

Assessing the Impacts of Exports, Gross Capital Formation, Imports, Gross National Income, and Inflations on New Zealand's Growth Trajectory

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ABSTRACT

This research investigates the impact of gross national income (GNI), gross capital formation (GCF), exports of goods and services (EXP), imports of goods and services (IMP), and inflation and consumer prices (INF) on economic growth (GDP) in New Zealand (NZ). The study employs various statistical tests such as; normality, serial correlation, heteroscedasticity, and multicollinearity to test whether the model fits the data and the test results show that the model is statistically feasible. The time series data were derived from the World Bank data indicators website in NZ using a purposive sampling technique for fifty-one (51) year period, from 1972 to 2022, and the data were analyzed through Eviews 10 software versions. The results of the regression analysis show that GNI, GCF, EXP, and IMP have positive and significant impacts on GDP, while INF has a negative and insignificant impact on GDP. The research contributes to the understanding of key indicators in enhancing economic growth in NZ. The findings of this research suggest that improving export, national savings, capital formation, importation of raw materials will contribute immensely to the economic growth of NZ. In addition, the research also suggests that inflation should be controlled, as it may hinder the country's economic growth. Controlling inflation is essential to boosting income generation and economic productivity. However, future research should consider broader geographical contexts of different nations, increase sample size, and variables for a comprehensive understanding of factors influencing economic growth over time.

Keywords: Economic Growth; Macroeconomic Indicators; Regression Analysis; New Zealand

INTRODUCTION

Economic growth is a fundamental objective for any nation, as it directly influences the quality of life, employment opportunities, and overall prosperity of its citizens (Millia et al., 2021). For New Zealand (NZ), a small yet dynamic economy in the global landscape, understanding the driving forces behind its growth trajectory is important for policymakers, economists, government agencies, and investors alike. This research focuses on investigating the key economic indicators and their impact on NZ's growth trajectory.

The economy of NZ provides important background information for comprehending the significance of these growth variables. The nation's agricultural exports, especially to the United Kingdom, propelled its explosive rise in the middle of the 20th century (Geoffrey et al., 2016). New Zealand's economy did, however, undergo a sea change in the 1970s with the diversification of trade links that followed the UK's admission to the European Economic Community (James, 2010). The country's economic landscape was

altered and its integration into the global economy was strengthened by further economic changes in the 1980s and 1990s, such as trade liberalization and banking sector deregulation (McCann, 2009). These historical events underscore the difficulties presented by inflationary pressures and income inequality while highlighting the critical roles that imports, exports, and capital formation play in propelling economic expansion. The significance of comprehending these factors in light of NZ's economic expansion has increased due to globalization. Being an open economy, NZ has strong ties to international trade networks, with the US, China, Australia, and Japan among its main trading partners (Nzier, 2005). While the emergence of emerging markets and the growing complexity of global supply chains have opened up new avenues for export expansion, they have also increased competitiveness and risks for NZ. According to (Safrany, 2018), Economic growth (GDP) serves as a primary indicator of economic growth, reflecting the overall economic activity within a nation. Economic growth indicates improvements in an economy's capacity to produce, driven by factors like increased investments, labor productivity, technological innovation, and capital formation. (Grossman et al., 2014) examine the criticism of GDP as social welfare and progress indicator, and the Database of Global Economic Indicator that used to affect U.S economy. Moreover, Gross National Income (GNI) represents the total income earned by a country's residents, including income from abroad, such as remittances and returns on foreign investments. A number of variables, such as Labour market dynamics, productivity levels, and returns on foreign investments, influence a nation income (Capelli & Vaggi, 2016). In addition, Gross capital formation (GCF) measure the net increase in fixed assets and inventory levels within an economy. GCF indicates the level of investment activity and economic growth potential (Amjed & Shah, 2021). It shows how much money is being invested in assets that increase an economy's ability to generate products and services. Deriving the value of exported goods and services (EXP) out of the country or the rest of the world, exports are crucial to GDP growth as they give income in foreign currency, promote production, and provide employment opportunities (Ferreira, 2009). They are an important part of international trade and are often encouraged to enhance a country's trade balance. Nevertheless, Imports of goods and services (IMP) primarily include the money spent on purchasing goods or services from other countries. On the one hand, imports help to meet the requirements of the domestic market and raise people's welfare (Profile, 1982). Imports allow the country to acquire goods or products that are not available in the nation. Inflation, consumer prices (INF) is another important factor influencing economic performance. Inflation is a reflection of shifts in the purchasing power of money and the general stability of prices in an economy. Low to moderate inflation is perceived to be healthy since it stimulates demand and investment activity. High inflation conditions, nevertheless, reduce the purchasing power of consumers, decrease savings as well as create insecurity in the economy, and ultimately result in lower GDP (Wynne & Sigalla, 2009).

