaal, 2013), it was noted that “focusing on infrastructure development could see Zimbabwe gaining 7% growth with a jump in gross domestic product from USD\$4.7 billion to a USD\$9.5 billion in the next 8 years” (2011:34). African Development Bank (2011) argued for the importance of the NRZ by stating that the rail network links all major towns, industrial sites, mining towns and commercial farms in Zimbabwe. Also, its strategic geological position provides linkages between countries hence serving as a gateway to markets within the region. Therefore, the report concludes by offering recommendations that NRZ should consider.

According to the report by the Parliament of Zimbabwe (2012), the government recognizes that the NRZ is an important subset of transport infrastructure within the economy because it is a key mode of transport that is well suited for a landlocked country like Zimbabwe to transport bulky goods domestically and regionally. The report acknowledges that the economic downturn of Zimbabwe played a role in the deterioration of the NRZ and how this has resulted in NRZ failing to meet the transport demand from the productive sectors of the economy. The report agreed that NRZ has a lot of potential in terms generating revenues and profits which can contribute to the GDP of the country. If GDP increases, Zimbabwe can experience economic growth and development.

The World Bank (2010) report critically examined the empirical review on challenges in transport infrastructure parastatals in Zimbabwe. The report concluded that with regard to transport infrastructure the government is supposed to pay particular attention to the NRZ. This is because it is the mode of transport that plays a critical part for economic and social development for a landlocked country like Zimbabwe. The report notes that the NRZ rail network should be revamped as soon as possible so as to ease congestion and further deterioration of the roads which have become an alternative for transportation of bulk goods, domestically and regionally.

Despite this consensus on the importance of the sector there has not been much success with programmes to revive NRZ. Elected representatives have expressed divergent views on the role of different actors in these processes and the NRZ itself has had little in the way of clear direction in a context where many of the disputes noted by Njoh (2007) seem to persist, perhaps leaving prospects of the rail sector playing the role desired by many a distant dream

2.11. Conceptual Framework

The importance of an efficient transport infrastructure has been widely acknowledged in the field of economic development. A range of theoretical frameworks are of relevance to the study and will be drawn on for more detailed discussion. In the first instance it is noted that some authors, for example, Njoh, (2007) argued that colonial infrastructure did have, and could continue to have an effect of reinforcing extractive economic regimes in countries where such infrastructure was not designed to support broader development goals. Extensive studies have been carried out to research the impact of infrastructure on long term economy development.

Some of this work was informed by the notion of ‘enclave’ development extrapolated from development theorists such as Cardoso and Faletto (1979). Therefore, this study will make use of their literature so as to provide a theoretical analysis for the theoretical framework. The two theorists based their model on their experiences in Latin America. According to Cardoso and Faletto (1979), in most developing countries, the way in which most infrastructures were planned and developed was mainly to cater for foreign-owned industries. As a result, the patterns of investment never really had any development gains for the host country. Cardoso and Faletto (1979) also argued that in as much as the infrastructure legacy that was left behind by the colonists formed an important infrastructure backbone, the economies’ future development will always be masked by the burden of inequities left behind by the colonisers.

Most of the railways that were constructed by the colonial powers served as gateways to export raw materials, agricultural and natural resources. As a result, a colony’s railway network was constructed and developed to suit the needs of its colonisers. This led to most of Africa’s railway network being disconnected, and adopting the standards and routing systems left in place by their colonisers.

Looking at the rail infrastructure that was put in place in Zimbabwe, it was constructed in a way that linked all major commercial farms, heavy industries and major mines to the main population centres which formed the basis for their markets. Also, when the settlers constructed the railway networks, they managed to take advantage of the strategic geological location of Zimbabwe, that is, it is landlocked, and therefore it had access to different countries in the region and could also serve as a gateway and transit point for the transportation of bulk raw materials, finished goods and passengers. This has seen the NRZ being critical to the growth of Zimbabwe's regional and international trade.

Over the years, the infrastructure, standards and routing system inherited by the NRZ, has severely eroded. If the railway network had been setup as a two way primary and secondary conduit for exporting raw materials agricultural produce and finished goods and importing goods and equipment, it would not have deteriorated to its current state. By being able to import goods and equipment, the NRZ would have been able to increase its revenues because it would be charging their customers for the transportation of bulk imports. The inherited infrastructure, standards and routing system is not sustainable for the economy and it affects its ability to adjust to change and external shocks hence NRZ's current state.

However, Njoh (2007) suggests this school of thought overstates the case of the negative impact of these networks and suggests more strongly that the combined effects of poor policy and weak systems of international support mitigated against countries investing in further developing these limited infrastructure networks to meet their development goals. In this regard a political economy framework could offer some useful tools in the analysis of the experience in Zimbabwe.

Mosco and others have described political economy as, "the social relations, particularly the power relations that mutually constitute the production, distribution, and consumption of resources" (Mosco, 1996: 25). In the case of NRZ, it is a state-owned enterprise that is in a dire and deteriorating state, and if it receives capital injection from the government, it will feed back into the economy and maintain a steady growth hence contributing positively to the GDP of the country. However, the government as the major shareholder has so far failed to invest in NRZ's infrastructure and this has had serious consequences for growth and competitiveness.

Due to the absence of proper infrastructure and new developments where 'just in time' orders and timely deliveries are important, most of NRZ's clientele have opted to use road transportation.

Additionally, so far NRZ's infrastructure has decreased the productivity of other inputs such as labour and the stock of private capital thus increasing unit costs. If NRZ's infrastructure was in good condition, the productivity of labour and stock of private capital would have increased hence decreasing unit costs. The current state of infrastructure of NRZ has resulted in a decrease in marginal productivity by private inputs thus decreasing the rate of return on physical capital from the private sector.

Taaffe, Morrill and Gould (1963- cited in Pedersen, 2001a) who are theorists on development of infrastructure in developing countries have argued that as demand for connectivity between nodes increases, developing countries that were once under colonial rule would begin to experience more developed and integrated transport systems. Yet, present day evidence shows that most of the transport infrastructure that was left in place by the colonisers has since lost its functionality and has never been replaced.

According to Pedersen (2001a), most African countries share common ground where railway infrastructure investment and maintenance are concerned. Most of their railway networks have deteriorated and this has been mainly caused by Structural Adjustment Programmes, economic and political instability and underperforming economies (Pedersen, 2001a). Estache (2005) reinforces Pedersen (2001a) arguments of the above challenges faced by most African railway networks and states that little attention was given to the significance of Africa's transport infrastructure when the Millennium Development Goals were made. This lack of attention has led to both governments and donors not fully investing in transport infrastructure and maintenance.

2.12. Conclusion

In conclusion to this chapter, it is important to note that there is a casual link between infrastructural development and economic development. However, as the following research indicates, an understanding of the broader context of how political and institutional factors, that is an inefficient and ineffective government, often affects the level of infrastructure stocks, physical units and cash flow.

Too often, infrastructure development theories focus on road, electricity and water and sanitation and how they affect the economy of a country and not on rail transportation. Similarly, the theories often focus on macroeconomic linkages and forget micro economic linkages. This study intends to reconcile these two linkages so as to provide a more holistic view of the importance of an efficient transport infrastructure. In doing so, it touches on the empirical literature that focuses on international and continental experience of rail and development. This gives a sense of the importance of rail and what have been its economic benefits.

Chapter 3: Research Methodology

3.1. Introduction

This chapter presents the research methodology that was used in gathering data for this dissertation. The study was conducted in Zimbabwe and focus was on the whole country. Zimbabwe is a landlocked country found in Southern Africa. The time frame that this study took into consideration was from 2000 to 2013. The chapter's focal points will be the research design, sampling technique and data gathering process as well as challenges that were encountered during the research process. This study involved a qualitative study of the National Railways of Zimbabwe (NRZ) which was supported by some relevant quantitative data. The objectives of the dissertation are to: 1) to assess the current situation or state of the NRZ, 2) to examine the causes that resulted in the challenges being experienced by the NRZ, and 3) to review the plans to fix the problems.

Before exploring the research design that was adopted for this dissertation, it is pivotal to offer a definition of what qualitative research entails. According to Creswell (2009: 4) qualitative research “is a means for exploring and understanding the meanings individuals or groups ascribe to a social or human problem”. To further substantiate Creswell definition, one can allude to the fact that carrying out qualitative research; the researcher will be able to study the phenomenon in its natural setting hence putting the researcher in a better position to assess what will be happening on the ground.

Since the NRZ is state-owned, information tends to be difficult to access because the state controls the inflow and outflow of information. Information which was not readily available had to be gathered from primary sources to effectively assess the implications infrastructure development in economic crisis and recovery with regards to the rail cargo sector in Zimbabwe since 2000. In addition, in order to cater for this challenge, quantitative analysis was used by looking at the publications of the Zimbabwe Central Statistical Office (2001, 2004), various relevant government and NRZ departments and multi-lateral agencies. It should be noted that where possible sources needed to be examined in parallel with alternative sources as the reliability of information remained a concern. Policy documents, annual reports of the NRZ, reviews of the performance of the public sector and of the economy are all generated by these entities.

3.2. Sample and Population

The study was conducted in Bulawayo, Zimbabwe. Bulawayo was chosen as the study site because it houses the NRZ headquarters and most of the private sector head offices that were part of the research process. The study sample used 17 respondents from the private sector, academic field, government and officials of the NRZ. This was mainly due to the fact that these institutions and various departments provided vital primary and secondary information in light of their involvement with the NRZ in monitoring, implementing, facilitating, promoting and researching the rail cargo during the economic crisis and recovery from 2000 to present day.

