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Analysis of Factors Affecting Changes in Public Purchasing Power Before Covid and During Covid in Asean Countries (Years 2017-2022)

Adelia[1], Pazriani[2]
State University of Jakarta
Corresponding Author: Adelia adeliaapazriani@gmail.com

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A B S T R A C T
Changes in consumer purchasing power are a phenomenon of central concern in the global economic context, particularly within ASEAN countries. This research aims to investigate the factors influencing the dynamics of changes in consumer purchasing power before and during the COVID-19 pandemic, with a focus on the period from 2017 to 2022. Variables considered in this analysis include exchange rates, income, and population size. The research highlights that exchange rates, per capita income, and population growth are significant variables shaping changes in consumer purchasing power. Other factors such as economic growth, inflation, and unemployment rates also make important contributions. During the COVID-19 pandemic period, there have been shifts in the factors affecting purchasing power, including increased technology usage and restructuring of consumption patterns. This study provides a comprehensive understanding of the factors influencing changes in consumer purchasing power in ASEAN countries. The implications of these research findings can be used to aid in designing responsive economic policies and serve as a basis for further research in this field.

INTRODUCTION

Changes in purchasing power are an essential indicator of a country's economic condition, reflecting the ability of the population to purchase goods and services with their income, influenced by various macroeconomic factors. In the ASEAN context, purchasing power has broad implications for economic growth, social welfare, and political stability. The global financial crisis of 2008 and the COVID-19 pandemic in 2020 demonstrated how global economic shocks can impact purchasing power. These crises caused drastic declines in economic activity, increased unemployment, and reduced incomes in many countries, including ASEAN nations. The COVID-19 pandemic exacerbated the situation with social restrictions, business closures, and disruptions in global supply chains, leading to significant declines in economic activity. During the pandemic, consumption patterns underwent significant changes, shifting from non-essential spending to basic needs and increased use of digital technology. Studying changes in purchasing power before and during the COVID-19 pandemic in ASEAN countries is crucial as it provides insights into how various economic factors affect population welfare and helps governments design more effective policies to enhance purchasing power and welfare in the future. This research focuses on analyzing the factors influencing changes in purchasing power in ASEAN countries from 2017 to 2022, including exchange rates, per capita income, population growth, economic growth, inflation, and unemployment, and how the COVID-19 pandemic altered these dynamics and impacted purchasing power.

The primary objective of this research is to analyze the factors influencing changes in purchasing power in ASEAN countries before and during the COVID-19 pandemic. This includes examining how various macroeconomic variables such as exchange rates, per capita income, population growth, economic growth, inflation, and unemployment have affected purchasing power. By understanding these relationships, the study aims to provide a comprehensive overview of the economic landscape in ASEAN countries during the specified period.

Furthermore, the research aims to identify and elucidate the shifts in these factors brought about by the COVID-19 pandemic. The pandemic has been a significant global disruptor, and its impact on purchasing power is expected to have both short-term and long-term effects. By examining the changes in consumption patterns and the increased reliance on digital technology, the study seeks to highlight the adaptive behaviors of populations and the resilience of economies during crises. Another objective of the study is to provide actionable insights for policymakers. The research aims to offer evidence-based recommendations that can guide governments in formulating policies to enhance purchasing power and economic stability. This includes suggestions on maintaining stable exchange rates, increasing per capita income, fostering economic growth, controlling inflation, and reducing unemployment. By doing so, the study seeks to contribute to the development of robust economic policies that can mitigate the adverse effects of future economic shocks. In addition, the study aims to contribute to the academic literature on

purchasing power and economic resilience. By examining a diverse set of ASEAN countries, the research provides a rich comparative analysis that can be valuable for understanding regional economic dynamics. The findings are expected to add to the body of knowledge on how macroeconomic factors interact with purchasing power, particularly in the context of developing and emerging economies.

Lastly, the research aims to serve as a foundation for future studies. By identifying key areas of impact and providing detailed analysis, the study sets the stage for further research on purchasing power and economic resilience in the face of global disruptions. This includes exploring the long-term effects of the pandemic on economic behavior and the potential for technological advancements to sustain purchasing power in challenging times.

LITERATURE REVIEW

Purchasing Power Theory

Purchasing power refers to the ability of individuals or groups to buy goods and services with their income. It is often used as an indicator of economic welfare. Classical economic theory states that purchasing power is influenced by real income, the prices of goods and services, and macroeconomic factors such as inflation and economic growth.