Many studies have been conducted on economic growth in New Zealand producing limited perspectives. The omission of integrating variables such as; Exports, Gross Capital Formation, Imports, Gross National Income, and Inflation may result in biased or incomplete results, compromising the trustworthiness of findings concerning the actual impact of these variables on economic growth. For example (Fatai et al., 2020) specifically examine energy consumption, and they found that Energy demand models in NZ have commonly relied on either a partial general equilibrium framework or spreadsheet-based methodologies. These approaches indicate that electricity is expected to be the most rapidly increasing energy type consumed by both households and the industrial sector over the next twenty years. (Conway & Orr, 2000) discuss the process of economic growth in NZ and they conclude that price plays a pivotal role in sustaining economic growth. Additionally, (Galt, 2000) conclude that NZ economic growth is influenced by government policy. Nevertheless, (Black, 1998) also conclude that exports, public sector investments, and tourism receipts have positive impact on NZ economic growth. Furthermore, (Raguragavan, 2004) investigates foreign direct investment (FDI) and its impact on NZ economy and it conclude that FDI has a positive impact on the economic growth of NZ. While (Acikgoz & Cinar, 2017) focus on public spending and economic growth. Notwithstanding, (Beck & Katz, 2011) used limited data of both time series and cross sectional to examine GDP growth. They noted that models with both a lagged dependent variable and serially correlated errors can easily be estimated. Against this backdrop, this study seeks to explore the impacts of Exports (EXP), Gross Capital Formation (GCF), Imports (IMP), Gross National Income (GNI), and Inflation (INF) on the economic growth (GDP) of NZ from 1972 to 2022. By addressing this research gap,

this research aims to contribute to the broader discourse on economic planning and development in NZ. This research will provide valuable additions to the existing academic literature fitted to the unique economic structure, trade policies, and inflation dynamics of the NZ economy. The findings may provide extensions to existing growth theories, including country-specific variables such as NZ's trade dependence, small open economy characteristics, and inflationary trends. The research will provide practical recommendations for policymakers, government agencies, stakeholders by highlighting key levers that drive or inhibit New ZN's economic growth trajectory.

This research is organized as follows: section one outlines the introduction, section two explains the literature review, research framework, and followed by the development of hypotheses, section three display the methodology, section four outlines the results and discussion, section five displays the study's conclusion including the implications, limitations and direction for further research.

The study of Economic growth has been central to the field of economics, with Gross Domestic Product (GDP) widely used as a measure of a country's economic performance. GDP represents the total monetary value of all final goods and services produced within a country's borders over a specific period (Paper et al., 2010). Previous studies such as (Bergh, 2009; Stel et al., 2005) conclude that GDP is influenced by several economic indicators that capture various aspects of a nation's economic activities.

