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ANALYSIS OF THE INFLUENCE OF DOMESTIC INVESTMENT, FOREIGN DIRECT INVESTMENT, POPULATION, CRIME RATE, AND UNEMPLOYMENT RATE ON ECONOMIC GROWTH IN DELI SERDANG REGENCY: ARDL MODEL APPROACH

Ramadhan Devan Pratama[1], Irsad Lubis[2], Raina Linda Sari[3]
[1,2,3]Universitas Sumatera Utara, Medan, Indonesia
Email: ramadhandevanpratama@usu.ac.id

ABSTRACT

The aim of development in a country or region is to improve the welfare and prosperity of society in a fair and equitable manner, one of which is by increasing sustainable economic growth. Because with high economic growth, it will reduce the unemployment rate, crime rate and changes in economic structure so that it has a positive impact on economic development itself. The main objective of this study is to analyze the effect of domestic investment, foreign investment, population, crime and unemployment on economic growth in Deli Serdang Regency. The data analysis method used is the Autoregressive Distributed Lag (ARDL) approach in the time series data model and the observation time span of this study starts from 2010 to 2021 where data interpolation will be carried out in quarterly. According to the results of the analysis, the variables domestic investment and foreign direct investment have a positive significant effect on economic growth. Meanwhile, the variables of population, crime and unemployment have a negative significant impact on economic growth in the long run. However, in the short run, the variables of direct investment, foreign investment, population and crime have a positive significant impact on economic growth. On the other hand, only the number of unemployed has a negative significant effect on economic growth. Based on the results of this study, it is appropriate for the Government of Deli Serdang Regency to optimize programs that are oriented towards increasing investment both domestic and foreign, suppressing the rate of population growth and the number of unemployed and maintaining regional security in the Deli Serdang Regency area.

KEYWORDS *Economic Growth, Domestic Investment, Foreign Investment, Population, Crime, Unemployment*

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INTRODUCTION

In general, every country strives to achieve the goal of promoting fair and equitable prosperity for its people, including Indonesia. One of the measures used to assess the performance of a country's or region's economy is economic growth. When economic growth is relatively steady or growing, accompanied by equitable development, it tends to reduce unemployment rates, levels of crime, and the occurrence of economic structural changes, thus positively impacting economic development itself. Economic growth is the process of sustained change in the economic conditions of a country or region towards a better state over a certain period of time (Putra, 2018).

Deli Serdang Regency is one of the strategic areas in North Sumatra with significant natural resource diversity, making it potentially attractive for both domestic and foreign investments, which could stimulate high economic growth rates. The following figure is provided:

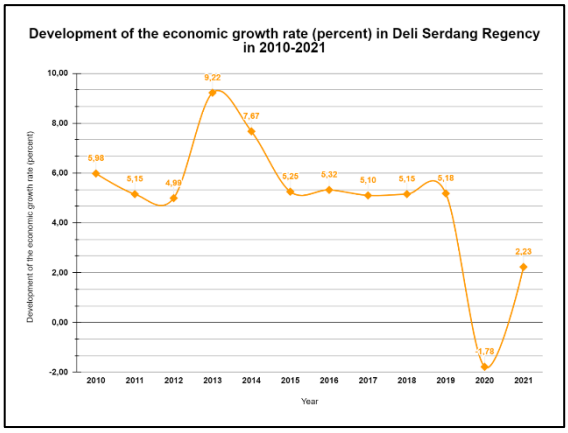

Figure 1. Economic Growth Rate in Deli Serdang Regency from 2010-2021
Source: BPS North Sumatra Province and Deli Serdang Regency (processed data)

In Figure 1 above, it can be observed that the economic growth rate in Deli Serdang Regency fluctuated during the period from 2010 to 2021. The lowest percentage of economic growth occurred in 2020 at -1.78%, but it increased again in 2021 to 2.23%. The decline in 2020 was due to the COVID-19 outbreak, which hindered economic activities. A decrease in economic growth in a region can also reduce the inflow of investment into that area, meaning the investment climate in that region is less conducive for investors. However, investments are crucial in driving economic growth due to the contributions they make.

According to Pujoalwanto (2014), the contribution of investment to economic growth can be seen from the demand and supply sides. From the demand side, increased investment will create effective demand consisting of consumption, domestic investment, and net exports. Meanwhile, from the supply side, increased investment can bring in more capital reserves that will develop into production capacity, which ultimately can address various issues in the region, both economic and social.

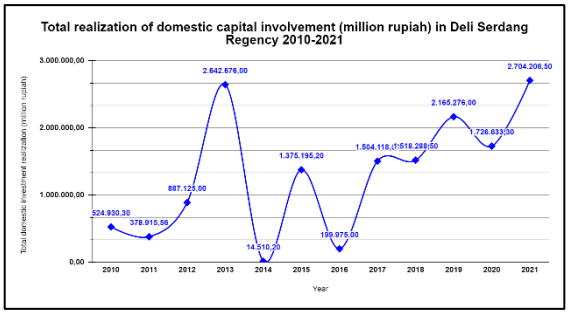

Figure 2. Total realization of Domestic Direct Investment (PMDN) in Deli Serdang Regency from 2010-2021
Source: BPS Deli Serdang Regency and Deli Serdang Regency Investment and One-Stop Integrated Service Agency (processed data)

Based on Figure 2, it can be seen that over the past twelve years, the total realization of domestic direct investment has tended to fluctuate from year to year. The decrease in domestic direct investment in Deli Serdang Regency is highly dependent on domestic economic conditions and the global economy. On the other hand, the increase in domestic direct investment, especially in 2021, is attributed to the hard work of the Deli Serdang Regency Investment and One-Stop Integrated Service Agency, which has been actively promoting to various business entities and mediating through task forces on various investment-related issues. The investment climate improvement program and investment realization aim to build a globally competitive business investment climate and create job opportunities.