In gathering information, NRZ officials that provided most of the vital primary information were from the Railway Board and executive management. Quasi-government institutions also consulted in the process of gathering information included Zimtrade and the Confederation of Zimbabwe Industries (CZI). Academics from the National University and Science and Technology and the private sector such as the Pretoria Portland Cement (PPC), Hwange Colliery and Zimbabwe Commercial Farmers (ZCF) were also consulted. An overview of the key participants' interview is provided in Table 3.

Table 3: Overview of Key Participants

Respondent	Organisation
1 (official 1)	National Railways of Zimbabwe
2 (official 2)	National Railways of Zimbabwe
3 (official 3)	National Railways of Zimbabwe
4 (official 4)	National Railways of Zimbabwe
5 (official 5)	National Railways of Zimbabwe
6 (official 6)	National Railways of Zimbabwe
7 (official 7)	National Railways of Zimbabwe
8 (official 8)	National Railways of Zimbabwe
9 (official 9)	National Railways of Zimbabwe
10 (official 10)	National Railways of Zimbabwe

11 (official 11)	National Railways of Zimbabwe
12 (official 12)	Hwange Colliery
13 (official 13)	Zimbabwe Commercial Farmers (ZCF)
14 (official 14)	Confederation of Zimbabwe Industries (CZI)
15 (official 15)	Zimtrade
16 (official 16)	Pretoria Portland Cement (PPC)
17 (official 17)	National University of Science and Technology (NUST)

3.2.1. Selection Process

It is important to ensure that sample selection is given enough attention so as to avoid, as far as possible, that a biased sample of officials and management is interviewed. Since the participants are from a specific predefined group, the study therefore adopted purposive sampling as a sampling method. Besides the method being the most common form of sampling, it is more flexible, interactive and sampling for proportionality is not vital.

In order to identify possible additional relevant respondents, a snowball technique was used. This was a vital method because the researcher was able to build up knowledge of relevant respondents as she went through the more obvious candidates to interview. Besides, this method also known as the chain referral method was helpful because participants that had already been interviewed were able to use their social networks to refer the researcher to potentially relevant participants that would contribute vital information for the study.

Given that one of the Railway Board members that were interviewed was related to the researcher, snowball sampling proved to be most suitable. This is because it guaranteed the researcher that participant would be comfortable and willing to participate and provide information that tended to be difficult to access because the state controls the inflow and outflow of information. The snowball sampling seemed to continue endlessly but the researcher had to take into consideration her sample size of 17 respondents.

3.3. Primary and Secondary Data Collection Methods

Methods that were used in collecting data were selected with caution as the researcher thought they might have an effect on the quality of data collected. The research for this study consisted of qualitative semi-structured interviews with 17 respondents from the private sector, academic field, multi-lateral fields, government and officials of NRZ. The full interview guide questionnaire can be found in Appendix I. To support the reliability of information provided by the respondents, secondary data will be used by looking at policy documents, parliament reports and reviews of the public sector and of the economy.

Qualitative semi-structured interviews were used because they put the researcher in a better position to obtain data because an opportunity is provided for the researcher to explore the participant's point of view regarding what is being asked. Since most views will be coming from the officials from the National Railways of Zimbabwe, the interviews have an advantage of not being time consuming in eliciting the respondent's responses.

In order to obtain informed permission for the research from the appropriate participants, the participants were given an informed consent letter which enlightened them on the purpose of the research, how confidentiality was to be ensured and contact details of the researcher, the supervisors and the UKZN Humanities and Social Sciences Research Office (Appendix II). In the subsequent dissemination of the research findings, anonymity of the participants was maintained. However, the researcher was allowed to make copies of existing literature from the NRZ archives and had to sign a confidentiality form.

3.4. Data analysis

Digital recordings and note taking were used to collect the qualitative data obtained from the participants. The data was transcribed and analysed by themes using thematic analysis. Thematic analysis is a qualitative research practice which includes looking through data to identify any patterns that are recurrent. Thematic analysis as presented by Virginia Braun and Victoria Clarke (2006) entails forming codes from data sets and organizing these into themes. Upon completing the transcribing process, the researcher was able to identify themes which enabled a coding framework to be established. The coding framework formed the pedestal for the analysis and enabled data to be organised in a uniform manner.

Themes identified by the researcher were then analysed to generate a synthesis of data gathered from the recorded interviews. For the final analysis, selective coding was used where the researcher scanned and selected data obtained from the participants so as to demonstrate the major themes. Upon completing coding and translation, the information obtained from the data was assessed and presented qualitatively in the form of charts, discussions and graphs to provide results and analysis used in Chapter Four.

3.5. Problems/Limitations Encountered

During the data and information gathering process, a few challenges were encountered. Firstly, since most of the vital information obtained for the research was mainly obtained from the NRZ officials, the results in this dissertation were based on the participants' opinions and experiences of using the NRZ as a mode of transportation. This meant that possible bias might have transpired, as certain NRZ officials might have felt the need to present a better picture of the organisation to the researcher since over the past years the media had painted a 'bad picture' about NRZ. However, some of the participants saw the interviews as an opportunity for them to give honest opinions and perceptions about the NRZ which motivated them to talk about the challenges they are facing as an organisation.

Secondly, since the government of Zimbabwe decided to classify economic information and data from the National Railways of Zimbabwe, the Central Statistical Office and other government owned enterprises to mask the failure of its policies, some vital statistical information could not be accessed. The last compendium of statistics was produced in 2001. Other minor statistical publications are only available up to 2004. This lack of data and information posed challenges for the study. However, enough statistical information was obtained from the NRZ officials who enabled informed assessment and identification of major challenges in rail cargo operations. In order to protect the identity of the respondents and the classified documents, they will be cited for example as, Official 1(Personal Correspondence 18 September 2013), Official 2 (Personal Correspondence 19 September 2013), to mention a few.

Thirdly, the sourcing of information from the PPC, ZCF, Hwange Colliery and CZI participants was treated with caution since the questions asked involved a state owned organisation.

The participants were at first reluctant to avail information but after mentioning some of the respondents that partook in the interviews and giving assurances that information is for academic purposes only, the participants began to actively participate.

Lastly, the method of analysis that was used to analyse data, that is, thematic analysis, could have led to bias as this method relies on the researcher's own interpretation. Nonetheless, the analysis managed to systematically make use of codes and use them in the framework that they were given so as to draw out major themes. The results provide a good case for the study even though they are not nationally generalizable. The results from the research could be argued to be only applicable to a specific location but the study still stands as a case study that could be vital to inform policy makers and international organisations such as the WTO, IMF and World Bank.

3.6. Conclusion

This chapter outlines the research methodology that was used for the research process. The methodology was designed to explore and understand infrastructure development in economic crises and recovery of the rail cargo in Zimbabwe since 2000 till present day. The qualitative methodology ensured that information gathered from the sample of seventeen respondents from private sector, academic field, multi-lateral fields and officials of NRZ.

Qualitative semi-structured interviews accompanied by an interview guide questionnaire were employed so as to put researcher in a better position to obtain data since the researcher would be able to explore the participant's point of view regarding what is being asked. Information obtained from the participant was digitally recorded. The participant responses from the interviews were then transcribed and coded into themes. Limitations to the study involved subjectivity and bias from the NRZ officials, classification of economic information and data by the government, sourcing of information being treated with suspicion and the method of analysis that was used to analyse data.

Chapter 4: Data Presentation and Analysis

4. Introduction

This chapter presents the data and information gathered during the research process. Analysis through the use of graphs, tables, discussions and reports will be used to present and analyse the data collected from the field work that was conducted. In order to examine infrastructure development of rail cargo in Zimbabwe during the economic crisis and recovery since 2000, this study firstly starts with a discussion about the NRZ's current capacity. Secondly, three themes that emerged from the research will be outlined and discussed: 1) challenges faced by the NRZ; 2) causes of challenges and 3) plans going forward.

4.1. Current State of the NRZ

When Zimbabwe started facing economic challenges in 2000, NRZ also felt the effects. Ever since then, the NRZ has been going through tough times and has failed to revamp itself despite the economy experiencing positive growth during 2012. The National Railways of Zimbabwe (NRZ) is a state owned entity and is the dominant transporter of bulk goods in Zimbabwe. Speed restrictions were put into place because certain parts of the tracks were unstable and likely to cause derailment of the trains. Due to the many speed restrictions, a total distance of 292.5 km is now being covered which amounts to 11% of the network (Official 1 & 2, Personal Correspondence 18 September 2013).

The NRZ's track infrastructure consists of the rail network and signalling and telecommunications equipment that spreads throughout the country. The rail network is 60% automated using what is called the Centralised Train Control (CTC). Presently, this automated section is no longer functional and this has led to a more accident prone environment. In an effort to mitigate accidents, the NRZ invested in an Integrated Trains Control System (ITCS) and Global Positioning System (GPS). This helped in locating the exact location of the trains that were moving along the different tracks and also improved the communication between the different control stations.

NRZ respondents (Official 1 & 2, Personal Correspondence 18 September 2013) argue that NRZ operates efficiently and effectively with 168 locomotives, 8 682 wagons, 47 cabooses and 309 coaches but currently, only 57 locomotives are being used.

