This research aims to describe and analyze: 1) The development of economic growth in Jambi Province; 2) The influence of investment, labor and exports on economic growth in Jambi Province for the period 2000-2021. The method used is multiple regression model analysis using the Error Correction Model (ECM) approach, using secondary data from 2000-2021. The research results show that: First, the development of economic growth in Jambi Province from 2000-2021 was 5.53 percent, although it experienced a decline in 2020, due to the COVID-19 pandemic. In 2021, the economy will pick up again, driven by increased production and export performance. Second, investment variables in the long term and short term have a positive and insignificant influence on economic growth in Jambi Province. The variable number of workers in Jambi Province has a negative and significant influence on the economic growth of Jambi Province, while in the short term it has a negative and insignificant influence on the economic growth of Jambi Province. The export variable has a positive and significant influence on economic growth in Jambi Province both in the long and short term.
1.0 INTRODUCTION

Economic growth is an indicator used to see the success of the economy in a region. An economy is said to be experiencing growing growth if the level of economic activity is higher than what was achieved in the previous period. According to Todaro and Smith 2006, one of the benchmarks for development implementation is seen from economic growth (Todaro, 2009). Economic growth is described from GRDP (Gross Regional Domestic Product). The higher the economic growth of a region, the better its economic activities will be. Economic growth can be seen from the growth rate of GRDP at constant prices (Colander, 2020).

Based on data from the Central Statistics Agency, the rate of economic growth in Jambi Province over the last 10 years (2012-2022). The overall economic growth of Jambi Province has decreased. During the 2020 pandemic, Jambi province's economic growth contracted by -0.51 percent, much lower than in 2019 which grew by 4.39 percent. It can be seen that in 2020 the rate of economic growth experienced a drastic decline, this was due to the Covid-19 pandemic which had an impact on many sectors, including the economic sector, both in terms of production and expenditure, which experienced a reduction in contraction, causing economic growth to plummet. In 2021, the realization of Jambi Province's economic growth will increase from the previous year, namely 3.69 percent and has left the contraction zone (Jambi Province Central Statistics Agency, 2024).

However, economic growth in Jambi Province has not returned to what it was before the pandemic. One of the factors that influences economic growth is investment. Based on the Harrod-Domar theory, investment has a good influence on the progress of a country because of its conditions. The higher investment savings will increase capital and trigger an increase in total output. So, it can trigger economic growth Sajid, (2010).

Based on data from the Jambi Province Central Statistics Agency, the development of capital investment growth rates in Jambi Province shows quite varied levels of fluctuation. The average value of PMDN is IDR 10,744,422 million, the average value of PMA is IDR 3,024,665 million. And the average investment value of Jambi Province is IDR 13,769/087 million. The decline in investment growth rates in 2005, 2009, 2017, 2018 and 2020. Factors that influenced the decline in economic growth in those years were factors that came from both domestic and foreign economic problems (Jambi Province Central Statistics Agency, 2024).

Physical capital and human capital are important factors in the process of economic growth. Another factor that supports economic growth is human resources in a region. The increasing population is both a driver and an obstacle to economic growth. An increasing population will increase the number of workers and this addition allows an area to increase production. Labor is a factor that can influence the output of a region (Borjas, 2016).

Based on data from the Jambi Province Central Statistics Agency, the workforce in Jambi province is experiencing fluctuations. In the 2015-2018 period, the workforce tended to increase and in 2019 the workforce decreased because the number of workers was not proportional to the number of job seekers so that labor absorption decreased compared to the previous year. The development of the workforce has increased again since the 2019-2022 period but has decreased again in the 2023 period with a figure of 899,583 thousand people (Jambi Province Central Statistics Agency, 2024).

The components that form economic growth are influenced by exports. Exports are the total of goods and services sold by a country to other countries. Exports can help carry out development efforts in a country through promoting and strengthening economic sectors that contain comparative advantages, whether in the form of the availability of certain production factors in abundant quantities or superior efficiency, aka labor productivity (Choor Foon Tang, 2015).