The theoretical foundation of GDP lies in Keynesian economics, which emphasizes the role of aggregate demand in driving economic growth, and neoclassical theories, which focus on the contributions of capital accumulation and technological progress. GDP can be evaluated from three angles, namely, (i) Production Approach: It measures total output produced in the economy. (ii) Expenditure Approach; which summarizes total spending on final goods and services, which includes consumption, investment, government spending, and net exports. (iii) Income approach; this approach calculates the total income earned by factors of production, including wages, profits, and rents (Slepov et al., 2017). GDP is thus a strong index that reflects the country's economic growth, which depends on different exogenous variables, such as export, gross capital formation, gross national income, and imports. Various researches have been conducted on whether GDP truly reflects economic growth. For example, (Solihatun & Irwan, 2024) explain Robert Solow's Growth Model which underlined capital accumulation, technological progress, and labor as the main factors in GDP growth. It was a model that laid the foundation for how GDP could relate to capital formation and productivity. (Florida et al., 2008) conclude that, in building from Solow's work, Romer's endogenous growth theory postulated that human capital and innovation also play crucial roles in GDP growth. (Makina et al., 2009) assessed the impact that trade liberalization and investments had on New Zealand's GDP growth. According to the results obtained, policy reforms that would enhance investment efficiency and infrastructure fueled New Zealand's economic growth of the 1990s. However, (Dalziel, 2016) also examined the impact of innovation and productivity on the GDP growth. The authors underline that unless new investments are made into human and physical capital, one cannot speak of long-lasting growth.

According to Keynesian theories, higher incomes induce more consumption, which is a substantial part of aggregate demand (David & Emmanuel, 2021). Research points out that there is a close relationship between GNI and GDP, as higher income levels lead to consumer spending, investment in productive assets, and rising economic activities. Empirical studies, such as (Yonar & İyit, 2018), have established a positive correlation between GNI and GDP, as higher income levels often translate into increased consumption, savings, and investment. (Milanovic, 2024) analyzed the influence of global income distribution and discovered that countries with higher GNI levels usually have stronger growth paths of GDP because of higher domestic demand. GNI captures the earnings from its robust export sector, particularly in agriculture and tourism, and its reliance on foreign investments. An increase in GNI supports domestic consumption and investment, thereby boosting GDP. However, fluctuations in global market conditions can significantly influence this relationship, particularly for an export-dependent economy. (Hirschman, 2013) investigate the nexus among GNI, trade, and growth in GDP for New Zealand. Their study shows that remittance inflows and income from foreign investments positively contributed to GDP through household consumption and business investments.

Capital formation often indicates increased economic activity, employment generation, and better infrastructure, leading to sustainability in growth (Akobeng, 2017). Studies by (Maune & Matanda, 2022) and (Dyché et al., 2011), have found a robust positive relationship between gross capital formation and GDP

growth, particularly in economies with efficient investment environments. (Ranawana et al., 2019) conclude that the model underlines savings and investment as the major drivers of economic growth. Higher capital formation means more production capacity, hence GDP growth. (Sawalha, Nabeel N., Elian, Mohammed I. & Suliman, 2021) examine the cross-country study and the study showed a positive correlation between the investment rate, which serves as a proxy for GCF, and GDP growth. (Wanniarachchi, 2020) added that their analysis on the economies of South Asia showed that an increase in GCF results in a rise in GDP, indicating infrastructure development as the most crucial agenda. However, the efficiency of these investments and their alignment with the nation's growth objectives are critical in maximizing their impact on GDP. (Barker, 2017) established that investment in public infrastructure, mainly in transport and telecommunications, largely contributed to the country's growth in GDP during the early 2000s.

As per the theory propounded by Adam Smith, the author of the Theory of Absolute Advantage, there should be certain goods which nations can produce more efficiently than others, and therefore, those goods should be exported enhancing production (Smith Adam, 1776). David Ricardo's Theory on comparative advantages export based economic activities and international trade enables every nation to effectively allocate their resources and enhances economic development (Siddiqui, 2018). Many studies prove the very positive impact of exports on GDP. For example, (Balassa, 1985) study showed that export growth has a significant impact on economic growth in developing countries. Along this line, (Beroud, 2024) pointed out that exportation plays a catalyzing function for augmenting GDP through enriching technological progress and scale economies. (Carroll, 2012) indicated that agricultural exports, especially dairy products, are among the drivers of its GDP.

Keynesian Economics argues that an increase in imports is detrimental to GDP growth since it depicts an outflow of domestic earnings (Stockhammer, 2023). In contrast, the Endogenous Growth Theory points out that imports can be beneficial as well since these could include modern technologies and capital goods and inputs that are absent in the country and thus can boost productivity and increase GDP (Pack, 1994). The relationship of imports to GDP is ambiguous. (Bureau & Economic, 1994) has pointed that import of intermediate and capital goods contribute to productivity and GDP through the endogenous growth model. On the other hand, (McCombie et al., 1997) stressed that too high imports may result in balance-of-payment constraints which lower the rate of economic growth. Imports have a double effect on GDP: they detract from net exports in the GDP formula, but they also allow access to inputs, machinery, and consumer goods that raise productivity and well-being. The trick is to manage the trade balance so that imports are not much greater than exports, else slowing the rise of GDP.