This has mainly been attributed to the decommissioning of the ITCS and GPS. The locomotives that were being used along the electrified track were electrical and the decommissioning meant that diesel locomotives that were being used on other tracks had to service that track hence putting more strain on the already few functioning diesel locomotives. In essence NRZ is only using 3 839 wagons, 12 cabooses and 170 coaches (Official 1 & 2, Personal Correspondence 18 September 2013).

Due to NRZ's inadequate and deteriorating infrastructure resources, there has been high failure to meet demand for its services. Railways Africa (2012) argued that twenty years ago the NRZ functioned effectively and efficiently which resulted in it moving 12 million tonnes of freight in 1992 and in 1997, it moved 19 million tonnes although this might have been with a variety of subsidies and the like which masked certain inefficiencies. However, over the past 12 years NRZ has barely been functioning as it managed to only move 2,6 million tonnes in 2009 and the latest 2010 statistics show that it only managed to move 1,7 million tonnes (Railway Africa, 2012).

To further substantiate the statistics above, Official 1 (Personal Correspondence 18 September 2013), states that, NRZ managed to move only 3, 8 million tonnes as compared to 4.9 million tonnes of bulk goods that it used to transport prior to 2000. As for its passenger services, a total of 936 000 commuters and 1.03 million were moved against targets of 1.1 million and 1, 3 million (Official 2, Personal Correspondence 18 September 2013). As a result of the drops in tonnage, NRZ is presently operating at a deficit of \$US3 million per month on average (Official 1, Personal Correspondence 18 September 2013).

In 1980 when the NRZ was taken over by the new government, it took over staff of about 18 000. This dropped to 11 264 by 1992. According to Official 3 (Personal Correspondence 18 September 2013). The NRZ's staff currently stands at 6 736. This has led many to conclude that the organisation needs to retrench some of its workers because it is overstaffed and failing to pay salaries. Official 3 (Personal Correspondence 18 September 2013) notes that currently the NRZ'S staff wages equate 86% of revenue leaving only 14% for all other operating expenditures hence there is need to let go of staff. Interviewees stated that the organisation has not been paying its staff full salaries since 2012.

In terms of human resources, NRZ was one state owned organisation that had good human resource commitments and obligations. NRZ provided an in-house medical fund which provided a stable health service benefit to all its employees. All employees had access to doctors, nurses and dentists who were paid through the medical fund created by NRZ. Moreover, it provided its retirees with pension benefits. As for its workshop staff and all workers in the field, NRZ made sure that each and every employee would get protective clothing and uniforms after every three months. Currently all the above benefits ceased to exist. The in-house medical fund is no longer operational. This has led to closure of all medical facilities and pharmacies that NRZ provided to its staff. As a result, employees are forced to look for other health service providers. The protective clothing and uniforms are no longer being provided to staff and the retirees have not been getting their retirement pensions.

As has been highlighted above, there is mounting evidence that NRZ's situation as an organisation is not in a good state. Evidence has shown that NRZ was once an esteemed organisation that operated effectively and efficiently. Therefore, it was important for the researcher to dig deeper and explore key challenges that the NRZ has been experiencing and to investigate what could have possibly caused these challenges.

4.2. Key Challenges and their Causes

4.2.1. Condition of Infrastructure

The NRZ's infrastructure consists of track infrastructure, traction power units (locomotives) and rolling stock (wagons and coaches). The technical and operational performance of NRZ's infrastructure has been adversely affected by the economic downturn of the past decade and in particular the shortage of foreign currency. As stated above, the non compensation of losses experienced by the NRZ sharply reduced its financial capacity to rehabilitate and maintain its railway infrastructure. As a result, the organisation's infrastructure continues to deteriorate thus affecting its service delivery.

Due to the country's economic instability, NRZ's service delivery has continued to decline due to low availability of locomotives and rolling stock. The track that is being used has never been refurbished and hence it has become too old for it to function effectively and efficiently. Moreover, inadequate maintenance and failure to replace obsolete locomotives, wagons and coaches has further worsened NRZ's current position.

4.2.1.1. Track

Official 2 (Personal Correspondence 18 September 2013), states that there is a 385km track that was concessioned to the Bulawayo Beitbridge Railway (BBR). However, over the past decade, the condition of the track has continued to deteriorate. According to Official 2 (Personal Correspondence 18 September 2013),

“.....in 2000, there was an increase of 4% to 21% of the route length with speed restrictions of the BBR. This has however declined because of failure of NRZ to rehabilitate its track. As a result, in 2009, 98 sections, a combined distance of 450 kilometres and 18 percent of the mainline experienced speed restrictions. The worst affected line was from Gweru to Masvingo...”

NRZ is not operating to its full capacity and the reduction in speed has negative consequences as “time is money”. If NRZ revamps and starts operating at full scale, the risk of the speed restrictions could constrain its capacity to operate efficiently, and worse, erode its competitiveness to the road sector. Official 2 (Personal Correspondence 18 September 2013) states that,

“.....if NRZ starts to operate at full scale, 658 000 concrete sleepers would be needed to eliminate these speed restrictions. This would cost the organisation approximately US\$ 70 million.....”

4.2.1.2. Locomotives

For any railway to operate effectively and efficiently, locomotive availability and utilisation are critical. According to Official 5 (Personal Correspondence 18 September 2013),

“.....NRZ owns 168 locomotives which includes 57 (34%) that are currently serviceable, 85 mainline locomotives, 30 of which are in service, 73 shunt locomotives, 35 which are in service and 10 steam locomotives, none of which are operating. Out of all locomotives classes, the DE11A locomotives which unfortunately number up to 13 units only have not gone beyond their design economic life of 25 years.....”

The above statistics provided by Official 5 (Personal Correspondence 18 September 2013), clearly shows that NRZ is facing the challenge of insufficient locomotive units. This has resulted in the organisation failing to meet the scarce transport demand by the economy. Several available locomotives have gone beyond their life span thus they are unreliable (Official 5, Personal Correspondence 18 September 2013).

4.2.1.3. Wagons

Official 1 (Personal Correspondence 18 September 2013) states that,

“...NRZ owns 8 682 wagons (including some old and damaged ones which are now being scrapped) and only 3 839 (41%) are operational while the rest are set aside for similar reasons as discussed under locomotives above. All the entity’s wagons have long gone beyond their design economic life of 40 years....”

This scenario clearly shows that wagon productivity is very low. The 3 839 that are operational have already passed their design life and this had resulted in NRZ experiencing problems with export traffic (Official 1, Personal Correspondence 18 September 2013).

4.2.2. Financial Constraints

NRZ’s financial problems became noticeable during the 1990s when Zimbabwe implemented Economic Structural Adjustment Programmes (ESAP). ESAP aimed at liberalizing the economy so as to stimulate investment by removing regulations and controls that limited completion. Despite being a monopoly in the transport sector, NRZ was targeted by ESAP and was not given any protection by the government. According to African Development Bank (ADB), 2011: 6) “.....NRZ incurred a net deficit of close to US\$100 million equivalent per year, this being about 65 percent of NRZ’s gross revenue and 3.5 percent of Zimbabwe’s GDP”. The cause of such losses was mainly because of an uneconomical and inflexible tariff structure and unaffordable investments which brought about high accruing interest. Moreover, the NRZ continued to transport lower freight thus resulting in lower revenues and higher operating expenses.

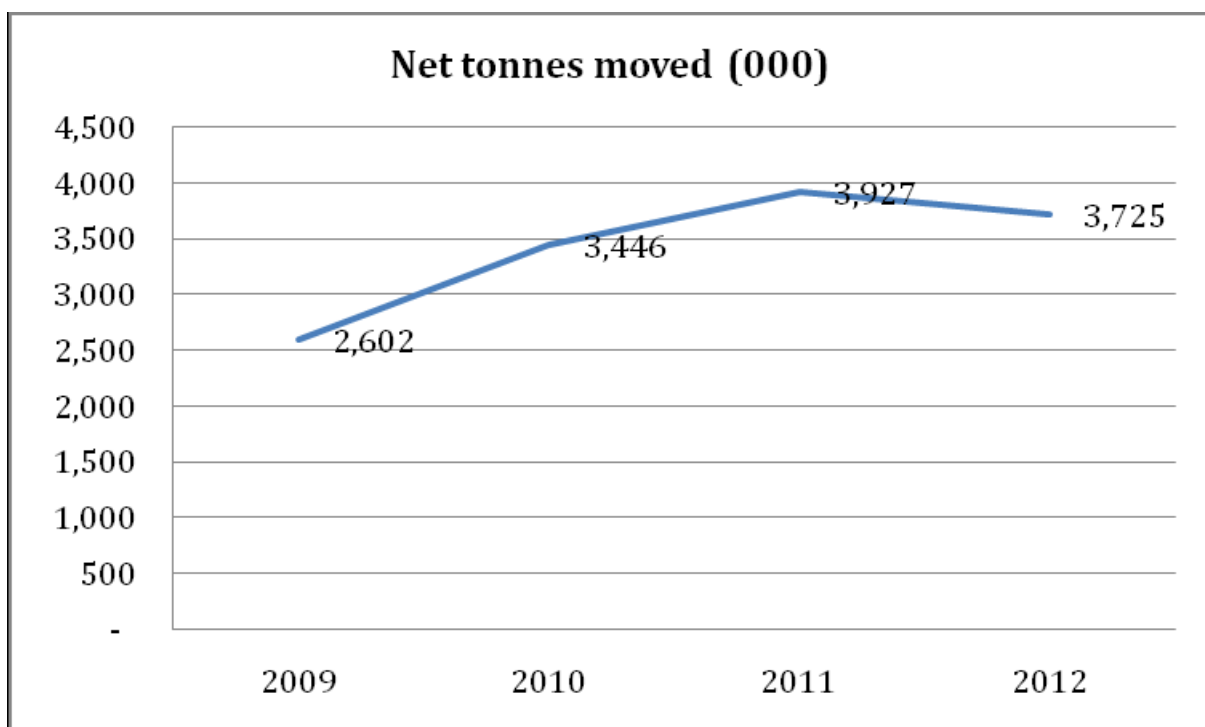
According to the African Development Bank (ADB) “in 1990, the NRZ transported close to 14.3 million tons by rail which resulted in a total capacity utilization rate of about 80 percent” (2011: 5). However, during most of the 1990s, the country went through challenges which also impacted on the NRZ. During 2000, when the economy of Zimbabwe began to sharply decline, NRZ suffered greatly because of the lack of funds to rehabilitate their railway infrastructure. Locomotives and wagon availability and utilisation began to gradually decline. As a result, NRZ could no longer meet the demand for freight services resulting in decreased profits.