The export value of Jambi Province experienced a decline from the 2012-2016 period. In the 2017-2018 period there was an increase in exports. The lowest export value in the 2020 period was US$177.65 million (Jambi Province Central Statistics Agency, 2024).

According to David Ricardo, there is a need for international trade in developing an economy and regarding the benefits that can be obtained from specialization and trade between countries (Sukimo, 2011). Judging from the development of economic indicators or variables as explained above, this could theoretically happen.

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Referring to the problems raised above, this research aims: first, to describe the development of economic growth in Jambi Province. Second, to analyze the influence of investment, labor and exports on economic growth in Jambi Province for the period 2000-2021.

2.0 LITERATURE REVIEW

Economic Growth Theory

The Harrod-Domar theory has several assumptions, namely that the economy is in a state of full employment, the economy consists of two sectors, namely the household sector and the corporate sector, the amount of public savings is proportional to the amount of national income, the propensity to save (marginal propensity to save) The amount is fixed, as well as the capital output ratio and the incremental capital output ratio are fixed (Arsyad, 2015).

Solow-Swan theoretical model, economic growth depends on the availability of production factors (population, labor, and capital accumulation) and the level of technological progress. This theoretical view is based on the assumption underlying classical economic analysis, namely that the economy is at full employment and full utilization of its production factors. What this means is that the economy will continue to develop depending on capital, labor and technological progress (Arsyad, 2015).

Labor Concept

According to Todaro, population growth is closely related to the number of workers working and is one of the factors that will influence economic growth. Apart from production factors, if the number of workers working increases from year to year and can be utilized optimally, it will increase economic growth (Todaro, 2009).

Investment Theory

Economic theory defines investment as expenditure to purchase capital goods (buildings, equipment, materials, etc.) with the aim of increasing capital stock and replacing damaged capital goods so that they can be used to produce goods and services in the future (Dewi, 2015).

Based on the Harrod-Domar theory, capital formation is an important factor that determines economic growth. Capital formation is not only seen as expenditure that will increase an economy's ability to produce goods and services, but will also increase society's effective demand. The benefit of investing is increasing capital and getting profits in the coming year (Jhingan, 2012).

Export

Exports are goods and services produced within a country, which are then sold abroad (Mankiw, 2018). Exports are an important factor in the Gross Regional Domestic Product (GRDP) in a region, so changes in the value of exports can directly affect income in a region. According to article 1 of the Republic of Indonesia Minister of Industry and Trade Decree No. 124/MPR/KEP/5/1996, exports are activities that remove goods from customs areas (Subhash, 2015).

3.0 METHODOLOGY

This research uses quantitative research methods in the form of units of measurement or numbers in the analysis results. This research uses time series data. Time series data used in econometrics are often not stationary. The data used in this research is economic growth data for Jambi Province for 2000-2021 in percent units, investment data for Jambi Province for 2000-2021 in millions of rupiah, labor data for Jambi Province for 2000-2021 in units of thousands of people, and export data Jambi Province in 2000-2021 in units of thousands of US$.
To answer the first research objective, namely to describe the development of economic growth in Jambi Province. By using descriptive analysis methods (Sugiyono, 2018). The formula used is:

\[ G = \frac{(X_t - X_{t-1})}{(X_{t-1})} \times 100\% \]

Where:
- \( G \): Variable Development
- \( X_t \): Value of the Relevant Year
- \( X_{t-1} \): Last year's value

To answer the second research objective, namely, to analyze the influence of investment, labor and exports on economic growth in Jambi Province for the period 2000-2021. By using the ECM (Error Correction Model) multiple regression method.