According to the Cost-Push Inflation Theory, escalation in prices occurs as a result of increased costs of input (labor and raw materials) causing a decline in the volume produced, assuming constant demand (Paper, 2024). Inflation might affect the level of GDP through consumer purchasing power, investment decisions, and cost structures. Control of inflation within the target range is conducive to stable economic growth, with predictable price levels and confidence for businesses. Research on the relationship between inflation and GDP suggests that it is nonlinear. For example, (Thi & Thanh, 2013) found that moderate inflation positively relates to growth, but high inflation distorts price signals, which negatively affects growth. Indeed, inflation targeting by the Reserve Bank since 1989 has ensured price stability and stimulated economic growth in Japan and Nigeria. A confirmation of this revealed that (Sucharita & Sethi, 2011) had supported the range of inflation for sustainable growth in GDP.

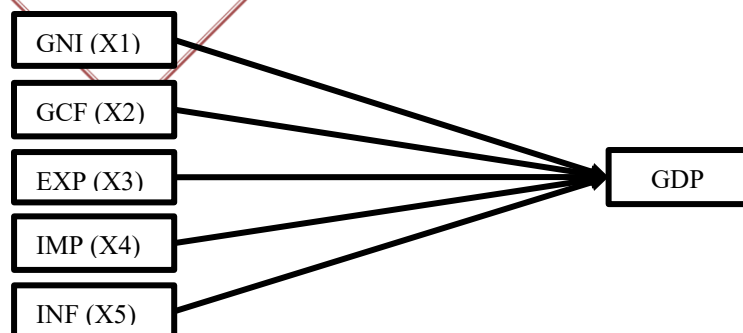


Figure 1. Research Framework

From the above framework, previous research, and theories the following hypotheses (H) were developed;

H1: Gross National Income (GNI) has a positive impact on (GDP) (X1)

H2: Gross capital formation (GCF) has a positive impact on (GDP) (X2)

H3: Export of goods and services (EXP) has a positive impact on (GDP) (X3)

H4: Import of goods and services (IMP) has a positive impact on (GDP) (X4)

H5: Inflation, consumer prices (INF) have a negative impact on (GDP) (X5)

METHODS

This research uses a quantitative approach. A quantitative method is a systematic, empirical investigation of an economic issues or questions that involves gathering and examining numerical information (Turato, 2005). This type of study is designed to produce statistically valid and reliable results that can be used to make data-driven decisions.

The operational definition and measurement of variables as; Economic Growth (GDP): It is the dependent variable, and it is considered a rise in the total value of goods and services that an economy produces within a time period. Usually, it is measured by the rate of growth of Gross Domestic Product, reflecting the percent change in GDP from one time period to another. Economic growth may be reported quarterly or annually. It can be measured in terms of Growth without adjustment for inflation or Growth in Real GDP - at constant prices (Abdulkadr et al., 2024). In this study, GDP was entered into the model in the form of an annual %.

