BINDURA UNIVERSITY OF SCIENCE EDUCATION

EFFECTS OF CRIME ON ECONOMIC GROWTH: CASE OF ZIMBABWE (1980 – 2023)

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The undersigned certify that they have read and recommended to the Bindura University of Science Education for acceptance, a research entitled: The effect of crime on economic growth: case of Zimbabwe (1980-2023).

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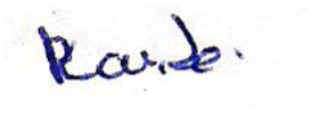
I **PATRICK KARIBE** (***63-984160-Z-83***) do hereby declare that this thesis is the result of my own investigation and research (original work), except to the extent indicated in the acknowledgements, references and by comments include in the body of the reports, and that it has not been submitted in part or full for any other degree to any University for purpose of obtaining an academic qualification.



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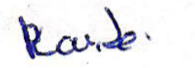
STUDENT NAME…**Patrick…Karibe**…SIGNATURE…  .DATE…**14/10/24**

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ABSTRACT

Zimbabwe has an extremely high rate of crime (*45% surge in crime in 2023*) and this is a hindrance to the country's economic growth. High prevalence rate of crime hinders the country's economic growth and development, as it discourages foreign direct investment (FDI), increase costs for businesses, reduces productivity, and leads to a net-migration. Crime in Zimbabwe remains a serious problem for economic progression. Therefore the research titled: *The effects of crime on economic growth in Zimbabwe*. In this regard, the quantitative research methodology using secondary data gathered from well recognised and reliable sources such as; Zimbabwe National Statistics Agency (ZimStat), Reserve Bank of Zimbabwe (RBZ), Zimbabwe Republic Police Services (ZRP), and the World Bank was employed with STATA 14.0 as the computer package for data analysis and presentation.

Objectives of the study: (i) to understand the negative impact of crime on economic growth in Zimbabwe, (ii) to identify the economic costs of crime in Zimbabwe, and (iii) to provide policy recommendations.

Methodology: Linear Regression Model; $GDPt = Bo + \beta 1VioCRIMEt + \beta 2Corruptit + \beta 3PolSta + \beta FDI + \beta ProtCrimet + Ɛ$. Where: Bo, β1, β2, β3, β4, and β5, are the coefficients of the variables to be estimated. GDP = economic growth, VioCRIME= Annual, ProtCrime Statistics, Corruption=Annual Index, Pol = Political stability, UE= Unemployment, FDI=Foreign Direct Investment, Ɛ = stochastic error term, t = time period

Findings: higher violent crime rate, is associated with lower economic growth. Literacy rates increase, economic growth, contribute to greater economic productivity and innovation. Political stability is associated with higher economic growth by attracting investment. *H*igher levels of corruption distort resource allocation, reduce investment, and undermine the rule of law. Unemployment, Foreign Direct Investment rate, trade openness and governance are not significant to economic growth.

Recommendations: (i) Investing in community policing, (ii) Investing in basic education to raise literacy rates with higher levels of human capital contributing to greater economic productivity

and innovation. (iii) Resource the Zimbabwe Republic Police Services for effective and efficient policing for political stability, and (iv) Fighting corruption.

DEDICATION

This research is dedicated to my wife (Mrs Eyenety Tatenda Karibe) who has believed in me in all my academic life, my son (Patrick Gabriel Karibe; *boys*) and *my departed daughter* (*lovely* Joyleen Panashe Karibe) who has given me a lot of love and support as I did my research dissertation.

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I wish to acknowledge the support of the following people during the course of the research project:

Firstly, I would like to extend my heartfelt gratitude to my supervisor, Mrs Dube who guided me in conducting and compiling the research study. I would also want to thank the Zimbabwe Statistics Office, Zimbabwe Republic Police Services for the support in accessing information that was required in this study.

Completion of this paper could not have been possible without the assistance of Mr. G. Mudyanadzo and Inspector Rambanepasi of Zimbabwe Republic Police Services. My special thanks also go to the respondents who made the research study a success. Last but not least to all my family members, I say thank you for the support.

ABBREVIATIONS

BUSE	Bindura University of Science Education
CUT	Chinhoyi University of Technology
FDI	Foreign Direct Investment
HIT	Harare Institute of Technology
IMF	International Monetary Fund
LSU	Lupane State University
UZ	University of Zimbabwe
RBZ	Reserve Bank of Zimbabwe
WB	World Bank
ZIM	Zimbabwe
ZimStat	Zimbabwe Statistical Office
ZRP	Zimbabwe Republic Police

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CHAPTER ONE

1.1 INTRODUCTION

Crime creates fear and indefinable suffering among people in a society. Criminality remains as ancient as man and it persists in all societies in corresponding to its level of development. The degree of criminality maneuver unimpeded in utmost societies habitually in developing countries around the world is most troublesome. The present of delinquency constructs distress, intimidation, and indescribable anguish among the citizens. Mostly delinquency regularly outlooks as an obstacle to the economic increase of society, dismays trade, upturns the cost of businesses, and eventually fuels brain-drain and ultimately forms economic progression and progress gaps outcomes around the world (Osawe, 2019 Criminal activity, or lawbreaking, is a serious problem that affects all society and nations, albeit to varying degrees (Wu, 2021). A vast array of illegal activities are visible globally throughout various times, and the theory of crime was primarily made up of recommendations from sociologists, psychologists, criminologists, political scientists, and law professors. These recommendations were not based on rigorous empirical examination, but rather on beliefs about concepts that devour the pressure towards readapt the period and the consequences. Though without discounting the various kinds of unique crimes, planned, violent, and profit-seeking crimes appear to be the most prevalent sorts of crime in the recent past (Nikolaos and Alexandros, 2019).

According to Nikolaos and Alexandros (2019), Chang and Wu (2016), Hamzah and Lau (2015), Freeman (2019), and others, the economics of criminality are often associated with factors like poverty, social exclusion, income, income inequality, unemployment, inflation, migration, human capital, worker ability or labor market skills, low legitimate earnings, poor employment records,

cultural characteristics, age, sex, fertility, demographic transition, education level, family background, its unequal representation concerning race, the level of urbanization, and other economic issues. According to economic theory, recessions primarily lead to a rise in criminal activity (Conley and Wang, 2021). Furthermore, uncertainty, throughout a depression, administration expenditures on crime avoidance continue the similar, before the escalating criminality percentage consequences voguish plunge criminality revealing degree. While depression remains dismissed, lawbreakers might flop towards change awaited likelihood of criminality revealing plus accordingly crime rates resolve loiter on a higher level affiliated to the prerecession historical.

High levels of criminality cause enormous costs to society and obstruct the expansion and advancement of the economy (Mehlum et al., 2021). The ultimate cost of crime to an individual is death, but victims may also bear additional costs including lost wages, medical expenses, or property (Atkinson et al., 2021). Large sums of money are spent on rejecting the oppressed on the glossy social surface. Fashionable reaction to high degrees of criminality, the administration is obligated to expend a chief portion of its financial plan on delinquency deterrence, such as financing law enforcement organizations, consecutively confinement amenities, and prison correction rehabilitations implementing crime avoidance curricula. The increase in spending on crime prevention and the decrease in productivity of those who have been harmed are two indicators of social harm (Daniele and Ugo, 2021; Ivaschenko et al., 2020). At the financial level, crime is an act that settles disputes and brings about the turbulent state of a country's economy. It is a well-known fact that criminality severely hinders the spread of economic growth. A few examples of these barriers include the inability to attract foreign direct investment, limitations on the use of human capital, a decline in attractiveness, a reduction in the ability to cause destruction, and an increase in the costs incurred by the non-profit sector (crime fighting). Additionally, the financial costs associated with delinquency include lost tourists (Hamzah and Lau, 2018).

According to the most recent data from the Zimbabwe National Statistics Agency (ZimStat), Zimbabwe had a 45% increase in crime in 2023. In the fourth quarter of 2022, 208,027 criminal offenses were reported to the police, up from 143,923 cases in the first quarter. According to the data, there were 319 homicide instances in the final quarter of 2022. According to the 2023 ZimStat

report, 591, or 4 crimes per 100,000 persons, were perpetrated against public safety and state security, accounting for the majority of recorded criminal cases (89,775). Most commercial people stored large sums of money in their homes, which attracted the burglars. There was evidence that corporations were using insiders to start seepages and provide clues to burglars. Some cash-in-transit attacks have been reported in which security companies' staff members were entangled.

The criminality effect on the economy growth is extensive, as it breeds excessive disbursements towards society at dissimilar intensities, from isolated to nationwide. It is reasonable to conclude that crime hinders a country's ability to expand economically given the financial losses already incurred and the potential for future budgetary gains from carefully allocated funds that may result in both tangible and intangible revenues (Gaibulloev & Sandler, 2021). Delinquency concocts imperative effects and influences proceeding the civilization. Continuously, illegal action consents to the ingestion of unlawful possessions or amenities that might not then be disbursed. Delinquency also results in exorbitant costs for both public and private parties, including lost lives, destroyed and stolen property, security costs, suffering, and anguish. In reality, delinquency is comparable to the tariff on the unexpurgated entire economy of a nation: it has effects such as dismays Indigenous and external direct reserves, decreasing the effectiveness of productions and rearranging possessions, producing diffidence and extravagance. A technique to extent the swarming-out influence of criminality is to assess its influence on the pecuniary performance of the nation or state.

Theory theorizes profitable progress outcomes cutting-edge decline in criminalities (Burnham, Feinberg & Husted, 2021). In global economics and public sector economics crime has been shown to have a robust transposed connection with pecuniary growth. Despite greater economic progress, there were more armed robberies in Zimbabwe throughout the reviewed period. This has also sparked questions about whether the current state of affairs is still consistent with the new normal of invalidating the financial model. Consequently, the researcher seeks to define the influence of crime on trade and industry in Zimbabwe, with the understanding of impending recommendations that decrease crime.

1.2 Background to the Study

According to Osawe (2021), economic growth is the gradual rise in the quantity of commodities and/or services generated by an economy. Economic growth usually relates to technological changes and innovations. Dornbusch & Fischer, 2018 allude to pecuniary progress as disturbed through the indispensable long-run progress of pecuniary propensity prudently than using short-run variations in its application. In the same vein pecuniary progress canister remain attained by using funds and human capital (resources) that exist obtainable in an enhanced mode. National profitable progress remains enforced in edict to attain greater standards of living for its citizens and can be extravagant by crime rate.

In boosting the growth of the economy, the administration employed numerous macroeconomic policies, and programs namely; The Zimbabwe Sustainable Socio-Economic Transformation (Zim Asset), Transitional Stabilisation Programme (TSP), National Development Strstegy-1(NDS1), and recently indigenous development policy to drive up the economy. On the other hand, it appears that the recommendations have not been as successful in reducing poverty as they were in achieving economic independence (Rogerson, 2018). Devoid of any reservations the Zimbabwe administration prepared momentous growth in taming subsists of masses of individuals who concluded deficiency lessening plus trade creation. Nevertheless, the pictured progress concluded the numerous macroeconomic strategies in Zimbabwe's devices remained realized at their optimum level owing to numerous hurdles one of which being criminality. The current crime prevalence defies the process of economic transformation in Zimbabwe. Certain categories of criminality alter good governance hence declining improvement and ultimately destructive to emerging nations such as Zimbabwe.

According to a Zimbabwean report, violent robberies have continued to rise over the previous ten years. However, based on their fear of robbers, the Zimbabwe Republic Police Service (ZRP) appears up to the challenge. The percentage of predominance validates the financial outlay based on an understanding of economics. Zimbabwe devises a lot of violent crime, it also has a lot of people who are imprisoned. The prevalence rate caused a double whammy for the government in the cost of running prisons, and correctional and rehabilitation services (ZPCS). Imprisoned

person(s) are not economically industrious. Equally, he/she does not earn for the nation and the economy. Here is lost revenue, and then there are out-of-pocket expenses as well.

Governments spend close to millions of dollars on prisons' correctional and rehabilitation services yearly. Subsequently, disbursements of vast sums of money create more problems than they resolve. Healthcare cost further adds to the expenses making prison correctional and rehabilitations unviable. Consequently, spending tells how devoted the administration and implementing partners are when it emanates from complications of determining illegal actions in the nation. These numbers will direct government policy, and changes in the aforementioned measures can also be used to gauge how well governmental programs are working. The main obstacle that the nation will always have to deal with is "world-class" criminal activity. On the other hand, knowing the truth about the consequences of crime will aid in finding a solution.

A cross-examination will also be conducted about the payment of insurance subscriptions and cloistered security meant to deter theft. The full impact of criminality on the economy, which would have remained undiscovered otherwise, may be unexpectedly revealed by the study. Government policy will therefore be appropriately guided by knowing the precise impact, leading to further economic growth and development. The financial costs of crime can easily produce a collaborative or unproductive economy. Wealthy individuals and domestic companies looking to increase their savings may ultimately decide to liquidate their assets in safer countries because they won't have to pay for costly private security services, extortion, or excessive insurance rates in other countries.

As an alternative to selecting to dispense funds in Zimbabwe, awful crime statistics may drive them to judiciously ponder other destinations (countries), which have better conditions and competitiveness. This decreases the dynamism (growth and vibrancy) of the economy since it slows down new savings and also, the diversity of the economy. This is because, even for local projects, investors will direct much of their savings where safety and security are positive, instead of where opportunities lie. Firms also invest much less in new technologies and innovations, when they direct a substantial portion of their earnings to safety and security.

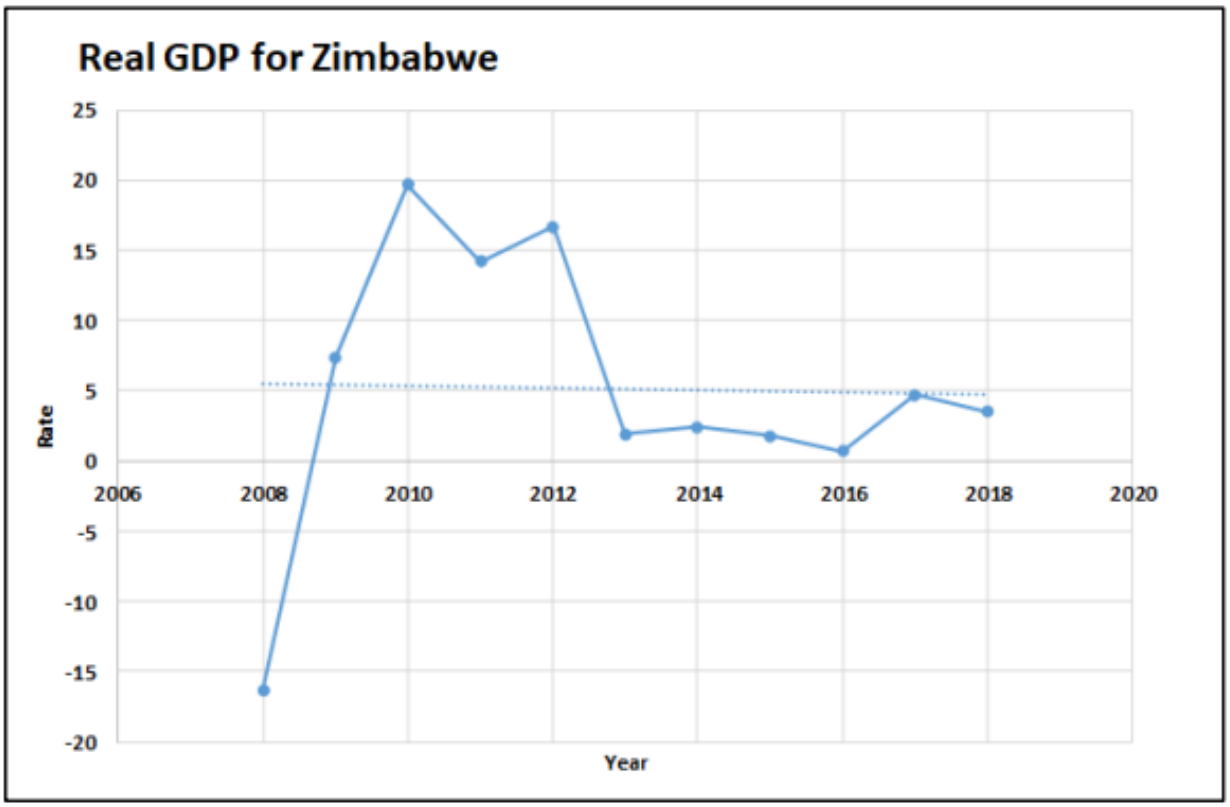
It is also possible to transfer the expense of private security to ultimate consumer costs. Ultimately, the aforementioned impacts will undermine local enterprises' competitiveness on a national and worldwide level. Investigations will also be conducted into the distribution of donations for insurance and cloistered security meant to ward off theft.

