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The Effect Of International Trade On Austria's Economic Growth

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ABSTRACT
In this study we analyze how international trade relates to economic growth in Austria. International trade is an economic activity by exporting and importing between countries, with the aim of improving the country's economy. The data set used in this study comes from the world bank, from 1992-2022, then processed using Eviews 12 software. The analytical instrument employed in this research is quantitative utilising the Error Correction Model (ECM) regression analysis method. The test results show that the variables of Exports, Imports, and Foreign Direct Investment have no significant short-term impact on Austrian economic growth, while inflation has a significant impact on the Austrian economy. In the long run, the variables Exports, Imports, Foreign Direct Investment have a significant effect on Austrian economic growth, while inflation has no significant impact on economic growth.

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INTRODUCTION

Over the last ten years economists and researchers have focused on the effect of international trade on economic growth (Yusuff et al., n.d.).. Economic growth, which is defined as the rate of growth generated from various sectors of the economy, demonstrates the pace of economic change that occurs (Septiningrum et al., n.d.). (Septiningrum et al., n.d.).. This shows the increase and level of global economic integration also affects economic development. (Shido-Ikwu et al. n.d.). Nowadays, international trade activities are more focused on free trade but also on bilateral and multilateral cooperation. A binding agreement is usually preceded by international trade cooperation. (Suryanto & Kurniati, 2022)..

The main factors driving this economic growth are the increase in factor inputs and the enormous scale of population and resources, Gains in international trade including increased efficiency, specialization, and greater access to markets. (Jain, 2023). But more a nation expands its trade with other nations, the more difficult it is to gain international advantages (Nwogwugwu & Umeghalu, 2021).

The International Monetary Fund staff stated that international trade has promoted economic growth, and as a consequence, it has shown that economic prosperity has helped both underdeveloped and developed nations, since increased incomes and living standards, thus helping to reduce poverty. (Ji et al., 2022). Prudent trade policies are considered an important way to promote sustainable economic growth and support it. Therefore, it is important to systematically investigate how international trade policies impact economic growth. (Prahaski & Ibrahim, 2023).

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Economic growth is an increase in output per capita over a longer period of time. In other words, regional economic growth can be defined as the growth of regional output shown in per capita income levels, which increases other economic activities, which in turn in the long run will increase employment and business opportunities. (Shaulim, n.d.). Logistically, a country can boost its exports when its exchange rate is low, and vice versa, as domestic currency earnings naturally increase as a result of a low exchange rate. The import mechanism works the other way around (Saragih & Aslami, 2022).

One of the government's ways to encourage the improvement of its country's economy is through the import and export process. Exports and imports are global trade carried out between two or more countries. (Egita et al., n.d.). Exports are very important because they are the only component of demand that can meet import needs. Domestic products have become cheaper and more competitive in the global market, while import prices have risen, lowering imports and possibly increasing GDP. (Rahma Faradilla et al., n.d.).

In the short term, a country may expand faster than the growth rate corresponding to the current account balance, especially in a favorable international situation. However, the imbalance cannot continue to increase in the long run.(Srdelić & Dávila-Fernández, 2024). Therefore, a rational and logical international trade policy is needed, which considers the advantages and disadvantages that may occur. (Ehan Irzawati et al., n.d.)..

The role of Exports in each country engages in competition in the international market in international trade of their own legal entities and establishes commercial relationships, such as buying and selling. Therefore, international trade significantly affects the economic growth of a country. (Camila Nurpadillah et al., 2023). As a component of an open economy, free trade will result in working to cover each other's shortcomings. This demand for domestic products will provide consumers with additional options for the products and services they need. (Azzaki, 2021).

Foreign investment is one of the parts that may trigger economic improvement (Maharani & Setyowati, 2024).Foreign investors are attracted to healthy economies with stable economic growth and high levels of employment. Crises can reduce foreign investment flows by affecting various macroeconomic indicators. (Sarker, 2024). Ineffective and underdeveloped institutions, such lax law enforcement, can affect trade and obstruct fruitful collaboration. The contribution of good institutions to economic development is increasingly clear (Abreo et al., 2021). These trade policies are unique to each country and show how active the government is in international trade. (Yeo & Deng, 2019).