The explanatory Variables such as; (i) Gross National Income (GNI): Is the total income of a country's residents and businesses, inclusive of earnings from abroad. It includes the sum of a nation's Gross Domestic Product and net income received from abroad in the form of remittances and foreign investments. GNI is measured either in current prices or constant prices adjusted for inflation. It is usually expressed in nominal terms, current USD, or in purchasing power parity terms to adjust for cost-of-living differences across countries (Capelli & Vaggi, 2016). In this study, GNI was recorded in the form of an annual %. (ii) Gross Capital Formation (GCF): Is the total value of investment in productive physical capital such as machinery, infrastructures, and buildings within an economy. This includes gross fixed capital formation plus changes in inventories. Its measurement is usually expressed as a percentage of GDP and estimated from National Accounts data. It reflects an economy's ability to expand productive potential (Pasara & Garidzirai, 2020). In this study, GCF was recorded as % of GDP. (iii) Exports of Goods and Services (EXP): Is the total value of goods and services sold by residents (citizens) of a country to foreign markets. It reflects both the demand for a country's products and its contribution to economic growth via trade. Exports are recorded in balance of payment accounts and national income statistics either in % of GDP or in absolute dollar (or other currency) values (Gabriele, 2006). In this study, EXP was entered into the model in the form as Annual % growth. (iv) Import of Goods and Services (IMP): IMP represents the sum value of goods and services imported from abroad, reflecting the dependence of the economy on foreign goods for consumption and production. Imports are measured as a share of GDP or in absolute terms. A higher level of imports compared to exports may indicate trade deficits (Ahmed & Khalil, 2014). In this study, IMP was recorded as Annual % growth. (v) Inflation and Consumer Prices (INF): INF refers to the rate of change in the general price level of goods and services over time and is indicative of purchasing power and macroeconomic stability. The measurement is quantified by indices like the Consumer Price Index (CPI) or the GDP deflator and expressed as an annual percentage change (Tarawalie & Kargbo, 2020). In this study, INF was recorded as an annual %.

This research uses secondary time series data to scrutinize multiple indicators across various periods. All the data were obtained from World Bank Data Indicator Website (WBDI). The study population comprises selected economic indicators of NZ from "World Bank Data Indicator Website", covering a fifty-one (51) -year period from 1972 to 2022. The study's sample selection method was purposive sampling which involves specific criteria. Firstly, each variable was selected based on its theoretical relevance and

empirical importance in economic growth studies. Secondly, each variable must have a data that is consistently listed from 1972 to 2022. Finally, the data must be found on the (WBDI).

The data are analyzed using statistical software such as Eviews 10. Moreover, the study employs linear regression technique. (McCullagh, 1980) define regression analysis as a study that explores the correlation between a dependent variable (Y) and the independent variables (X). The reason for this analysis is to investigate the impact of how the independent variables influence the dependent variable.

This study will use linear regression to determine whether the independent variables have any significant influence on GDP which happens to be the dependent variable. The following linear regression model is specified:

$$GDP_t = B_0 + B1GNI_t + B2GCF_t + B3EXP_t + B4IMP_t + B5INF_t + E_t$$

Where; GDP_t: Gross domestic products of growth, B1GNI_t: Gross national income, B2GCF_t: Gross capital formation, B3EXP_t: Exports of goods and services, B4IMP_t: Imports of goods and services, B5INF_t: Inflation, consumer prices, E_t: Error term, B₀, ... Constant, B1, B2, ... B5: Coefficients to be estimated.

To validate the model, the following diagnostic tests will be conducted: This normality test is used to determine whether a dataset or the residuals of a regression model follow a normal distribution (Hernandez, 2021). In regression analysis, normality of residuals is an important assumption for valid hypothesis testing and inference. Moreover, if the probability value is above 0.05, then the data is normally distributed. The serial correlation test examines whether the residuals (errors) of a regression model are correlated across time or observations (Gourieroux et al., 1985). The Durbin-Watson statistic will also be used to check for autocorrelation in the residuals. The Heteroscedasticity test evaluates whether the variance of residuals is constant across all levels of independent variables (Dorfman, 2024). The Breusch-Pagan and White tests will be applied to assess the constancy of error variances. Moreover, if the probability value is above 0.05, then there is homoscedasticity, but however, if the probability value is less than 0.05, then there is heteroscedasticity. The Multicollinearity test assess whether independent variables in a regression model are highly correlated with each other (Ali et al., 2021). Variance Inflation Factors (VIFs) will be computed to ensure the independent variables are not highly collinear. When the VIF is less than 5, it shows low or no multicollinearity, but if the VIF is greater or equal to 10 it indicates a high multicollinearity.