Zimbabwe establishes solid foundations for accelerating trade and industry to achieve economic prosperity. The free open-market-led growth is precarious to maximize the nation's perspective. Some decades after independence, the nation Zimbabwe continued solitary of the nations with the utmost living standards fashionable Southern Africa bolstered by a skillful staff and infrastructure superior to most nations. Even so, the economic downturn that began in 1995 is still a hype-copious divide that is either reasonable or could become competitive on a regional and global scale in the near to medium future. Zimbabwe is incredibly egalitarian across several value chains in agriculture and agribusiness industries, including sugar, cotton, horticulture, meat, and dairy, according to the recently completed national private sector diagnostic. Moreover, Zimbabwe has enormous short-term potential in the travel and tourism industries as well as in the mining of energy transition minerals with abundant lithium reserves.

To fully comprehend the future, Zimbabwe must find innovative ways to leverage the private sector's present and emerging opportunities to pursue financial advancement and link the country's inherent advantages, which include its relatively robust human capital which is on par with that of well-empowered upper-middle-income markets in Africa as well as its wealth of natural and mineral resources. An appreciation of the special effects of criminality on pecuniary activity is extremely very essential and significant. The main explanation for this is that as the country's economy grows, criminals will likewise be searching for more opportunities to steal. In light of this, data on economic crimes and other transgressions must be regularly tracked and kept up to date. Since crimes now happen every day in Zimbabwe's towns, cities, and even rural areas, the country's crime rates have been steadily rising (Mphisa, 2019). The upsurge in crime rate has resulted in the loss of lives and property, and the corporate community has not remained secure. The Mashonaland and Midlands provinces' mining regions were identified as potential hotspots for increases in armed robberies (Mining in Zimbabwe, 2019). Close by dint of devour remained ferocious horror clutches who offered themselves altered forenames; Mom Shangwe, Ma

Shurugwi, Ma Bhemba, Ma Ziga, Ma Kwekwe, who stood poignant vogueish crowds armed using knives (machetes), catapult, and axes. They recklessly attack their victims in search of money and other valuables like gold and cellphones. The Zimbabwe Republic Services which is mandated by section 219 of the Constitution of Zimbabwe Amendment Number 20 of 2013 to enforce and protect the society from violent crimes made frantic efforts to arrest the tide, with success (Dube, 2018). Almost all of the cases were erratic, where criminals beset corporate units in pursue of the United States Dollars which the nation embraced in the course of multi-currency and dollarisation period. Even after Dollarization, the trend appeared to have persisted.

1.2.1 Figure 1: GDP data trend for Zimbabwe 2008 - 2018.



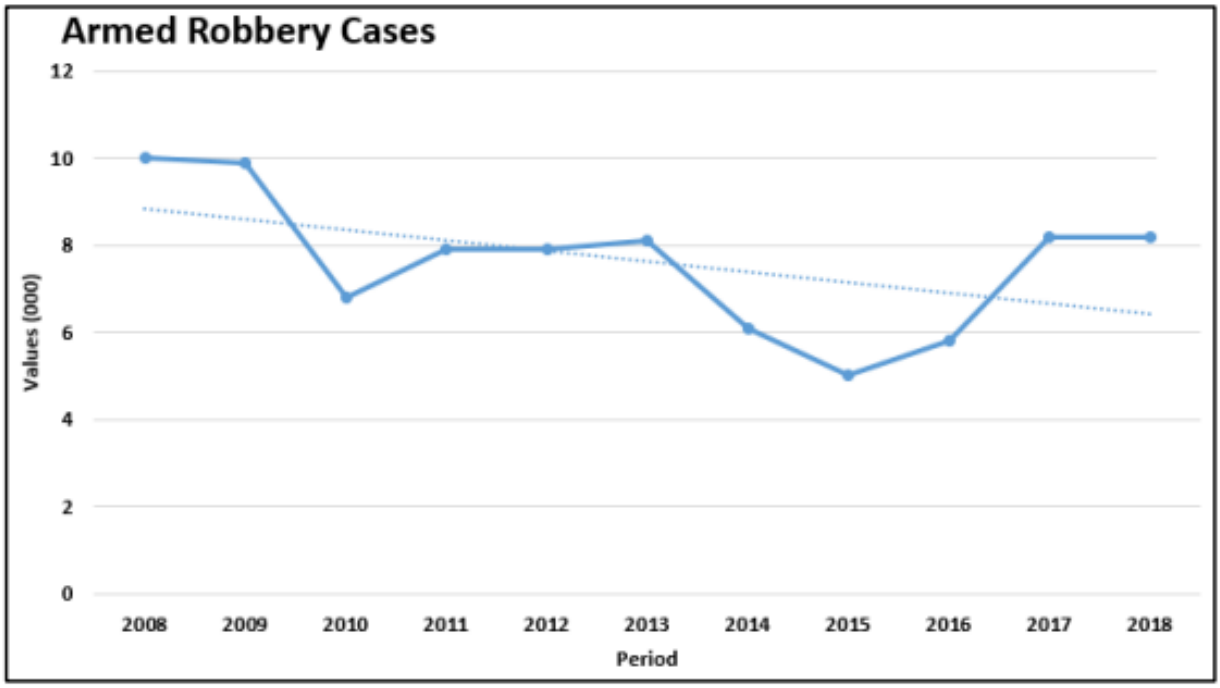
(Global Economy Database, 2019).

Fig 1 above shows the real GDP for Zimbabwe from 2008 - 2018. The common trend shows that real GDP was increasing gently form -17 (2006) to +4 (2018). In addition, there were some variations from 2009 to 2018 but above 0.

In Zimbabwe, unusual glassy strong criminality is still often cited as a means of impeding advancement, making appropriate financial progress imperative for the country's administration (Crime Analyst, 2020). The risk of criminality dissuades possessions to shield exertions, extracts well-being costs over-amplified tension, and mostly generates an atmosphere unconducive to productive action. Furthermore, part of the reason for the massive exodus of Zimbabwean experts and specialists in the modern era may still be traced back to the necessity of inciting a serious criminal scenario. All of these effects discourage saving and hinder the long-term growth of Zimbabwe. Explanations quoted for a harmful affiliation amid pecuniary progress and crime are, amongst others, as follows:

- Criminality stimulates households and societies to spend more currency scheduled, well-being maintenance, and security insurance rather than on education and other investments;
- The government is forced by delinquency to increase funding for law enforcement, crime prevention, and justice administration all essential to promoting progress;
- Criminality destroys the skilled labor force by furthering brain-drain and by injuring and killing skillful staff;
- Delinquency prevents individuals from entering the workforce by discouraging them from pursuing jobs that necessitate working long hours or far from home;
- Criminality increases trade costs (undeviating losses plus security and preventive costs), which deters capital from being invested in productive capacity and lowers returns;
- Criminality dismays both domestic and external savings; then
- The efficacy of investments in education and other public spaces that support long-term progress like public transportation is diminished by criminal activity (Stone, 2018).

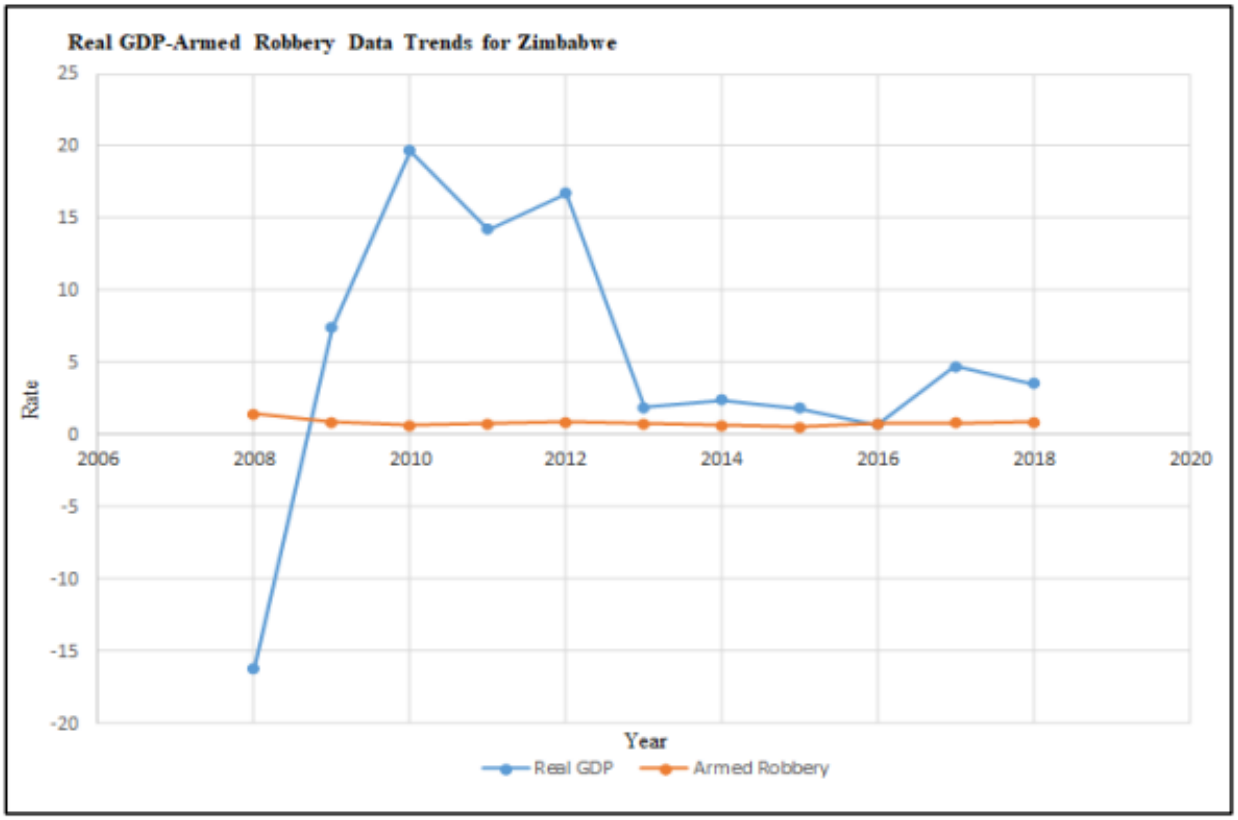
1.2.2 Figure 2: Armed Robbery cases for Zimbabwe 2008 -2018.



(ZRP Services Crime Statistics Database, 2019)

From figure 2, above, information on cases of armed robbery illustrates the haphazard stroll phenomenon, by way of an inferred descending drift as presented by the drift line. The general drift shows a downward decline in armed robbery cases decreasing rate from 10 in 2008 to 8 in 2018.

1.2.3 Figure 3: GDP-Armed Robbery Cases Data for Zimbabwe.



(World Bank and Zimbabwe Republic Police Services Crime Statistics Database, 2019)

Fig 3, above shows that, whilst the Real GDP trend is growing from negative values to positive values, the armed robbery trend oscillates above zero in a linear pattern. Generally, the graphs visualize no relationships between Real GDP and Armed Robbery.

Furthermore, according to Blake and Weale (2023) and Blackburn (1919), a country's ability to achieve progressive financial advancement is crucial, and during the past 25 years, there has been an increasing amount of consideration given to the elements that determine this. Solow's growth model was the first theory to emphasize the importance of determinants for profitable progress, and it is also the most fundamental. Additional investigations unveiled additional critical factors that influence economic growth, including human capital stock (Mincer, 2021) and innovation

(Aghion & Howitt, 2019). One of the primary means of knowledge transfer between two countries is foreign direct investment (FDI), which contributes comparatively more too economic growth (Borensztein et al., 2018; Lensink & Hermes, 2023).

Since the connection between crime and economic growth has received more attention in the academic literature, many studies have sought to quantify the direct and indirect costs of crime on society (McCollister et al., 2019; Anderson, 2019). Certain research (Cárdenas, 2019; Peri, 2018; Gaibulloev & Sandler, 2020) indicates that crime has a major detrimental effect on economic expansion. Mauro & Carmeci, 2019; Ray et al., 2019), Goulas & Zervoyianni, 2019; and Burnham et al., 2018) find that the effect is either nonexistent or very small.

1.3 Statement of the Problem

Zimbabwe has a tremendously high degree of crime (*45% surge in crime in 2023*), perceived as interference in the nation's pecuniary progress. The high prevalence rate of crime is hindering the country's economic growth and development, as it discourages foreign direct investment (FDI), increases costs for businesses, decreases productivity, and leads to a brain drain (net-migration), thereby perpetuating income inequalities and limiting communities' pecuniary progress and improvement. Criminality is a warning to the steadiness and prosperity of the citizens of the nation. While some crime categories may be declining, violent crimes against individuals and businesses continue to grow. Because there is little data on the relationship between crime and economic growth, crime in Zimbabwe continues to pose a significant threat to economic expansion. Therefore, the study investigated the relationship between criminality and economic growth.

1.4 Objectives

i. To understand the effect of crime on economic growth in Zimbabwe.
ii. To identify the economic costs of crime in Zimbabwe.
iii. To identify effective policies.

1.5 The Research questions

i. What is the influence of crime on economic growth in Zimbabwe?

ii. What are the economic costs of crime in Zimbabwe?

iii. What policies are effective and relevant for the economic growth in Zimbabwe?

1.6 Research Hypothesis of objective (i)

H_0: Crimes devise no effect on economic growth in Zimbabwe.

H_1: Crimes influence economic progress in Zimbabwe.

1.7 Research Hypothesis of objective (ii)

H_0 Crimes have no economic costs in Zimbabwe.

H_1: Crimes influence pecuniary growth in Zimbabwe.

1.8 Justification

i. Knowledge gap in developing countries.

Despite an increasing amount of worldwide study on the impacts, little is known about this link in the context of Zimbabwe. This research will help close this information gap.

ii. Policy formulation.