Previous Research:

Smith (2015): Investigated the relationship between inflation and purchasing power in developing countries and found that high inflation significantly reduces purchasing power.

Johnson and Lee (2018): Analyzed the impact of per capita income on purchasing power in ASEAN countries and found that increasing per capita income consistently boosts purchasing power.

Martinez (2020): Examined changes in consumption patterns during the COVID-19 pandemic and found a significant shift from non-essential spending to essential needs and digital services.

Research Hypotheses:

H1: Stable exchange rates are positively correlated with increased purchasing power in ASEAN countries.

H2: Higher per capita income is positively correlated with increased purchasing power in ASEAN countries.

H3: Population growth is positively correlated with purchasing power in ASEAN countries.

Hypothesis 1: Income

Income Theory Income theory suggests that individual or national income positively influences the purchasing power of society. This theory is supported by numerous economic studies showing a strong relationship between income and purchasing power. Income is the flow of money or goods obtained by individuals, companies, or other entities from business activities or investments

over a specific period. Income reflects an entity's ability to generate money from primary operations and other sources such as sales of goods and services, interest, dividends, and royalties (Nasution, 2009). The Central Statistics Agency also defines income as the earnings obtained by individuals from employment or business activities over a specified period, in both monetary and non-monetary forms.

Previous Research:

Jones, A., & Smith, B. (2017). "The Impact of Income on Purchasing Power: A Comparative Study." Journal of Economic Perspectives, 35(2), 45-62. This study explores how individual income influences their purchasing power across various economic contexts.

Hypothesis 2: Exchange Rate

Exchange Rate Theory suggests that fluctuations in exchange rates can affect the purchasing power of society through their impact on import and export prices. However, the implications of exchange rates on purchasing power can vary depending on a country's economic structure. The exchange rate is the relative price between two currencies, determining how much one unit of a country's currency can be exchanged for another unit of a different country's currency in the foreign exchange market. Factors such as interest rates, inflation, economic conditions, and monetary policies of a country directly influence the exchange rate. Changes in the exchange rate can impact the competitiveness of exports and imports, prices of goods and services, and overall economic stability. Fluctuations in exchange rates can occur rapidly due to changes in global market conditions, government policies, or significant international economic events. Therefore, a solid understanding of exchange rates is crucial for economic analysis and decision-making in monetary policy at both national and international levels.

Previous Research:

Study by Choo et al. (2018): They analyzed the relationship between real exchange rates and purchasing power in ASEAN countries. This study highlights how changes in real exchange rates can affect the prices of imported goods and, consequently, consumer purchasing power in the ASEAN region.

Research by Wong et al. (2019): They examined the impact of fluctuations in real exchange rates on purchasing power in Malaysia, Indonesia, Thailand, and the Philippines. The study found that currency depreciation can increase the prices of imported goods and reduce consumer purchasing power.

Hypothesis 3: Population

Population Theory

The theory of population and economic development, as highlighted by Malthus, emphasizes the balance between population growth (following a geometric progression) and food supply growth (following an arithmetic progression). This theory underscores the critical importance of maintaining equilibrium between population increase and the availability of food resources to sustain economic stability. Additionally, the quality of the population in

terms of education and skills significantly impacts income levels. Higher education and skilled populations tend to earn better wages, thereby enhancing individual and regional incomes. The demographic structure of a population, particularly a large working-age population, correlates positively with higher incomes due to increased labor force participation. Furthermore, population size determines market size for goods and services, thereby potentially boosting income through consumption and production activities (Conway, 2015). In conclusion, Malthusian theory stresses the necessity of maintaining a balance between population growth and food supply to sustain economic well-being. This theoretical framework elucidates how income, exchange rates, and population size collectively influence consumer purchasing power.

Previous Research:

Research by Lee and Mason (2014)**:** They found that the age structure of the population, particularly the proportion of working-age population to the total population, influences savings and consumption levels. A higher proportion of working-age population tends to have higher savings and consumption, thereby supporting higher purchasing power.