**Error Correction Model**

The following Error Correction Model multiple regression equation (Gujarati, 2012):

\[ Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon_t \]

Information:
- \( Y \): Economic Growth in Jambi Province (Percent)
- \( X_1 \): Investment (Million Rupiah)
- \( X_2 \): Labor (Thousand People)
- \( X_3 \): Export Value (thousand US$)
- \( \epsilon_t \): error term

Next, to identify relationships between non-stationary variables, use a dynamic econometric model, one of which is an error correction model (ECM). The ECM model used in this research is the Eagle-Granger ECM with the following model:

\[ \Delta Y = \beta_0 + \beta_1 \Delta X_1 + \beta_2 \Delta X_2 + \beta_3 \Delta X_3 - \beta_6 ECT + \epsilon_t \]

Information:
- \( \Delta Y \): Difference in Economic Growth in Jambi Province (Percent)
- \( \Delta X_1 \): Difference in investment value (million Rupiah)
- \( \Delta X_2 \): Difference in Labor (Thousand People)
- \( \Delta X_3 \): Difference in export value (thousand US$)
- \( ECT \): Error Correction Term (Short Term Adjustment).
- \( \epsilon_t \): error term

**4.0 FINDINGS AND DISCUSSION**

The development of Jambi Province's economic growth can be seen in the following Chart:
The development of Jambi Province's economic growth from 2000-2021 fluctuates. In 2000-2003 there was a decline, while in 2004 there was an increase of 5.38 percent. From 2005 to 2009 the average growth was 6.36 percent per year. Meanwhile, in 2012-2013 there was a decline, where in 2013 it decreased by 6.84 percent.

In 2019 the GRDP value of Jambi Province increased. This increase was influenced by increased production in all business fields which were free from the influence of inflation. This shows that during 2019 there was economic growth of 4.35 percent, lower than the previous year's economic growth of 4.69 percent. Economic growth during 2019 was accelerated by the performance of foreign exports. In 2020, the rate of economic growth in Jambi Province experienced a drastic decline. This was caused by the Covid-19 pandemic which hit Indonesia in March 2020. The effects of the Covid-19 pandemic had an impact on many sectors, including the economic sector, both in terms of production and expenditure, which experienced a reduction in contraction, causing economic growth to plummet.

However, in 2021 the economic growth rate of Jambi Province will increase. Economic growth during 2021 was due to the improvement in the economic conditions of Jambi Province after the Covid-19 pandemic began in early 2020. Adaptation to new habits and the recovery of the world economy have encouraged improvements in the Jambi economy. Economic growth during 2021 will be accelerated by investment and improvements in foreign export performance. The investment referred to is mainly the construction of infrastructure projects such as road improvements and hydropower. The foreign exports referred to are mainly exports to Singapore, Japan and the United States. The highest economic growth was achieved by the Health Services and Social Activities business sector, namely 14.33 percent. The cause is the response to the pandemic and the massive implementation of Covid-19 vaccination in the community. Of the 17 existing economic business fields, all experienced positive growth.

Estimation of Multiple Regression Models Long-Term Error Correction Model Approach

The results of estimating the regression model equation with error correction in the multiple regression equation model using the Error Correction Model (ECM) approach on the value of investment, labor and exports on economic growth in Jambi Province can be seen in the table below:
Table 1 Long Term Error Correction Model Estimation Results

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>9.135751</td>
<td>1.436259</td>
<td>6.360794</td>
<td>0.0000</td>
</tr>
<tr>
<td>X1</td>
<td>3.94E-09</td>
<td>2.26E-08</td>
<td>0.174477</td>
<td>0.8634</td>
</tr>
<tr>
<td>X2</td>
<td>-4.00E-06</td>
<td>1.08E-06</td>
<td>-3.693937</td>
<td>0.0017</td>
</tr>
<tr>
<td>X3</td>
<td>1.57E-06</td>
<td>5.43E-07</td>
<td>2.890699</td>
<td>0.0097</td>
</tr>
</tbody>
</table>

R-squared | 0.507197 | Mean dependent var | 5.530909 |
Adjusted R-squared | 0.425064 | S.D. dependent var | 1.796650 |
S.E. of regression | 33.40560 | Schwarz criterion | 3.817566 |
Sum squared resid | 35.81114 | Hannan-Quinn criter. | 3.665925 |
Log likelihood | 1.75259 | Durbin-Watson stat | 1.592286 |
Prob(F-statistic) | 0.004503 |

Source: Processed Data, Eviews 12 (2024)

