Analysis Of The Influence Of Digital Economy Factors On Gross Domestic Product in Indonesia

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Abstract. Economic growth in Indonesia has become a major focus for the government and other stakeholders. As one of the most populous countries in the world and an active member of the Southeast Asian economic region, Indonesia has great potential to achieve high and sustainable economic growth. This study uses a quantitative approach. The quantitative method is a research method that can be interpreted as a research method based on the philosophy of positivism, used for research on certain populations or samples, data collection using research instruments, quantitative data analysis with the aim of testing the established hypothesis. This research is associative (relationship), namely a research method that aims to determine the relationship between two or more variables, where this study aims to determine the relationship between the influence of independent variables on the dependent variable. With this research, a theory can be built that can function to explain, predict and control a symptom. Based on the results of data processing output using the SPSS 22 data processing application, the variables of internet users, the level of e-commerce users and the level of digital payments have an effect on GDP through the results of the t-test and f-test. Based on the formulation of the problem and the results of the tests that have been carried out, the following conclusions can be drawn: A. Exports have a positive and significant effect on Indonesia's Foreign Exchange Reserves where t count (2.305) t table (1.74) and significant (0.035) (0.05).

Keywords: Internet Users, E-Commerce, Digital Payments, GDP

1. INTRODUCTION

The world is entering the era of the industrial revolution 4.0 or the fourth world industrial revolution where technology has become the basis of human life. Everything becomes limitless and unlimited due to the development of the internet and digital technology. This era has influenced many aspects of life, both in the fields of economics, politics, education, culture, and others. The development of technology in computer networks has caused a rapid increase in the telecommunications sector, which is marked by the emergence of the internet. The internet as one of the implementations of information and telecommunications technology is the main technology that is being and continues to be developed by many organizations or individuals. Economists say that Indonesia's economic growth is projected to reach 6%-7% in 2030, if the development of the industrial revolution 4.0 is carried out properly. Economic growth is a long-term problem faced by a country in an effort to increase real national income. Economic growth measures how successful a country is in producing goods and services that are influenced by factors that experience an increase in quantity and quality so that they can improve people's welfare. Sukirno (2000) in macro analysis stated that the level of economic growth achieved by a country is measured from the development of real national income achieved by a country. A region can be said to experience rapid economic growth if it

experiences a significant increase from year to year, while slow growth occurs if it experiences a decrease or fluctuation from year to year.

Table 1. Number of Internet Users, E-Commerce Transaction Value, Digital Payment Rate, GDP

Year	Number of Internet Users (X1) Million	E-Commerce Transaction Value (X2) IDR Trillion	Digital Payment Rate (X3) IDR Trillion	GDP (Y) IDR Million
2012	39,6	42	1.971.549.527.358,04	1 152 262,10
2013	60,6	69,6	2.907.432.136.946	1 275 048,40
2014	71	70,1	3.319.556.042.855	1 409 655,70
2015	89,6	99,5	5.283.017.651.779	1 555 207,00
2016	90,7	103	7.063.688.968.575	1 671 597,80
2017	13,6	105,6	12.375.468.717.372	1 787 963,20
2018	146	106	47.198.616.105.148,30	1 900 621,70
2019	174	206	145.165.467.752.595	2 012 742,80
2020	176	266	204.909.169.984.853	2 115 494,50
2021	203	403	305.445.559.902.000	2 254 541,30
2022	205	530	222.899.206.954.271	2 428 900,50
Source	bps.go.id/	kominfo.go.id	bi.go.id	bps.go.id/

Economic growth can be known by comparing Gross Domestic Product (GDP) in a particular year with the previous year (Sukirno, 2006). Basically, GDP is the sum of the final value of all manufacturing and service sectors, both at current prices (nominal GDP) and at constant prices (real GDP) (Mankiw, 2004). Sectors that contribute to GDP include agriculture, mining and quarrying, manufacturing, electricity, gas and water, construction, trade, transportation and communication, finance, real estate and corporate services, and services.