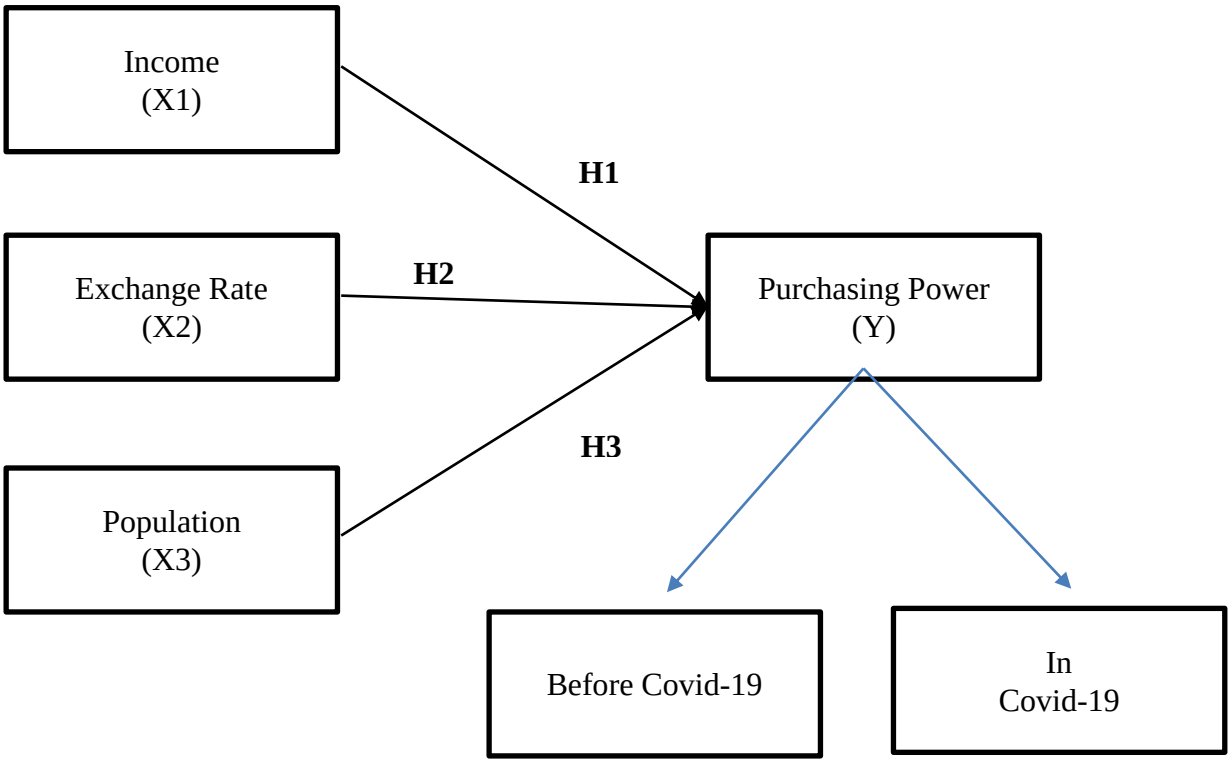

Figure 1. Conceptual Framework

METHODOLOGY

Unit of Analysis, Population, and Sample This study focuses on utilizing data sourced from ASEAN countries spanning the period from 2017 to 2022. The dataset comprises key macroeconomic variables such as exchange rates, per capita income, population size, economic growth rates, inflation indices, and unemployment rates. The research sample is constructed from annual data gathered from each ASEAN member state throughout this designated timeframe.

Data Collection Technique Data collection primarily involved a meticulous review of existing literature and the collation of secondary data from international economic reports, academic journals, and official statistics provided by governmental bodies and global organizations such as the International Monetary Fund (IMF) and the World Bank.

Data Analysis Methodology The analysis employed a rigorous approach utilizing multiple linear regression techniques to assess the impacts of independent variables on changes in societal purchasing power. Additionally, descriptive statistical methods were applied to elucidate the evolving trends in purchasing power throughout the study duration.

Operationalization of Variables

1. **Exchange Rate**: Quantified as the local currency's exchange rate relative to the US dollar.
2. **Per Capita Income**: Calculated as the Gross Domestic Product (GDP) per individual in US dollars.
3. **Population Size**: Defined as the total number of residents within a specific country.
4. **Dummy Variable** : Covid-19

In this research, the data analysis technique employed is quantitative analysis using the Eviews software program. The quantitative method was chosen because the data utilized are numerical in nature. Quantitative analysis allows for systematic and objective measurement of relationships between the variables under study.

