

Handling Inflation In The World Of Marketing By Using Communication And Information Technology And Its Impact On Economic Growth

Lina Damayanti¹

¹STIE Jaya Negara Tamansiswa Malang, Indonesia

Abstract

This study examines Inflation, Communication and Information Technology, Marketing and Economic Growth, and the connection among them. This study investigates data from the 2000 to 2020 starting point to generate “autoregressive vectors” that can be used to determine relationships between variables. This model is used to analyze Inflation, Information Communication and Technology, Marketing and Economic Growth in Indonesia using secondary data from the World Bank. We find that Inflation can reduce the quality of economic development in each period from the beginning to the end, but inflation can be overcome with the existence of Information Communication and Technology, not only that Information Communication and Technology also helps in the development of a Marketing in Indonesia which has resulted in increased economic growth in Indonesia.

Keywords: Inflation, Information Communication and Technology, Marketing, Economic Growth,

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Background

When a person's financial status reaches a critical point, the inflation rate tends to rise. Financial depth may be a source of high inflation, which is not always desirable because rapid price increases can reverse the prognosis of economic development. Identifying and planning the right amount of funding is critical to promoting price stability and economic progress (Subramaniam & Masron, 2022). Housing returns (HR) can also be used to hedge against inflation because investors are paid for inflation when they invest in the housing market. This finding is consistent with Fisher's premise. Empirical studies, in particular, reveal that the risk-return tradeoff that is accessible in the home market does not exist in the housing market. Indications of high inflation rates, referred to as "bad news", can lead to a decline in HR (Nguyen, 2020).

Inflation can also cause a decrease in the purchasing power of the population when wages do not follow the index. With a general increase in prices, people's wages will be able to buy less of a product. Therefore, even if wages are held at the same nominal value, real wages are said to be reduced. Inflation does not affect all economic actors equally (Bawono, Zainuri, Wilantari, 2019). Therefore, it eventually leads to a random redistribution of wealth. Inflation can be seen as a devaluation of the purchasing power of a currency. Therefore, very high inflation causes an appreciation of the exchange rate, with a tendency for strong currencies to skyrocket in value. Finally, high inflation rates carry a scenario of great economic uncertainty. This ultimately

makes it difficult for companies to make plans, due to low visibility to invest (Widarni & Bawono, 2021).

It is important to point out that, while inflation is harmful to the economy, its opposite, deflation, is also harmful. In a price drop scenario, people tend to delay consumption, to always buy cheaper.

If inflation can be handled it will be able to improve an economy, in dealing with inflation, there is also information and communication that plays an important role in economic growth and inflation. The development of technology and information can create the development of digital technology that continues to grow increasingly massive. The development of digital technology also has an impact on overcoming environmental damage and repairing an inflation where the use of information and communication technology has entered human life so that this can also have an effect on energy use and public consumption. This is very important in marketing where digitalization is able to encourage marketing to create demand which is indicated by consumption (Lange, Pohl, Santarius, 2020).

The future of human work is tied to the development of the knowledge economy, technological developments, and artificial intelligence tools. The role of employees in relation to the economy in the future will undergo various changes. Humans can lose their jobs in the future due to technological changes and changes in human life, but what must be considered is that alternative jobs have emerged along with technological developments (Rusmingsih, Widarni, & Bawono, 2021).

Technology is doing its job and trying to find a place for it in the human world, and the knowledge economy has provided it in the world of technology. Unusual working ideas were crystallized when, in simulations, the world's leading models of the human mind were transmitted in several scientific and sports fields. Artificial intelligence is getting better and better from time to time so that artificial intelligence can replace various human jobs (Widarni & Bawono, 2022).

Artificial intelligence and increasingly sophisticated and automated robotization threaten to take humans out of their jobs. Machines programmed in the world of artificial intelligence perform fully human functions, and even do so without any complications or costs. Therefore, its acceptance is possible, and people who have money and businesses are eager to do so. One machine can do the work of many people so technology can offer advantages in the business field (Mutascu, 2021).

Large factories in the application of artificial intelligence and robotization can create a huge unemployment crisis, as can other institutions in all fields and sectors. The knowledge economy is an economic alternative that allows humans to be actively involved and is difficult to replace by artificial intelligence, namely human creativity. And because the biggest distinguishing feature of the knowledge economy is that it is decentralized and improving across all sectors, including technology, just as the digital economy is doing. In it, and earn money through it, without being time bound to a place, or to a certain time. The knowledge economy allows humans to generate income across countries. There is also a serious trend in the private sector to invest in research and development in response to the negative effects of technological waves on all types of employment sectors, which reinforces the idea of achieving a knowledge society in return (Fu, Bao, Xie, & Fu, 2021).