Previous research conducted by (Citra Ananda 2023)The results show that economic growth is partially influenced by international trade and has a significant impact, so it has a negative and insignificant impact on economic growth, exports have a positive impact, working capital allocation affects economic growth, and imports have not been able to affect economic growth. In conclusion, international trade has a significant impact.

In research (Yeboah et al., 2023) shows how economic growth is affected by exports and imports in Ghana Both developed and poor nations have profited from international trade agreements. Tariffs with flexibility that ensure the unrestricted flow of goods and services can increase international trade, but higher trade restrictions in developing countries prevent these countries from showing their significance.

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Other research conducted by (Wistiasari & Zhangrinto, 2023)shows that a country's ability to prosper economically is greatly influenced by international trade. The benefits can be in the form of a higher capital balance, foreign exchange reserves, general government revenue, and employment prospects. Economic growth and international trade are synonymous because free trade and trade can increase a country's economic growth. The purpose of this study is to explore how far the influence of exports, imports, inflation rate and foreign investment in improving the economy in Austria, whether it can later improve the economy in the country.

METHODS

In this study to analyze the factors influencing economic growth by Austria's international trade, an error correction model (ECM) regression analysis, also known as the Error Corrrection Model (ECM), is used. The data used are annual time series data from the period 1992-2022, sourced from the World Bank. The long-run estimator model is as follows:

$$PDBN_t^* = \beta_0 + \beta_1 EXP_t + \beta_2 IMP_t + \beta_3 INF_t + \beta_4 FDI_t + \varepsilon_t$$

Information:

PDBN = Nominal Gross Domestic Product (US$ million)
EXP = Exports (US$ million)
IMP = Imports (US$ million)
INF = Inflation (%)
FDI = Foreign Direct *Investment* (US$ million)
β_0 = Long-run constant
$\beta_1, \beta_2, \beta_3$ = Long-run regression coefficients of EXP, IMP, INF, and FDI.
ε = Error term
t = year

Adhering to the methodology of Domowitz and Elbadawi (1987), by minimising a single quadratic cost function, the partial adjustment behaviour of the ECM is produced. Following the minimisation procedure, the standard short-run equation of the ECM is produced by structuring and parameterising it.:

$$\Delta(PDBN_t) = \alpha_1 \Delta(EXP_t) + \alpha_2 \Delta(IMP_t) + \alpha_3 \Delta(INF_t) + \alpha_4 \Delta(FDI_t) - \lambda(PDBN_{t-1} - \beta_0 - \beta_1 EXP_{t-1} - \beta_2 IMP_{t-1} - \beta_3 INF_{t-1} - \beta_4 FDI_{t-1}) + \upsilon_t$$

Information:

Δ = Differencing operator
$\alpha_1, \alpha_2, \alpha_3$ = Short-term regression coefficient (EXP, INF, FDI and IMP)
λ = Coefficient of *adjustment*
υ = *Error term*

In particular, the short-run ECM estimator model is a consequence of the setup and parameterization of the basic short-run ECM equation:

$$\Delta(PDBN_t) = \gamma_0 + \gamma_1 \Delta(EXP_t) + \gamma_2 \Delta(IMP_t) + \gamma_3 \Delta(INF_t) + \gamma_4 \Delta(FDI_t) + \gamma_5 EXP_{t-1} + \gamma_6 IMP_{t-1} + \gamma_7 INF_{t-1} + \gamma_8 FDI_{t-1} + \gamma_9 ECT + \omega_t$$

Information:

ECT = Error Correction
$(ECT_t = EXP_{t-1} + IMP_{t-1} + INF_{t-1} + FDI_{t-1} - PDBN_{t-1})$

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$\gamma_7 = \lambda$
$\gamma_0 = \lambda\beta_0$
$\gamma_1, \gamma_2, \gamma_3 = \alpha_1, \alpha_2, \alpha_3$
$\gamma_4 = -\lambda(1 - \beta_1)$
$\gamma_5 = -\lambda(1 - \beta_2)$
$\gamma_6 = -\lambda(1 - \beta_3)$
ω = *Error term*

An annual time series covering the years 1992–2022 is the dataset that was utilised, sourced from the World Bank.