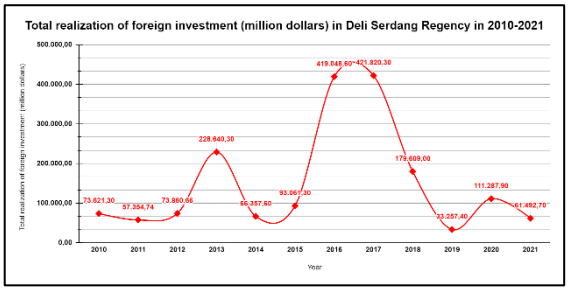

Figure 3. Total realization of Foreign Direct Investment (PMA) in Deli Serdang Regency from 2010-2021
Source: BPS Deli Serdang Regency and Deli Serdang Regency Investment and One-Stop Integrated Service Agency (processed data)

Based on the above figure 3, in general, the state of foreign direct investment in Deli Serdang Regency shows a trend that is in line with the national conditions, meaning that the development of foreign direct investment in Deli Serdang Regency also experiences fluctuations similar to what happens at the national level. Fluctuating foreign direct investment indicates the failure to achieve the expected investment targets that should increase every year. According to Tambunan (2021),

investors' considerations in foreign direct investment in a region include legal certainty and investment protection, ease of investment licensing, government policies supporting a favorable investment climate, political situation, security, social life, and the availability of adequate natural resources and technology utilization.

In addition to investment, population growth can drive economic growth but can also hinder it. Typically, population growth in developed countries can drive economic growth due to high investment and technology mastery, and high-quality human resources. However, in developing countries, the impact of population growth on development is not as expected due to different economic conditions compared to those developed countries. This is because they have low capital, low technology mastery, and insufficient skilled labor. Population growth can actually be seen as a hindrance to economic development. According to Nulhakim and Samosir (2017), excessive population growth can put pressure on land, resulting in increasing unemployment, high crime rates, and increasing dependency ratios. As a result, it becomes increasingly difficult to provide adequate education, health, and social services for the population.

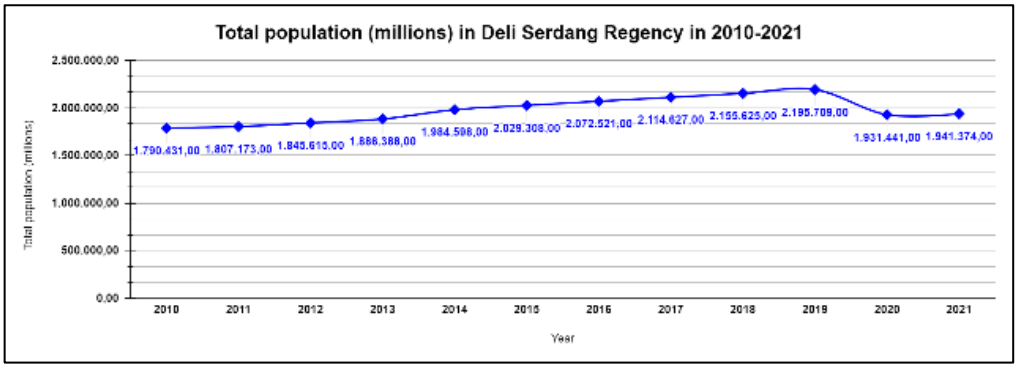

Figure 4. Number of Population in Deli Serdang Regency from 2010-2021
Source: BPS North Sumatra Province and Deli Serdang Regency (data processed)

Based on figure 4, it can be seen that over the past twelve years, the population in Deli Serdang Regency has increased from 2010 to 2019. However, in 2020, the population decreased and increased again in 2021. The decrease in 2020 was caused by an increase in the number of deaths (mortality rate) due to the COVID-19 outbreak. Deli Serdang Regency is one of the regencies with the largest population in North Sumatra Province. With a large population, it should be able to produce many products and become a large consumer base. This is because it can support production and consumption activities, allowing economic activities to continue and develop. A large population often indicates rapid development in a region. The population has an impact on various fields including economic growth. However, the negative impact arises when the population becomes denser without a corresponding increase in available job opportunities, leading to an increase in crime due to economic factors, especially in meeting basic needs.

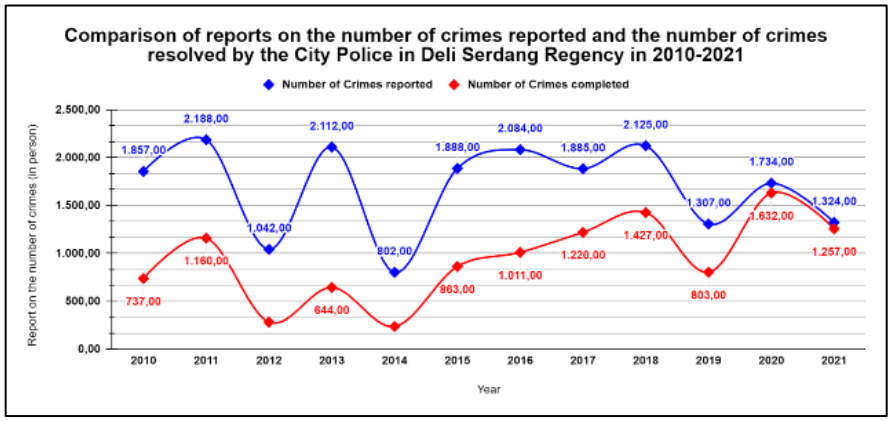

Figure 5. Comparison of the Number of Reported Crimes with Resolved Cases in Deli Serdang Regency from 2010-2021
Source: BPS North Sumatra Province and Deli Serdang Regency (processed data)