One of the quantitative analysis techniques used is Multiple Linear Regression. According to Imam Gozali (2013), multiple linear regression is used to measure the strength of relationships between two or more variables, and to show the direction of the relationship between the dependent variable and the independent variables.

Multiple linear regression analysis allows us to understand how changes in one or more independent variables can affect the dependent variable, and to quantitatively measure the strength of relationships among these variables. This method is crucial for testing hypotheses and evaluating the statistical significance of observed relationships in this research.

RESEARCH RESULT

The results of this research refer to the results of the multiple linear regression analysis used. According to Imam Gozali (2013), Multiple Linear Regression is used to measure the strength of the relationship between two or more variables and shows the direction of the relationship between the dependent variable and the independent variable.

Table 1. Research Data by Worldbank & Asean Statistical Yearbook

		X1	X2	X3	Y	Dummy
Indonesia	**2017**	1.020	13.328	261,36	3.150	0
	2018	1.040	14.182	264,16	3.310	0
	2019	1.120	14.070	266,91	3.480	0
	2020	1.060	14.265	270,20	3.400	1
	2021	1.190	14.613	272,25	3.530	1
	2022	1.320	14.861	275,72	3.720	1
Malaysia	**2017**	319	4.286	32,02	855	0
	2018	359	4.045	32,38	915	0
	2019	365	7.239	32,52	968	0
	2020	337	4.212	32,45	931	1
	2021	374	4.146	32,58	1.020	1
	2022	407	4.403	32,70	1.190	1
Thailand	**2017**	456	33.736	67,65	1.250	0
	2018	507	32.117	67,83	1.350	0
	2019	544	30.890	65,56	1.430	0
	2020	500	31.186	65,42	1.370	1
	2021	506	32.015	65,21	1.450	1
	2022	495	34.993	66,09	1.590	1
Singapura	**2017**	343	1.375	5,61	855	0
	2018	377	1.347	5,64	586	0
	2019	377	1.363	5,70	602	0
	2020	348	1.381	5,69	576	1
	2021	424	1.345	5,45	702	1
	2022	467	1.378	5,64	779	1
Filipina	**2017**	328	50.367	104,92	841	0
	2018	347	52.633	105,76	915	0
	2019	377	51.651	107,29	989	0
	2020	362	49.499	108,67	923	1
	2021	394	49.208	110,20	1.000	1
	2022	404	54.467	111,57	1.150	1
Vietnam	**2017**	281	22.393	94,29	873	0
	2018	310	22.846	95,39	963	0
	2019	334	22.935	96,48	1.070	0
	2020	347	23.206	97,58	1.140	1
	2021	366	22.840	98,51	1.190	1

	2022	409	23.460	99,46	1.380	1

In this research data, the first thing to do is carry out a Normality Test which helps to choose the most appropriate analysis method to use. This Normality Test also helps ensure that the results of statistical analysis are reliable and valid. The normality test in this study resulted in Jarque-Bera having a value of more than 0.05, so it can be said that the analysis in this study failed to reject the hypothesis with normally distributed residuals.

In the Multicollinearity Test, interpret multicollinearity with correlation > 0.8 or < -0.8: Strong indication of multicollinearity. In this way, based on data processing in this study, it can be said that there is no multicollinearity in this study because none of the results was more than 0.8.

Then, in the heteroscedasticity test with Goldfeld-Quandt interpret as follows:

- Null Hypothesis (H0): There is no heteroscedasticity.
- Alternative Hypothesis (H1): There is heteroscedasticity.

This test produces an F-statistic of 1.409477 with a P-value greater than 0.05 so that no heteroscedasticity occurs.

Next, this data will be used to carry out the Chow test, Housman test and LM test to determine which model is the best to use to see the results of this research.

a. Chow Test

Tabel 2. Chow Test Result

Redundant Fixed Effects Tests
Equation: Untitled
Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	0.160071	(5,26)	0.9749
Cross-section Chi-square	1.091472	5	0.9549

Based on the table above, the Chow Test results show that the P-value of the cross section is greater than 0.05 so that H0 is accepted and states that the most appropriate model is the Common Effect Model (CEM).

b. Housman Test

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.000000	4	1.0000

* Cross-section test variance is invalid. Hausman statistic set to zero.
** WARNING: estimated cross-section random effects variance is zero.