Due to decreased profits, NRZ continued to incur operational losses which led the organisation to borrow from banks and applying for bank overdrafts. In addition, Official 6 (Personal Correspondence 18 September 2013) notes that,

“...since the introduction of the multi currency in February 2009, the economy has been underperforming owing to across-the-board liquidity constraints coupled with constant machinery breakdowns, plant maintenance and power outages. This has had a negative impact on NRZ’s operations business that is being availed for movement falls far below the level that is required to enable NRZ to at least break even...”

The state of the economy from 2000 to 2012 has made it difficult for most industries, mines and the commercial farming community to break even. This has led to tonnages being moved by NRZ declining. The figure below shows NRZ’s performance for the period 2009-2012.

Figure 1: Tonnage comparison (000)



Source: Personal Correspondence 18 September 2013, Official 1

The inter-parastatal debt between NRZ and other state owned entities has also elevated NRZ’s cash flow problems. According to Official 5 (Personal Correspondence 19 September 2013), the Grain Marketing Board (GMB) of Zimbabwe and Ziscosteel currently owe NRZ a total of US\$10.5 million.

Since the NRZ also has outstanding debts with these two organisations, NRZ cannot deny GMB transportation services of especially strategic commodities such as drought relief (Office 5, Personal Correspondence 19 September). As a result, the main challenge is getting paid for the services rendered.

Given its cash flow problems, the NRZ has failed to pay most of their suppliers. This has resulted in NRZ negotiating payment terms with their suppliers. In most instances, they have failed to meet these negotiated terms due to financial constraints. This has resulted in most suppliers not supplying goods and services that the NRZ needs. According to Official 2 (Personal Correspondence 19 September 2013),

“.....for the year to August 2013, the organisation's total revenue amounted to US\$61.2 million against total expenditure of US\$95.2 million giving a deficit of \$34 million. Salaries and fuel constituted the bulk of expenditure with salaries taking 68% of the revenue generated. The organisation is owed US\$33.9 million and in turn it owed its creditors US\$155.2 million as at 31 August 2013 leaving it with a net creditors' position of US\$121.3 million.....”

4.2.3. Revenue Structure

One of the major causes behind current difficulties is the structure of revenue raised from tariffs and the state. The 1997 Railways Amendment Act was put forward in 1997 so as to enable NRZ to operate on a commercial basis hence granting it authority to set competitive tariffs without any interference from the government. Before the Act was proposed, the government, which is the major shareholder, set both passenger and freight tariffs. According to Official 1 (Personal Correspondence 18 September 2013) the setting of tariffs by the government especially with regard to passenger services has led to NRZ incurring significant losses particularly in commuter trains. This is because when the government sets these tariffs, there are below operating costs.

Official 1 (Personal Correspondence 18 September 2013), stated that in the 1997 Railway Act, the government stated that the NRZ would be compensated for the losses that they incurred prior the proposed Act through Public Service Obligation (PSOs) contracts but until present day, no such contracts have been signed and officialised.

According to Official 1 (Personal Correspondence 18 September 2013),

“...PSO contracts are vital whether NRZ or concessionaires carry out services or not. Absence of signed and officialised policy has resulted in NRZ’s financial position plummeting yearly since there is still no compensation for the continued losses of operating loss-making passenger services, stations and lines.....”.

If the government had enacted the Act, it would mean that the NRZ would have been compensated and its financial position would have improved. According to Official 1(Personal Correspondence 18 September 2013), NRZ would have concessioned loss-making passenger services, station or lines to private entities that would have run them efficiently and effectively. As a result, NRZ would be left to operate freight services, lines and stations that are pivotal to the organisation commercially leading to profit maximisation for the organisation.

The NRZ is responsible for the maintenance of its own railway lines and infrastructure. Such a scenario burdens the NRZ because there is so much capital outlay that is needed to maintain the railways and its station. Given the fact that the major shareholder, the government, is going through a cash-crunch, the NRZ’s infrastructure continues to deteriorate because of lack of funds. Official 1(Personal Correspondence 18 September 2013), further substantiates by arguing that,

“.....the NRZ, unlike its road competitors, is currently responsible for the maintenance of its infrastructure. This places an insurmountable burden on it especially given the heavy outlays that are involved. This irregularity was to be corrected through the operationalisation of the 1997 Railway Amendment Act, which would have paved way for the takeover of maintenance of railway infrastructure as well as provision of social obligations by the Government.....”

The situation is quite different for the road sector because they only pay a licence fee to enable them to operate on the roads which means they do not directly pay for road infrastructure maintenance. This shows that there is a lack of uniformity between rail and road funding with regards to infrastructure maintenance which would have been avoided had the government signed and officialised the operationalisation of the 1997 Railway Amendment Act.

The NRZ has been arguing that if the playing field is levelled between the road and rail sector, they would be able to increase their freight traffic thus the economy benefiting from economies of scale, reduced global warming and road congestion.

Prior, to the 1997 Railway Amendment Act, the government proposed funds to the NRZ and other state owned entities to help them stay afloat through yearly Public Sector Investment Programme (PSIP) allocations. These funds were mainly to be used for paying operating expenses. This programme has not been operating effectively and efficiently ever since 2000 when Zimbabwe started to go through an economic crisis. Official 1 (Personal Correspondence 18 September 2013), argues that,

“...the Public Sector Investment Programme (PSIP) allocations have been suspended for more than 6 years and only resumed in 2010. After they resumed, there has not been much of a difference for NRZ’s current situation because the funds are not only insufficient to meet maintenance but are rarely disbursed in full...”

4.2.4. Decline in Available Business

Between 2000 and 2007, Zimbabwe’s political and economic situation was characterised by an average of 7635% inflation, unsustainable fiscal deficit and overvalued and an unstable exchange rate (Reuters, 2007). Such a scenario led to a scarcity in foreign currency thus fuel, electricity and industrial inputs which were vital for the economy could no longer be purchased. The land reform programme that took place in 2000, affected the commercial farming sector which served as a source of foreign exchange through exports. The manufacturing sector also suffered because of the shortage of agriculture inputs to agricultural industries.

The economic and political challenges that Zimbabwe faced and continues to experience had serious impacts on NRZ’s operational, financial and technical performance. Most of the commercial farmers affected by the land reform used the railway to transport wheat, raw sugar, and maize to different towns and neighbouring counties. The railway network in Zimbabwe was built in a way that linked all the major farming towns and other countries. When commercial farming activities began to decline, the NRZ experienced a major blow because the farming sector formed one of their biggest clientele. The tonnage of agricultural produced that the NRZ used to transport declined drastically.

Since Zimbabwe started to face economic challenges, its economy has generally been underperforming and this has led to most industries operating below capacity and surviving on a 'hand-to-mouth' basis. This scenario means that most industries are only concentrating on making raw material that are placed on order and if there are any purchases, these are in small quantities so as to be able to sustain the business (Official 4, Personal Correspondence 18 September 2013). This has resulted in the road sector having an upper hand over the rail sector because of its door-to-door service and it is just-in-time delivery. According Official 4 (Personal Correspondence 18 September 2013),

“.....all the above stated factors coupled with constant machinery breakdowns, plant maintenance and power outages have stifled industry’s production capacity resulting in NRZ suffering major setbacks.....”