Superior technology, resources, geography, and history, when used responsibly and transparently make for a strong economy. Where the natural economic surplus flows to the expansion of the

use of technology, because technology is an important element of human civilization, especially in terms of the economy and new sources of financing (Sasongko, Bawono, & Prabowo, 2021).

Economic development can also be created by a marketing technique such as digital marketing which is one of the new things because of the existence of information and communication technology based on internet technology known as educational technology. Of course this change requires society to adapt (Andersson, Laurin & Rosenqvist, 2018). Consumer behavior shows that consumers prefer products to be purchased when they understand the product and product descriptions use language they understand (Al-Fattal, Ayoubi, 2012).

Marketing communication is related to the company's branding and positioning. This is very important especially in maintaining the company's position in the market. Marketing needs to go through a communication process so that a social and communication process is formed between the company and the community as consumers (Boyle, Proctor, 2009). Ethical marketing encourages polite marketing that upholds ethics in marketing products, including honesty and fairness in pricing and information disclosure (Ghazali, Mutum, 2017).

Marketing is closely related to finance where marketing is the spearhead in providing company life and earning income so that it can finance all company operations. Marketing is an important component in business (Meldrum, Ward, Srikanthan, 1986). Marketing strategy continues to evolve along with technological developments. In the current digital era, of course, new marketing strategies continue to be developed so that it becomes digital marketing that is increasingly massive in its use in the business field (Andersson, Laurin & Rosenqvist, 2018). This study examines Inflation, Communication and Information Technology, Marketing and Economic Growth, and the connection among them.

Research methods

In a 21-year data analysis spanning 2000 to 2020, "autoregressive vectors" were used to express variable-to-variable causal relationships. World Data for this study. We examine Inflation, Communication and Information Technology, Marketing and Economic Growth in Indonesia . To study the causal relationship, a multivariate regression model was used between the variables of Inflation, Communication and Information Technology, Marketing and Economic Growth in Indonesia :

$$EG_t = \beta_0 + \beta_1 ICT_{t1} + \beta_2 MG_{t2} + \beta_3 NO_{t3} + e_t \quad \text{eai 1}$$

$$ICT_t = \beta_0 + \beta_1 EG_{t1} + \beta_2 MG_{t2} + \beta_3 NO_{t3} + e_t \quad \text{eai 2}$$

$$MG_t = \beta_0 + \beta_1 EG_{t1} + \beta_2 ICT_{t2} + \beta_3 NO_{t3} + e_t \quad \text{eai 3}$$

$$NO_t = \beta_0 + \beta_1 EG_{t1} + \beta_2 ICT_{t2} + \beta_3 MG_{t3} + e_t \quad \text{eai 3}$$

Information:

EG : Economic Growth

ICT : Information Communication and Technology

MG : Marketing

NO : Inflation

e : erroneous title

t : time sequence

β : degree in terms of causation influence

eai: formula

This research employs vector computations, in which every regression connection is combined so that every variable simultaneously becomes both the independent and the dependent variables.

Results and Discussion

This test can be used to assess whether the data is stationary or not. Error term analysis is used to determine whether the series is stationary, which includes the possibility of autocorrelation if the series is not. After trying the following unit test root: the findings:

Table 1. ADF Unit Root Test On ICT, NO, EG And MG Data In Indonesia

Variable	Unit Root	Include in the examination Equation	Statistics for the ADF Test	5% Critical Value	Description
Information Communication and Technology (ICT)	Level	Intercept	-1.840710	0.3514	
	First Diff	Intercept	-3.693215	0.0133	Stationer
Inflation (NO)	Level	Intercept	-1.605610	0.4605	
	First Diff	Intercept	-5.809964	0.0002	Stationer
Economic Growth (EG)	Level	Intercept	-0.527808	0.8660	
	First Diff	Intercept	-1.929268	0.3129	
	Second Diff	Intercept	-3.319458	0.0293	Stationer
Marketing (MG)	Level	Intercept	-2.243841	0.1983	
	First Diff	Intercept	-5.572305	0.0003	Stationer

EG is stationary at the second difference, while the variables ICT, NO and MG are stationary at the first difference. This is demonstrated by Augmented Dickey-Fuller with results like, running the test -3.693215 and probability 0.0133, since the probability is less than 5%, in this situation, the difference of the two IN data indicates that it is stationary. Both VAR and causationry should be tested for sensitivity before starting a VAR investigation, there should be a selection of an acceptable optimal time lag. These are the following results:

Table 2. Optimal Lag Test at Lag 0 to 3 ICT, NO, EG and MG data in Indonesia

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-197.6675	NA*	236717.5	23.72559	23.92164	23.74507
1	-187.4143	14.47511	499705.8	24.40168	25.38193	24.49912
2	-159.5501	26.22511	186039.3	23.00590	24.77035	23.18129
3	-121.4344	17.93681	59545.88*	20.40405	22.95270	20.65739

The results of the study can be seen in Table 2. And the results of the variation in the length of the ICT, NO, EG and MG lags are in LR, FPE, and SC at position number 1. The results of the three components conclude that lag 3 is different, so lag 3 will be chosen.

Table 3. VAR Model Analysis

	EG	ICT	MG	NO
EG	-1.857383	-23.79841	-28.60360	10.31110

	(3.91936)	(16.8054)	(9.84476)	(4.88924)
	[-0.47390]	[-1.41611]	[-2.90547]	[2.10894]
ICT	0.115976	0.452146	0.659538	-0.150121
	(0.15416)	(0.66101)	(0.38723)	(0.19231)
	[0.75230]	[0.68402]	[1.70324]	[-0.78062]
MG	0.003846	1.088981	0.378418	-0.006698
	(0.13372)	(0.57335)	(0.33587)	(0.16681)
	[0.02877]	[1.89934]	[1.12667]	[-0.04016]
NO	0.137897	0.448548	2.135221	0.002063
	(0.32676)	(1.40108)	(0.82076)	(0.40762)
	[0.42201]	[0.32015]	[2.60151]	[0.00506]
C	11.87064	37.06399	144.5481	-39.76572
	(16.4731)	(70.6333)	(41.3775)	(20.5495)
	[0.72061]	[0.52474]	[3.49339]	[-1.93512]
R-squared	0.483503	0.735365	0.875996	0.900291
Adj. R-squared	-0.756089	0.100242	0.578386	0.660989
Sum sq. resids	29.96820	550.9724	189.0778	46.63505
S.E. equation	2.448191	10.49736	6.149435	3.054015
F-statistic	0.390050	1.157830	2.943439	3.762160
Log likelihood	-30.12878	-56.33271	-46.70697	-34.10872
Akaike AIC	4.792087	7.703635	6.634108	5.234302
Schwarz SC	5.435133	8.346681	7.277154	5.877348
Mean dependent	5.004559	33.36707	40.46196	7.373656
S.D. dependent	1.847448	11.06667	9.470609	5.245230

The connection among ICT with EG is greatly positive having 0.115976 Coefficient and 0.75230 t-statistic. The connection among MG with EG is greatly positive having 0.003846 Coefficient with 0.02877 t-statistic. The connection among NO with EG is greatly positive having 0.137897 Coefficient with 0.42201 t-statistic. The connection among MG with ICT is greatly positive having 1.088981 Coefficient with 1.89934 t-statistic. The connection among NO with ICT is greatly positive having 0.448548 Coefficient with 0.32015 t-statistic. The connection among NO with MG is greatly positive having 2.135221 Coefficient with 2.60151 t-statistic. This shows that Information Communication and Technology has an important relationship to Economic Growth, Marketing and Inflation. The higher the Information Communication and Technology, the Economic Growth will also develop.

Table 4. Granger Causality Test

Null Hypothesis:	Obs	F-Statistic	Prob.
ICT does not Granger Cause EG	18	0.14046	0.9336
EG does not Granger Cause ICT		0.58355	0.6381
MG does not Granger Cause EG	18	1.84869	0.1967
EG does not Granger Cause MG		0.38290	0.7674
NO does not Granger Cause EG	18	0.67588	0.5847
EG does not Granger Cause NO		0.11678	0.9484
MG does not Granger Cause ICT	18	0.79624	0.5212

ICT does not Granger Cause MG		0.87444	0.4837
NO does not Granger Cause ICT	18	0.28707	0.8338
ICT does not Granger Cause NO		1.20559	0.3532
NO does not Granger Cause MG	18	0.83070	0.5043
MG does not Granger Cause NO		2.86483	0.0852

The results of the Granger causality test in Indonesia are shown in Table 4. The causal relationship between a single variable and a variable is between the variables ICT for EG, MG for EG, NO for EG, MG for ICT, NO for ICT and NO for MG. This can be seen from the probability that is lower than five percent.