Based on figure 5, it can be seen that over the past twelve years, the number of resolved crime cases in Deli Serdang Regency has consistently failed to match the number of reported crimes. This indicates that the performance of the Deli Serdang City Police (Polresta) has been less than optimal in handling crime, given the high number of reported crimes. There is a need to create a more conducive sense of security within the community by mitigating the risk of residents being affected by criminal acts, especially in areas with high crime rates.

According to Santoso, Sukendar, and Aryono (2022), factors contributing to high crime rates include population density, income inequality, minimal police personnel, and a high number of unemployed individuals. With a large number of unemployed people, there is a high risk of social problems such as crime, poverty, income inequality, and other social issues. The denser the population of unemployed individuals in an area, the more room there is for criminal activities, as the chances of being caught are smaller. This indicates a higher potential for social vulnerability, such as crime, triggered by a large number of unemployed individuals.

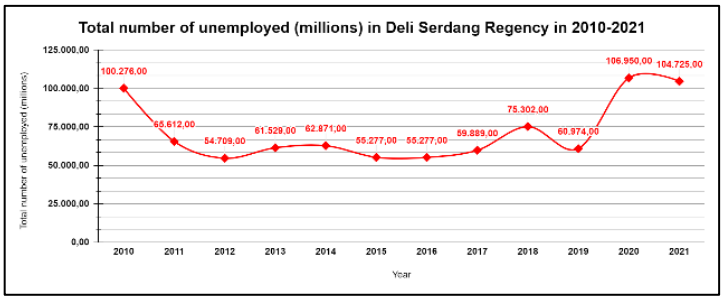

Figure 6. Number of Unemployed in Deli Serdang Regency from 2010-2021

In figure 6 above, it can be seen that the total number of unemployed individuals in Deli Serdang Regency has fluctuated during the period from 2010 to 2021. The causes include slowing economic growth, difficulty in obtaining employment, wage rigidity, and wage efficiency. A decline in economic growth in a region also

reduces labor absorption. Therefore, to minimize the unemployment problem, measures such as consistently growing the economy, creating as many job opportunities as possible, and providing proportional wages in line with global developments are necessary.

RESEARCH METHOD

The data analysis method used with the ARDL (Autoregressive Distributed Lag) approach in the time series data model and the observation time span of this study starts from 2010 to 2021 where data will be interpolated into quarterly form so that the time span of data obtained in the study amounts to 48 observations. According to Arief in Tarmizi (2020), data interpolation is a way of dividing annual data into quarterly or quarterly data so that four data will be presented in quarterly form. The formula used to interpolate data is:

$Q_1 = 1/4\{xt - 4.5/12 (xt - xt_{-1})\}$
$Q_2 = 1/4\{xt - 4.5/12 (xt - xt_{-1})\}$
$Q_3 = 1/4\{xt - 4.5/12 (xt - xt_{-1})\}$
$Q_4 = 1/4\{xt - 4.5/12 (xt - xt_{-1})\}$

Information:

Q_1 -Q_4 = Quarterly data results obtained from each Time Series data
xt = Data in the calculated year
xt_{-1} = Data for the previous year

The use of dependent variables that have been determined in this study is economic growth, while the independent variables that have been determined in this study are domestic investment, foreign investment, population , number of crime, and number of unemployed. The economic growth data used is the rate of economic growth on the basis of constant prices in units of percent. Domestic investment data uses the total realization of investment activities to do business by the Indonesian state in units of million rupiah. The foreign investment data used is the total realization of investment activities by foreign nationals or foreign governments expressed in units of million dollars. Data on the number of residents is obtained from the total population domiciled in the area of Deli Serdang Regency in units of million people. Data on the number of crimes obtained from the number of crimes that have been resolved by the police in the Deli Serdang Regency area recorded in the mental unit and data on the number of unemployed people are obtained from the large number of labor force who are actively searching in the Deli Serdang Regency area recorded in the mental unit. The Autoregressive Distributed Lag (ARDL) estimation model in the long term is as follows:

$$\Delta EG_t = \alpha + \beta_1 LogDI_{t-1} + \beta_2 LogFDI_{t-1} + \beta_3 LogTP_{t-1} + \beta_3 LogCRM_{t-1} + \beta_4 LogUMPLY_{t-1}$$
$$+ \beta_5 LogCRM_{t-1} + \sum_{i=1}^{P} \delta 1i \Delta EG_{t-1} + \sum_{i=0}^{q} \delta 2i \Delta LogDI_{t-1} + \sum_{j=0}^{q} \delta 3J \Delta LogFDI_{t-1}$$
$$+ \sum_{j=0}^{q} \delta 3J \Delta LogTP_{t-1} + \sum_{j=0}^{q} \delta 4J \Delta LogCRM_{t-1} + \sum_{j=0}^{q} \delta_5 J \Delta LogUMPLY_{t-1} + \mu_t$$