Mines also formed huge clientele for NRZ as it transported chrome ore, Ferro alloys and granite. Currently, most mines have moved from their current mining locations in search of more rich mineral deposits. Looking at the way the railway network was constructed, not only was it meant to benefit the commercial farmers, but also the mining companies and heavy industries. As a result of such, the NRZ has been affected. According to Official 4 (Personal Correspondence 18 September 2013),

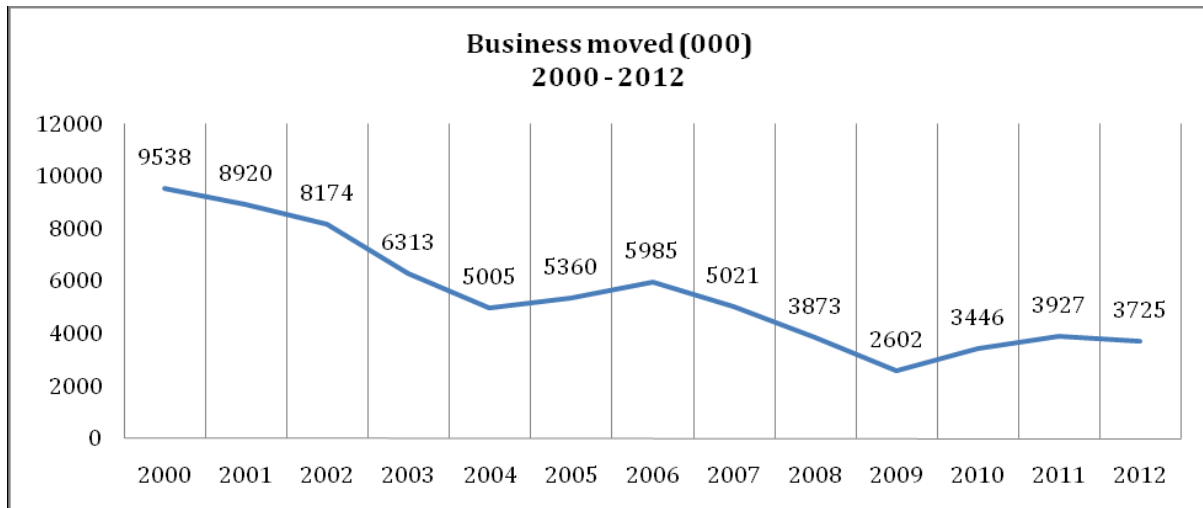
“.....the migration of mines away from railheads and the opening up of new mines or concessions away from rail loading points has resulted in the need for shuttle services between the mines and the railway loading points. This has seen road making inroads into traditionally rail-friendly business further diminishing the railways share of the ‘small cake’.....”

Furthermore, NRZ has ownership of the Railway Motor Services Private Limited (RMS). This company was incorporated so as to provide road services to and from rail heads. The RMS has ceased to function and no clear explanation has been given as to why this is the case. Respondents from the NRZ do not know why RMS is not functioning and have argued that if it was functioning it could help in proving shuttle services especially to mines that have migrated from railheads.

In essence, because of a decrease in business available, the NRZ has also encountered a steady decline in cargo moved, thus affecting its capacity to carry out scheduled maintenance of its resources and financial obligations.

Figure 2 below illustrates the trend in the business moved by NRZ over the last decade or so and how it has continued to nose-dive since 2004.

Figure 2: Tonnage comparison (000): 2000-2012



Source: Personal Correspondence 18 September 2013, Official 1

Figure 2 clearly indicates that over the last ten years, NRZ's performance has decreased from 9.5 million tonnes in 2000 to about 3.7 million tonnes in 2012.

4.2.5. Skills Flight

NRZ has been experiencing a high staff turnover ever since the economy started facing socio-economic challenges. From 2000 to 2003 alone, NRZ lost close to 200 (10%) skilled staff to neighbouring, regional and overseas railway systems (Official 7, Personal Correspondence 19 September 2013). The skilled staff that the organisation lost comprised of engineers, technicians, computer programmers and artisans. The loss of skilled staff led to NRZ facing challenges especially with regard to the quality of work provided by technical staff. Most of the skills that were provided by this workforce take ample time to train and as such a skills shortage occurred. According to Official 7 (Personal correspondence 19 September 2013),

“.....NRZ had as at 2011 almost stabilized following training of new skills. The problem however cropped up again towards the end of 2012, as the entity principally owing to its failure to pay salaries on time, started to lose those who had been trained and had started to be useful.....”

In essence, the economic instability experienced by Zimbabwe has led to the underperformance of NRZ resulting in a decline in business available. NRZ has been failing to meet its obligations of paying its staff on time and according to what they are supposed to be paid based on their skills. The effect of delays on salary negotiation tends to have a negative impact on production. At the same time, the inflationary environment that NRZ is operating under has seen most workers being motivated by career development in order to be attractive to job markets outside Zimbabwe as opposed to salaries.

4.2.6. Poor Corporate Governance and Government Interference

The Board of Director's (BOD) composition has raised eyebrows over the past years. The appointment of the BOD is not clear because there is no laid down procedure or guidelines on how and what characteristics are sought. The Minister was perceived as being able to appoint BOD members without reference to observable and worthy criteria, despite being given the selection criteria by legislation. In addition, the BOD's involvement in strategic management at NRZ is weak thus compromising its corporate governance. This has been caused by the lack of continuity in the BOD and lack of funds to conduct proper induction courses to new BOD members. In addition, BOD members and management hardly know what is happening on the ground and this had lead to dissemination of inaccurate information.

The study found that most of the BOD members have unstipulated terms of office. This has resulted in policy and strategies concerning the operation of NRZ not being implemented successfully. Most of the respondents agreed that BOD members should only be allowed to enjoy a minimum term of office of three years. Failure to stipulate BOD member's terms of office has led to stakeholders not working towards achieving a common goal because approval of decisions takes too long thus failing to react towards the dictates of business.

Some respondents ascertained that the current top management structure at the NRZ is overstretched. Currently, there is a General Manager, five Directors, three Area Managers and five Army Personnel at Director Level. This has resulted in the top management duplicating duties, for example, Director Operations and Marketing, Audit and Inspectorate. This has caused despondence and labour unrest within the organisation. In as much as efforts have been made to come up with a leaner structure, the structure still continues to widen.

While it was good for the Army to rescue of the NRZ in times of need, the existing arrangement has become more of a permanent solution thus militarising the organisation. This has resulted in more strain on the already inadequate resources and poor corporate governance.

The Minister, according to the Railway Act, is empowered to give directions of both general and specific nature. In the absence of a BOD as was the case in 2009, the Ministry of Transport, Communication and Infrastructural Development took over the responsibilities of the BOD. In cases where this has happened, the effectiveness of corporate governance has been compromised. Although decisions were made faster when there was no BOD, the interests represented were of the shareholder, that is, the government, at the expense of stakeholder's interests.

With regard to constant government interference, all 17 respondents felt that the government is too involved in the NRZ's operations. The NRZ does not charge commercial rates due to the restrictions and controls on tariffs and fares by the government whilst it is expected to maintain and repair its infrastructure. This has led to the near collapse of rail tracks, signals and communication equipment because NRZ has no financial capacity to fund the capital intensive infrastructure. Moreover, the influence of the current political situation has seen the government, which is the sole shareholder, making political decisions over economic decisions. Official 9 (Personal Correspondence 19 September 2013), states that the Ministry of Transport, Communications and Infrastructure Development forced NRZ to provide low-cost commuter services in Harare and Bulawayo and this resulted in an expenditure increase of 1 020% from a marginal revenue of 370%.

4.2.7. Fuel and Energy Problems

Zimbabwe's economic meltdown in 2000 had a huge impact on NRZ's fuel requirements and this led to most trains being cancelled. The locomotives that the NRZ uses are powered by diesel and when fuel shortages became rampant, most of the locomotives came to a standstill. However, according to Official 9 (Personal Correspondence 19 September 2013),

“.....when the economy started to use multi-currencies in 2009, NRZ began to earn foreign currency which it could now use to buy fuel but the government prohibited NRZ from using its earnings to import directly even though Caltex provided fuel to customers that needed at least 2 500 litres of fuel.

This was because the National Oil Company of Zimbabwe (NOCZIM) (also state owned) has the monopoly to procure and provide fuel for all government parastatals”.

NRZ also has steam powered locomotives but the erratic supply of coal had resulted in delays in shunt operations mainly in Bulawayo. Hwange Colliery Company which is the major supplier of coal in Zimbabwe has been unable to purchase mining spares equipment due to lack of funds and this has resulted in its inability to meet customer’s demand for coal. NRZ is one of those customers that have been affected because most of their steam powered locomotives are not operating to their full capacity since the coal being supplied is not enough to power the locomotives.

Zimbabwe’s power supply has been experiencing load shedding, blackouts and breakdowns. This has been attributed to lack of foreign currency to import electricity and failure to settle reoccurring import bills. In order to maintain some form of stability, load shedding was introduced. When the Dabuka to Harare route was still electrified, electrical driven locomotives were affected by the load shedding. Official 2 (Personal Correspondence 19 September 2013), argues that,

“.....the electrically driven locomotives would be stuck for about 1 hour to as long as 10 hours at the Dabuka railway station. This greatly affected our delivery time from a target of 60 hours to an average of 80 hours. Most of our customers notably Windmill and National Foods were not accepting of these delays....”

These fuel and energy challenges have resulted in pocket-sized business for the NRZ. Since most of the customers are not accepting of these delays that are frequently being encountered by the NRZ, the road sector had emerged as a close substitute for rail transport. The road sector is being chosen by NRZ’s major customers because of its flexibility and how it can easily adapt to changes in the environment, unlike rail.

4.3. Plans Going Forward

On the outlook, the economy of Zimbabwe is expected to remain stable and to attain a positive but lower Gross Domestic Product (GDP) rate which will foster for economic growth. This has led the NRZ to implement a 2013 Strategic Plan as a survival strategy and to regain business lost to road competition. One of NRZ’s main objectives for 2013 is to increase its tonnage of freight traffic.

Official 2 (Personal Correspondence 19 September 2013), stated that NRZ was aiming to at least move 6 million tonnes of freight traffic, 1.2 million inter-city passengers and 1.1 intra-city commuters. The set goals, objectives and targets by NRZ can only be achieved if certain resources are put in place. Below are the strategies that NRZ plans to pursue and resuscitate in accordance with the 2013 Strategic Plan.