RESULT AND DISCUSSION

Result

Descriptive statistics results

The descriptive statistics were utilized to present the characteristics of the variables under investigations. The findings of the descriptive statistics results can be seen in **Table 1** below. The results of the descriptive statistics show that the mean GDP is 2.53, indicating an average annual growth rate of 2.53% over the period. The median for GDP is 2.77, meaning that the distribution is fairly balanced, with half of the values above this and half below. The maximum GDP of 7.80 reflects the growth rate in the peak period, while the minimum GDP of -3.94 indicates a sharp contraction in a few specific years. The standard deviation of 2.28% means that there was moderate dispersion in the GDP growth rates. The average GNI of 2.49% displays the same average annual rise in national income as that of GDP. The GNI median of 2.73 supports consistent distribution, with only slight skewness. The maximum value of 7.87 and minimum value of -3.80 reveal huge fluctuation in the levels of income over the years. The standard deviation of 2.34 reflects a comparable level of dispersion as found in GDP. The average GCF of 23.66% reflects a consistent average investment as a % of GDP. The median GCF of 23.23 reinforces the fact that distribution is fairly consistent. The highest GCF of 35.00 indicates a high investment period, whereas the lowest GCF of 17.54 indicates the minimum recorded investment levels. The standard deviation of 2.85 indicates a moderate capital formation fluctuation. Mean EXP value is 3.41, indicating that the average growth of export on a yearly basis was 3.41%. The median for exports, which is 3.41, is close enough to the mean, hence indicating a symmetric distribution. The highest EXP value of 12.76 and the lowest EXP value of -17.63 reflect extreme fluctuation, and in some years, exports showed a severe decline. The standard deviation of 4.54 demonstrates a relatively

high dispersion in export performance. The mean IMP value is 4.59, reflecting an average annual rise of 4.59% in imports. The median import value of 4.87 indicates slightly higher consistency than that of exports. The peak IMP value of 21.32 and the trough of -21.60 reflect large volatility in the levels of imports, probably driven by trade factors. The standard deviation of 7.80 indicates a significant dispersion in import activities. The average INF rate is 5.75%, indicating moderate inflation during the period under consideration. The median inflation rate of 3.04 suggests that INF was below the mean for more than half of the period, indicating skewness in the data. The maximum inflation rate of 17.15 reflects a period of high inflation, while the minimum inflation rate of -0.11 suggests rare deflationary conditions. The standard deviation 5.41 indicates considerable variability in inflation levels.

Table 1. Descriptive statistics results

	GDP	GNI	GCF	EXP	IMP	INF
Mean	2.531043	2.493739	23.66177	3.407018	4.593205	5.745766
Median	2.774843	2.727943	23.23256	3.411898	4.870059	3.037023
Maximum	7.800279	7.871221	35.00495	12.76021	21.32072	17.15055
Minimum	-3.936338	-3.800859	17.54446	-17.63127	21.59640	-0.114267
Std. Dev.	2.283101	2.337085	2.849613	4.540334	7.802188	5.408663
Skewness	-0.338279	-0.596753	1.120493	-1.702923	.843260	0.963214
Kurtosis	3.159927	3.632488	6.549342	10.46556	4.820315	2422333
Jarque-Bera	1027026	3.877058	37.44216	143.0856	13.08553	8.595257
Probability	0.598390	0.143915	0.000000	0.000000	0.001440	0.013601
Sum	129.0832	127.1807	1206.70	173.7579	2342534	293.0340
Sum Sq. Dev.	260.6274	273.0984	406.0148	1030.732	3043707	142.82
Observations	51	51	51	51	51	51

Source: Eviews 10 analyzing data

Table 2. Linear regression model results

Variables	Coefficient	Prob.	Prob(F-statistic)	R-squared	Adjusted R-square
Constant	22.559768	0.0129	0.000000	0.908670	0.898523
GNI	0.742468	0.0000			
GCF	0.128244	0.0081			
EXP	0.059623	0.0134			
IMP	0.051100	0.0027			
INF	-0.040557	0.1119			

Source: Eviews 10 analyzing data

$$GDP_t = B_0 + B_1GNI_t + B_2GCF_t + B_3EXP_t + B_4IMP_t + B_5INF_t + E_t$$

$$\text{Estimated model: } GDP = 22.56 + 0.74gni + 0.12gcf + 0.06exp + 0.05imp - 0.04inf$$

Normality Test results

The results of the normality test in Table 3 below indicate that since the p-value of 0.388548 is greater than the significance level of 0.05 the data is normally distributed.