Although there has been a lot of research done globally on the effects, not much is known about this connection concerning Zimbabwe. This study will contribute to closing this knowledge gap.

iii. Academic purpose

As a requirement for the degree, in part

1.9 Delimitations

The study focused on how criminal activity affected economic advancement in Zimbabwe from 1980 to 2023. The nation was purposefully chosen since it was recognized to be facing both economic hardship and a high crime rate. The study is limited to using the impact of crime on economic advancement in Zimbabwe as a case study. Understudied variables of relevance include unemployment on economic growth, governance, technology, literacy level, net migration, property crime, violent crime, and crime rates. The public sector economics population of interest includes the security sector, the public sector economy, and other government agencies.

1.10 Assumptions

The researcher and economist policy analyst assumes that the study is based on unbiased data from the research participants, Government institutional Reports, Reserve Bank of Zimbabwe, Zimbabwe Republic Police Services, ZimStat, and World Bank. It was also assumed that data from the above sources was a true representative of the economics (economies) and crime situation in Zimbabwe. The study was of the assumption that crime affects economic growth in Zimbabwe.

1.11 Limitations

Data obtained from public sources always has its limitations such as inaccessibility for example the Zimbabwe Republic Police Services has no data portal website accessed by the public, bureaucracies, and red tape. Bureaucratic challenges were encountered during the data gathering method for this study, primarily while conferring with the police department and a few government institutions. The crime rate (Zimbabwe Republic Police Services, Crime Statistics report, 2023) is the primary independent variable for which the concluded measurement error is most likely to be severe. It was also acknowledged that there were significant gaps in the data provided to ZimStat, which were then filled in using different techniques such as interpolation, extrapolation, imputation, and estimation. The economist researcher, however, takes comfort in that institutional and government ministries, departments, and agencies or research institutes from which data were obtained had devoted and established common standards of how data should be defined and collected.

1.12 Definition of terms

Crime: (Schoepflin 2018) postulated, that crime is a violation of official law and is punishable concluded prescribed authorizations. Violent and nonviolent crimes are examples of the way society typically instills in its members the idea that some crimes are more serious than others. While the impoverished are frequently associated with criminal activity, crimes carried out by the wealthy and those in positions of authority continue to be an expensive and underreported issue in society.

Effects: these are the outcome or the result of crime focusing on economics (economic growth) (Banerjee. 2022).

Economic growth is the process of simple increase, involving more of the same, while pecuniary improvement remains a practice of organizational modification, symbolizing somewhat unalike if not something more. The increase in the quantity of something quantifiable is growth.

1.13 Summary.

The problem statement and its context were given rationally in this part. To make the purpose of conducting the research more clear, the problem description and research introduction were then presented. The study's questions, goals, and reasoning were all beautifully presented. The section provided contextual towards the study highlighting approximately vital measurements and acumens. The chapter laid the foundation for the research by giving pointers on the direction being taken by the research study. The next chapter will be on reviewing related literature towards addressing the objectives of the research.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter will address economic growth theories, an empirical assessment, the relationship between crime and economic growth in Zimbabwe, and a summary of the chapter.

2.2 Economic growth Theories

Nations strive for pecuniary progress and improvement. While it is a necessary component, economic advancement is not the sole one. Classical economic models in the 1950s and 1960s observed improvement of pecuniary progression as a sequence of continuous phases of profitable progression through which nations must pass. Critical components in the economic growth of a society, are capital accumulation, labor through population growth, and technology advancement (Michael. P. Tadura, 2021). Additionally, the population growth and subsequent rise in the labor force. Innovation in job completion is significantly responsible for technological growth. During the 1980s and 1990s, a fourth strategy for economic development and expansion emerged victorious. Neoclassical or neoliberal monetary theory is a counterrevolution that highlights the benefits of open economies, free markets, and the denationalization of inefficient state companies.

Profoundly most agrarian societies are largely associated with economic growth and these societies lacked modern economic structures. However contemporary industrialized countries were once undeveloped agrarian societies.

Unique principal strategies of progress and improvement essential aimed at any take-off stayed the enrolment of internal and external savings in the imperative to produce satisfactory savings toward

hasten pecuniary progression. Financial elements that contribute to more advancement can still play a significant role in the Harrod-Domar development model, also referred to as the AK model since it is built on a linear production function with capital stock as the output. K times a constant, usually denoted by A.

2.3 Theory of growth-Neoclassical

Hindering the influx of external share, the harshness of numerous emerging nation administrations affording neoclassical progress theory will deter progress in the economies of the emerging sphere (Aboya. Y, 2022). Trevor Swan and Robert Solow advanced the Neo-classical concept in 1956. The model is chiefly practical and applicable in the production function as illustrated voguish neo-classical theorists. The Solow neoclassical growth model shows declining revenues that flow persistently and separately to labor and capital. The technical process is the final factor that explains the word growth. Solow and other proponents of neoclassical growth theory assumed that the degree of this process was established exogenously, or without reference to any other factors (Dani. Rodrick, 2021).

The fundamental foundation for researching emerging nations on the outskirts of the global community is provided by the Solow model. Because of the framework's flexibility, labor and capital can be substituted for one another, and as the process advances, it is assumed that the profits from using these inputs will decline (Karda. H, 2019).

The fundamental explanation with regards to Solow's neoclassical framework growth model expenditures' production function:

$$Y = k\,\alpha\,(AL)\,1\text{-}\alpha$$

With the equation:

Y= Gross Domestic Product or Survive (GDP),

K= capital stock,

L = labor through population growth, and

A = labor productivity.

The aforementioned rate was predicted to be 2% per year for industrialized countries, but it varies for emerging countries according to whether they are developing economies or failed governments trying to catch up to rich nations. The neo-classical economic growth model, in contrast to Domar's definition, treats technology as an independent variable and labor as a second variable in the growth equation (model). Solow's neo-classical model is frequently referred to as "exogenous" progress archetypal towards endogenous progress archetypal due to the 2% annual speed of technological growth. Although these new technologies benefit consumers greatly, they also open up new opportunities for wrongdoing and criminal activities. Technology can act as a conduit for criminal activity and deviance in the real world, as in the situations of gangs, terrorism, and child pornography, as well as a medium and atmosphere for crime, as in the case of hacking (Andrews, M., 2019).

Technology is a means of improving methods of doing conventional jobs like farming, garment production, and house construction. It is the foundation for economic advancement (Karda Hoff and Joseph, 2021).

The Solow residual, a third type, is responsible for the GNI gain that is not attributable to a brief change in the stocks of labor or capital. This residual is responsible for roughly at least 50% of historical growth in industrialized countries, geo-politics, and geo-economies (Paul Krugman,

2021). The neo-classical growth theory acclaims pecuniary progression towards the exogenous or entirely liberated process of scientific upgrading or advancement.

Vogueish closed economies with subordinate savings produce additional gradually in the short-run than with extraordinary savings degrees. Open economies practice income conjunction on higher altitudes by way of capital whereabouts starting rich nations towards deprived nations where capital labor portions are lower and this ensues on savings remain upper. Hindering the influx of external share, the harshness of numerous emerging nation administrations affording neoclassical progress theory will deter progress in the economies of the emerging sphere. Ingenuousness inspires greater admittance to exterior assembly ideas that advance the degree of technological improvement.

2.4 Harrod-Domar growth model

Harrod and Domar focused especially on addressing the two problems that arose from investment in their models (Aboya. Y, 2022). Certain investment operations are illegal. To maintain treaty-based investment arbitration's substantive and procedural fairness for all parties involved, this model narrates the changes in the thinking about crime in foreign direct investment and recommends that additional attention be paid to investor claims of corruption and crimes related to corruption (Andrews, M., 2019). A certain percentage of GDP requisite stands hoarded and devoted for the markets to produce. It follows that an increase in crime could harm reserves, investment, and eventually financial advancement. All economies need to set aside a certain percentage of their GDP if only to replenish depreciating or worn-out capital assets (equipment, buildings, materials, etc.). New reserves that constitute net flourishes to the capital stock are necessary for growth. To encourage national growth, nations must set aside and spend a certain amount of their GDP. They can grow more quickly the more they can invest and save. Within the framework of the Harrod-Domar model, there is a lack of clarity regarding labor force progress. In an emerging country such as the Republic of Zimbabwe, labor is expected to be abundant and can be engaged on a need-basis, proportionate to capital investment (Stephen C. Smith, 2019).

Harrod model established the degree of progress of returns that would reserve stability amongst tradable and savings plus to revealing if the stability remains self-correcting. Harrod-Domar's ultimate exogenous-players in the growth archetypal embrace capital increase and the proportion of upsurge in production to upturn savings;

$\Delta K/\Delta Y$.

$\Delta K=I$.

A portion of a country's GDP must be set aside and spent to promote national growth.

We build the resulting simple model of economic growth based on the capital-output part as, k. and further assume that the national net savings portion, s, is a fixed proportion of national productivity and that the level of total savings determines the amount of new investment:

1. Net-savings (s) is about equal to the percentage, s, of national income (Y), resulting in a

Modestly straightforward calculation.

$S = sY$ (i)

1. Net-investment (I) is distinct as the alteration in the capital stock, *k*, and can be symbolized by ΔK such that.

$I = \Delta K$ (ii)

Because the entire capital standard, k, bears a direct connection to total national income or production, Y as expressed by the capital-output ratio, c,

$K/y = c$

$\Delta K/\Delta Y = C$

$\Delta K = c\Delta Y$ (iii)

2. Real net-national investments, s, obligation the same net savings, I, this correspondence equation:

$S = I$ (iv)

Knowing that $S = Sy$

$I = \Delta K = c\Delta Y$

$S = sY = \Delta K = c\Delta Y = I$ (v)

Simply $sY = c\Delta Y$ (vi)

$DY/Y = S/c$ (vii)

According to Domar's growth model, the national capital-output ratio (c) and the net domestic savings proportion (s) work together to determine how much GDP is growing. More precisely, it says that the level of national income growth in the absence of administration will be adversely or negatively connected with the economy's capital-output ratio in addition to being directly or indirectly correlated with the savings component.

Δk is the capital change.

ΔY = shift in output, and

I = savings

Change in capital stock is a result in savings, meaning;

$\Delta K = I$

The growth model by Harrod-Domar is related to this study titled: Effects of crime on pecuniary progress, a model seeks to conclude whether or not the real pecuniary progress degree will produce a state in which predicted savings match anticipated reserves and in that condition, the idea of

reasonable degree progress plus the normal degree of progress play a part. A certain percentage of GDP requisite stands hoarded and devoted for the markets to produce. It follows that an increase in crime could harm reserves, investment, and eventually financial advancement.

2.5 Classical growth theory

The Classical School assumes that criminal behavior is the result of free choice. Here, "free will" refers to awareness, sense, or intention. According to the Classical Theory of Criminology, people are rational and have the will to act following their desires. They also determine if a crime is logical by weighing its advantages over its disadvantages. Thus, the concept of free will is used in classical criminology to explain why criminals choose to commit crimes and why discouraging criminal activity and making it difficult or costly for them to commit crimes is the most effective strategy to reduce crime (Piquero, 2021). People make reasonable decisions and choose to commit crimes depending on the possibility of punishment. According to the Social Control Theory, people are logical creatures who just want to reduce their suffering and maximize their pleasure (Burke, 2019). People usually use rational understanding to weigh the advantages against the drawbacks while making decisions.

Aboya Y, Ansari N, Chishty BA, Hussain A (2022)

Pecuniary economic development denotes the difficulties of underdeveloped nations and profitable progress toward that of industrialized nations (Maddison, 2021). Schumpeter concludes that progress is the steady and stable transformation trendy the elongated path that arises around through a slow upsurge voguish degree of reserves and population growth. The interpretation by Schumpeter remained extensively acknowledged besides particularized by mainstream economists. According to Kindlebege, “economic growth means more output”. Classical economists, Friedman in 2021; defines growth as an increase of the system in one or more proportions available an alteration in its creation of the system in one or more dimensions.

The pecuniary progress is correlated to quantitative persistent escalation per capita productivity otherwise increase is complemented by an increase in labor power, depletion, wealth, and capacity of skill. Any economy may produce nonetheless the aforementioned might not progress as a result of deficiency, unemployment, poverty, and disparities. These may carry on to persevere owing to the deficiency in technology and fundamental adjustment. The aforementioned remains problematic envisage progress lacking pecuniary progression in the nonexistence of an upsurge in productivity per capita, particularly when the population is increasing fast. Economist, Smith Adams advanced supply-sided progress archetypal through ensuing the simple production function:

Y = (L, K, T.)

Whereby;

Y. = Output,

L. = labor,

K. = capital, and

T. = Land

As growth is sometimes seen as an expansion of the system, therefore productivity would remain correlated to capital, land, and labor inputs. In the classical growth model output is conventionally connected to an increase in population, savings, land-dwelling progress or utilization, and an increase in production. The economist Adam Smith proposes that nations or states experience

swelling earnings towards weighbridge and reserves is a function of savings and results in pecuniary progress (Reis, 2021).

An extraordinary population expansion was under way by the time classical thinkers formulated their theories about population growth. The real GDP per person would only rise momentarily, according to the classical growth theory or model, as population explosions will lower real GDP per person and propensity will drive population expansion. In illuminating the increase in population, conventional economists recycled the dimple of the existence of actual revenue (actual GDP per individual). As soon as actual revenue surpasses the existence actual revenue, the population grows. Growing populations can decrease investment per hour of labor and finally decline actual revenue to less than sustenance actual revenue. The minute the real revenue is less than the sustenance actual revenue, individuals cannot endure, and the population decreases. Growth theory was broadly condemned because of its feebleness in capturing the effects of know-how on pecuniary progress.

2.6 Endogenous growth theory

Endogenous growth theorists seek to elucidate the frameworks that reveal the degree of λ, or GDP growth that is exogenously resilient and impermeable, in the Solow equation of neoclassical progress theory, commonly known as the Solow residual. While endogenous growth models allow about the same physical dimensions as their neoclassical equivalents, the conclusions drawn from them are questionable because their underlying hypotheses differ dramatically. The goal of endogenous growth theory is to assess the different long-term progress plans among countries by explaining the actuality of expanding revenues. Even while equipment plays a significant role in these models, long-term evolution may now be explained without reference to external technical improvements. One easy way to tell endogenous growth theory apart from traditional neoclassical theory is to recognize that many endogenous growth theories may be represented using the simple equation Y=AK as the Harrod-Domar model. Whereas K includes both human and physical capital, A is expected to suggest any component that outrages equipment.

The endogenous progress theory emphasizes the significance of reserves and human capital in attaining swift advancement. Additionally, it makes some improvement-related claims that are consistently at odds with antiquated theories. First off, national growth rates are constant and differ between nations depending on national savings rates and technical improvements; there is no one element responsible for the equilibration of growth rates in closed markets. Furthermore, due to technological constraints, the per capita income levels of capital-poor countries cannot catch up to those of wealthy countries with comparable rates of population growth and savings (Todaro and Smith, 2019). These authenticity are extremely important since a nation's brief or prolonged dejection may contribute to a long-term widening of the income gap with wealthier nations.