Indonesia's Gross Domestic Product (GDP) value has always increased from year to year. From the data, the gross domestic product value based on current prices shows that the sector that has the highest contribution to Indonesia's GDP in 2018 was occupied by the Manufacturing Industry sector of IDR 2,947.3 trillion, then in second place was the Wholesale and Retail Trade sector of IDR 1,931.9 trillion. The Agriculture, Forestry, and Fisheries sector of IDR 1,900.3 trillion is in third place. Of the three highest sectors, there has always been an increase every year, one of which is in the trade sector. Indonesia as a developing country that is trying to develop its economy certainly needs a new sector that can help stimulate its growth in this era of the 4.0 industrial revolution. E-commerce is one sector that is considered capable of carrying out growth for the Indonesian economy. E-commerce or more familiarly known as online business is now no longer foreign to Indonesia. E-commerce is a form of development of the trading system better known as the "electronic trading system" so that all forms of convenience can be realized with this electronic trading activity. This trading system is an electronic business mechanism that focuses on individual-based business transactions by using the internet as a medium for exchanging goods or services between two institutions (business to business) and direct consumers (business to consumer).
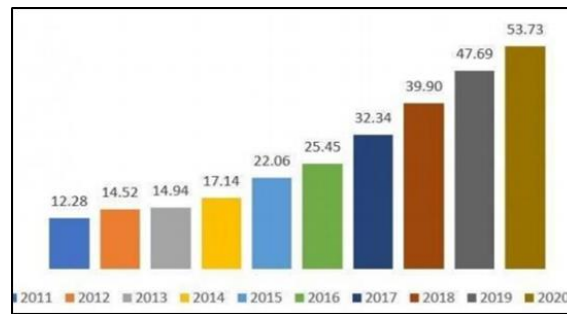
Figure 1. Number of Internet Users in Indonesia

Based on the figure internet users in Indonesia are increasing from year to year. The number of internet users in 2014 was 88.1 million people out of a total population of 250 million people in Indonesia. Meanwhile, in 2018, out of a total population of 265 million people in Indonesia, 171.2 million people or around 64.6 percent were connected to the internet. This figure has increased from 2017 when the internet penetration rate in Indonesia was recorded at 54.72 percent or 143.3 million people. The high growth in internet users is a good potential for the advancement of Indonesia's digital economy. With the internet, internet users can easily access cyberspace and grow very rapidly, it is hoped that internet development can help economic growth in one way, namely the business sector. With a high population and number of internet users, Indonesia is a market share for e-commerce players. The government's attention to the development of e-commerce has only been seen recently, but in fact the emergence of e-commerce in Indonesia can be identified since 1996, when Dyviacom Intrabumi as an internet service provider offered a transaction facility in the form of an online mall (D-Mall). In its development, e-commerce has increasingly been positioned in the midst of society since Kaskus arrived to enliven the virtual world in 1999 while bringing the Buy and Sell Forum (FJB) and 3G launching in Indonesia in 2006 (UBS, 2014).

The payment system is the most important component in an economy, especially in ensuring the achievement of payment transactions carried out by the community and business activities. In addition, the payment system also has an important role in supporting the creation of financial system stability and the implementation of monetary policy. In order to ensure the smoothness and security of the payment system, Bank Indonesia has implemented policies that focus on four main aspects, namely increasing security, efficiency, expanding access to the payment system and paying attention to consumer protection. Non-cash payments are increasingly becoming a trend in Indonesian society, both in urban and rural areas. Non-cash money is considered more effective as a means of payment transactions and is the main driver of economic growth today. Bank Indonesia (BI) noted that the value of electronic money transactions doubled to IDR 31.66 trillion from January to September 2018 compared to 2017.

The main drivers of non-cash growth include online payments and electronic money (Okefinance, December 30, 2018). In developed countries, economic transactions to support economic growth do not only use paper money and coins, but most have used non-cash.

If an area does not have internet access or telecommunications signals, the need for cash is still high. Also in border areas, cash is still needed to ensure the sovereignty of the Republic of Indonesia. Electronic money (e-money) has many advantages. Among them, it is more practical, efficient (fast transactions), there is transaction transparency, easy to transact, economical in terms of money management, avoiding the risk of theft and avoiding counterfeit money. However, e-money also has disadvantages, namely transaction restrictions, compromised privacy, negative real interest rates, risk of being hacked, EDC machine capabilities and internet access

2. LITERATURE REVIEW

According to Sukirno (2004: 17), Gross Domestic Product is National Income that describes the level of a country's production achieved in a certain year and its changes from year to year. National product or national income is a term that applies to the value of goods and services produced by a country in a year influenced by digital economy.