Information:

EG	: Economic growth in the quarter t
LogDI	: PMDN on quarterly t
LogFDI	: PMA on a quarterly basis t
LogTP	: quarterly population t
LogCRM	: quarterly crime count t
LogUMPLY	: number of unemployed in the quarter t
μ	: *Disturbance error (white noise)*

Meanwhile, the short-term ARDL model equation is as follows:

$$\Delta EG_t = \alpha + \sum_{i=1}^{P} \delta 1_i \Delta EG_{t-1} + \sum_{i=0}^{q} \delta 2_i \Delta LogDI_{t-1} + \sum_{j=0}^{q} \delta 3_J \Delta LogFDI_{t-1} + \sum_{j=0}^{q} \delta 3_J \Delta LogTP_{t-1} + \sum_{j=0}^{q} \delta 4_J \Delta LogCRM_{t-1} + \sum_{j=0}^{q} \delta_5 J \Delta LogUMPLY_{t-1} + \gamma ECT_{t-1} + \epsilon_t$$

Where:

δ : short-term coefficient

γ : *speed of adjustment.*

According to Ekananda (2016) said that in analyzing it should be started with a unit / stationary root test using the Phillips-Platform method. Then, determine the optimal lag length based on the Akaike Info Criterion (AIC) approach. Furthermore, *a bound test* was carried out on the long-term relationship between variables by comparing the F-statistical values obtained by comparing critical values. Not to forget, stability tests were also carried out using CUSUM and CUSUMQ accompanied by tests of normality, linearity, autocorrelation, and heteroscedasticity to ensure that the resulting coefficients meet the regression criteria of classical assumptions.

RESULT AND DISCUSSION

A. Stationarity Test

The stationarity test used the Phillips-Perron (PP) test, which showed that none of the variables were stationary at the level since the probability values exceeded 0.05. Subsequent testing at the first difference indicated that all variable data became stationary as the probability values were less than 0.05. These results indicate that the data meets the requirements for estimation using the ARDL method.

Table 1. Stationarity Test Results

Variable	Level		1st difference	
	PP Tests	Prob	PP Tests	Prob
EG	-1,0277	0,2694	-2,8274	0,0057*
LOG_DI	0,0280	0,6868	-4,7155	0,0000*
LOG_FDI	-0,4173	0,5275	-3,6892	0,0004*
LOG_TP	0,8445	0,8898	-3,3368	0,0013*

LOG_CRM	0,1057	0,7114	-4,5262	0,0000*
LOG_UMPLY	-0,6157	0,4453	-2,2576	0,0246*

*) Stationary

Source: Processed Data (2023)

B. Optimal Lag Length Test

In determining and selecting the best ARDL model, the optimal lag length combination is used with *the Akaike Criteria Info* (*AIC*) approach. The results obtained illustrate the best ARDL model.

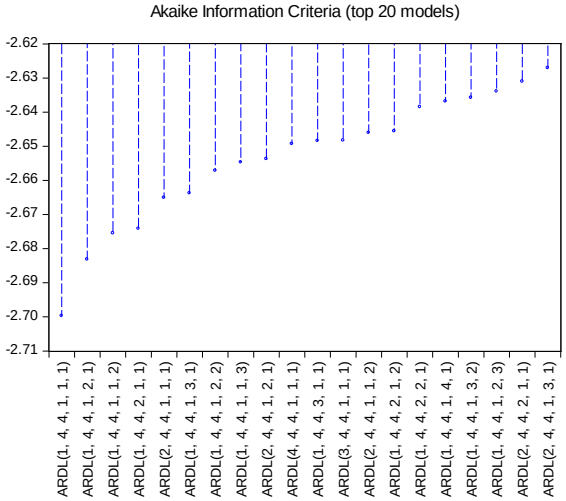

Figure 7. Akaike Criteria Test Results Info
Source: Data processed (2023)

Figure 2 shows twenty estimation models according to the Akaike Information Criterion (AIC) with maximum lag lengths. Thus, model (1,4,4,1,1,1) is the best based on the smallest Akaike Information Criterion (AIC) value of -2.70.

C. Bounds Test

The bounds test aims to determine the long-term relationship in the ARDL model (1,4,4,1,1,1) by comparing the obtained F-statistic with Pesaran's critical values. The test results show an F-statistic of 32.11, which is more significant than all available critical values (1%, 5%, and 10%). Consequently, the null hypothesis of no long-term association is rejected. These findings indicate that economic growth, domestic investment, foreign investment, population, crime rate, and unemployment move together in the long term.

Table 2. Bounds Test / Cointegration Results

Variable	F-Statistics	Information
EG LOG_DI LOG_FDI LOG_TP LOG_CRM LOG_UMPLY	32,116	There is a long-term relationship
Critical Value Bounds (Significance)	**I(0)**	**I(1)**
10%	2,26	3,35
5%	2,62	3,79
2,50%	2,96	4,18
1%	3,41	4,68

Source: Processed Data (2023)

D. Long-Term ARDL Model Equation

The long-term equation estimation for the ARDL model (1,4,4,1,1,1) shows that domestic investment, foreign investment, population, crime rate, and unemployment statistically influence economic growth.