It can be noted that the model formed can be written mathematically, which is explained below:

\[ Y = \beta_0 + \beta_1 X_1 - \beta_2 X_2 + \beta_3 X_3 + \epsilon_1 \]

\[ Y = 9.135751 + 3.94E-09X_1 - 4.00E-06X_2 + 1.57E-06X_3 + \epsilon_1 \]

1. The constant value of variable Y is 9135751, which means that without the independent variables (investment, labor and exports) economic growth will increase by 9.13 percent.
2. The regression coefficient Assuming other variables are constant, and vice versa. million rupiah for every 1 rupiah increase.
3. The regression coefficient Assuming other variables are constant, and vice versa.
4. The regression coefficient X3 is 1.57E-06, which means that every increase in exports of one thousand US$ will increase the economic growth rate by 1.57E-06 percent. Assuming other variables are constant, and vice versa.

Long Term Partial Test (t-Test)

\[ df = n-k \text{ or } df= 22-3=19 \text{ and the significance of } 5\% \text{ is } 2.093. \text{ This can also be seen through the } p \text{ value which describes the level of probability or level of significance.} \]

1. Based on table 1, the investment value variable has a t-statistical value of 0.174477, where based on the t test the value is < t-table, with a probability level of 0.8634. So it can be concluded that investment has a positive and insignificant effect on economic growth in Jambi Province.
2. Based on table 1, the labor variable has a t-statistical value of -3.693937, where based on the t test, the value is > t-table, with a probability level of 0.0017. So it can be concluded that labor has a negative and significant effect on economic growth in Jambi Province.
3. Based on table 1, the export value variable has a t-statistic value of 2.890699, where based on the t test, the value is > t-table, with a probability level of 0.0097. So it can be concluded that exports have a positive and significant effect on economic growth in Jambi Province.
Anova Test (F Test)

The F-statistic value is 6.175259 where the F test shows that F statistic > F table with a probability level of 0.004503, so it can be concluded that all independent variables in the model have a significant influence on the dependent variable.

Determination Coefficient Test (R2-Test)

The results obtained showed that the value of investment, labor and exports influenced economic growth in Jambi Province by 50.73%, of which 49.27% was influenced by other factors outside the model in the long term.

Estimation of Multiple Regression Models Short Term Error Correction Model Approach

The results of estimating the regression model equation with error correction in the multiple regression equation model using the Error Correction Model (ECM) approach on the value of investment, labor and exports on economic growth in Jambi Province in the short term can be seen in table 2 below:

Table 2 Short Term Error Correction Model Estimation Results

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>-0.095210</td>
<td>0.295886</td>
<td>-0.321780</td>
<td>0.7518</td>
</tr>
<tr>
<td>D(X1)</td>
<td>2.47E-10</td>
<td>2.63E-08</td>
<td>0.009398</td>
<td>0.9926</td>
</tr>
<tr>
<td>D(X2)</td>
<td>-1.77E-06</td>
<td>1.56E-06</td>
<td>-1.134680</td>
<td>0.2732</td>
</tr>
<tr>
<td>D(X3)</td>
<td>1.59E-06</td>
<td>6.63E-07</td>
<td>2.401121</td>
<td>0.0289</td>
</tr>
<tr>
<td>ECT(-1)</td>
<td>-6.82880</td>
<td>0.248726</td>
<td>-2.745510</td>
<td>0.0144</td>
</tr>
</tbody>
</table>

R-squared: 0.497308 Mean dependent var: -0.104286
Adjusted R-squared: 0.371635 S.D. dependent var: 1.673522
S.E. of regression: 1.326592 Akaike info criterion: 3.607360
Sum squared resid: 28.15754 Schwarz criterion: 3.856056
Log likelihood: -32.87728 Hannan-Quinn criter.: 3.661334
F-statistic: 3.957160 Durbin-Watson stat: 2.303547
Prob(F-statistic): 0.020301

Source: Processed Data, Eviews 12 (2024)