4.3.2. Customer Financed Equipment Rehabilitation Efforts

In 2004, NRZ managed to negotiate to have its status regarded as being an extreme priority and this resulted in the government approving Public- Private Sector Partnership (PPP) as part of NRZ's recapitalisation. This allowed NRZ to obtain funding from its key customers, in an attempt to restore its locomotives, wagons, coaches and infrastructure capacity in return for a dedicated service. According to Official 10 (Personal Correspondence 20 September 2013),

“Currently in Zimbabwe, PPP agreements have been signed with customers such as MV Carriers, Sakunda and Strauss Logistics for the refurbishment of 55, 50 and 60 wagons respectively. The contracts are at various stages of implementation”.

With these contracts being at various stages of implementation, NRZ hopes to make available 3 976 wagons and to have an all round wagon utilization of 45 kilometres per day. Getting customer support for wagons puts NRZ in a better position because wagons can be owned or dedicated to a customer and can contract their operations to the railways.

4.3.3. Purchase of New Resources

NRZ is one parastatal that can generate a lot of revenue from its operations and operate profitably. However, its current state has hindered such and it is only through funding that NRZ can become viable again and be able to purchase new resources. The NRZ management has secured provision of infrastructure contracts mostly from China. The agreement between the Chinese National Railways (CNR) and NRZ to provide infrastructure was concluded in 2004. The contract between the two railway companies stated that CNR would supply 10 locomotives, 8 commuter train sets and 64 mainline coaches at US\$110,4 million (Parliament Report, 2012).

The contract stipulated that there was need for a letter of credit that would cover the total price of the equipment and a 10% deposit to be drawn for production to commence (Parliament Report, 2012).

According to the Parliament Report “NRZ paid US\$2, 5 million in 2006 and an additional US\$400 000 in 2008 towards deposit for the equipment, leaving a balance of US\$8.5 million” (2012:7). Since the NRZ could not raise the balance, the contract has since been revised to suit the already paid deposit where CNR will supply 14 locomotives at US\$29 million (Parliament Report, 2012). Unfortunately, Sinasure, China’s export and credit insurance company the guarantor of the loan has insisted on the deposit of 15% on the remaining balance (Parliament Report, 2012). Since NRZ is already struggling financially and it has been difficult to secure lines of credit. According to Official 5 (Personal Correspondence 18 September 2013),

“.....discussions are however underway, through the Ministry of Finance, to convince them to secure lines of credit for us against the 10% deposit already paid.....”

4.3.4. All Round Recapitalisation Initiatives

Due to NRZ’s extensive nature for funding requirements for the maintenance of its infrastructure, NRZ has engaged with the Development Bank of Southern Africa (DBSA) for a loan so that it could rehabilitate its infrastructure. Official 5 (Personal Correspondence 18 September 2013), stated that,

“.....to this end, DBSA and NRZ contracted CPCS Transcom International Limited on 15 December 2011 to prepare a Project Information Memorandum (PIM) for the recapitalisation of the NRZ. The PIM has since been submitted by the Consultants to the Bank, and put a business case for NRZ to borrow US\$442 million towards recapitalisation.....”

After the State Procurement Board and the Ministry of Finance has approved the loan application, the NRZ can then negotiate for the loan with the DBSA. Once the loan has been approved, one of NRZ’s main objectives would be the removal of speed restrictions and the refurbishment of critical equipment both for workshops and track maintenance. According to Official 5 (Personal Correspondence 18 September 2013), priority would have to be the installation of optic fibre/microwave links and Ultra High Frequency (UHF) along the mainline and installation of power backup to critical installations.

4.4. Data Analysis

The results presented above provide evidence which supports the arguments brought forward in the field of economic development on the importance of an efficient transport infrastructure. To some degree the material collected accorded to the concept of enclave development discussed in the conceptual framework where colonial inspired railway infrastructure that was inherited by Zimbabwe has had an effect on the NRZ.

After Zimbabwe gained its independence, it inherited a railway that formed the infrastructural backbone of a landlocked economy and also took over the burden of inequities. NRZ was constructed so as to link all major commercial farms, mines and industries. So when Zimbabwe went through chaotic political and economic challenges, it affected all these sectors and this in return affected the NRZ. When the land distribution program was implemented, the agriculture sector suffered greatly and this severely affected the manufacturing sector and the NRZ in a multi-effect chain reaction. The impacts felt by the NRZ were seen through the decrease in volumes of tonnage moved and the reduction in business available from its agriculture, mining and industrial clientele.

The most important findings in this study were the challenges NRZ was facing and the root causes of the challenges. The material used in the literature review correlate to some extent with the challenges being faced by NRZ and the root causes of the challenges. Pederson (2001a) and Estache (2005) highlighted the reasons for why most railway systems are in their current state and capacity. The data collected corresponds to most of what the two theorists' stated. It appears that most of the challenges faced by the NRZ were brought about by the economic meltdown of the Zimbabwean economy. The fact that NRZ is state owned, meant that whatever challenges were affecting the economy, would also affect NRZ because government is the major shareholder and it made the major decisions.

Njoh (2007) gives a clear picture of the relationship between transportation and economic development within the African context. Njoh (2007) points out that colonial power invested in railway building projects because it positively influenced development and was cost effective in terms of investment. However, the colonial powers made little effort to link colonies and this had a negative effect after post-colonial because Africa as a continent continued to lack quality and quantity and infrastructure needed to connect with the rest of the world.

Njoh (2007) argues that Kenya's railway network was once effective and efficient. However, the railway networks deteriorated due to neglect, mismanagement and obsolescence. This is the same case scenario that the NRZ has experienced.

Ranganathan and Foster (2011) argue that railway networks left in place by the colonial powers were sustainable and modest but the conflicts and governments in Africa led to the current state of most railway networks in Africa. The political turmoil experienced in Zimbabwe from 2000 to 2012, had an effect on the functionality of the NRZ. However, Ranganathan and Foster (2011), state that if railway infrastructure is maintained and upgraded, Africa could benefit from trade integration.

There is evidence to suggest that if NRZ was to operate on a commercial basis with minimal interference from the government, it would be able to operate effectively and attain profits. This is achievable if the 1997 Amendment Act is signed and officialised. Due to the funding requirements needed for the maintenance of railway infrastructure, it is therefore only feasible for the government to take over that role. Moreover, since the road sector has emerged as NRZ's rivalry, the government is the only one that can level the playing field by making sure that NRZ operates effectively and efficiently so as to match up to the services provided by the road sector. Most companies want good service and their goods delivered on time. The road sector has managed to grab most of the companies that formed NRZ's clientele because of their just-in-time and door-to-door service. However, even though the rail infrastructure, tractive power and rolling stock have gone beyond their life span, the railway still has the advantage of economies of scale, lower transport cost and the ability to move bulk goods over long distances, as compared to road.

The economic and political challenges that Zimbabwe faced and continues to face had serious impacts on available business for NRZ. The railway network was built linking all major mining and farming towns which used the rail to transport their goods domestically and regionally. The economic and political challenges resulted in mining, farming and manufacturing industries being affected and this spilled over to the NRZ because the economy was underperforming which resulted in less goods being transported on rail. The NRZ's available business declined resulting in failure to maintain and upgrade infrastructure and equipment, pay workers salaries and debts.

Infrastructure and equipment became obsolete and the organisation faced a serious skills flight to neighbouring countries and overseas.

Constant government interference and lack of corporate governance has also played role in the downfall of the NRZ. The BOD is appointed by the Minister of Transport, Communication and Infrastructural Development who was perceived to just appoint the BOD without any worthy criteria. This has led to BOD passing on policies that are inefficient and ineffective because they hardly know what is happening on the ground.

During the research, most of the respondents discussed the financial position of the NRZ and how financial constraints had hindered the NRZ from operating effectively. Since securing funds has been quite a challenge for the NRZ, the government could assist by opening up lines of credit, and by involving strategic partners who will bring recapitalisation funds so that NRZ can rehabilitate. So far the only concession that exists is between NRZ and BBR where the latter caters for other routes and BBR operate the Bulawayo and Beitbridge route. If NRZ does more of these concessions, it helps them to only concentrate on routes they deem pivotal and strategic. This agreement has however not benefitted NRZ that much because the contract clearly stipulates that neither of the players can operate the other's routes unless there is need for cooperation. In future, NRZ will have to be strategic in who they partner with and have concessions that benefit them.

4.5. Discussion

The NRZ has been saddled with a lot of challenges due to the socio-economic and political challenges in Zimbabwe. From the research that was conducted, it is clear that the chaotic political and economic challenges that were faced by Zimbabwe had a multi-effect chain reaction in all sectors of the economy and rail transportation. The massive land redistribution programme that was implemented by the government created a poor political environment which had immediate impacts on the economy. The results flowed down-streamed to NRZ whose transportation tonnage volumes began to drop after the 2000, 2002 and 2005 elections. Also, because of lack of capital investment after the election, the NRZ's equipment and infrastructure began to deteriorate resulting in its current state.

NRZ's infrastructure and equipment, that is, track, locomotives, wagons and coaches are in dire state. Most of the mainline locomotives have gone beyond their economic life span and this has resulted in constant breakdowns. Failure to carry out scheduled maintenance, rehabilitation and replacement of obsolete infrastructure, has contributed to the NRZ's current capacity. The electric locomotives that operated along the electrified Dabuka – Harare route are no longer operating as part of the electrified section has been decommissioned due to theft and vandalism. The poor state of NRZ's infrastructure and equipment has resulted in derailments and prolonged transit time due to delays which has paved way for competition from the road sector. There is therefore need for NRZ to implement a recapitalisation strategy if it is to operate effectively and efficiently.