Table 3. Long-Term Equation Estimation Results

Dependent Variable: EG				
Variable	**Coefficient**	**Std. Error**	**T-Statistics**	**Prob.**
LOG_DI	8,860	2,345	3,778	0,000
LOG_FDI	5,204	1,842	2,823	0,009
LOG_TP	-43,627	14,005	-3,114	0,004
LOG_CRM	-4,9591	1,5798	-3,139	0,004
LOG_UMPLY	-2,709	1,126	-2,404	0,023
EC = EG + (8,860*LOG_DI + 5,204*LOG_FDI – 43,627*LOG_TP – 4,9591*LOG_CRM – 2,709*LOG_UMPLY)				

Source: Processed Data (2023)

Domestic investment has the most significant coefficient value of 8,860. These results show that domestic investment is the dominant factor affecting economic growth. As a result, an increase in domestic investment of 1 percent increased economic growth by 8.860 percent. Meanwhile, foreign investment has a positive effect with a coefficient of 5.204 which means that an increase in foreign investment of 1 percent will increase economic growth by 5.20 percent. Furthermore, the number of population has a negative effect with a coefficient of 43.627 which means that an increase in the population of 1 percent will reduce economic growth by 43.63 percent. On the other hand, the number of crimes has

a negative effect with a coefficient of 4.959, meaning that an increase in the number of crimes by 1 percent will reduce economic growth by 4.96 percent. Meanwhile, the number of unemployed has a negative effect with a coefficient of 2.709, meaning that an increase in the number of unemployed by 1 percent will reduce economic growth by 2.71 percent.

E. Short-Term ARDL Model Equation

The short-term equation estimation for the ARDL model (1,4,4,1,1,1) indicates the short-term relationship between variables, considering the ECT or CointEq value, which is vital and significant at the 5% level. The CointEq (-1) value is -0.158, and its probability is less than 0.05, indicating short-term cointegration in this model. Additionally, the negative coefficient sign explains the long-term balance deviation correction mechanism at 15.8 percent per period (quarterly).

Table 4. Short-Term Equation Estimation Results

Dependent Variabel: EG				
Variable	**Coefficient**	**Std. Error**	**Γ-Statistic**	**Prob.**
C	9,072	3,248	2,792	0,009
D(LOG_DI)	0,326	0,145	2,247	0,033
D(LOG_DI(-1))	-0,004	0,148	-0,028	0,977
D(LOG_DI(-2))	-0,009	0,148	-0,064	0,949
D(LOG_DI(-3))	-0,576	0,114	-5,037	0,000
D(LOG_FDI)	2,874	0,586	4,902	0,000
D(LOG_FDI(-1))	0,002	0,478	0,005	0,995
D(LOG_FDI(-2))	0,006	0,476	0,014	0,988
D(LOG_FDI(-3))	-0,826	0,357	-2,316	0,028
D(LOG_TP)	139,337	20,24	6,884	0,000
D(LOG_TP(-1))	-6,935	2,044	-3,391	0,002
D(LOG_CRM)	1,875	0,513	3,656	0,001
D(LOG_CRM(-1))	-0,788	0,212	-3,716	0,001
D(LOG_UMPLY)	-2,102	0,468	-4,488	0,000
D(LOG_UMPLY(-1))	-0,430	0,250	-1,717	0,097
CointEq(-1)*	-0,158	0,040	-3,970	0,000

Source: Processed Data (2023)

The results of the study show that changes in the population have the most significant coefficient value, meaning that the population greatly affects changes in economic growth. The change in population had a significant positive effect in the same period with 139,337. On the contrary, the change in the population in the first lag with a score of 6,935 had a significant negative impact on the change in economic growth. The results show that an increase in population change of 1 percent will increase economic growth by 139.38 percent in the same period and reduce the economic growth gap by 6.94 percent in the next quarter.

Meanwhile, the change in foreign investment had a positive impact on the same period with a coefficient of 2.874. These results show that a shift in foreign investment of 1 percent will increase economic growth of 2.87 percent currently. On the other hand, the change in the number of criminalities had a positive impact on the same period with a coefficient of 1,875. These results show that a shift in the number of crimes by 1 percent will increase economic growth of 1.88 percent today. Next, changes in domestic investment had a positive impact on the same period with a coefficient of 0.326. This result shows that a shift in domestic investment of 1 percent will increase economic growth of 3.36 percent currently.

And the last is only the change in the number of unemployed that has a significant detrimental effect in the same period, with a coefficient value of 2.102. The results show that an increase in the shift in the number of unemployed by 1 percent will increase economic growth by 2.10 percent in the same period (quarter).

F. Robustness Check

This research used several residual diagnostic tests for robustness analysis, including tests for normality, linearity, autocorrelation, heteroscedasticity, and CUSUM and CUSUMQ tests. The CUSUM (cumulative sum of recursive residuals) test with a 95% confidence level evaluates the model estimation line at the 5% critical value or if it is not outside the upper and lower bounds. The estimate is stable if the line is between the upper and lower bounds. The estimate is unstable if the CUSUM line is outside the upper and lower bounds.