It can be noted that the model formed can be written mathematically, which is explained below:

\[ \Delta Y = \beta_0 + \beta_1 \Delta X_1 - \beta_2 \Delta X_2 + \beta_3 \Delta X_3 - \beta_5 ECT + \epsilon_i \]

\[ \Delta Y = -0.095210 + 2.47E - 10 \Delta X_1 - 1.77E - 06 \Delta X_2 + 1.59E - 06 \Delta X_3 - 0.682880 ECT + \epsilon_i \]

\[ \Delta Y = -0.095210 + 0.000000000247 \Delta X_1 - 0.00000177 \Delta X_2 + 0.00000159 \Delta X_3 - 0.682880 ECT + \epsilon_i \]

1. The constant value of variable Y is -0.095210, which means that without the independent variables (investment, labor and exports) the change in economic growth will decrease by 0.09 percent.
2. The regression coefficient Assuming other variables are constant, and vice versa. million rupiah for every 1 rupiah increase.
3. The regression coefficient Assuming other variables are constant, and vice versa.
4. The regression coefficient assuming other variables are constant, and vice versa.

5. The ECM (Error Correction Model) model includes the ECT (Error Correction Term) variable. The regression coefficient for the ECT variable is an adjustment coefficient which is the speed of adjustment between the actual value and the desired value that will be eliminated in one period. The economic growth variable is not only influenced by investment, labor, and exports, but is also influenced by the ECT error term variable. The coefficient of change in ECT in this study is -0.682880, which means that the difference between economic growth and the equilibrium value is 0.68. The results of the short-term regression or ECM, obtained a probability value of change in ECT of 0.0144 < \( \alpha = 0.05 \), which means it is significant. The ECT change coefficient value must be negative and significant, so it can be said that the ECM model used is correct.

**Short Term Partial Test (t-test)**

\[ df = n-k \text{ or } df= 22-3=19 \text{ and the significance of } 5\% \text{ is } 2.093. \text{ This can also be seen through the } p \text{ value which describes the level of probability or level of significance.} \]

1. Based on table 2, the investment value variable has a t-statistical value of 0.009398, where based on the t test, the value is < t-table, with a probability level of 0.9926. So it can be concluded that changes in investment value have a positive and insignificant effect on changes in economic growth in Jambi Province.

2. Based on table 2, the labor variable has a t-statistical value of -1.134680, where based on the t test the value is < t-table, with a probability level of 0.2732. So it can be concluded that changes in the workforce have a negative and insignificant effect on changes in economic growth in Jambi Province.

3. Based on table 2, the export value variable has a t-statistical value of 2.401121, where based on the t test, the value is > t-table, with a probability level of 0.0289. So it can be concluded that changes in exports have a positive and significant effect on changes in economic growth in Jambi Province.

4. Based on table 2, the ECT (Error Correction Term) variable shows a t-statistic value of -2.745510, where based on the t test, the t-statistic value is > critical t value, with a probability level of 0.0144. This means that the ECT change variable has a negative and significant influence on changes in economic growth in Jambi Province. So that the ECM (Error Correction Model) model used is convincingly valid for use.

**Anova Test (F Test)**

The F-statistic value is 3.957160 where the F test shows that F statistic > F table with a probability level of 0.020301. For this reason, it can be concluded that the independent variables built in the model in this study have a significant effect on the value of the independent variable, namely changes in the level of economic growth in Jambi Province in the short term.

**Determination Coefficient Test (R2-Test)**

In the short term, the results obtained show that the value of investment, labor and exports influence economic growth in Jambi Province by 49.73%, of which 50.27% is influenced by other factors outside the model in the short term.

**Economic Analysis**

**The Influence of Investment on Economic Growth in Jambi Province**

Based on the results of regression estimation using an error correction approach or Error Correction Model. The influence of investment on economic growth in Jambi Province shows that in the long term and in the short term it has a positive and insignificant influence. This is shown by the t-statistical hypothesis test at a significance level of 5%, which means that an increase in interest rates has a tendency to increase economic growth in the long and short term. However, the influence caused by the increase in investment value in Jambi Province does not have such an important effect in increasing economic growth in Jambi Province, both in the long term and in the short term.
The results of this research are supported by research conducted by Shamshad Begum and Abdul F.M Shamsuddin (2014), where investment has a positive and insignificant effect on economic growth in Bangladesh. This means that increasing the value of investment in Bangladesh does not have such an important effect on increasing its economic growth. There is research conducted by Muhammad Taufik, Eny Rochaida and Fitriadi (2014), where investment has a positive and insignificant effect on economic growth in Jambi Province. As for research conducted by Deluma (2019), investment has a positive and insignificant effect on economic growth in Indonesia. This means that increasing the investment value does not have such an important effect on increasing economic growth in Jambi Province.