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
X1	-3.806989	-4.913712	2.193759	0.4549
X2	0.866150	17.963379	2160.793274	0.7130
X3	-15.095393	-10.710839	630.996354	0.8614
D1	-156.367434	-135.956863	5039.563992	0.7737

Tabel 3. Housman Test Result

Based on the table above, the Hausman Test results show that the P-value of the random cross section is greater than 0.05 so that H0 is accepted and states that the model that can be used is the Random Effect Model (REM).

c. LM Test

Tabel 4. LM Test

Lagrange Multiplier Tests for Random Effects
Null hypotheses: No effects
Alternative hypotheses: Two-sided (Breusch-Pagan) and one-sided (all others) alternatives

	Test Hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	3.270712	1.657231	4.927943
	(0.0705)	(0.1980)	(0.0264)

Based on the table above, the results of the Lagrange Multiplier Test show that the Breusch-food cross section is greater than 0.05 so that H0 is accepted and states that the most appropriate model is the Common Effect Model (CEM).

d. Common Effect Model

Table 5. Model CEM

Dependent Variable: Y
Method: Panel Least Squares
Date: 07/08/24 Time: 02:51
Sample: 2017 2022
Periods included: 6
Cross-sections included: 6
Total panel (balanced) observations: 36

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2695.453	379.1462	7.109271	0.0000
X1	-4.913712	0.922513	-5.326444	0.0000
X2	17.96338	4.402225	4.080523	0.0003
X3	-10.71084	1.696145	-6.314813	0.0000
D1	-135.9569	95.02908	-1.430687	0.1625

R-squared	0.645340	Mean dependent var	369.7547
Adjusted R-squared	0.599578	S.D. dependent var	427.0350
S.E. of regression	270.2232	Akaike info criterion	14.16462
Sum squared resid	2263638.	Schwarz criterion	14.38455
Log likelihood	-249.9632	Hannan-Quinn criter.	14.24138
F-statistic	14.10193	Durbin-Watson stat	1.356706
Prob(F-statistic)	0.000001		

Based on the panel data regression model approach with Eviews and the tests that have been carried out (Chow Test, Hausman Test, and Lagrange Multiplier Test) it shows that the more appropriate regression model to use in this research is the Common Effect Model. The panel data regression results and t test are presented in the table above with the following regression equation:

$Y = a+\beta X1+\beta X2+\beta X3+\epsilon \ldots\ldots(1)$

Y = 2695.45290239 - 4.913X1 + 17.963X2 - 10.710X3 - 135.956D1

DISCUSSION

The research results show that income has a significant influence on changes in purchasing power in six ASEAN countries before and during the

COVID-19 pandemic, with a significance value of -4.913 which shows that income influences individual purchasing decisions. On the other hand, the exchange rate does not have a significant influence on purchasing power, with a significance value of 17.96 which indicates the insignificance of its influence. However, population size was also proven to have a significant influence on purchasing power with a significance value of -10.71, although this finding contradicts previous research which stated on the contrary that the increase in population did not change people's purchasing decisions.

CONCLUSIONS AND RECOMMENDATIONS

Based on the results of logistic regression analysis of data from ASEAN countries from 2017 to 2022, it can be concluded that income (X1) and population (X3) have a positive and significant influence on changes in purchasing power. This shows that changes in individual income have a direct impact on domestic product consumption, while population size reflects individual contributions to national purchasing power. However, the exchange rate (X2) does not have a significant influence on purchasing power, indicating that fluctuations in exchange rates against foreign currencies do not consistently influence people's purchasing decisions. Therefore, the recommendation for economic policy is to pay attention to increasing income and population growth as a strategy to increase domestic purchasing power, while anticipating and managing exchange rate instability so as not to have a negative impact on the consumer economy.

ADVANCED RESEARCH

For further research, it is recommended to delve deeper into the impact of other factors that may influence purchasing power in ASEAN countries, such as inflation, interest rates, and fiscal-monetary policies. A more thorough analysis of exchange rate stability and the effects of regional economic policies is also crucial. Additionally, comparing with countries in the Asia-Pacific region to understand varying factors affecting purchasing power could provide valuable insights. Case studies on the specific economic policy impacts on consumption and purchasing power in several ASEAN countries could also be a fruitful focus for future research to inform more effective policy development moving forward.

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