Table 3. Normality test results

Jarque- Bera	1.890676
Probability	0.388548

Source: Eviews 10 analyzing data

Serial correlation test results

The results of the Serial Correlation test in Table 4 below suggest that since the Prob. Chi-Square of 0.3149 is greater than the significance level of 0.05. This means there is no statistically significant evidence of serial correlation in the residuals of the model at the 5% significance level. Hence, the residuals are independent, and the model presents a good result.

Table 4. Serial Correlation test results

Obs*R-squared	2.310709	Prob. Chi-Square	0.3149
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Source: Eviews 10 analyzing data

Heteroscedasticity test results

The results of the heteroscedasticity test in Table 5 below shows that since the p-value of 0.1076 is greater than the standard significance levels of 0.05, it indicates that there is no significant evidence of heteroscedasticity in the data. The error variance appears to be constant, meeting the assumption of homoscedasticity.

Table 5. Heteroscedasticity test results

Obs*R-squared	Prob. Chi-Square	0.1076
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Source: Eviews 10 analyzing data

Multicollinearity test results

The results of the Multicollinearity test in Table 6 below shows that all the VIF values are below 5, suggesting no severe multicollinearity among the variables. It indicates that the model is not at risk of multicollinearity issues, and the results are reliable for interpretation.

Table 6. Multicollinearity test results

GNI	VIF	1.9097821
GCF	VIF	1.642826
EXP	VIF	1.045590
IMP	VIF	1.489992
INF	VIF	1.730173

Source: Eviews 10 analyzing data

Discussion

The Linear regression model results predict the relationship between a dependent variable and one or more independent variables (Burks et al., 2019). It examines how independent variables, such as GNI, GCF, EXP, IMP, and INF, influence the dependent variable, GDP. The results of the linear regression in **Table 2** above are as follows:

The results of the R square and adjusted R square of 0.908 and 0.898 as shown in table 3 indicates that approximately 90% of the independent variables explained the dependent variable, (GDP). The R square explains how much of the independent variables (GNI, GCF, EXP, IMP, and INF) are explaining the dependent variable, (GDP). The F-Statistics evaluate the overall significance of the model. This test proves the model is fit for the equation with a significant score of 0.000000 as shown in table 3 which is excellently significance. It further depicts that the model is extremely good to explain GDP. The GDP growth rate is 22.56% when GNI, GCF, EXP, IMP, and INF are all kept constant. Indicating that the p value 0.0129 is less than the significance level of 5%, the results show that the GDP growth rate in New Zealand is significance when all other factors are held constant at the 5% level of significance.

GNI has a positive and significant impact on GDP, suggesting that a 1-unit increase in GNI is associated with a 0.742468-unit increase in GDP. This highlights the critical role of gross national income in driving GDP growth in NZ. The coefficient and p-value score align with the notion that GNI is potentially contributing to the GDP growth of NZ. In a similar study done by (Jalal, 2020) in examining the fiscal challenges of the health sector by mapping trends in a set of health and economic indicators for low-income, lower-middle-income, upper-middle-income, and high-income countries. It found that health indicators improve with increased GNI per capita and GDP. The rate of improvement, however, is slower in low-income regions than in high-income countries. Though slow, the rate of improvement is enough to create a growing population of older individuals. Additionally, (Leipert, 1989) also conclude that GNI has a favorable impact on economic growth in a conceptual side of defensive expenditure.

GCF has a positive and significant impact on GDP. It reflects how much an economy is spending on assets like infrastructure, machinery, equipment, buildings, and other forms of capital that can enhance future

production. This result aligns with economic theory, as investments in capital formation often contribute to productivity and economic expansion. Moreover, this result is also supported by (Onyinye et al., 2017), who examine the effect of capital formation (GCF) on economic growth in Nigeria and conclude that GCF has a positive impact on economic growth in the short run and long run. Nevertheless, (Kanu et al., 2019) also conclude that GCF has a positive impact on GDP growth.