RESULTS AND DISCUSSION

The estimated results generated by the upfront ECM short-run estimator model along with the complementary tests are presented in table 1.

Table 1. Econometric Model Estimation Results

$$PDBN_t = 37963{,}55 + 0{,}8119\Delta EXP_t + 0{,}5970\Delta IMP_t - 6280{,}735\Delta INF_t$$
(0,3272) (0,4679) (0,0159)**
$$+0{,}0383\Delta FDI_t + 1{,}2273EXP_{t-1} - 1{,}5451IMP_{t-1}$$
(0,6886) (0,0986)** (0,0556)**
$$+4325{,}972INF_{t-1} - 0{,}4300FDI_{t-1} + 0{,}4082ECT_t$$
(0,2862) (0,0355)** (0,0190)

R^2 = 0,8936; DW-stat = 2,2895; F = 18,6763; Prob.F = 0,0000

Uji Diagnosis

(1) Multikolinieritas (VIF)
$\Delta EXP_t = 65{,}106$; $\Delta IMP_t = 65{,}9443$; $\Delta INF_t = 2{,}8933$; $\Delta FDI_t = 2{,}0303$; $EXP_{t-1} = 648{,}0506$; $IMP_{t-1} = 623{,}8948$; $INF_{t-1} = 1{,}9401$; $FDI_{t-1} = 5{,}2007$; $ECT_{t-1} = 13{,}9027$

(2) Jarque Bera (Normalitas Residual)
JB (2) = 0,7403; Prob.(2) = 0,6906

(3) Breusch Godfrey (Otokorelasi)
$\chi^2(4) = 7{,}8583$; $Prob.\chi^2(4) = 0{,}0969$

(4) White (Heterokedastisitas)
$\chi^2(18) = 12{,}4164$; $Prob.\chi^2(18) = 0{,}8250$

(5) Ramsey Reset (Linieritas)
F(2,18) = 0,0541; Prob.F = 0,9475

Sumber: Worldbank, processed. Notes: *sign at α = 0.01, ** sign at α = 0.05, and *** sign at α = 0.10. The number in parentheses is the empirical probability (p-value) of the t-statistic.

The ECT regression coefficient (adjustment coefficient λ) of the data in Table 1 is 0.4082, which indicates that the coefficient meets the criterion of $0 < \lambda < 1$. The p value or probability (significance) of the empirical t-statistic for this coefficient is 0.0190, which means that the adjustment coefficient at α = 0.01 is significant. The relationship between the independent and dependent variables in an econometric model should theoretically reach equilibrium over time, and the error correction mechanism will achieve this. These two

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positions indicate that the estimated model is indeed an ECM model. After the short-run parameters are defined, the calculation produces the long-run ECM estimated model as follows:

$$PDBN_t^* = 93{,}0023 + 4{,}0066\ EXP_t - 2{,}7852\ IMP_t + 8393{,}8760\ INF_t - 0{,}0534\ FDI_t$$

The diagnostic test in table 1 shows that the statistical probabilities for the residual normality, autocorrelation, heteroscedasticity, and linearity tests are 0.6906 (> 0.10), 0.0969 (> 0.05), 0.8250 (> 0.10), and 0.9475 (> 0.10), respectively. It is concluded that the estimated model has a normal residual distribution without autocorrelation and heteroscedasticity problems, and the model specification is linear. The multicollinearity problem is caused by the variables EKS_{t-1} and IMP_{t-1} , which have VIF < 10, 648.0506 and 623.8948 respectively. With an R^2 or strong predictive power of 0.8936 and an F statistic of 0.0000 (<0.01), the statistics (goodness of fit) indicate the existence of the model. This means that the variation in the Export, Import, Inflation and Foreign Investment variables can explain 89.36 percent of the variation or rise and fall in the Austrian Economic Growth variable.