The Influence of Labor on Economic Growth in Jambi Province

Based on the results of regression estimation using an error correction approach or Error Correction Model. The influence of labor has a negative and significant influence on economic growth in the long term. Meanwhile, in the short term, the influence of labor has a negative and insignificant effect on economic growth. This is shown by the t-statistical hypothesis test at a significance level of 5%, which means that an increase in the number of workers has a tendency to reduce the level of economic growth in the long and short term. With the influence caused by an increase in the number of workers, it has a significant effect in reducing the level of economic growth in Jambi Province, and an increase in the number of workers has an insignificant effect in reducing the level of economic growth in Jambi Province.

This is in accordance with the total output growth theory and the Solow growth theory which states that a rapid increase in the number of workers can accelerate the rate of economic growth. Because, workers are actors and managers of other production factors so that increasing the number of workers in Indonesia will have a positive impact on increasing economic growth (Todaro, 2009).

The results of this research are supported by research conducted by Susilo and Ratnaawati (2015), where the labor variable has a negative and significant effect on sectoral gross domestic product in Indonesia. As for research conducted by Hellen, Sri Mintarti and Fitriadi (2017), where labor significantly influences economic growth. This means that increasing the number of workers has a significant effect on reducing the level of economic growth.

The Influence of Export Value on Economic Growth in Jambi Province

Based on the results of regression estimation using an error correction approach or Error Correction Model. The influence of export value has a positive and significant influence on economic growth in the long term. Meanwhile, in the short term, the influence of export value has a positive and significant influence on economic growth. This is shown by the t-statistical hypothesis test at a significance level of 5%, which means that an increase in export value has a tendency to increase the level of economic growth in the long and short term. With the influence caused by the increase in export value, it has a significant effect in increasing the level of economic growth in Jambi Province, both in the long and short term.

This is in accordance with the Hecksher-Ohlin theory, which states that a country will export goods produced with the majority of its production inputs which are cheap and abundant, which will benefit the country because it will increase income and accelerate the process of development and economic growth (Faqih A, 2022). This shows how exports have an influence on a country's economic growth. Exports also have a positive impact on economic activity, because of the income generated from the expenditure of residents of other countries on goods produced domestically.

The results of this research are supported by research conducted by Nadee, A. Burney (2010), where exports have a positive and significant effect on economic growth. As for research conducted by Subhash C. Sharma, Mary Norris, and Daniel Wai-Wah Cheung (2008), where exports have an inverse causality relationship between exports and economic growth in the United States and England, which shows that countries with domestic demand conditions are likely to have an influence significant in the growth process with exports. This means that increasing the value of exports has a tendency to increase the level of economic growth.
5.0 CONCLUSION

The results of the analysis of the development of economic growth can be concluded: The economic growth of Jambi Province during the 2000-2021 period shows significant fluctuations. Even though it experienced a decline in 2020 due to the COVID-19 pandemic. In 2021, the economy picked up again, driven by increased production and good export performance to countries such as China, the United States, Japan and ASEAN, as well as investment in infrastructure such as road improvements and hydropower, playing an important role in economic recovery. The highest growth in 2021 was achieved by the Health Services and Social Activities sectors, demonstrating adaptation to new habits and sustainable economic recovery post-pandemic.

Results of the analysis of the influence of investment, labor and exports on the economic growth of Jambi Province: In the short and long term, the value of investment in Jambi Province has a positive and insignificant influence on economic growth in Jambi Province. The number of workers in Jambi Province in the long term has a negative and significant influence, while in the short term it has a negative and insignificant influence on the economic growth of Jambi Province. Meanwhile, exports, both in the long and short term, have a positive and significant influence on economic growth in Jambi Province.

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