Exports have a positive and significant on GDP. While export is beneficial, suggesting that a 1-unit increase in exports is associated with a 0.059623-unit increase in GDP, reinforcing the importance of trade and export-oriented growth strategies in economic development. This result is similar with the study done by (Fosu, 1990) in examined exports and economic growth: The Africa case, it found that export growth favorably affect the rate of economic growth in less developed countries. This result is also supported by (Islam & Haque, 2018), who conclude that EXP has a favorable impact on GDP growth in Bangladesh.

Imports have a positive and significant impact on GDP growth. While IMP might initially appear to detract from GDP in traditional economic models, this positive impact could be attributed to the complementary relationship between imports and domestic production, such as the importation of raw materials or capital goods that enhance output. The result of this research is align with the research findings of (Millia et al., 2021) study in Iran. They found that import had a significant impact on the economic growth in the long run. Moreover, this result is also supported by (Saaed & Hussain, 2015), who conclude that import has a positive impact on the economic growth of Tunisia.

Inflation has a negative and insignificant impact on GDP. This suggests that inflation, while negatively correlated with GDP, does not have a strong or reliable impact in this model. But inflation sometimes hinder the economic growth which might be cause by several factors, such as excess money supply, high level of government spending or borrowing. This result is similar with the findings of (Moore, 1975), who conclude that inflation has a negative impact on economic growth in Tanzania. Again, this result is also supported by (Aziz & Amalina, 2017), who examine factors affecting GDP growth in Malaysia and they conclude that inflation has an adverse effect on GDP growth.

Therefore, in these instances, **H1:** GNI has a positive influence on GDP, **H2:** GCF has a positive influence on GDP, **H3:** EXP has a positive impact on GDP, **H4:** IMP has a positive impact on GDP are supported. The results indicate that the null hypotheses should be rejected because their p-values are lower than the significance level of 0.05. There is sufficient evidence to support the claim that the outcome underscores the importance of GNI, GCF, EXP, and IMP in enhancing GDP growth. However, **H5:** INF has a negative impact on GDP and a p-value greater than the significance level of 0.05, there is no enough evidence to reject the null hypothesis. Therefore, the results indicate that there is no significance impact of inflation on GDP growth at 5% level of significance. The endogenous growth theories and Solow -swam growth model support the idea that GNI, GCF, EXP, and IMP positively influence GDP growth, through their role in enhancing savings, investment, production capacity, and productivity.

CONCLUSION

This research focuses on investigating economic indicators and their impact on NZ's growth trajectory. The study employs various statistical tests such as; normality, serial correlation, heteroscedasticity, and multicollinearity to test whether the model fits the data and the test results show that the model is significantly feasible. The time series data were derived from the World Bank data indicators website in NZ using a purposive sampling technique for fifty-one (51) year period, from 1972 to 2022. NZ's economy stands out for its dependence on a variety of sectors. This may reflect the fact that inflation often has mixed effects on GDP, depending on the economic growth. The study makes it clear that GNI, GCF, EXP, and IMP are contributing significantly to the GDP growth of NZ. INF has a negative impact on GDP, while GNI, GCF, EXP, and IMP have positive impact on GDP. Theoretically, the results of this study have implications that suggest that endogenous growth theories and Solow -swam growth model remain significant in describing the current reality regarding key economic indicators and their impact on economic growth. Practically, the findings of this research have implications for policymakers, government agencies, stakeholders, suggesting that if they want to improve the economic growth of a country, they should not only

focus on agriculture, tourism, technology, but they should also consider EXP, GNI, GCF, and IMP. This would enable the importance of income generation and overall economic productivity in driving growth more effectively in the country. In addition, the research findings have implications for investors, suggesting that understanding economic trends helps businesses make informed decisions about investments, pricing, producing, and market expansion. However, there are several limitations to this study. Firstly, the research focuses exclusively on NZ and excludes other nations. Secondly, the study utilizes a limited sample size, and a restricted number of variables. Therefore, future research should explore potential interaction effects, by consider incorporating other countries or region in the study, and increase the variables to assess changes in economic growth over time. Again, it is recommended for policy-makers to control inflation and increase exports. Additionally, researchers should improve the sample size to ensure the robustness of the findings. Finally, considering exploring different economic indicators and their impact on GDP growth in other nation could be helpful in detail understanding of the topic.

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