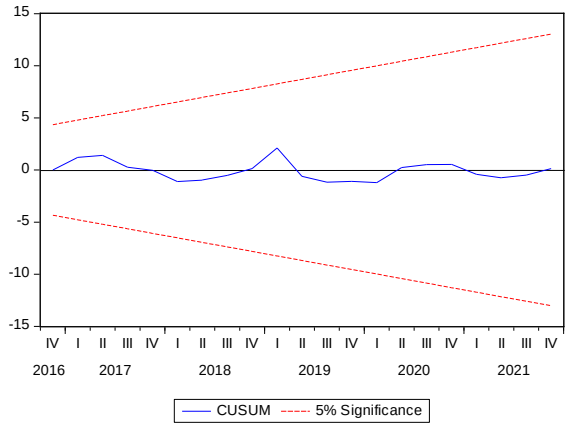

Figure 8. CUSUM Stability Test Results
Source: Data processed (2023)

The ARDL model (1,4,4,1,1,1) results show that the CUSUM line is between the upper and lower bounds of the 5% critical value (Figure 6), indicating that the model estimate is stable. The next step is to conduct the CUSUMQ (cumulative sum of squares of recursive residuals) test with a 95%

confidence level to ensure that the model is genuinely stable. The CUSUMQ test criteria are: (1) if the CUSUMQ line is at the 5% critical value or not outside the upper and lower bounds, the estimate is considered stable, and (2) if the CUSUMQ line is outside the upper and lower bounds, the estimate is considered unstable. The ARDL model (1,4,4,1,1,1) results show that the CUSUMQ line is between the upper and lower bounds of the 5% critical value, indicating that the estimated model is considered stable.

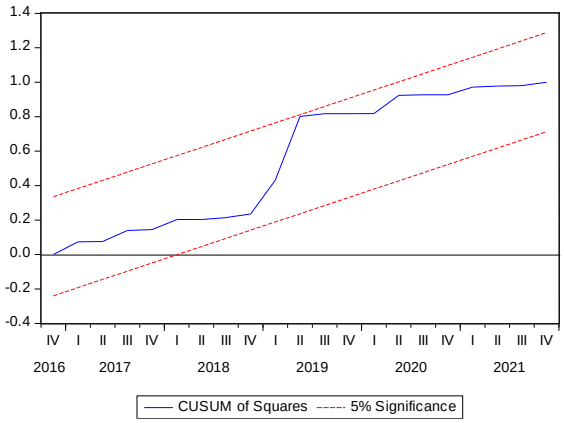

Figure 9. CUSUMQ Stability Test Results
Source: Data processed (2023)

The CUSUM and CUSUMQ tests show that the ARDL model (1,4,4,1,1,1) estimate is stable. The estimation results can be used to interpret the relationship between economic growth, domestic investment, foreign investment, population, crime rate, and unemployment. Subsequently, a classical assumption test was conducted to ensure that the generated coefficients meet the BLUE (best linear unbiased estimator) characteristics by testing for normality, linearity, autocorrelation, and heteroscedasticity.

Table 5. Classical Assumption Test Results

Diagnostic test's	Methods	Value Prob	Note
Normality	Jarque-Bera	0,1974	Support
Linearity	RESET Test	0,0873	Support
Autocorrelation	Breusch-Godfrey (LM Test)	0,0582	Support
Heteroscedasticity	Breusch-Pagan-Godfrey	0,4203	Support

Source: Data processed (2023)

The test results show that the ARDL model (1,4,4,1,1,1) meets the classical assumption criteria. The coefficients explain the relationship between economic growth, domestic investment, foreign investment, population, crime rate, and unemployment.

Pembahasan

Temuan hasil riset membuktikan bahwa iklim investasi baik dalam negeri (penanaman modal dalam negeri) maupun asing (penanaman modal asing) yang telah dilaksanakan sudah kondusif di wilayah Kabupaten Deli Serdang sebab berpengaruh positif dan signifikan terhadap pertumbuhan ekonomi baik secara jangka panjang maupun pendek. Hal ini sejalan dengan temuan Abubakar dan Shehu (2015) yang menyatakan bahwa peningkatan investasi dalam negeri dapat menyebabkan menaikkan laju pertumbuhan ekonomi di India. Selain itu, hasil temuan dari Arfa, Aliasuddin dan Nasir juga mendukung riset ini sebab dalam hasil penelitian menunjukkan investasi asing berkorelasi positif dengan pertumbuhan ekonomi di Indonesia. Dengan demikian, temuan ini telah mendukung gagasan teori pertumbuhan ekonomi Harrod-Domar yang menyatakan bahwa jika semakin banyak investasi yang masuk ke suatu negara atau wilayah maka semakin melejit pula perekonomian di suatu negara atau wilayah. Peningkatan investasi akan meningkatkan persediaan modal, yang akan meningkatkan pendapatan nasional.

Berikutnya, hasil penelitian menunjukkan bahwa jumlah penduduk dapat meningkatkan pertumbuhan ekonomi dalam jangka pendek. Namun, itu dapat pula berdampak negatif pada pertumbuhan ekonomi untuk waktu yang lama. Secara jangka pendek temuan ini menguatkan pandangan teori Malthus yang mengungkapkan bahwa perkembangan perekonomian dalam negara atau wilayah ditentukan dengan adanya pertambahan jumlah penduduk. Di mana ketika jumlah penduduk bertambah maka jumlah permintaan terhadap barang dan jasa turut meningkat.

Namun secara jangka panjang, ternyata jumlah penduduk justru menimbulkan efek disrupsi bagi pertumbuhan ekonomi sehingga mengalami kerugian karena dengan tingkat pertumbuhan ekonomi yang relatif rendah dan tidak dapat melampaui dari tingkat pertambahan penduduk disertai pendapatan rata-rata masyarakat, maka akan mengalami penurunan. Jika dalam jangka panjang tersebut ternyata pertumbuhan ekonomi sama dengan pertambahan penduduk, maka perekonomian negara atau wilayah tersebut tidak terjadinya suatu perkembangan atau bisa dikatakan stagnan serta tidak tercapainya kemakmuran masyarakat secara merata. Hasil ini sejalan dengan Fatoni & Prasetyanto (2022) dan Rahman & Khatimah (2021), yang menyatakan bahwa pertambahan jumlah penduduk dapat mengurangi laju pertumbuhan ekonomi. Jumlah penduduk berdampak negatif terhadap pertumbuhan ekonomi karena ketika jumlah penduduk bertambah namun pengangguran tidak berkurang maka permintaan barang dan jasa juga akan menurun disebabkan penyesuaian tingkat kemampuan individu untuk memenuhi kebutuhan juga ikut menurun.