Digital economy was introduced by Don Tapscott in 1995 through his book entitled The Digital Economy: Promise and Peril in the Age of Networked Intelligence, namely a socio-political and economic system that has characteristics as an intelligence space, including information, various access to information instruments, information capacity, and information processing. The digital economy is an economic activity based on digital internet technology. The digital economy is also called the internet economy, web economy, digital-based economy, new economy knowledge, or new economy.

E-commerce is the process of buying, selling, or exchanging goods, services, and information via computer networks including the Internet. According to Kalakota and Whinston (1997). From a business process perspective, e-commerce is the application of technology to automate business transactions and workflow steps. From a service perspective, e-commerce is a tool that can meet the needs of companies, consumers, and management with the aim of minimizing service costs, improving the quality of service to consumers, and increasing the speed of customer service. E-commerce enables the process of buying and selling products and information via the internet and other online services.

F-Internet or International Network is a very large computer network consisting of small interconnected networks that span the globe. The Internet is a limitless communication

network involving millions of personal computers spread throughout the world. By using the Transmission Control Protocol/Internet Protocol (TCP/IP) protocol and supported by communication media such as satellites and radio packets, the Internet has enabled communication between computers over unlimited distances (Oetomo, 2002: 52). The rapid development of technology has an impact on the development of payment systems in business transactions, especially in maintaining the continuity of business relations between the parties. The payment system, which is one of the pillars supporting the stability of the financial system, has developed, which initially only used cash, has now expanded to a digital payment system or can be called electronic money (e-money). Technological advances in the payment system have shifted the role of cash (currency) as a means of payment into a more efficient and economical form of non-cash payment.

Digital Payment System Payment can generally be interpreted as the transfer of money from the payer to the recipient. Digital payment is a technology-based payment. In digital payments, money is stored, processed, and received in the form of digital information and the transfer process is initiated through electronic payment instruments. Traditional payments are made through cash, checks, or credit cards, while digital payments are made using specific software, payment cards, and electronic money. The main components of a digital payment system include: money transfer applications, network infrastructure, regulations and procedures that govern the use of the system. A digital payment system provides a way to pay for the purchase of goods or services via the internet. Unlike the usual payment system, customers send all data related to payment to the seller via the internet, there is no external interaction between the customer and the seller (by sending invoices via email or confirmation via fax). Currently, there are more than 100 types of electronic payment systems.

3. METHODS

This research uses a quantitative approach method. Quantitative method is a research method that can be interpreted as a research method based on the philosophy of positivism, used to research a certain population or sample, data collection using research instruments, quantitative data analysis with the aim of testing the hypothesis.

The data analysis method uses multiple linear regression analysis. In regression analysis, in addition to measuring the strength of the relationship between two or more variables, it also shows the direction of the relationship between the dependent variable and the independent variable. Multiple regression analysis is usually in the form of a straight line (linear) and non-linear. While the regression analysis in this study is multiple linear regression,

namely regression involving more than one variable (X), namely the Number of Internet Users, E-Commerce Transaction Value, Digital Payment Level and one variable (Y), namely GDP.

The data analysis method in this study uses Multiple Linear Regression Analysis. Multiple linear regression is used to predict the effect of two or more variables on one variable to prove whether or not there is a functional relationship between two or more independent variables (X) with a dependent variable (Y) (Usman, Husaini & Setiadi, 2003). The Multiple Linear Regression Equation is as follows:

$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$………………………………………….1

4. RESULTS

Multiple linear regression data processing results using the SPSSdata processing application.

Table 2. Multiple Linear Regression Analysis Techniques

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	1.74219E	5569229.573		3.128	.009
Internet Users	9.069	13672.789	.009	.066	.948
E-Commerce Transactions	4.948	7242.776	.888	6.833	.000
Digital Payment	-3.922	76227.359	-.067	-.515	.616

1. Dependent Variable: PDB

From the table above, the results of the estimated equation for the GDP model are as follows: $\hat{Y} = 1,742 + 9,069X_1 + 4,948X_2 - 3,922X_3$. Constant of 1,742; meaning that if Internet Users (X1), Digital Payments (X2), E-commerce Transactions (X3), then GDP (Y) is 1,742. The regression coefficient of the Internet User variable (X1) is 9,069; meaning that if the other independent variables remain the same and Internet Users increase by 10%, then GDP (Y) will increase by 9.69%. The regression coefficient of the E-commerce Transaction variable (X2) is 4,948; meaning that if the other independent variables remain the same and E-commerce increases by 10%, then GDP will increase by 49.48%. The regression coefficient of the Digital Payment variable (X3) is -3.922; meaning that if the other independent variables remain the same and Digital Payments experience a 10% decrease, then GDP (Y) will experience a decrease of -39.22%.