2.7 The assessment of a theoretical literature review

The discussion above makes it evident how the neoclassical growth theory improves this research by ensuring that an increase in the rate of technological advancement or the total component of the production of the economy increases productivity per worker's progress. For example, the nation's output will decline if some of its competent citizens leave the country due to violent delinquencies. Because it uses the natural rate of growth and the idea of an acceptable degree of progress to determine whether or not the real pecuniary progress degree will form an objection in which anticipated reserves equal anticipated reserves, the Harrod-Domar growth model is correspondingly related to this study. It is necessary to set aside a specific portion of GDP to support market production. People killing each other off led to a decline in savings, reserves, and financial advancement. This study will contribute to the advancement of endogenous growth theory since it recounts a remarkable agreement regarding domestic engagement. In actuality, criminality has a negative economic impact since it causes businesses to lose money while tax payer funds are used to fund jails, correctional facilities, and rehabilitation programs.

$$\text{Rate of economic growth (g)} = \frac{\text{Level of savings (s)}}{\text{Capital ouptut ratio (k)}}$$

Harrod-Domar growth model

2.8 Empirical Literature

Most research studies done so far have shown that criminality or delinquency has a momentous effect continuously to the public. When criminal activities are planned, they make it possible to consume illicit products or services that one could not have otherwise. Similar to this, criminal activity places an endless burden on both public and private organizations. These costs include lost or stolen goods, personal injury, security expenses, and psychological distress. Estimating the public cost of crime has grown to be a required subject of study in recent decades (Czabanski, 2008). This area of study looks at the substantial toll that crime takes on society as well as the growth and widening of economic inequality. For instance, Price (2020) used survey data to estimate the Home Office's overall expenses associated with crime in Wales and England. 6.5% of the GDP is expected to be spent overall, as forecast. The entire yearly cost of criminal activity in the US is estimated by Anderson (1919) to be 11.9% of GDP. Detotto and Vannini (2019) evaluated the difficulty of a group of criminal charges (about 65% of all criminal offenses) in Italy in 2020. In Italy, the estimated overall societal cost exceeds 2.6% of GDP.

The negative effects of crime on financial advancement are still overlooked in economic literature, even though the measurement and reporting of crime expenses receive much-needed attention. Delinquent behavior has consequences that are similar to tariffs on the entire economy: it depresses savings both domestically and abroad, lowers corporate competitiveness, and sways resources, which leads to uncertainty and disarray. Crime is recognized as one of the primary causes of losses in terms of both human lives and financial resources in both industrialized and developing nations.

In underdeveloped countries like Zimbabwe, where resources are few to establish the required countermeasures to reduce crime, delinquency is a greater concern. Highly industrialized countries have devised and implemented diverse strategies to mitigate the extent and severity of criminal activity via engineering, education, and law enforcement. High rates of crime, particularly violent crime, are routinely cited by Zimbabwe's government as a barrier to advancement. However, the evidence on the precise way in which crime impedes economic progress is far weaker (Stone, 2020).

A large number of individuals who engage in illegal behavior end themselves behind bars and unable to work, which has a detrimental effect on the production level of the economy. This consequence makes sense if one considers the fact that a disproportionately high number of males of working age end up behind bars in numerous different nations. Individuals with low levels of education are also expected to earn less money, and as paying for prison after committing a crime is one of the main alternative costs, these individuals are thus more likely to commit crimes. This would explain why the economy might have high crime rates at low capital accretion rates, low wage rates, and potentially Spartan income disparity. This idea holds that the government's role extends beyond simply redistributing resources directly through taxation to include providing the infrastructure and services like public education and schooling that are required to raise worker productivity and wage income.

Such a role is hampered by the large number of people who, for example, are imprisoned and do not participate in the legal process of output and revenue production. Under such circumstances, government revenues are low not only because of a reduction in the actual amount of taxable resources but also mainly because a significant portion of those resources are being diverted from investments in productive savings, such as education, to investments in unproductive savings, such as security. This would explain how crime harms capital accumulation and growth (Capasso, 2021).

Travel invents besides become unique the exciting besides entrancing businesses across the globe. Theoretically, numerous researchers and authors are all-inclusive and have pleased the matter of criminality to tourism. In Zimbabwe, the travel industry has emerged as one of the main sources of income for the country's economy. Crimes against tourists are not a recent phenomenon that has emerged with the growth of the travel and tourism sector. According to Giddens (2022), crimes committed against travelers affect more people than only the victims and their families. This statement is quite real since hostile tourist behaviors at a certain location are still widely reported by the media or by travelers themselves via word-of-mouth to friends and family. Following that, the location receives negative press, and fewer people visit the region. Travelers in Zimbabwe are still at risk of being attacked by criminals. The tourists suffer bodily and emotional trauma as a result of this. This occasionally reaches a stage where the illegal act performed against the tourist

even has an impact on that specific traveler's friends and relatives. When violent crimes like rape and murder are committed, this happens.

Mauro (2019) found a strikingly negative relationship in 70 nations during the early 1980s between the rate of financial advancement and crime. According to Lambsdorff's (2021) research, corruption lowers capital creation across a range of nations. Forni and Paba (2020) examine how several socioeconomic factors affected the provinces' financial performance in Italy between 1971 and 1991 and discover that crime had a detrimental effect on these nations' financial development. Peri (2021) shows that homicides harmed the annual per capita income advancement even after adjusting for other explanatory variables using a larger data set (covering the years 1951 to 1991).

According to Pellegrini and Gerlagh (2021), the effect of corruption on GDP growth lowers the country's openness and the savings-to-GDP ratio. Cardenas (2019) looked studied the correlation between crime and growth rate in 65 unbalanced nations between 1971 and 1999. The results of the study support earlier studies by showing that crime harms economic expansion. In a panel of eighteen Western European countries, Gaibulloev and Sandler (2019) investigated the impact of both domestic and foreign terrorism on the rise in per capita income between 1971 and 2004.

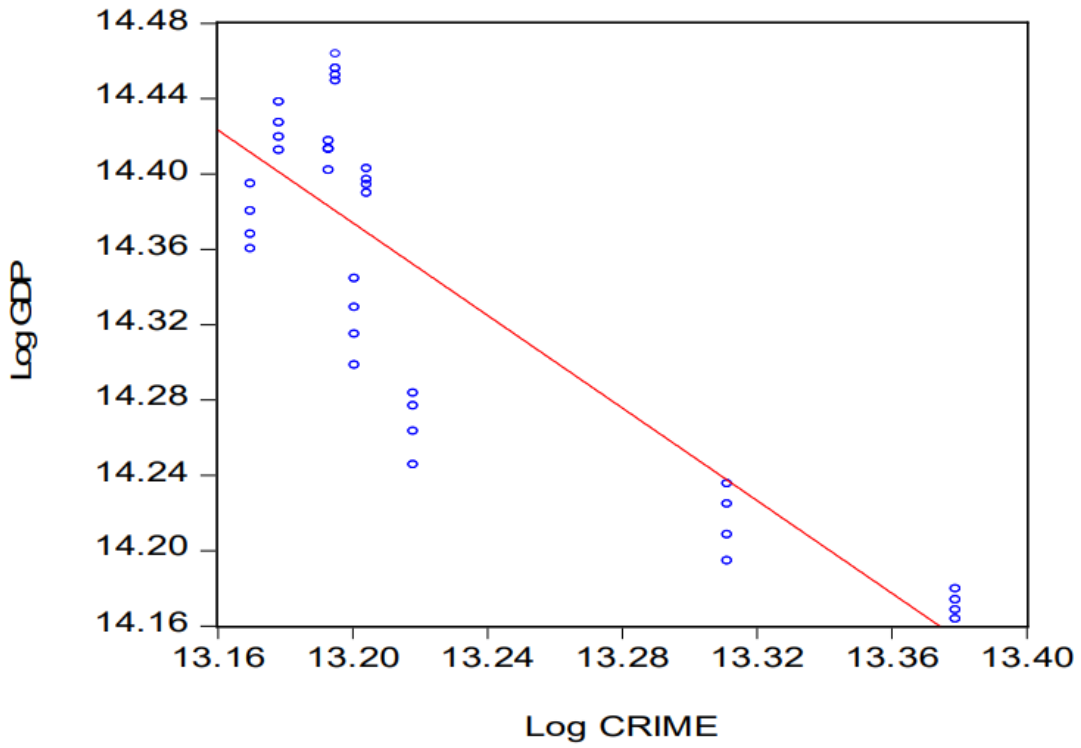
Their findings imply that crime harms these nations' economic growth. Enders and Sandler (2019) use a VAR model to evaluate the impact of terrorist incidents on net foreign direct investment in Greece. According to their research, crime and foreign direct investment are negatively correlated in Greece. Masih and Masih (2019) studied the relationship, within a multivariate co-integrated system, between some crime categories and their socioeconomic determinants for the Australian situation. In Australia, Narayan and Smyth (2020) examined the relationship between seven different crime typologies, unemployment, and real pay using a Granger causality test in an Autoregressive Distributed Lag (ARDL) model. According to their research, there is a direct link between criminal activity and unemployment. This result implies that crime will rise in tandem with unemployment. In light of this, unemployment increases criminality. Using regional data from Italy, Mauro and Carmeci (2019) conducted an empirical reconnoitration of the relationship between economic growth, unemployment, and crime. Their

results support the views of other scholars, who hold that crime has a detrimental effect on economic expansion.

Two other scholars who have started to make the argument that crime slows growth are Cardenas (2019), who looked at Colombia's annual GDP growth between 1951 and 2005, and Habibullah and Baharom (2019), who used an ARDL model to analyze the relationship between the real gross national product and different criminal offenses in the Malaysian case. Using data from Italy (1970–2004), Detotto and Pulina (2019) recently employed an ARDL model to evaluate the link between different crime offenses, deterrence measures, and economic variables. Chen (2020) employs a Vector Autoregressive (VAR) model to investigate the causal and long-term links between income, crime, and unemployment in Taiwan. These lessons lend credence to the theory that illicit activities stimulate adverse economic growth.

The increase in state-of-the-art administrative spending on security crowds out some important infrastructural improvements. For a significant number of people in today's society, if not the majority, crime is still an unavoidable part of existence. Insecurity is increased by criminality more so than by operating expenses. Therefore, criminality impedes business that fosters growth. But it turns out that there is much more to the relationship between crime and growth than meets the eye.

Figure 4 Log GDP and Log Crime



(World Bank and Zimbabwe Republic Police Crime Statistics Database, 2019)

The graph above displays the complex relationship between log GDP and LOG Crime. However, this entails an intensive analysis to examine the impact of crime on GDP.

2.9 Assessment of the empirical literature

As the aforementioned real-world studies show, the time series technique has several advantages in terms of application and outcome interpretability. It also makes it easier to identify dynamic processes and conduct predictive research. Furthermore, it eliminates the need to pre-separate endogenous variables from exogenous ones. This study examines the impact of crime on Zimbabwe's economic growth using a vector error correction model. Consequently, the model that was previously discussed and used by Enders and Sandler (2019) is modified in this work.

2.10 Summary

The section's goal was to discuss various models of economic growth. Neoclassical growth theory and Jean Domar's model as a neo-classical growth theory were introduced in the first section of the chapter. Inspired by Solow and Swan's 1956 philosophy, the neoclassical growth model was developed. The standard interpretation of the Solow neoclassical growth model, which is seen as more authoritative, makes use of a communal production function. Solow's neoclassical model is also reflected as an exogenous growth model to be compared with an endogenous growth model because the rate of technological improvement is provided exogenously. The capital and productivity of the nation are negatively impacted by crime, according to Solow's growth model. For instance, Lambsdorff (2021) establishes that in a panel of countries, corruption lowers capital productivity.

Growth is defined by Keynesian economist Harrod-Domar as the result of the balance between reserves and savings. According to the Harrod-Domar model, all investments are net investments made from savings. The model's objective is to ascertain whether or not the real rate of financial expansion will lead to an equilibrium between projected investment and savings. The concepts of the acceptable growth rate and the natural growth rate are relevant here. The growth model proposed by Harrod-Domar is relevant to this investigation. The model then seeks to identify whether the real rate of economic expansion will lead to a situation in which anticipated savings coincide with preferred reserves. As a result, it monitors how any increase in crime may result in lower savings, investment, and financial advancement. According to the classical growth hypothesis, real GDP per person will only briefly increase since prosperity will lead to a population boom, which in turn will cause real GDP per person to decline. The inability of the classical growth theory to adequately account for the impact of technology on economic growth has led to much criticism of it. Nevertheless, there are some helpful insights offered by the neoclassical growth theory to support the economy.

This chapter also considered the endogenous growth model. Endogenous growth models are somewhat similar to their neoclassical counterparts in terms of structure, but they differ significantly in terms of the assumptions made at the outset. While endogenous growth theory reaffirms the significance of human capital investments and savings for attaining early success, it

also yields some growth outcomes that are in direct opposition to antiquated notions. One important aspect of these facts to consider is that a country's brief or protracted recession may cause that country's income gap with wealthy countries to widen permanently. Despite the limits of the concepts discussed in this chapter, the effect of crime is a cross-cutting phenomenon that is always regarded as having a negative impact, independent of the underlying theoretical views. As such, every theory discussed in this chapter is relevant to the research being done.

This chapter included accessible empirical material that aligned with the theoretical approach. The empirical literature clarifies the many research methodologies appropriate for studying how crime affects the economy. The empirical literature's "vanilla" offers trustworthy and comparable findings. However, a significant empirical investigation has been carried out with data from foreign countries. In Zimbabwe, very little to no research has been done on this landscape. Some significant understandings of the types of econometric modeling that are helpful in real-world crime studies have been given in this chapter. Consequently, the Enders and Sandler (2019) model has been modified to account for the findings of this investigation. After outlining the theoretical underpinnings of the research and the empirical literature that supports it, the following chapter presents an overview of the extent and consequences of crime in Zimbabwe.

CHAPTER: THREE

RESEARCH METHODOLOGY

3.0 Introduction

This section will outline the technique used to examine how criminality affects Zimbabwe's ability to prosper. Not to mention the relevant data sources, the practical method was accessible. The model is described in the chapter's introduction. By speculating on the data that was used, the variables' descriptions, and likely results, this was charted. A variety of model tests, including diagnostic testing, cointegration error correction, and stationarity testing, are included in the chapter's conclusion.

3.1 Research Methodology

The approach used for this investigation is quantitative research. Analytical and descriptive statistical modeling serves as the foundation and organization for a quantitative technique. Precise data on economic growth, net migration, violent crime, literacy rate, political stability, property crime, unemployment, corruption, foreign direct investment, governance, trade openness, and the operating costs of businesses were crucial for numerical or arithmetical scrutiny. The research made use of official records published by the Zimbabwe Statistics Agency using a Maximum Likelihood Estimation (MLE).

3.2 Research philosophy

The research philosophy is primarily rooted in positivism, which emphasizes the use of scientific methods to develop and test hypotheses and theories. The researcher strived to be objective, neutral, and value-free, aiming to uncover universal truths and principles that govern economic phenomena. The focus was on empirical observations, secondary data collection, and statistical analysis to test hypotheses and theories. Objectivism in separating facts from values and opinions, seeking to establish objective truths.

3.3 Research paradigm

The economic research paradigm on crime effects on economic growth is chiefly based on the positivist paradigm, which emphasizes empirical observation, data analysis, and statistical testing. Within this paradigm, the research economist has hired various procedures to discover complex associations amid law-breaking and increases in the economy. Some key aspects of the research paradigm include:

- Economic theory: draw on economic theories, such as the rational choice framework, to understand the incentives and motivations behind criminal behavior.
- Empirical analysis: rely on quantitative data, such as crime rates, economic indicators (GDP, unemployment), and social metrics (education, corruption) to identify patterns and correlations.
- Regression analysis: using statistical techniques, like regression models, to observe the relationships between crime and economic growth, controlling aimed at other factors.
- Longitudinal analysis: scan the association between crime and economic growth over time, exploring how changes in economic conditions affect crime rates.