Selanjutnya, hasil riset juga memperlihatkan bahwa dengan tingginya jumlah kriminalitas akan menurunkan pertumbuhan ekonomi dalam jangka panjang. Namun, ternyata dapat pula berdampak positif pada pertumbuhan ekonomi untuk waktu yang pendek. Secara jangka panjang temuan ini membenarkan pandangan

Teori Gary Becker yang mengatakan bahwa kejahatan tercipta dari perbuatan rasional dengan mengkalkulasikan untung rugi yang didapat dari tindakan ilegal tersebut. Di mana ketika suatu individu memutuskan melakukan tindak kejahatan tersebut adalah keputusan rasional yang berlandaskan maksimisasi kepuasan yang berdasarkan pada ekspetasi kepuasan dari perbuatan yang mereka tempuh. Hasil temuan ini selaras dengan temuan Ahmad, Ali dan Ahmad (2014) yang menemukan bahwa Tingkat Kriminalitas memiliki pengaruh negatif dan signifikan terhadap Pertumbuhan ekonomi di Pakistan.

Namun secara jangka pendek, ternyata jumlah kriminalitas justru memicu efek anomali bagi pertumbuhan ekonomi sehingga mengalami kenaikan karena kecenderungan pelaku kejahatan untuk melakukan tindakan kriminal dipengaruhi oleh intensitas kegiatan ekonomi masyarakat yakni bertambahnya konsumsi masyarakat akibat pelaku kejahatan perlu memenuhi kebutuhan hidup baik individu maupun berkeluarga.

pertumbuhan output ekonomi memang berdampak pada niat perilaku pelaku kejahatan dalam mewujudkan perbuatan jahatnya. Apalagi pihak penegak hukum tidak bersungguh – sungguh dalam menjaga keamanan dan ketertiban masyarakat sehingga pelaku tindak pidana memanfaatkan situasi tersebut yang mendorong mereka untuk mengulangi perbuatan jahat tersebut di kemudian hari. Hal inilah yang menyebabkan kejahatan memberikan efek positif pada dirinya sendiri. Hasil ini sejalan dengan Hasyim, Zulhilmi & Amri (2019) dan Khairani & Ariesa (2020), yang menyatakan bahwa tingginya jumlah kriminalitas tetap meningkatkan laju pertumbuhan ekonomi. Jumlah kriminalitas berdampak positif terhadap pertumbuhan ekonomi karena beragam faktor yang terjadi, tidak hanya dari faktor ekonomi semata namun disebabkan adanya faktor politik, sosial, ketimpangan pendapatan atau lainnya masih banyak yang belum dapat dituntaskan oleh pihak penegak hukum.

Discussion

The research findings prove that the investment climate, both domestic (domestic investment) and foreign (foreign investment) that has been implemented, is conducive in the Deli Serdang Regency area because it has a positive and significant effect on economic growth both in the long and short term. This is in line with the findings of Abubakar and Shehu (2015) which state that an increase in domestic investment can cause an increase in the rate of economic growth in India. In addition, the findings of Arfa, Aliasuddin and Nasir (2015) also support this research because the results show that foreign investment is positively correlated with economic growth in Indonesia. Thus, these findings have supported the idea of the Harrod-Domar theory of economic growth which states that if more investment enters a country or region, the more soaring the economy in a country or region. Increased investment will increase the capital stock, which will increase national income.

Next, the results show that population can increase economic growth in the short term. However, it can also have a negative impact on economic growth for a long time. In the short term, these findings corroborate the views of Malthus' theory which reveals that economic development in a country or region is determined by the increase in population. When the population increases, the demand for goods and services also increases.

However, in the long run, it turns out that the population actually has a disruptive effect on economic growth so that it suffers losses because with a relatively low economic growth rate and cannot exceed the level of population growth accompanied by the average income of the community, it will experience a decline. If in the long run it turns out that economic growth is equal to population growth, then the economy of the country or region does not develop or can be said to be stagnant and the prosperity of the community is not achieved evenly. These results are in line with Fatoni & Prasetyanto (2022) dan Rahman & Khatimah (2021), which state that population growth can reduce the rate of economic growth. Population has a negative impact on economic growth because when the population increases but unemployment does not decrease, the demand for goods and services will also decrease due to adjustments in the level of individual ability to meet needs.

Furthermore, the results also show that a high crime rate will reduce economic growth in the long run. However, it can also have a positive impact on economic growth for a short period of time. In the long run, this finding justifies the view of Gary Becker's theory that crime is created from rational actions by calculating the profit and loss gained from these illegal actions. Where when an individual decides to commit a crime it is a rational decision based on the maximization of satisfaction based on the expectation of satisfaction from the actions they take. This finding is in line with the findings of Ahmad, Ali and Ahmad (2014) who found that the crime rate has a negative and significant effect on economic growth in Pakistan.