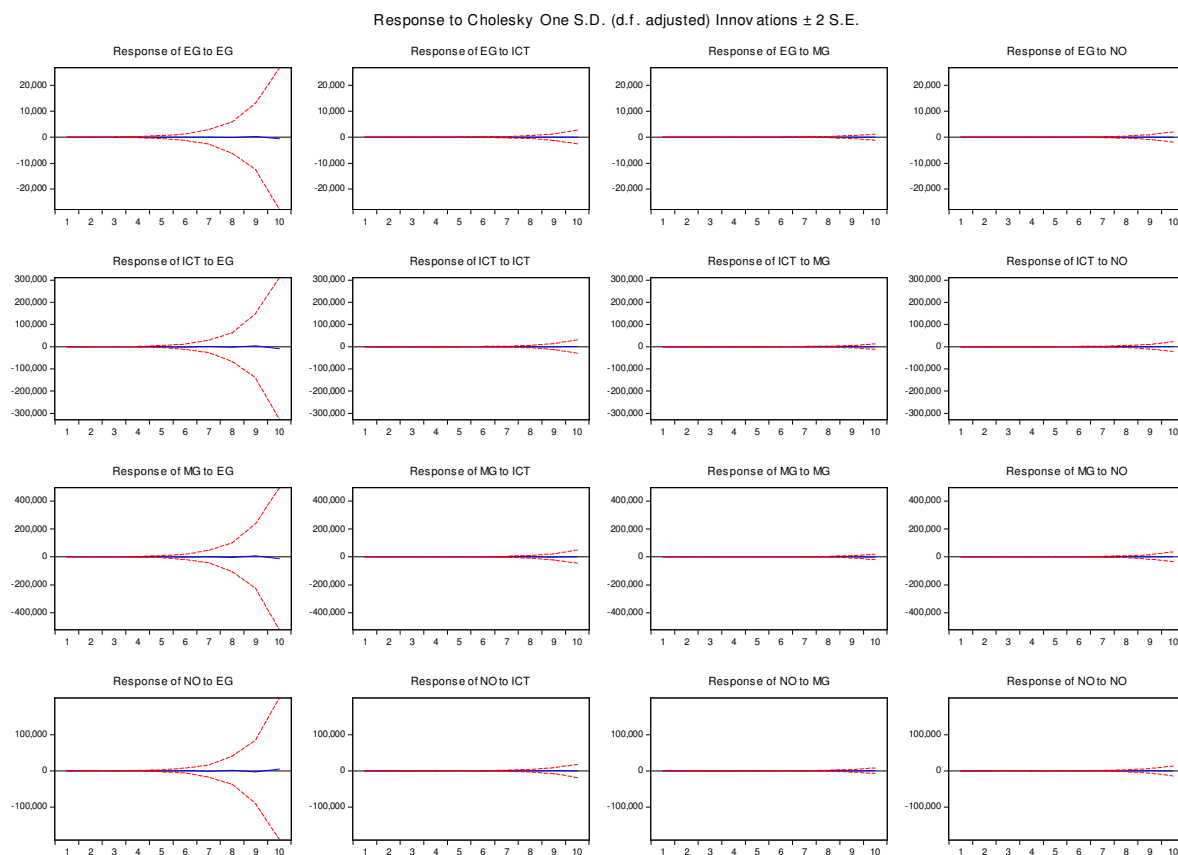


Figure.1. Impulse Response Function

The response between EG and EG itself has a fairly stable wave until the 4th period, followed by a wave that continues to rise until the 7th period, then there is a slight decrease until the 8th period and then continues with a high wave until it hits. peaked in the 10th period. The ICT variable response with EG was quite stable until the 4th period which experienced a few waves until the 7th period, then there was a shock wave from the 9th to the 10th period, then there was another shock wave until the end of the period. Point. This shows that the development of EG towards ICT was quite stable in several periods until the shock wave occurred in the last period. In contrast to the ICP response to EG which was stable in periods 4 to 7, followed by a high wave that peaked in period 10, it can be said that ICP had a very good response to EG. The MG response to EG also experienced a fairly stable wave until the 6th period then there was a slight

increase in the 7th period until it reached its peak in the 10th period. 7. The response of the NO variable to EG has a fairly stable and low wave in the 6th to 7th period, followed by a shock wave that is high enough to reach its peak in the 8th to the last period. This shows that inflation has a major influence on economic growth. The higher the economic growth, the inflation will also increase.

Conclusion

Inflation can reduce the quality of economic development in each period from the beginning to the end, but inflation can be overcome with the existence of Information Communication and Technology, not only that Information Communication and Technology also helps in the development of a Marketing in Indonesia which has resulted in increased economic growth in Indonesia.

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