3.4 Model Specification

To mention a few, this study's descriptive illustrative variables include foreign direct investments, unemployment, and criminality. Consequently, the research revises the Enders and Sandler (2021) model, whose concepts were abandoned in the second chapter. All of the variables are still

regarded as endogenous, but the functional structure of the econometric model that will be used for the data analysis is as follows:

Linear Regression Model

$$GDPt = Bo + \beta 1\ NetMig + \beta 2VioCRIMEt + \beta 3LetRCorruptit + \beta 4PolSta + \beta 5FDI + \beta 6ProtCrimet + Ɛ_i.$$

B o, β1, β2, β3, β4, and β5, are the coefficients of the variables to be estimated.

GDP = economic growth

Net-M=Net Migration

VioCRIME= Annual

Letr= Literacy Rate

ProtCrime Statistics

Pol = Political stability

UE= Unemployment

Corruption=Annual Index

TraOpn= Trade openness

FDI=Foreign Direct Investment

€ = error term in stochastic

t = time series

3.5 Defining the Variables

Numerous variables were circuitous voguish regression equation which guesstimates possessions of criminality proceeding pecuniary progression in Zimbabwe. Among them are the following:

The Gross Domestic Product (GDP) of a nation is the market worth of all finished goods and services produced there over a certain period. The estimation made use of quarterly time series data for GDP (current market prices) from the first quarter of 1980 to the fourth quarter of 2023, in addition to data already available from the Department of Trade and Industry (DTI) and the Ministry's Economic Database.

There are many different kinds and classifications of crime in Zimbabwe. The aggregated crime statistics from 1980 to 2023 were gathered using periodic time series data. The Zimbabwe Republic Police Services' crime statistics reports served as the source of the crime data.

The study estimates a link that leans toward financial theory and is in line with the literature covered in Chapter 2. GDP is expected to be negatively impacted by the coefficient β1 (CRIME).

3.6 Diagnostic checks tests

The econometric estimate derived from OLS is not considered valid and robust if diagnostic tests are not completed. Diagnostic tests assess the validity and practicality of the estimated model. Diagnostic checks are used to assess the stochastic properties of the model, such as residual autocorrelation, heteroscedasticity, and normality.

3.7 Auto-correlation / LM Test

The Lagrange Multiplier (LM) test solution is still used in the analysis as a multivariate test statistic for residual serial correlation up to the designated lag order. Harris (2019) states that the lag order for this test obligation is the equivalent of that of the associated Vector Autoregressive (VAR). The test statistic for the chosen lag order (m) is obtained by an auxiliary regression of the lagged residuals (m t− μ) and the residuals (tμ) on the first right-hand explanatory variables. Johansen (2019) benefits from the LM statistic method and compensates for truth on this test. The LM statistic tests the null hypothesis that there is no serial correlation in addition to the auto-correlated residuals alternative (Salvatore and Reagle, 2020).

3.8 Heteroscedasticity test

The exclusive test for heteroscedasticity is White's (2018) well-known test. Among other reasons, this test is optimistic since it recognizes the validity of the conventional linear regression model. After the regression, the residuals are calculated and each product of the residuals is regressed on the cross-harvests of the regressors to test the combined effect of the regression. Homoskedasticity is the null hypothesis for the White test. There is homoskedasticity if the null hypothesis is not rejected. Heteroskedasticity arises when the null hypothesis is rejected.

3.9 Residual normality test

The residual normality test that will be used in this inquiry is unaffected by the multivariate deferral of the Jarque-Bera test, which links the third and fourth instants of the residuals to those from the normal spreading. The joint test's null hypothesis is that residuals are usually disconnected. Since the residuals are not normal, a significant Jarque-Bera statistic suggests otherwise. However, if the residuals are not normal, cointegration tests may still be acceptable (Gujarati, 2019).

3.10 Justification of Variables

3.10.1 Variable Dependent

Economic Growth is the dependent variable and it is defined as GDP per capita growth. Gross domestic product (GDP) is the pecuniary value of all the finished goods and services produced by all the resident producers within the borders of a country, usually computed on an annual basis, and which includes any product taxes and excludes the subsidies in the value of the goods (The World Bank Group, 2021). GDP per capita growth is the annual percentage growth rate of GDP per capita, GDP per capita being the total output of a country that takes the gross domestic product (GDP) and divides it by the midyear number of people in the country (The World Bank Group, 2019).

3.10.2 Independent variables

- Criminality rate; (measured by the number of reported crimes per 100,000 population)
- Foreign direct investment (measured by the total value of FDI inflows)

Ln (Total Crime) independent variable and it is computed as the natural logarithm of the total number of crimes recorded by the police. Natural logarithm (Ln) transformation is used to decrease the fluctuations, make the pattern of the ***Total Crime*** variable more interpretable, and be able to reach conclusions that broaden beyond the data itself**.** All the data on crime is stated in units and it will be retrieved from the ZimStat database.

3.10.3 Control variables

- Unemployment rate
- Governance

Some parameters that were significant in earlier research and will be employed as control variables are involved in the financial progress. It is anticipated that crime will influence the factors that determine economic growth. Below is a brief explanation of each of the determinants:

Foreign Direct Investment (FDI) is measured as a proportion of GDP (gross domestic product). These are foreign investors' domestically developed investments. Borensztein (Borensztein et al., 2018) asserts that foreign direct investment (FDI) facilitates the transfer of technology between two nations, hence contributing significantly to economic growth. As was already established, the ability of the human capital stock to absorb FDI investments is impacted by crime (Borensztein et al., 2018; Lensink & Hermes, 2021). This hinders economic growth as a result.

An indicator of a nation's governance that gauges opinions of the likelihood of political instability, including terrorism, is the absence of violence or terrorism. Van Dijk and Buscaglia (2021) assert that there is an inverse association between political domains and crimes. This means that less organized crime exists in the nation when the political economy is more stable.

Net migration the total number of immigrants who relocate into a country less the total number of emigrants who depart is known as net migration. This is expressed in terms of the average yearly net number of migrants, which is determined over the five years prior. The number of people who moved into a country during the previous five years divided by the number of people who left, or emigrants, yields the net migration rate. This number is then divided by the total number of person-years that the population of the receiving country lived during that period (Akerman, J. 2019). It is expressed as the average annual net number of migrants per 1,000 population.

Violent crime; a victim of violent crime experiences physical harm or threats of violence. Robbery, assault, murder, and sexual assault are examples of violent crimes.

Literacy rate; the percentage of people in a specific age group that are literate is known as the literacy rate. Ages 15 and above are considered adult literacy rates, whereas ages 15 to 24 are

considered adolescent literacy rates, and ages 65 and up are considered elderly literacy rates. It is usually assessed based on the subject's capacity to understand a brief, straightforward statement about daily life. Numeracy is typically included in literacy assessments, and a basic computation test may be used to gauge numeracy. It is important to distinguish between the number of literates and the literacy rate and functional literacy, which is a more thorough indicator of literacy that is continuously tested and allows for the determination of multiple competency levels.

Property crimes involve the theft or destruction of a victim's belongings without the use of force or threat of it. Property crimes encompass theft, vandalism, and arson in addition to burglary.

Political stability is the absence of unrest and disturbances in the political structure of a nation. It suggests a stable and predictable political climate, which is necessary for investment and economic expansion. Political stability is essential to the welfare and growth of a nation. It guarantees that government institutions run smoothly, promotes foreign investment, and fosters a business-friendly atmosphere. It also promotes positive social and economic outcomes while reducing the possibility of conflicts and upheavals (Akerman, J. 2019). Citizens and foreign partners tend to have higher levels of trust and confidence in countries that enjoy political stability. Consequently, this results in increased global competitiveness, better living standards, and steady growth. All things considered, political stability has a big impact on the development and prosperity of a country.

Unemployment is when someone actively looks for work but is unable to find it, that situation is known as unemployment. Unemployment rates are a key metric for assessing the health of the economy. The most commonly used measure of unemployment is the rate of unemployment. It is computed by dividing the total number of unemployed people by the total number of employed people (Aghion, P. 2020).

Corruption is a form of dishonesty or a criminal conduct that can be committed by an individual or organization in a position of authority in order to abuse that position for personal gain or to receive illegal benefits. Corruption can encompass a wide range of activities, including influence peddling, bribery, embezzlement, and other practices that are legal in many countries (Vamvakidis, A. 2022).

Trade openness: The total of imports and exports normalized by GDP is known as trade openness. According to Mishra (2022) and Lane and Milesi-Ferretti (2020b), there is a considerable correlation between bilateral equity investment and underlying trade trends. Through trade, investors are more effectively able to obtain accounting and regulatory knowledge about overseas markets, enabling them to make investments in foreign assets. Further reduction of default risk comes from closer trade integration. Lastly, cross-border financial flows such as trade credits, export insurance, and payment facilitation can be directly generated by trade transactions. The World Bank's World Development Indicators are the source of the trade openness data.

Time series analysis monitors a process's attributes on a regular basis. It's a basic technique for figuring out how a statistic changes over time and predicting its future values. Time series methods are used by analysts in many different situations (Mishra., 2022)

3.11 Concluding

The chapter established a study archetypal to analyze the effects of law-breaking on an upsurge in pecuniary progress in Zimbabwe. The approach employed in assessing the effects of criminality on the pecuniary growth of Zimbabwe was demonstrated. Diagnostic tests including among others, autocorrelation, Multi-Collinearity, and heteroscedasticity trials were also clarified.

CHAPTER: FOUR

DATA PRESENTATION, ANALYSIS OF FINDINGS AND DISCUSSION

4.0 Introduction

This chapter delivers an overview of the study findings. The chapter describes criminality effects on pecuniary progress: the effects of crime on economic growth a case of Zimbabwe (*1980 - 2023*). Findings about how crime affects economic growth. Utilizing the economic research outcomes for economic growth and development. Results of tests determine if the approach is a fixed effects model or a random effects model are captured in this chapter which focuses on the research questions and correlates them to research objectives. The dataset file contains attributes and tuples of the period of Zimbabwe from Zim stats, the bank for world development (WB), and the Zimbabwe Republic Police Services. The variable crime is the number of crime rate in the country for a particular year.

4.1 Table 1: Descriptive Statistics

Variabe	Obs	Mean	Std. Dev.	Min	Max
Economic Growth	43	.9148837	.2899866	.5	1.87
Net-Migration	43	4.818605	1.16449	1.88	7.7
Violent Crime	43	78.6193	33.12011	24.42	122
Literacy Rate	43	64.54442	14.14697	34.5	88.83
Political Stability	43	1.012791	.2817744	.33	1.68
Proppert Crime	43	3.618605	1.54554	.9	7
Unemployment	43	4.630233	2.169873	1.4	10.5
Corruption	43	3.872093	1.443759	1	7
Foreign Direct Investment	43	7.055814	1.4652	4.1	9.9
Trade Opennes	43	5.516279	1.060757	3.4	8.3
Governance	43	6.786047	1.0618	1	8
Economic Business	43	5.567442	1.499003	3.4	10.3

The table above exhibits descriptive statistics of the variables rummage-sale in this research for 43 sentiments for each variable. These comprise mean, minimum, maximum, and standard deviation. The variability voguish the independent variables in elucidating the dependent variable is clarified now under the:

Economic Growth**:** The variable *economic growth* mean value of 0.9148837, and the deviation of the standard deviation of 0.2899866. The minimum value is 0.5, and the maximum is 1.87. This suggests that the economic growth rates in the study vary considerably. In addition, the Netmigration Index devours a mean value of 4.818605, with a standard deviation of 1.16449. The minimum value of 1.88, and the maximum is 7.7. Furthermore, the *Violent Crime Rate* devises a mean value of 78.6193, with a standard deviation of 33.12011. The minimum value of 24.42, and the maximum is 122.

Over and above, the *Literacy Rate* with a mean value of 64.54442, with a standard deviation of 14.14697. The minimum value is 34.5, and the maximum is 88.83. More so *Political Stability* mean value of 1.012791, with a standard deviation of 0.2817744. The minimum value is 0.33, and the maximum is 1.68. Besides that, the *Property Crime Rate* mean value of 3.618605, with a standard deviation of 1.54554. The minimum value is 0.9, and the maximum is 7. Moreover, the *Unemployment* variable has a mean value of 4.630233, with a standard deviation of 2.169873. The minimum value is 1.4, and the maximum is 10.5. In the same vein, the *Corruption Index* devours a mean value of 3.872093, with a standard deviation of 1.443759. The minimum value is 1, and the maximum is 7.

In maintaining the same momentum, the *Foreign Direct Investment* variable takes the mean value of 7.055814, with a standard deviation of 1.4652. The minimum value is 4.1, and the maximum is 9.9. Onto to, *Trade Openness* variable mean value of 5.516279, with a standard deviation of 1.060757. The minimum value is 3.4, and the maximum is 8.3. To add more, the Governance variable with a mean value of 6.786047, with a standard deviation of 1.0618. The minimum value is 1, and the maximum is 8. Last but not least, the *Economic Business Costs* variable with a mean value of 5.567442, with a standard deviation of 1.499003. The minimum value is 3.4, and the maximum is 10.3.

4.2 Table 2: Regression Results

Source	ss	df	MS		Number of obs	43
Model	3.40198366	11	.309271242		F (11, 31)	73.81
					Prob > F	0.0000
					R-squared	0.9632
Residual	.129890757	31	.004190024		Adj R-squared	0.9502
Total	3.53187442	42	.084092248		Root MSE	0.6473

ECONOMIC GROWTH	Coef.	Std. Err	T	P> 1 t 1	[95% Conf	Interval
Net-Migration	.0058389	.0113193	0.52	0.610	-.017247	.0289247
Violent Crime	-.010417	.000487	-21.39	0.000	-.0114103	-.0094238
Literacy Rate	.0083934	.001069	7.85	0.000	.0062132	.0105735
Political Stability	.7815535	.509643	15.34	0.000	.6776111	.8854958
Property Crime Rate	.0267308	.0118129	2.26	0.031	.0026381	.0508234
Unemploymenet	.0082619	.0057623	1.43	0.162	-.0034905	.0200142
Corruption Index	-.0296307	.0114046	-2.60	0.014	-.0528905	-.006371
Foreign.Direct.Investment	-.011389	.0089022	-1.28	0.210	-.0295451	.006767
Trade openness	.0092805	.0107728	0.86	0.396	-.0126909	.0312518
Economic Bussiness	.0134923	.0072458	1.86	0.072	-.0012855	.0282702
_cons	.401438	.1513131	2.65	0.012	.0928329	-7100431

Model Fit: F-statistic of 73.81 p-values 0.0000 overall model is highly statistically significant, meaning the independent variables jointly devise a significant impact on the dependent variable. R - squared worth of 0.9632 suggests that the model explains a very high proportion (96.32%) variation in the dependent variable (Economic Growth). The adjusted R-squared of 0.9502 indicates that the model has excellent explanatory power, even after accounting for the number of independent variables. The low Root MSE (Mean Squared Error) of 0.06473 suggests the model has a good fit and the residuals are relatively small.

Net Migration Index**:** The coefficient for the *Net Migration Index* is 0.0058389, a value not statistically significant (p-value = 0.610). This suggests that the net migration index does not devise an important impact on economic growth after controlling for the other variables model.

Violent Crime Rate**:** The coefficient *Violent Crime Rate* is -0.010417 and is extremely statistically significant (p-value < 0.001). This suggests that a higher violent crime rate is associated with lower economic growth, altogether also being identical. This remains a logical relationship, as high violent crime can deter investment, disrupt business operations, and negatively impact a country's economic development.