However, in the short term, it turns out that the amount of crime actually triggers an anomalous effect for economic growth so that it increases because the tendency of criminals to commit criminal acts is influenced by the intensity of community economic activity, namely the increase in public consumption due to criminals needing to meet the needs of both individual and family life.

Economic output growth does have an impact on the behavioral intentions of criminals in realizing their evil deeds. Moreover, law enforcement authorities are not serious in maintaining public security and order so that criminals take advantage of the situation which encourages them to repeat these criminal acts in the future. This is what causes crime to have a positive effect on itself. These results are in line with Hasyim, Zulhilmi & Amri (2019) dan Khairani & Ariesa (2020), which state that the high amount of crime still increases the rate of economic growth. The number of crimes has a positive impact on economic growth due to various factors that occur, not only from economic factors alone but due to political, social, income

inequality or other factors, there are still many that cannot be resolved by law enforcement.

Then, the results also explain that the large number of unemployment will have a negative and significant effect on economic growth both in the long and short term. This is in line with the findings of Astari, Hamzah & Ratih (2019) which state that the number of unemployed is negatively correlated with economic growth in Indonesia.

Thus, this finding has solidified Okun's law which states that there is a relationship between the amount of unemployment and economic growth in a country or region. This indicates that when economic growth in a region is soaring, it indicates that many people are working in various sectors. Conversely, when economic growth tends to grow slowly due to the lack of people working due to the limited output of goods and services produced.

CONCLUSION

Based on the results and discussion in this study, several conclusions are obtained. Domestic and foreign investment have a positive and significant influence on economic growth in both the short and long term in Deli Serdang Regency. However, population has a positive effect on economic growth in the short term, but negative in the long term. Meanwhile, the number of crimes has a positive impact in the short term, but negative in the long term. And the amount of unemployment has a negative and significant impact on economic growth in both the short and long term in Deli Serdang Regency. Therefore, based on these results and conclusions, a number of suggestions can be given. The government of Deli Serdang Regency is advised to maintain a stable investment climate, promote investment potential, control the population growth rate, improve security, and pay attention to the provision of employment and skills training on a regular basis. Thus, it is expected to increase economic growth and reduce unemployment in the region.

REFERENCES

Ahmad, A., Ali, S., & Ahmad, N. (2014). Crime and economic growth in developing countries: Evidence from Pakistan. *Ahmad, Arslan, Ali, Sharafat & Ahmad, Najid (2014). Crime and Economic Growth in Developing Countries: Evidence from Pakistan. Journal of Basic and Applied Scientific Research*, *4*(4), 31–41.

Arfa, I. J., & Aliasuddin, M. N. (2015). engaruh Perdagangan dan Penanaman Modal Asing Terhadap Pertumbuhan Ekonomi di Indonesia: Sebuah Aplikasi Autoregressive Distributed Lag Model (Ardl. *Jurnal Ilmu Ekonomi: Program Pascasarjana Unsyiah*, *3*(3).

Astari, M. (2019). *Hukum OKUN: Pertumbuhan Ekonomi dan Tingkat Pengangguran di Indonesia*. Universitas Lampung.

Fatoni, M. R., & Prasetyanto, P. K. (2022). Analisis Faktor Yang Mempengaruhi Pertumbuhan Ekonomi Provinsi Sumatera Utara Tahun 1990-2021 (Analysis of Factors Affecting Economic Growth of North Sumatra Province 1990-

2021). *Jurnal Economina*, *1*(3), 647–664.
Hasyim, S., Zulhilmi, M., & Amri, K. (2019). Is there a causality relationship between law enforcement, crime rates, and economic growth? An empirical evidence from western Indonesia. *Regional Science Inquiry*, *11*(3), 95–109.
Khairani, R., & Ariesa, Y. (2020). Analisis Kriminalitas dan Pengaruhnya Terhadap Pertumbuhan Ekonomi Sumatera Utara. *Jurnal REP (Riset Ekonomi Pembangunan)*, *5*(2), 166–178.
Khatimah, H. (2021). Pengaruh Jumlah Penduduk dan Pengangguran Terhadap Kemiskinan dan Pertumbuhan Ekonomi di Provinsi Sulawesi Selatan. *Skripsi. Ilmu Ekonomi Pada*.
Nulhakim, I., & Samosir, O. B. (2017). The Effects of Internet Access on Contraceptive Use in Indonesia (Intercensal Population Survey Data Analysis of 2015). *2nd International Conference on Indonesian Economy and Development (ICIED 2017)*, 65–69.
Pujoalwanto, B. (2014). *Perekonomian Indonesia: tinjauan historis, teoritis, dan empiris*. Graha Ilmu.
Putra, W. (2018). *Perekonomian Indonesia: Penerapan Beberapa Teori Ekonomi*.
Santoso, A. P. A., Aryono, A., Prakoso, A. P., Faruk, U., & Lestari, T. I. (2022). Kajian Yuridis Tindakan Circumsisi Oleh Perawat Pada Praktik Keperawatan Mandiri (Studi Kabupaten Sidoarjo). *JISIP (Jurnal Ilmu Sosial Dan Pendidikan)*, *6*(2).
Tambunan, T. S. (2021). *Prinsip-prinsip penanaman modal di Indonesia*. Expert.
Tarmizi, T. (2020). *Analisis Tugas Dinas Pendidikan dan Kebudayaan Dalam Pelayanan Sertifikasi Tenaga Pendidik di Kabupaten Kepulauan Meranti*. Universitas Islam Riau.