While exports (EXP), imports (IMP), and foreign direct investment (FDI) have no noticeable impact on nominal gross domestic product (GDP), the inflation variable (INF) has a sizable short-term effect on GDP. Exports (EXP), imports (IMP), and foreign direct investment (FDI) are variables that in the long run significantly affect nominal gross domestic product (GDP); in contrast, the inflation variable (INF) does not have a large influence on nominal GDP.

Exports have no impact on nominal gross domestic product in the short run. The regression coefficient of this variable is 4.006, which means that this variable has a long-run impact on nominal gross domestic product. When exports increase by US$1 million, nominal gross domestic product will increase by US$4.006 million, in accordance with the linear pattern of the relationship with the variable. Conversely, a decrease in exports by US$1 million will result in a decrease in nominal GDP by US$4.006 million.

Nominal gross domestic product is not affected by imports in the short run. This variable has a long-run regression coefficient of -2.7852 on nominal gross domestic product. An increase in imports by one million US dollars will result in an increase in nominal gross domestic product by 2.7852 million US dollars, in accordance with the linear relationship pattern of this variable. On the other hand, if imports fall by one million US dollars, nominal GDP will fall by 2.7852 million US dollars.

The short-run effect of inflation on GDP is measured by the regression coefficient of 6280.735; the relationship between nominal GDP and inflation follows a straight-line pattern. Thus, a 1% increase in inflation will result in an increase in nominal gross domestic product by USD 6280.735 million. Conversely, a 1% decrease in inflation will result in a decrease in nominal gross domestic product by USD 6280.735 million. In the end, nominal gross domestic product is largely unaffected by the inflation variable.

Foreign investment has little effect on nominal gross domestic product in the short run. Foreign investment variable has a regression coefficient of -0.0534 and affects nominal gross domestic product in the long run. Nominal gross domestic product will increase by US$0.0534 million if foreign investment increases by US$1 million, in accordance with the lin-lin relationship pattern. Conversely, nominal gross domestic product will decrease by US$0.0534 million if foreign investment decreases by US$1 million.

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Discussion

The results of the indicators listed explain that economic growth in Austria in the short term is influenced by Inflation. In the short term, exports, imports and foreign investment have no influence. In the long run Inflation has no influence, while exports, imports, and investment. Foreign investment has an influence on economic growth in Austria. Inflation has an effect in the short term, indicating that economic growth in Austria each year has a stifling effect on economic growth. Inflation is one of the biggest macroeconomic problems, high inflation rates can affect long-term investment due to higher supply and borrowing costs. Lack of investment can hamper economic expansion and ultimately affect economic growth. Inflation can affect consumer purchasing power. When prices rise, individuals and households may need to spend more money to maintain their standard of living. Inflation can affect a country's international competitiveness.

Export and import variables have an impact. on Exports and imports have an impact in the long run. In line with the theory of international trade. that the domestic production of goods and services is detrimental to the export of goods and services abroad. Thus, the flow of capital into the country will be increased by the amount of goods and services exported abroad, which will be managed by funding capital for large, small, and medium-sized enterprises.

Many goods and services are imported from abroad to be used in production and fulfill the needs of society. An increase in the amount of goods and services imported from abroad will encourage the production, consumption, and distribution of domestic economic activity, and if domestic economic activity is going well, domestic economic growth will increase, driving the growth of the economy as a whole. The amount of goods and services imported from abroad will support domestic economic growth.

CONCLUSION

The results of the study show that the Austrian economy in the short term affects inflation, while for the variables of exports, imports and foreign investment have no significant impact on Austrian economic growth. In the long run, economic growth is influenced by exports, foreign investment and imports. Meanwhile, inflation does not have a significant impact on Austrian economic growth. It is important to learn more about the relationship between international trade and economic growth in different contexts and locations for future studies. The study of the relationship between several countries with different economic structures (for example, whether they are rich or poor in natural resources) and different geographical locations at the same time should provide better information. One other possible way is to compare the impact of international trade on economic growth in countries that are or are not members of a trading bloc. New studies can also be conducted to gain a better understanding of the impact of international trade on economic growth in a country, especially in countries with significant dimensional differences and differences.

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