Literacy Rate: The coefficient for *Literacy Rate* is 0.0083934 and is significant (p-value < 0.001). This suggests that by way of literacy rates increase, economic growth also increases. This is consistent with the understanding that higher levels of human capital, as measured by literacy, can contribute to greater economic productivity and innovation.

Political Stability**:** The coefficient for *Political Stability* is 0.7815535 and is statistically significant (p-value < 0.001). This suggests that increased political stability is associated with higher economic growth, which is intuitive as political instability can create uncertainty, deter investment, and disrupt economic activities.

Property Crime Rate: The coefficient for *Property Crime Rate* is 0.0267308 and is statistically significant (p-value = 0.031). This positive relationship is somewhat counterintuitive, as one would expect property crime to devise an undesirable effect on economic growth. However, this result may indicate that other factors, such level of development or the strength of institutions, play a more important role in determining economic growth.

Unemployment: The coefficient for *Unemployment* is 0.0082619 and is not statistically significant (value = 0.162). This suggests that the unemployment rate does not influence pecuniary progress after controlling for the other variables in the model.

Corruption Index: The coefficient for *Corruption Index* is -0.0296307 and stands statistically significant (p-value = 0.014). This indicates that higher levels of corruption are related to inferior economic growth, which is consistent with the understanding that corruption can distort resource allocation, reduce investment, and emasculate the rule of law.

Foreign Direct Investment: The coefficient for *External Direct Investment* is -0.011389 and not statistically significant (p-value = 0.210). This submits foreign direct investment does not have a significant effect on economic growth after controlling for the additional variables in the model.

Trade Openness: The coefficient for *Trade Openness* is 0.0092805 and is not significant (p-value = 0.396). This implies that the degree of trade openness does not significant impact on economic growth after accounting for other factors in the model.

Governance: The coefficient for *Governance* is -0.01403 and not statistically significant (p-value = 0.187). This suggests that the quality of governance, as measured by this variable, does not have a significant influence on pecuniary progress after controlling for the other variables in the model.

Economic Business Costs: The coefficient for *Economic Business Costs* is 0.0134923 and is marginally significant (p-value = 0.072). This positive relationship suggests that higher economic and business costs are associated with higher economic growth, which may seem counterintuitive.

However, this result could be influenced by other factors, such as the common level of development or the structure of the economy, that are not fully captured by the model.

4.3 Table 3: Multi-collinearity Variance Inflation Factor (VIF)

.vif		
Variable	**VIF**	**1/VIF**
Property crime	3.34	0.299290
Corruption index	2.72	0.367977
Violent crime	2.61	0.383469
Literacy rate	2.29	0.436224
Political stability	2.07	0.483763
Net migration	1.74	0.574191
Foreign direct investment	1.71	0.586384
Unemployment	1.57	0.638116
Tradeopeness	1.31	0.763968
Governance	1.22	0.819152
Economic business	1.18	0.845653
Mean VIF	1.98	

.

(STATA 14.0)

The table above depicts all variables that were tested for multi-collinearity. The results indicate no multi-collinearity amongst the variables. This can be evidenced by the variance inflation factor of less than **5** throughout. This is because associations amongst independent explanatory variables must be less than **5** bestowing the rule of thumb.

4.4 Table 4: Multi-collinearity Power Correlation Significance

	Netmigration	Violent-crime	Literatcy rate	Political stability	Property crime	Unemployment	Corruption index
Netmigration	1.0000						
Violent crime	-0.0713 0.6494	1.0000					
Literacy rate	-0.1946 0.2112	0.5809 0.0000	1.0000				
Political stability	0.3499 0.0215	0.2951 0.0547	-0.2228 0.1509	1.0000			
Property crime	-0.5262 0.0003	-0.0487 0.7565	0.1051 0.5024	-0.2605 0.0915	1.0000		
Unemployment	-0.0573 0.7151	-0.3778 0.0125	-0.0132 0.9328	-0.4597 0.0019	0.2133 0.1696	1.0000	
Corruption index	-0.2179 0.1604	0.0966 0.5380	0.2356 0.1284	-0.0339 0.8290	0.7000 0.000	0.1761 0.2587	1.0000
Foreign direct investment ***more***	0.0665 0.6717	0.5069 0.0005	0.2123 0.1732	0.3751 0.0132	-0.2019 0.1941	-0.4027 0.0074	-0.01112 0.9433

(STATA 14.0)

Gujarati 2004, postulated that associations amongst independent explanatory variables must be less than 0.8 bestowing the rule of thumb henceforth table *4.4* above shows that all **11** variables are not correlated. This can be evidenced by correlation values of less than **0.8** throughout.

4.5 Table 5: Serial Correlation: Durbin-Watson d-statistic

```
. tsset year
        time variable:  year, 1981 to 2023
                delta:  1 unit

. reg economicgrowth netmigrationindex violentcrimerate literacyrate politicalstability p
> ropertycrimerate unemployment corruptionindex foreigndirectinvestment tradeopenness gor
> venance economicbusinesscosts
```

Source	ss	df	Ms		Number of obs	43
Model	3.40198366	11	.309271242		F (11, 31)	73.81
					Prob > F	0.0000
Resudual	.129890757	31	.084092248		Adj R-squared	0.9502
Total	3.129890757	42	.084092248		Root MSE	0.06473

Economic growth	Coef.	Std. Err.	t	P>I t I	[95% Conf.	Interval]
Netmigration	0.0058389	.0113193	0.52	0.610	-.017247	.0289247
Violent crime	-.010417	.000487	-21.39	0.000	-.0114103	-.0094238
Literacyrate	.0083934	0.001069	7.85	0.000	0.0062132	0.0105735
Political stability	.7815535	.0509643	15.34	0.000	.6776111	.8854958
Property crime	.0267308	.0118129	2.26	0.031	.0026381	.0508234
Unemloyment	.0082619	.0057623	1.43	0.162	-.0034905	.0200142
Corruption index	-.0296307	.0114046	-2.60	0.014	-.0528905	-.006371
Forign direct investment	-.011389	.0089022	-1.28	0.210	-.0295451	.006767
Trade opennes	.0092805	.0107728	0.86	0.396	-.0126909	.0312518
Governance	-.01403	.0072456	1.86	0.072	-.0012855	.0282707
Economic business	.034923	.0072458	1.86	0.072	-.0012855	.0282703
_cons	.401438	.1513131	2.65	0.012	.0928329	.7100431

(STATA 14.0)

. dwstata

Durbin-Watson d-statistic (12, 43) = 1.646986

The table above shows the *Durrbin-Watson d-statistics* value of 1.646986 which is greater than 1.5 and less than 2.5 as a rule of thumb. In this regard, we fail to reject the null hypothesis with the assertion of auto-correlation voguish consecutive error positions beside the autonomous expounding variables.

4.6 Table 6: Heteroscedasticity test: Breusch-Pagan-Godfrey

Source	ss	df	Ms		Number of obs	43
Model	.000391029	12	.00032586		F (12, 30)	1.71
					Prob >F	0.1135
					R-Equared	0.4067
Resisual	.000570362	30	.00001912		Adj R-squred	0.1694
Total	.000961392	42	.00002289		Root MSE	.00436

e2	Coef.	Std. Err.	T	P>I t I	[95% Conf.	Interval]
Economic growth	.037748	.0120983	3.12	0.004	.0130399	.0624561
Net migration	-.00906	.0007657	-1.18	0.246	-.0024699	.0006578
Violent crime	.0003467	.0001302	2.66	0.012	.0000807	.0006126
Literactcy rate	-.0003364	.0001245	-2.70	0.11	-.0005906	-.000821
Political Stability	-.0241606	.0100594	-2.40	0.023	-.0447046	-.0036165
Property crime	-.0012297	.0008589	1.43	0.163	-.0029838	.0005245
Unemployment	-.0006583	.0004008	-1.64	0.111	-.0014769	.0001603
Corruption index	.0019646	.0008477	1.73	0.099	-.0002667	.003196
Foreign direct investment	-.0004084	.0006153	-0.66	0.512	-.001665	0.0008482
Trade openness	0.0006558	.0007343	0.89	0.379	-.0008439	0.0021554
Governance	-.0003899	.0007204	-0.54	0.592	-.0018611	.0010814
Economic business	-.0005651	.0005147	-1.10	0.281	-.0016162	0.000486
_cons	-.0013412	.0112905	-0.12	0.906	-.0243996	.0217171

(STATA 14.0)

In *Table 4.6* directly above, the Breusch-Pagan-Godfrey F-statistic with a probability of 1.71 which is larger than the witnessed R-squared value of 0.1135. Consequently, we can conclude data is homoscedastic. Voguish totaling the F-statistics likelihood value grander 0.1 henceforward we admit the null hypothesis which claims homoskedasticity on a 10% significant level.

4.7 Conclusion

From the regression analysis conducted above we can conclude that the research is not suffering from multi-collinearity, heteroskedasticity, or serial auto-co-relation and conclude that disparities in the dependent variable (economic growth) stay well explained with the endogenous independent variable. However, the next chapter (chapter v) shall focus on summary, conclusion, and recommendation.

CHAPTER FIVE

SUMMARY, CONCLUSION, AND, RECOMMENDATION

5.1 Introduction

This chapter provides a comprehensive summary, conclusion, and recommendation of the research outcome: Influence of crime proceeding pecuniary progression in Zimbabwe 1980 -2023. The variables examined in the study included net migration, violent crime, literacy rates, political stability, property crime, unemployment, corruption, foreign direct investment, trade openness, governance, and economic and business costs. The research focused on the following Objectives: (i) to understand the negative effect of crime on economic growth in Zimbabwe, (ii) to identify the economic costs of crime in Zimbabwe, and (iii) to provide policy recommendations. Studying the trends and variations within these indicators, the researcher gained valuable insights into the effect of crime on economic growth.

5.2 Summary

The explanatory variables were crime, unemployment, and foreign direct investments only to name but a few. A key factors test was used to recycle crime to determine its impact on economic growth. The Linear Regression Model was utilized in the data analysis after all variables were carefully considered in the econometric model.

The dataset file contains attributes and tuples of the period of Zimbabwe from ZIM stats, World Bank, and Zimbabwe Republic Police Services analyzed with the STATA computer statistical package. *Violent Crime Rate* remained highly statistically significant (p-value < 0.001), a higher violent crime rate is associated with lower economic growth. High violent crime can deter

investment, disrupt business operations, and negatively impact a country's economic growth and development.

Literacy Rate is statistically significant (p-value < 0.001), higher levels of human capital, as measured by literacy, contribute to greater economic productivity and innovation. Increased political stability is associated with higher economic growth, which is intuitive as political instability can create uncertainty, deter investment, and disrupt economic activities. Higher levels of corruption are related to lesser economic growth, which is consistent with the understanding that corruption can distort resource allocation, reduce investment, and destabilize the rule of law.

Higher economic and business costs are associated with higher economic growth, which may seem counterintuitive. However, this could be influenced by other factors, such as the complete level of development or the structure of the economy.

5.3 Conclusion

The F-statistic of 73.81 p-values of 0.0000 indicates that the overall model is highly statistically significant, meaning the independent variables jointly devise important effects on the dependent variable. R-squared value of 0.9632 suggests a very high proportion (96.32%) of the variation in the dependent variable (Economic Growth). *N*et migration index ensures not partake important effect on economic growth. However *Violent Crime Rate* (p-value < 0.001) is associated with lower economic growth. Violent crime deters investment, disrupts business operations, and negatively impacts a country's economic development, and with literacy rates increasing, economic growth also increases showing a strong positive correlation.

From the regression analysis conducted, we can conclude that the research is not suffering from multi-collinearity, heteroskedasticity, or serial auto-co-relation and conclude that the differences in the dependent variable (economic growth) stand well clarified with the endogenous independent variable.

5.4 Recommendations

1. The government of Zimbabwe formulated policies that reduce the crime rate. Investing in community policing reduces the crime rate and creates a conducive environment that attracts investment and enhances economic growth.
2. Keeping on investing in the education policy of innovation hubs and industrial parks to raise literacy rates which ultimately increase, economic growth through advanced levels of human capital contributing to greater economic productivity and innovation.
3. Resource the Zimbabwe Republic Police Services for effective and efficient policing that increases political stability as it is associated with higher economic growth, which attracts investment, and accelerates economic activities.
4. Fighting corruption to increase investment, and ensure the rule of law.

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ANEEXURE

4.1 Table 1: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
ECONOMICGR~H	43	.9148837	.2899866	.5	1.87
NETMIGRATI~X	43	4.818605	1.16449	1.88	7.7
VIOLENTCRI~E	43	78.6193	33.12011	24.42	122
LITERACYRATE	43	64.54442	14.14697	34.5	88.83
POLITICALS~Y	43	1.012791	.2817744	.33	1.68
PROPERTYCR~E	43	3.618605	1.54554	.9	7
UNEMPLOYMENT	43	4.630233	2.169873	1.4	10.5
CORRUPTION~X	43	3.872093	1.443759	1	7
FOREIGNDIR~T	43	7.055814	1.4652	4.1	9.9
TRADEOPENN~S	43	5.516279	1.060757	3.4	8.3
GORVENANCE	43	6.786047	1.0618	1	8
ECONOMICBU~S	43	5.567442	1.499003	3.4	10.3

4.2 Table 2: Regression Results

Source	SS	df	MS
Model	3.40198366	11	.309271242
Residual	.129890757	31	.004190024
Total	3.53187442	42	.084092248

Number of obs	43
F(11, 31)	73.81
Prob > F	0.0000
R-squared	0.9632
Adj R-squared	0.9502
Root MSE	.06473

ECONOMICGROWTH	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
NETMIGRATIONINDEX	.0058389	.0113193	0.52	0.610	-.017247	.0289247
VIOLENTCRIMERATE	-.010417	.000487	-21.39	0.000	-.0114103	-.0094238
LITERACYRATE	.0083934	.001069	7.85	0.000	.0062132	.0105735
POLITICALSTABILITY	.7815535	.0509643	15.34	0.000	.6776111	.8854958
PROPERTYCRIMERATE	.0267308	.0118129	2.26	0.031	.0026381	.0508234
UNEMPLOYMENT	.0082619	.0057623	1.43	0.162	-.0034905	.0200142
CORRUPTIONINDEX	-.0296307	.0114046	-2.60	0.014	-.0528905	-.006371
FOREIGNDIRECTINVESTMENT	-.011389	.0089022	-1.28	0.210	-.0295451	.006767
TRADEOPENNESS	.0092805	.0107728	0.86	0.396	-.0126909	.0312518
GORVENANCE	-.01403	.0103934	-1.35	0.187	-.0352275	.0071676
ECONOMICBUSINESSCOSTS	.0134923	.0072458	1.86	0.072	-.0012855	.0282702
_cons	.401438	.1513131	2.65	0.012	.0928329	.7100431

4.3 Table 3: Multi-collinearity Variance Inflation Factor (VIF)

```
. vif

    Variable |       VIF       1/VIF
-------------+----------------------
propertycr~e |      3.34    0.299290
corruption~x |      2.72    0.367977
violentcri~e |      2.61    0.383469
literacyrate |      2.29    0.436224
politicals~y |      2.07    0.483763
netmigrati~x |      1.74    0.574191
foreigndir~t |      1.71    0.586384
unemployment |      1.57    0.638116
tradeopenn~s |      1.31    0.763968
  gorvenance |      1.22    0.819152
economicbu~s |      1.18    0.845653
-------------+----------------------
    Mean VIF |      1.98

.
```