The funding requirements needed go way beyond NRZ's financial capabilities and hence the government is the majority shareholder is supposed to make available funding. However, there has not been funding from the government due to the current economic situation of the country. What the government could have done to help NRZ stay afloat and pay their operating expenses, was to allocate money through the Public Sector Investment Programme (PSIP). However, these allocations have not been in full dispersion since the economic meltdown.

What is clear is that there is urgency for the 1997 Railway Act to be officialised. The government's delay in authorizing for its operation has resulted in continued losses and expenses by the NRZ. Haulage trucks, because they don't pay any maintenance fee for the roads, continue to damage the roads due to bulky loads. There is need for a stipulated legislation that will state what cargo the roads should transport so that NRZ continues to be providing transportation of bulky goods thus protecting both the road and rail infrastructures. With the current economic trends that the Zimbabwean economy is going through, it is only fitting for the NRZ to operating on a commercial basis.

The few available resources are not being channelled towards motivating staff and paying their salaries on time and this has led to a massive skills flight. This lack of motivation is prevalent to such an extent that most of the staff is now motivated by career development as compared to motivation through salary. This could be because of the current economic trend face by most citizens in Zimbabwe where money is no longer the motivator but rather enhancement of skills and careers for better job opportunities in other countries.

Whilst the problems associated with the conclusion of salary negotiations were highlighted during the interviews, nothing seems to have been done to rectify these problems in order to minimise disruption on movement of freight and passengers. Even though the economic environment does not sustain market rates as remuneration for skilled and experienced staff, it is imperative to pay them competitive rates so as to attract and retain them.

The inter-parastatal debt is substantial and this has resulted in NRZ also owing huge amounts to its suppliers. With most parastatals failing to stay afloat, recovery of most of these debts will likely be impossible and hence NRZ is bound to be experiencing cash flow problems for a while. It is imperative therefore that the government come up with policies that can regulate these inter-parastatal debts so that these parastatals can continue to operate.

NRZ's staff compliment is too high for an organisation that is struggling to stay in business. There are too many directors and they are not held accountable to anyone. This has resulted in duplication of duties which has resulted in poor management of the parastatal. The BOD has failed to carry out their role because they are political affiliates who have been selected by the Ministry, who clearly have little experience on how the NRZ should be run. This has resulted in poor corporate governance and negative policy management within the organisation.

4.6. Conclusion

The study has provided evidence that support the concept of 'enclave' development which argues that the transport infrastructure that was constructed by the colonisers was meant to only act as the backbone for development and economic prospects even though it meant taking over the burden of imbalance of the railway into post-colonial Zimbabwe. The role that NRZ has played thus far prior 2000 has enabled it to fulfil the developmental and economic prospects for the economy. This is mainly because of its ability to transport bulky goods over long distances and domestically and regionally.

As detailed above, NRZ has been facing challenges that have mainly been attributed to the economic and political instability that Zimbabwe has been facing since 2000. Several of the challenges were also discussed by Estache (2005) and Pederson (2001a).

Even with such challenges in place, NRZ has potential to perform efficiently and effectively if its rehabilitation is done properly with the private sector, donor agencies and government actively providing the funding required.

Chapter 5: Conclusion and Recommendations

5. Introduction

For most countries, an efficient and adequate transport infrastructure will result in stable growth and development outcomes. The aim of this research was threefold: firstly, to assess the current situation or state of the NRZ, secondly to examine the causes that resulted in the challenges being experienced by the NRZ and thirdly to review the plans to fix the problem. The study is framed around the notion of ‘enclave development’ to explore how colonial inspired transport infrastructure development was not designed to support broader economic growth and development.

5.1. Conclusion

The research carried out articulated the current capacity and challenges the NRZ has been facing as an organisation. The study sought to: 1) assess the current situation or state of the NRZ; 2) to examine the causes that resulted in the challenges being experienced by the NRZ and 3) to review the plans to fix the problems. Against the background and objectives of the study, the research gathered sought to answer the following questions:

1. What were the patterns of rail use in Zimbabwe before 2000 and what are the current patterns of rail use in 2000 till present day?
2. How has the total cargo handled by the NRZ, that is, main type of cargo and passengers changed since 2000 to 2013?
3. What has been the availability and utilization of locomotives and wagons?
4. What are some of the challenges that the NRZ faces and what has caused them? (Probes on causes include: Internal constraints: The National Railways of Zimbabwe Act; brain drain; poor management; inter-parastatal debt, availability of rolling stock; track and communications infrastructure; operators and workers; bureaucracy; external constraints: demand, politics, hyper-inflation, electricity shortages, fuel shortages and unstable currency exchange rate.
5. How has policy towards rail evolved in Zimbabwe, with specific reference to the post 2000 period?

What responses have been proposed by various stakeholders for addressing shortcomings and what has been done about these proposals?

5.1 What factors or actors influenced any policy changes?

5.2 How have these policy changes influenced patterns of cargo handling in the rail sector?

6. What are the present institutional arrangements governing rail activities in Zimbabwe and how have these changed over time? This would include changing economic structure, investment and management of the rail system (also compared to other modes), governance etc.

7. What should be solved to improve railway accessibility and efficiency in Zimbabwe?

What is clear is that the NRZ has suffered extensive neglect from 2000 till present day, from the economic meltdown of the Zimbabwean economy. The study was able to achieve its objectives to a large extent because data collected from the 17 respondents shows that the disregard of this transport subsector has resulted in many of consequences for the organisation and the country as a whole.

The study managed to answer all the research questions using data collected from the interviews as well as relevant secondary data. Zimbabwe is a landlocked country and the rail was vital for transporting bulk goods domestically and regionally. Failure to upgrade and maintain its infrastructure and services has resulted in preference of the road transport subsector over rail. Several of the challenges NRZ has been facing can be curtailed if the 1997 Railway Act is quickly passed and officialised. More importantly, recapitalisation of infrastructure through funds and loans is the first step towards revamping the NRZ thus attracting and widening space for the sectors of the economy and the private sector in contributing to the economic growth and development of the country. Nonetheless, in the medium to long term NRZ will need to collaborate more directly with other rail actors in the region to provide a more integrated network and to ensure upgrading towards a higher set of operating standards. This is not just necessary to make NRZ a more effective organisation but is an imperative for longer term economic growth and development.

Summary table on the themes and respective findings

No.	Themes	Findings	Statistics
1.	Current state of the NRZ	Economic challenges to blame for the current state	<ul style="list-style-type: none"> - Currently moving 1.7 million tons as compared to 2.6 million tons in 2009. - Operating a deficit of US\$3 million per month on average. - Currently in possession of 3839 wagons, 57 locomotives, 170 coaches and 12 cabooses
2.	Key Challenges and their causes	Condition of infrastructure	658000 concrete sleepers are needed to eliminate the restrictions.
		Locomotives	Only 13 units of DE11A locomotives have not gone beyond their design economic life of 25 years
		Wagons	NRZ owns 8682 wagons and only 3839 are operational.
		Financial Constraints	In August 2013, NRZ's total revenue amounted to US\$61.2 million against total expenditure of US\$95.2 million, giving a deficit of US\$34million.
		Revenue Structure	-
		Decline in available business	Performance over the past 10 years has decreased from 9.5 million tons in 2000 to about 3.7 million tons in

			2012
		Skills Flight	2000 – 2003, NRZ lost 200 (10%) of skilled staff.
		Poor Corporate Governance & Government Interference	Expenditure increase of 1 020% from marginal revenue of 370%
		Fuel and Energy Problems	Delivery time from a target of 60 hours to an average of 80 hours.
3.	Plans going forward	Customer financed equipment rehabilitation efforts	To make available 2976 wagons and all round wagon utilization of 45 kilometres per day.
		Purchase of new resources	Chinese National Railways to supply 10 locomotives, 8 commuter train sets and 64 mainline coaches at US\$110.4 million.
		All round recapitalization initiatives	Submission of business case for NRZ to borrow US\$442 million towards recapitalization.

5.2. Recommendations

Despite the rapid economic meltdown of the economy of Zimbabwe, NRZ still has potential to operate effectively and efficiently and therefore, it is against this background that the following recommendations are argued for by the researcher. Relevant authorities and key economic players in the Zimbabwean economy should take note of the following recommendations.

1. The government needs to expand the role of private sector participation and private concessions so as to improve NRZ's current capacity and condition of its railway infrastructure. Besides, such initiatives will help NRZ achieve sustainable commercial feasibility. The government therefore has to identify potential railway routes that will function effectively and efficiently under concessions. More so, the NRZ could extend BBR's concession so that it operates more railway routes.
2. The government has not really given the NRZ space to operate commercially without constant interference. In addition, the government's failure to officialise the 1997 Railway Act has affected NRZ's ability to operate within the dictates of the economy and market. The way forward would be to create an independent entity that would regulate railway operations and services. This entity would implement institutional frameworks that would enable NRZ to become competitive and operate according to the transportation market. Since the entity will be independent from government interference, it can have political and technical power to control government actions towards concessions and private sector participation. Studies have shown that African governments often interfere in concessions and private sector participation which often hinders progress.
3. In the light of the above findings, the power to appoint BOD should be vested in another authority, for example, creation of a Parastatal Commission. This would reduce ministerial interference in the BOD and promote independence of the Board. In addition, the General Manager should be appointed by the BOD and not by the Ministry as they tend to appoint a candidate who is politically affiliated and not suitable to run the organisation.

BOD member's term of office should be clearly stipulated in order to allow for continuity in the Board. Likewise, there should be a formal induction programme for new BOD members as this would facilitate a faster and clearer understanding of strategic issues at NRZ and hence improve decision making process. The BOD should be drawn from across the industrial spectrum so as to bring all the required expertise needed by the NRZ.

Staff composition should be streamlined so that only proficient staff are retained instead of carrying incompetent staff driven by self enrichment. Through streamlining, duties are not duplicated and the interests of the organisation are put first thus maximising productive time.

4. NRZ should be revived as soon as possible the Railway Motor Services Private Limited (RMS) so as to provide seamless service that it once provided. This way NRZ can cut down the haulage sector's competition because it will be able to provide a number of services at lower costs thus attracting more customers. In addition, RMS can provide door-to-door service especially in areas that the railway network cannot reach thus continuing to realise profits and maintaining customers.

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Appendix 1: Interview Guide

Project Title

Infrastructure development in economic crisis and recovery: The rail cargo sector in Zimbabwe since 2000.

INTERVIEW GUIDE

To kick start the interview I will firstly start by learning about your biography. This will then be followed by questions that are related to your own experiences with regards to the National Railways of Zimbabwe (NRZ). For the purposes of this research, while transport infrastructure can refer to rail, roads, airlines and ports, my main focus will be on rail transport with specific regards to rail cargo in Zimbabwe since 2000.

Subsequently I will ask you questions regarding your professional point of view pertaining to the NRZ, as an employee of the organization, as a member of the Board of Directors, or as the private sector that has engaged with the NRZ.

Date: To be announced

Location of interview: Zimbabwe

The following are the focus questions for the interview and are derived from the broader objectives.

0. Date and location of interview

1. Biographic material

1.1 Name of respondent

1.2. Organisation

1.3. Position of respondent
1.3.1. Job title (eg Manager of Planning)

1.3.2. Please can you describe your current roles and responsibilities and indicate how long have you been in this position.

1.4. Responsibilities with respect to research topic: Please could you briefly explain in what way you have had exposure to issues with respect to Zimbabwe's rail system.

2. General issues with respect to rail and development (NOT ZIMBABWE SPECIFIC)

2.1. What do you feel are the main advantages a rail system offers to a country (Generally and with specific reference to freight)?

2.2. What would you suggest are the main limitations of rail (generally and with specific reference to freight)?

2.3. What features would you feel are most important for a rail system to support economic growth and development?

2.4. Please rate the following indicators according to their importance in monitoring the performance of freight rail (1 very important, 5 unimportant)

2.4.1 Cost per ton per kilometre compared to other modes

Very Important 1	2	3	4	Unimportant 5
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2.4.2. Time to destination compared to other modes

Very Important 1	2	3	4	Unimportant 5
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2.4.3. Reliability compared to other modes

Very Important 1	2	3	4	Unimportant 5
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2.4.4. Environmental impact compared to other modes

Very Important 1	2	3	4	Unimportant 5
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2.4.5. Availability of service

Very Important 1	2	3	4	Unimportant 5
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2.4.6. Other (please specify)

Very Important 1	2	3	4	Unimportant 5
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2.5. Which country examples of effective rail systems do you believe are most relevant to a developing country? Please give reasons?

3. The rail system in Zimbabwe

3.1. What do you feel have been the main influences on the evolution of Zimbabwe's rail system since 1980? (Economics, policy, institutions)

3.2. What were the strengths in the development approach taken for rail?

3.3. What were the weaknesses in the development approach taken to rail?

3.4. What do you believe have been the main impacts of Zimbabwe's rail system since 1980?

3.5. What have been the main performance trends/changes of the rail system since 2000 with respect to:

Type of freight carried

Tonnage of cargo carried annually

Destination of cargo

Reliability/efficiency

Costs compared to other modes

Coverage of service

3.6. How would you describe the main features of Zimbabwe's rail present system in terms of:

(Please rate according to the following scale: 1 Excellent, 2 Good, 3 Poor, 4 Very poor)

Geographic coverage

Excellent	Good	Poor	Very Poor
1	2	3	4

Economic sector alignment

Excellent	Good	Poor	Very Poor
1	2	3	4

Reliability

Excellent	Good	Poor	Very Poor
1	2	3	4

Cost competitive

Excellent	Good	Poor	Very Poor
1	2	3	4

Integration with other modes

Excellent	Good	Poor	Very Poor
1	2	3	4

Integration with networks in SADC

Excellent	Good	Poor	Very Poor
1	2	3	4

3.7. What are the main challenges facing the rail system today in terms of the following categories?

Institutional arrangements

Investment

Policy frameworks

Operations/performance management

Other issues identified by the respondent ...

3.8. What impact did the period of economic crisis post 2000 have on the rail system in Zimbabwe? Please explain your responses.

3.9. What have been the main features of public policy with respect to rail, and more especially freight rail, in the past decade?

3.10. What has been the impact of these public policy issues on the rail system?

3.11. What do you feel are the views of the main freight owners about the performance of the rail system in Zimbabwe?

3.12. If you are aware of any plans for the future of rail in Zimbabwe what are the main features of these plans?

3.13. What are the main obstacles to these plans being implemented?

3.14. What do you feel the main impact will be on freight users of rail (existing and potential)?

3.15. Do you feel freight rail should feature in Zimbabwe's present and future planning as a priority?

3.15.1. If you feel it should not be prioritised please give reasons?

3.15.2. If you feel it should be prioritised please give reasons?

If you feel it has a future relevance please answer the following ...

3.16. What steps would be most important with respect to the rail system and freight rail in particular in the next few years? Please rank your responses from most important to least important.

3.17. Should Zimbabwe extend its partnerships with other rail providers in the SADC region (if so why?)

3.18. Should Zimbabwe explore public-private partnerships, management contracts or concessions for its rail system in the future? (why?)

3.19. Should Zimbabwe reprioritise its transport investment with respect to rail and other modes (if so in what way?)

3.20. Where would you like to see Zimbabwe's rail system in 10 years time? What features should it display?

3.21. What impacts do you feel this future system could have on the Zimbabwean economy and its development?

Additional questions to explore.....

1. How has your work changed in the time that you have been doing it?
2. What do you think are the top five priorities of transport infrastructure in Zimbabwe? Why in that order?
3. If you are in a position to comment on this, how would you say the total cargo handled by the NRZ i.e. main type of cargo and passengers changed since 2000 to 2013?
4. In your analysis, what do you think are some of the factors that have impacted on the changes in rail use patterns over this period?
5. What do you think are some of the challenges that the NRZ faces and what do you think has caused them? (Probes on causes: Internal constraints: The National Railways of Zimbabwe Act; brain drain; poor management; inter-parastatal debt, availability of rolling stock; track and communications infrastructure; operators and workers; bureaucracy; External constraints: demand, politics, hyper-inflation, electricity shortages, fuel shortages and unstable currency exchange rate.
6. What are the impacts of the current capacities of the rail infrastructure for Zimbabwe's economy and society?
7. What responses have been proposed by various stakeholders for addressing shortcomings and what do you think are the strengths and weaknesses of these proposals?
8. Do you think that the underperformance of the NRZ has had an impact on key sectors of the economy .i.e. mining, agriculture and industrial?
9. What has been the availability and utilization of locomotives and wagons?
10. What has been the pattern of geographic areas and economic sectors serviced?

11. In your own opinion, do you think there are potential penalties in terms of Gross Domestic Product per capita that Zimbabwe is likely to face from not fully utilizing the railway system effectively and efficiently?
12. In your own analysis, how has the railroad transport contributed to domestic and regional economic growth and socio-economic development?
13. What are some of the impacts of the capacities of the domestic railway networks with regional trading partners such as Zambia, DRC, Botswana, South Africa and Mozambique and how regional trade has been affected?
14. What should be solved to improve railway accessibility in Zimbabwe?
 - I. In the short term.
 - II. In the middle term.
 - III. In the long term.

THANK YOU

N.B. This is an unstructured interview and not all the aforementioned questions may be asked or responded to, while some questions may stem from other discussion that may occur in the course of the interview.

Appendix 2: Informed Consent

To be read out by researcher before the beginning of the interview. A copy of the form will be signed by the respondent.

Dear Participant

Thank you for taking part in this research study. Your input will add significant value in to the research project titled *Infrastructure development in economic crisis and recovery: The rail cargo sector in Zimbabwe since 2000*. This study aims to explore the various perceptions of participants from the National Railways of Zimbabwe, private sector, multi-lateral organizations, and government officials. This research is conducted by **Dianah R. Takundwa (Student No: 208521714)** towards my MA Degree in Development Studies.

Please be advised that that you may choose not to participate in this research study and would you wish to withdraw at any stage, you have the full right to do so and your action will not be of any disadvantage to you in anyway.

Your participation in this research will be interviews; these will be arranged to ensure minimal disruption to your schedule. The interview should take no longer than 1hr to 1hr 30mins. The information obtained will be treated as confidential. This will be safely stored at the University of KwaZulu-Natal, Howard College Campus.

Should you have any questions my contact details?

Dianah R. Takundwa

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