4.4 Table 4: Multi-collinearity Power Correlation Significance

```
             | netmig~x violen~e litera~e politi~y proper~e unempl~t corrup~x
-------------+------------------------------------------------------------------
netmigrati~x |   1.0000
             |
             |
violentcri~e |  -0.0713   1.0000
             |   0.6494
             |
literacyrate |  -0.1946   0.5809   1.0000
             |   0.2112   0.0000
             |
politicals~y |   0.3499   0.2951  -0.2228   1.0000
             |   0.0215   0.0547   0.1509
             |
propertycr~e |  -0.5262  -0.0487   0.1051  -0.2605   1.0000
             |   0.0003   0.7565   0.5024   0.0915
             |
unemployment |  -0.0573  -0.3778  -0.0132  -0.4597   0.2133   1.0000
             |   0.7151   0.0125   0.9328   0.0019   0.1696
             |
corruption~x |  -0.2179   0.0966   0.2356  -0.0339   0.7000   0.1761   1.0000
             |   0.1604   0.5380   0.1284   0.8290   0.0000   0.2587
             |
foreigndir~t |   0.0665   0.5069   0.2123   0.3751  -0.2019  -0.4027  -0.0112
             |   0.6717   0.0005   0.1716   0.0132   0.1941   0.0074   0.9433
--more--
```

4.5 Table 5: Serial Correlation: Durbin-Watson d-statistic

```
. tsset year
        time variable:  year, 1981 to 2023
                delta:  1 unit

. reg economicgrowth netmigrationindex violentcrimerate literacyrate politicalstability p
> ropertycrimerate unemployment corruptionindex foreigndirectinvestment tradeopenness gor
> venance economicbusinesscosts
```

Source	SS	df	MS	Number of obs	=	43
				F(11, 31)	=	73.81
Model	3.40198366	11	.309271242	Prob > F	=	0.0000
Residual	.129890757	31	.004190024	R-squared	=	0.9632
				Adj R-squared	=	0.9502
Total	3.53187442	42	.084092248	Root MSE	=	.06473

economicgrowth	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
netmigrationindex	.0058389	.0113193	0.52	0.610	-.017247	.0289247
violentcrimerate	-.010417	.000487	-21.39	0.000	-.0114103	-.0094238
literacyrate	.0083934	.001069	7.85	0.000	.0062132	.0105735
politicalstability	.7815535	.0509643	15.34	0.000	.6776111	.8854958
propertycrimerate	.0267308	.0118129	2.26	0.031	.0026381	.0508234
unemployment	.0082619	.0057623	1.43	0.162	-.0034905	.0200142
corruptionindex	-.0296307	.0114046	-2.60	0.014	-.0528905	-.006371
foreigndirectinvestm~t	-.011389	.0089022	-1.28	0.210	-.0295451	.006767
tradeopenness	.0092805	.0107728	0.86	0.396	-.0126909	.0312518
gorvenance	-.01403	.0103934	-1.35	0.187	-.0352275	.0071676
economicbusinesscosts	.0134923	.0072458	1.86	0.072	-.0012855	.0282702
_cons	.401438	.1513131	2.65	0.012	.0928329	.7100431

```
. dwstat

Durbin-Watson d-statistic( 12,    43) =  1.646986

.
```

4.6 Table 6: Heteroscedasticity test: Breusch-Pagan-Godfrey

```
. predict e, residuals

. gen e2 = e^2

. reg e2 economicgrowth netmigrationindex violentcrimerate literacyrate politicalstabilit
> y propertycrimerate unemployment corruptionindex foreigndirectinvestment tradeopenness
> gorvenance economicbusinesscosts
```

Source	SS	df	MS	Number of obs	=	43
				F(12, 30)	=	1.71
Model	.000391029	12	.000032586	Prob > F	=	0.1135
Residual	.000570362	30	.000019012	R-squared	=	0.4067
				Adj R-squared	=	0.1694
Total	.000961392	42	.00002289	Root MSE	=	.00436

e2	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
economicgrowth	.037748	.0120983	3.12	0.004	.0130399	.0624561
netmigrationindex	-.000906	.0007657	-1.18	0.246	-.0024699	.0006578
violentcrimerate	.0003467	.0001302	2.66	0.012	.0000807	.0006126
literacyrate	-.0003364	.0001245	-2.70	0.011	-.0005906	-.0000821
politicalstability	-.0241606	.0100594	-2.40	0.023	-.0447046	-.0036165
propertycrimerate	-.0012297	.0008589	-1.43	0.163	-.0029838	.0005245
unemployment	-.0006583	.0004008	-1.64	0.111	-.0014769	.0001603
corruptionindex	.0014646	.0008477	1.73	0.094	-.0002667	.003196
foreigndirectinvestm~t	-.0004084	.0006153	-0.66	0.512	-.001665	.0008482
tradeopenness	.0006558	.0007343	0.89	0.379	-.0008439	.0021554
gorvenance	-.0003899	.0007204	-0.54	0.592	-.0018611	.0010814
economicbusinesscosts	-.0005651	.0005147	-1.10	0.281	-.0016162	.000486
_cons	-.0013412	.0112905	-0.12	0.906	-.0243996	.0217171

Year	OMIC GRC	MIGRATION I	LENT CRIME F	ERACY RA	TICAL STAB	RTY CRIME	EMPLOYM	RUPTION IN	FOREIGN L	DE C
1981	1.03	4.21	27.38	#####	0.33	3	6.9	4.5	7.8	
1982	1.05	4.78	25.63	#####	0.34	4	10.5	5	5	
1983	1.12	4.83	24.42	#####	0.44	5.5	6.2	3	4.5	
1984	1.22	3.34	25.00	#####	0.54	5.5	5.8	4.5	4.1	
1985	1.05	4.98	25.50	#####	0.59	3	7	3	4.9	
1986	1.11	4.39	25.00	#####	0.68	3.5	9.8	2	5.6	
1987	1.19	3.74	26.92	#####	0.86	6.5	8.7	5	4.7	
1988	1.25	5.98	31.00	#####	1.12	3.5	3.6	3.5	5.4	
1989	1.87	6.86	33.13	#####	1.68	1	2.5	2	8.1	
1990	1.26	5.84	50.83	#####	1.39	2	3.8	2	7.4	
1991	1.03	3.74	51.00	#####	1.09	4	1.6	4	7.8	
1992	1.44	7.29	53.50	#####	1.45	1.5	6.9	2	6.7	
1993	1.21	4.85	58.00	#####	1.26	4	2.9	3	8.1	
1994	1.18	6.23	58.25	#####	1.27	4	2.6	5	6.8	
1995	1.13	3.73	65.25	#####	1.22	4.6	3.1	5	7.6	
1996	1.26	5.14	74.50	#####	1.26	4.5	3.7	6	6.7	
1997	1.00	3.53	86.50	#####	1.01	1.5	1.8	2	5.6	
1998	0.86	4.26	84.50	#####	0.95	3	4.1	3	7.8	
1999	1.03	3.49	80.25	#####	1.14	4	4.1	4	5.7	
2000	0.97	4.58	84.00	#####	1.03	7	6.3	7	6.1	
2001	0.89	4.68	78.83	#####	1.06	2	3.7	2	8.4	
2002	0.86	4.61	76.00	#####	1.04	3.5	4.4	5.5	9.3	
2003	0.96	4.89	81.00	#####	1.18	4.6	8	6	6.8	
2004	0.77	5.39	90.67	#####	0.94	3	2.5	3	8	
2005	0.70	4.99	109.75	#####	0.90	2.5	3.1	2.5	5.5	
2006	0.71	6.14	119.92	#####	1.03	5.5	4.4	6	8.1	
2007	0.69	3.65	122.00	#####	1.15	5	3.8	5	6.9	
2008	0.58	4.84	114.08	#####	0.90	3.5	6.5	3	5.6	
2009	0.60	6.26	111.42	#####	0.92	1	4.9	1	7.7	
2010	0.82	5.38	103.00	#####	1.12	4.5	4.5	5	6.4	
2011	0.91	3.88	118.67	#####	1.21	6	7.1	6	8.1	
2012	0.77	6.20	117.50	#####	1.14	2.5	2.4	2.5	9.9	
2013	0.71	4.60	115.00	#####	1.19	3	2.5	4	8.8	
2014	0.72	4.16	109.83	#####	1.30	1	6.1	3.5	6.7	
2015	0.65	4.88	98.58	#####	1.24	4	2.3	3.5	8.1	
2016	0.70	5.86	97.58	#####	1.20	2	3.7	3	5.8	
2017	0.51	3.81	98.50	#####	0.83	4.5	1.4	4.5	6.6	
2018	0.50	5.74	97.83	#####	0.79	3	2.9	3	6.7	
2019	0.74	7.70	90.25	#####	1.10	0.9	5.5	5	8.6	
2020	0.66	3.34	99.08	#####	1.03	6	3.7	6	7.8	
2021	0.51	1.88	114.58	#####	0.86	5	4.6	3	9.7	
2022	0.54	4.60	113.00	#####	0.88	3.5	4.1	5	8.1	
2023	0.58	3.93	113.00	#####	0.89	3.5	5.1	3	9.4	

Year	ECONOMIC GROWTH	NET MIGRATION INDEX	VIOLENT CRIME RATE	LITERACY RATE	POLITICAL STABILITY	PROPERTY CRIME RATE	UNEMPLOYMENT	CORRUPTI INDEX
1981	1.03	4.21	27.38	85.17	0.33	3	6.9	
1982	1.05	4.78	25.63	79.50	0.34	4	10.5	
1983	1.12	4.83	24.42	62.17	0.44	5.5	6.2	
1984	1.22	3.34	25.00	56.00	0.54	5.5	5.8	
1985	1.05	4.98	25.50	45.33	0.59	3	7	
1986	1.11	4.39	25.00	40.67	0.68	3.5	9.8	
1987	1.19	3.74	26.92	37.00	0.86	6.5	8.7	
1988	1.25	5.98	31.00	34.50	1.12	3.5	3.6	
1989	1.87	6.86	33.13	36.75	1.68	1	2.5	
1990	1.26	5.84	50.83	46.00	1.39	2	3.8	
1991	1.03	3.74	51.00	48.08	1.09	4	1.6	
1992	1.44	7.29	53.50	53.00	1.45	1.5	6.9	
1993	1.21	4.85	58.00	55.83	1.26	4	2.9	
1994	1.18	6.23	58.25	54.33	1.27	4	2.6	
1995	1.13	3.73	65.25	60.50	1.22	4.6	3.1	
1996	1.26	5.14	74.50	74.33	1.26	4.5	3.7	
1997	1.00	3.53	86.50	84.75	1.01	1.5	1.8	
1998	0.86	4.26	84.50	76.75	0.95	3	4.1	
1999	1.03	3.49	80.25	73.00	1.14	4	4.1	
2000	0.97	4.58	84.00	78.75	1.03	7	6.3	
2001	0.89	4.68	78.83	66.33	1.06	2	3.7	
2002	0.86	4.61	76.00	62.33	1.04	3.5	4.4	
2003	0.96	4.89	81.00	65.75	1.18	4.6	8	
2004	0.77	5.39	90.67	73.83	0.94	3	2.5	
2005	0.70	4.99	109.75	85.67	0.90	2.5	3.1	
2006	0.71	6.14	119.92	82.58	1.03	5.5	4.4	
2007	0.69	3.65	122.00	73.50	1.15	5	3.8	
2008	0.58	4.84	114.08	73.50	0.90	3.5	6.5	
2009	0.60	6.26	111.42	72.50	0.92	1	4.9	
2010	0.82	5.38	103.00	74.92	1.12	4.5	4.5	
2011	0.91	3.88	118.67	88.83	1.21	6	7.1	
2012	0.77	6.20	117.50	79.58	1.14	2.5	2.4	
2013	0.71	4.60	115.00	68.58	1.19	3	2.5	
2014	0.72	4.16	109.83	60.67	1.30	1	6.1	
2015	0.65	4.88	98.58	51.67	1.24	4	2.3	
2016	0.70	5.86	97.58	57.08	1.20	2	3.7	
2017	0.51	3.81	98.50	60.42	0.83	4.5	1.4	
2018	0.50	5.74	97.83	61.17	0.79	3	2.9	
2019	0.74	7.70	90.25	60.67	1.10	0.9	5.5	
2020	0.66	3.34	99.08	62.67	1.03	6	3.7	

2021	0.51	1.88	114.58	67.75	0.86	5	4.6
2022	0.54	4.60	113.00	69.00	0.88	3.5	4.1
2023	0.58	3.93	113.00	74.00	0.89	3.5	5.1

Year	ECONOMIC GROWTH	NET MIGRATION INDEX	VIOLENT CRIME RATE	POLITICAL STABILITY	PROPERTY CRIME RATE
1981	1.03	4.21	27.38	0.33	3
1982	1.05	4.78	25.63	0.34	4
1983	1.12	4.83	24.42	0.44	5.5
1984	1.22	3.34	25.00	0.54	5.5
1985	1.05	4.98	25.50	0.59	3
1986	1.11	4.39	25.00	0.68	3.5
1987	1.19	3.74	26.92	0.86	6.5
1988	1.25	5.98	31.00	1.12	3.5
1989	1.87	6.86	33.13	1.68	1
1990	1.26	5.84	50.83	1.39	2
1991	1.03	3.74	51.00	1.09	4
1992	1.44	7.29	53.50	1.45	1.5
1993	1.21	4.85	58.00	1.26	4
1994	1.18	6.23	58.25	1.27	4
1995	1.13	3.73	65.25	1.22	4.6
1996	1.26	5.14	74.50	1.26	4.5
1997	1.00	3.53	86.50	1.01	1.5
1998	0.86	4.26	84.50	0.95	3
1999	1.03	3.49	80.25	1.14	4
2000	0.97	4.58	84.00	1.03	7
2001	0.89	4.68	78.83	1.06	2
2002	0.86	4.61	76.00	1.04	3.5
2003	0.96	4.89	81.00	1.18	4.6
2004	0.77	5.39	90.67	0.94	3
2005	0.70	4.99	109.75	0.90	2.5
2006	0.71	6.14	119.92	1.03	5.5
2007	0.69	3.65	122.00	1.15	5
2008	0.58	4.84	114.08	0.90	3.5
2009	0.60	6.26	111.42	0.92	1
2010	0.82	5.38	103.00	1.12	4.5
2011	0.91	3.88	118.67	1.21	6
2012	0.77	6.20	117.50	1.14	2.5
2013	0.71	4.60	115.00	1.19	3
2014	0.72	4.16	109.83	1.30	1
2015	0.65	4.88	98.58	1.24	4
2016	0.70	5.86	97.58	1.20	2
2017	0.51	3.81	98.50	0.83	4.5
2018	0.50	5.74	97.83	0.79	3
2019	0.74	7.70	90.25	1.10	0.9
2020	0.66	3.34	99.08	1.03	6
2021	0.51	1.88	114.58	0.86	5

2022	0.54	4.60	113.00	0.88	3.5
2023	0.58	3.93	113.00	0.89	3.5

Year	UNEMPLOYMENT	CORRUPTION INDEX	FOREIGN DIRECT INVESTMENT	TRADE OPENNESS	GORVENANCE	ECONOMIC/BUSINESS COSTS
1981	6.9	4.5	7.8	6.8	6.8	4.8
1982	10.5	5	5	5	6.7	5.6
1983	6.2	3	4.5	5.5	6.7	5.7
1984	5.8	4.5	4.1	5.1	6.9	3.6
1985	7	3	4.9	5.9	7.7	5.8
1986	9.8	2	5.6	4.6	8	3.7
1987	8.7	5	4.7	3.7	7.5	6.1
1988	3.6	3.5	5.4	4.4	6.3	4.4
1989	2.5	2	8.1	6.8	6	10.3
1990	3.8	2	7.4	5	6.9	5.1
1991	1.6	4	7.8	5.5	7.4	5.9
1992	6.9	2	6.7	5.1	6.2	3.4
1993	2.9	3	8.1	5.9	6.8	5.2
1994	2.6	5	6.8	4.6	6.7	6.9
1995	3.1	5	7.6	3.7	7.6	5.4
1996	3.7	6	6.7	4.4	6.5	5.6
1997	1.8	2	5.6	5.1	7.6	5.7
1998	4.1	3	7.8	5.9	6.8	3.4
1999	4.1	4	5.7	5.8	6.7	7.1
2000	6.3	7	6.1	5.7	6.7	5.9
2001	3.7	2	8.4	4.1	8	4.8
2002	4.4	5.5	9.3	6.8	7.7	6.7
2003	8	6	6.8	4.6	8	7.1
2004	2.5	3	8	4.7	7.5	4.8
2005	3.1	2.5	5.5	6.6	6.3	5.6
2006	4.4	6	8.1	6.8	6	5.7
2007	3.8	5	6.9	4.7	6.9	3.6
2008	6.5	3	5.6	6.1	7.4	5.8
2009	4.9	1	7.7	5.4	6.2	3.7
2010	4.5	5	6.4	8.3	6.8	6.1
2011	7.1	6	8.1	6.8	6.7	4.4
2012	2.4	2.5	9.9	6	7.6	10.3
2013	2.5	4	8.8	4.5	6.5	5.1
2014	6.1	3.5	6.7	5.1	7.6	5.9
2015	2.3	3.5	8.1	5.9	6.8	3.4
2016	3.7	3	5.8	5.6	6.7	5.2
2017	1.4	4.5	6.6	5.7	6.7	6.9
2018	2.9	3	6.7	3.4	6.2	5.4
2019	5.5	5	8.6	7.1	6.8	5.9
2020	3.7	6	7.8	5.9	6.9	4.8

2021	4.6	3	9.7	4.8	1	6.7
2022	4.1	5	8.1	6.7	6.2	7.1
2023	5.1	3	9.4	7.1	6.8	4.8

year	economicgrowth	netmigrationindex	violentcrimerate	literacyrate								
	politicalstability	propertycrimerate	unemploymentcorruptionindex									
	foreigndirectinvestment	tradeopenness	gorvenance	economicbusinesscosts								
	e	e2										
1981	1.03	4.21	27.38	85.17	.33	3	6.9	4.5	7.8	6.8	6.8	4.8
	-.0310704	.0009654										
1982	1.05	4.78	25.63	79.5	.34	4	10.5	5	5	5	6.7	5.6
	-.0618928	.0038307										
1983	1.12	4.83	24.42	62.17	.44	5.5	6.2	3	4.5	5.5	6.7	5.7
	-.0130033	.0001691										
1984	1.22	3.34	25	56	.54	5.5	5.8	4.5	4.1	5.1	6.9	3.6
	.1534175	.0235369										
1985	1.05	4.98	25.5	45.33	.59	3	7	3	4.9	5.9	7.7	5.8
	.0252241	.0006363										
1986	1.11	4.39	25	40.67	.68	3.5	9.8	2	5.6	4.6	8	3.7
	.0386843	.0014965										
1987	1.19	3.74	26.92	37	.86	6.5	8.7	5	4.7	3.7	7.5	6.1
	.009098	.0000828										
1988	1.25	5.98	31	34.5	1.12	3.5	3.6	3.5	5.4	4.4	6.3	4.4
	.0017584	3.09e-06										
1989	1.87	6.86	33.13	36.75	1.68	1	2.5	2	8.1	6.8	6	10.3
	.1383859	.0191507										
1990	1.26	5.84	50.83	46	1.39	2	3.8	2	7.4	5	6.9	5.1
	-.078217	.0061179										
1991	1.03	3.74	51	48.08	1.09	4	1.6	4	7.8	5.5	7.4	5.9
	-.0570641	.0032563										
1992	1.44	7.29	53.5	53	1.45	1.5	6.9	2	6.7	5.1	6.2	3.4
	.0074525	.0000555										
1993	1.21	4.85	58	55.83	1.26	4	2.9	3	8.1	5.9	6.8	5.2
	-.0481788	.0023212										

1994	1.18	6.23	58.25	54.33	1.27	4	2.6	5	6.8	4.6	6.7	6.9
	-.0441988		.0019535									
1995	1.13	3.73	65.25	60.5	1.22	4.6	3.1	5	7.6	3.7	7.6	5.4
	.0107679		.0001159									
1996	1.26	5.14	74.5	74.33	1.26	4.5	3.7	6	6.7	4.4	6.5	5.6
	.0740188		.0054788									
1997	1	3.53	86.5	84.75	1.01	1.5	1.8	2	5.6	5.1	7.6	5.7
	.0287795		.0008283									
1998	.86	4.26	84.5	76.75	.95	3	4.1	3	7.8	5.9	6.8	3.4
	-.0143046		.0002046									
1999	1.03	3.49	80.25	73	1.14	4	4.1	4	5.7	5.8	6.7	7.1
	-.0725146		.0052584									
2000	.97	4.58	84	78.75	1.03	7	6.3	7	6.1	5.7	6.7	5.9
	-.0499079		.0024908									
2001	.89	4.68	78.83	66.33	1.06	2	3.7	2	8.4	4.1	8	4.8
	-.0224436		.0005037									
2002	.86	4.61	76	62.33	1.04	3.5	4.4	5.5	9.3	6.8	7.7	6.7
	-.0191341		.0003661									
2003	.96	4.89	81	65.75	1.18	4.6	8	6	6.8	4.6	8	7.1
	-.0603813		.0036459									
2004	.77	5.39	90.67	73.83	.94	3	2.5	3	8	4.7	7.5	4.8
	.0032597		.0000106									
2005	.7	4.99	109.75	85.67	.9	2.5	3.1	2.5	5.5	6.6	6.3	5.6
	-.0139059		.0001934									
2006	.71	6.14	119.92	82.58	1.03	5.5	4.4	6	8.1	6.8	6	5.7
	.054626		.002984									
2007	.69	3.65	122	73.5	1.15	5	3.8	5	6.9	4.7	6.9	3.6
	.0887323		.0078734									
2008	.58	4.84	114.08	73.5	.9	3.5	6.5	3	5.6	6.1	7.4	5.8
	-.0072692		.0000528									

2009	.6	6.26	111.42	72.5	.92	1	4.9	1	7.7	5.4	6.2	3.7
	.0321883		.0010361									
2010	.82	5.38	103	74.92	1.12	4.5	4.5	5	6.4	8.3	6.8	6.1
	-.0444202		.0019732									
2011	.91	3.88	118.67	88.83	1.21	6	7.1	6	8.1	6.8	6.7	4.4
	.053351		.0028463									
2012	.77	6.2	117.5	79.58	1.14	2.5	2.4	2.5	9.9	6	7.6	10.3
	.0095922		.000092									
2013	.71	4.6	115	68.58	1.19	3	2.5	4	8.8	4.5	6.5	5.1
	.0725155		.0052585									
2014	.72	4.16	109.83	60.67	1.3	1	6.1	3.5	6.7	5.1	7.6	5.9
	-.0042934		.0000184									
2015	.65	4.88	98.58	51.67	1.24	4	2.3	3.5	8.1	5.9	6.8	3.4
	-.0910254		.0082856									
2016	.7	5.86	97.58	57.08	1.2	2	3.7	3	5.8	5.6	6.7	5.2
	-.0933307		.0087106									
2017	.51	3.81	98.5	60.42	.83	4.5	1.4	4.5	6.6	5.7	6.7	6.9
	-.0187688		.0003523									
2018	.5	5.74	97.83	61.17	.79	3	2.9	3	6.7	3.4	6.2	5.4
	-.0030853		9.52e-06									
2019	.74	7.7	90.25	60.67	1.1	.9	5.5	5	8.6	7.1	6.8	5.9
	-.008687		.0000755									
2020	.66	3.34	99.08	62.67	1.03	6	3.7	6	7.8	5.9	6.9	4.8
	-.0068801		.0000473									
2021	.51	1.88	114.58	67.75	.86	5	4.6	3	9.7	4.8	1	6.7
	-.0428274		.0018342									
2022	.54	4.6	113	69	.88	3.5	4.1	5	8.1	6.7	6.2	7.1
	.0639012		.0040834									
2023	.58	3.93	113	74	.89	3.5	5.1	3	9.4	7.1	6.8	4.8
	.0410515		.0016852									

year	economicgrowth	netmigrationindex	violentcrimerate	literacyrate								
	politicalstability	propertycrimerate	unemploymentcorruptionindex									
	foreigndirectinvestment	tradeopenness	gorvenance	economicbusinesscosts								
	e	e2										
1981	1.03	4.21	27.38	85.17	.33	3	6.9	4.5	7.8	6.8	6.8	4.8
	-.0310704	.0009654										
1982	1.05	4.78	25.63	79.5	.34	4	10.5	5	5	5	6.7	5.6
	-.0618928	.0038307										
1983	1.12	4.83	24.42	62.17	.44	5.5	6.2	3	4.5	5.5	6.7	5.7
	-.0130033	.0001691										
1984	1.22	3.34	25	56	.54	5.5	5.8	4.5	4.1	5.1	6.9	3.6
	.1534175	.0235369										
1985	1.05	4.98	25.5	45.33	.59	3	7	3	4.9	5.9	7.7	5.8
	.0252241	.0006363										
1986	1.11	4.39	25	40.67	.68	3.5	9.8	2	5.6	4.6	8	3.7
	.0386843	.0014965										
1987	1.19	3.74	26.92	37	.86	6.5	8.7	5	4.7	3.7	7.5	6.1
	.009098	.0000828										
1988	1.25	5.98	31	34.5	1.12	3.5	3.6	3.5	5.4	4.4	6.3	4.4
	.0017584	3.09e-06										
1989	1.87	6.86	33.13	36.75	1.68	1	2.5	2	8.1	6.8	6	10.3
	.1383859	.0191507										
1990	1.26	5.84	50.83	46	1.39	2	3.8	2	7.4	5	6.9	5.1
	-.078217	.0061179										
1991	1.03	3.74	51	48.08	1.09	4	1.6	4	7.8	5.5	7.4	5.9
	-.0570641	.0032563										
1992	1.44	7.29	53.5	53	1.45	1.5	6.9	2	6.7	5.1	6.2	3.4
	.0074525	.0000555										
1993	1.21	4.85	58	55.83	1.26	4	2.9	3	8.1	5.9	6.8	5.2
	-.0481788	.0023212										

1994	1.18	6.23	58.25	54.33	1.27	4	2.6	5	6.8	4.6	6.7	6.9
	-.0441988		.0019535									
1995	1.13	3.73	65.25	60.5	1.22	4.6	3.1	5	7.6	3.7	7.6	5.4
	.0107679		.0001159									
1996	1.26	5.14	74.5	74.33	1.26	4.5	3.7	6	6.7	4.4	6.5	5.6
	.0740188		.0054788									
1997	1	3.53	86.5	84.75	1.01	1.5	1.8	2	5.6	5.1	7.6	5.7
	.0287795		.0008283									
1998	.86	4.26	84.5	76.75	.95	3	4.1	3	7.8	5.9	6.8	3.4
	-.0143046		.0002046									
1999	1.03	3.49	80.25	73	1.14	4	4.1	4	5.7	5.8	6.7	7.1
	-.0725146		.0052584									
2000	.97	4.58	84	78.75	1.03	7	6.3	7	6.1	5.7	6.7	5.9
	-.0499079		.0024908									
2001	.89	4.68	78.83	66.33	1.06	2	3.7	2	8.4	4.1	8	4.8
	-.0224436		.0005037									
2002	.86	4.61	76	62.33	1.04	3.5	4.4	5.5	9.3	6.8	7.7	6.7
	-.0191341		.0003661									
2003	.96	4.89	81	65.75	1.18	4.6	8	6	6.8	4.6	8	7.1
	-.0603813		.0036459									
2004	.77	5.39	90.67	73.83	.94	3	2.5	3	8	4.7	7.5	4.8
	.0032597		.0000106									
2005	.7	4.99	109.75	85.67	.9	2.5	3.1	2.5	5.5	6.6	6.3	5.6
	-.0139059		.0001934									
2006	.71	6.14	119.92	82.58	1.03	5.5	4.4	6	8.1	6.8	6	5.7
	.054626		.002984									
2007	.69	3.65	122	73.5	1.15	5	3.8	5	6.9	4.7	6.9	3.6
	.0887323		.0078734									
2008	.58	4.84	114.08	73.5	.9	3.5	6.5	3	5.6	6.1	7.4	5.8
	-.0072692		.0000528									

2009	.6	6.26	111.42	72.5	.92	1	4.9	1	7.7	5.4	6.2	3.7
	.0321883		.0010361									
2010	.82	5.38	103	74.92	1.12	4.5	4.5	5	6.4	8.3	6.8	6.1
	-.0444202		.0019732									
2011	.91	3.88	118.67	88.83	1.21	6	7.1	6	8.1	6.8	6.7	4.4
	.053351		.0028463									
2012	.77	6.2	117.5	79.58	1.14	2.5	2.4	2.5	9.9	6	7.6	10.3
	.0095922		.000092									
2013	.71	4.6	115	68.58	1.19	3	2.5	4	8.8	4.5	6.5	5.1
	.0725155		.0052585									
2014	.72	4.16	109.83	60.67	1.3	1	6.1	3.5	6.7	5.1	7.6	5.9
	-.0042934		.0000184									
2015	.65	4.88	98.58	51.67	1.24	4	2.3	3.5	8.1	5.9	6.8	3.4
	-.0910254		.0082856									
2016	.7	5.86	97.58	57.08	1.2	2	3.7	3	5.8	5.6	6.7	5.2
	-.0933307		.0087106									
2017	.51	3.81	98.5	60.42	.83	4.5	1.4	4.5	6.6	5.7	6.7	6.9
	-.0187688		.0003523									
2018	.5	5.74	97.83	61.17	.79	3	2.9	3	6.7	3.4	6.2	5.4
	-.0030853		9.52e-06									
2019	.74	7.7	90.25	60.67	1.1	.9	5.5	5	8.6	7.1	6.8	5.9
	-.008687		.0000755									
2020	.66	3.34	99.08	62.67	1.03	6	3.7	6	7.8	5.9	6.9	4.8
	-.0068801		.0000473									
2021	.51	1.88	114.58	67.75	.86	5	4.6	3	9.7	4.8	1	6.7
	-.0428274		.0018342									
2022	.54	4.6	113	69	.88	3.5	4.1	5	8.1	6.7	6.2	7.1
	.0639012		.0040834									
2023	.58	3.93	113	74	.89	3.5	5.1	3	9.4	7.1	6.8	4.8
	.0410515		.0016852									