Table 3. Simultaneous Test

ANOVAª

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	5.232E+15	3	1.744E+15	16.064	.000b
Residual	1.303E+15	12	1.086E+15		
Total	6.535E+15	15			

a. Dependent Variable: GDP

b. Predictors: (Constant), Digital Payment, E-Commerce Transaction, Internet User

It can be seen in Table 4.5, that the Fcount value is greater than the Ftable value (16.064 > 3.81) and the sig. value is 0.000 which is smaller < than the significance level (0.000 < 0.05). So it can be concluded that the variables of Internet Users, Digital Payments and E-commerce together have a significant effect on the GDP variable. While the t-test is used to test the significance of the model partially between the independent variables (Internet Users, Digital Payments and E-commerce) against the dependent variable (GDP). The results of the t-test that have been processed using the SPSS22 application are shown below:

Table 4. Partial Test

Coefficientsª

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	17421947.131	5569229.573		3.128	.009
Internet Users	906.990	13672.789	.009	.066	.948
E-Commerce Transactions	49489.847	7242.776	.888	6.833	.000
Digital Payment	-39221.388	76227.359	-.067	-.515	.616

a. Dependent Variable: PDB

The Internet User variable has a t count (0.66) < t table (1.77) and significant (0.948) > (0.05). Thus, this shows that the Internet User variable has no effect and is not significant on Indonesia's GDP. The E-commerce variable has a t count (6.833) > t table (1.77) and significant (0.00) < (0.05). Thus, this shows that the E-commerce variable has a significant effect on Indonesia's GDP. The Digital Payment variable has a t count (-0.515) < t table (1.77) and significant (0.616) > (0.05). Thus, this shows that the Digital Payment variable has no positive and insignificant effect on Indonesia's GDP. The coefficient of determination test (R^2) is used to determine the ability of the independent variables used in the regression equation to explain the variation in the dependent variable.

Table 5. Determinant Coefficient Test

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.895[a]	.801	.751	10419784.73459	1.181

a. Predictors: (Constant) Digital Payment, E-Commerce Transactions, Internet Users

b. Dependent Variable: GDP

The R value of 0.895 indicates that the relationship between GDP and its 3 independent variables, namely Internet Users, E-commerce and Digital Payments, has a strong relationship because R is close to 1. The value of the Determination Coefficient (R-Square) is 0.895 or 89.5%. This means that the magnitude of the influence of Internet Users, E-commerce and Digital Payments on GDP is 89.5%. While the remaining 10.5% is influenced by other factors not examined in this study that the magnitude of the influence of Internet Users, E-commerce and Digital Payments on GDP is 89.5%. While the remaining 10.5% is influenced by other factors not examined in this study.

5. DISCUSSION

Based on the results of data processing output using the SPSS 22 data processing application, the regression coefficient value of the Internet User variable (X1) is 9.069; this means that if the other independent variables remain the same and Internet Users increase by 10%, Indonesia's GDP (Y) will increase by 9.69%. The coefficient between Internet Users and Indonesia's GDP is positive, this means that if Internet Users increase, Indonesia's GDP will also increase. Based on the results of simultaneous hypothesis testing or the (F) test, it was obtained that Internet Users (X1), E-commerce Transactions (X2) and Digital Payments (X3) have an F count greater than the F table value (16.064> 3.81) and a sign value. of 0.000 which is smaller < than the significance level (0.000 <0.05). So it can be concluded that the variables Internet Users, Digital Payments and E-commerce together have a significant effect on the GDP variable. Based on the results of partial hypothesis testing or t-test, it was obtained that the Internet User variable (X1) has a t-count value smaller than the t-table value (0.66 < 1.77) and has a sig. value greater than the significance level (0.948 > 0.05). So in this case Ha is accepted and Ho is rejected. This means that there is no influence and partial significance between the internet user variable and GDP.

Based on the results of data processing output using the SPSS 22 data processing application, the regression coefficient value of the E-commerce variable (X2) is 4.948; this means that if the other independent variables remain the same and Internet Users increase by

10%, Indonesia's GDP (Y) will increase by 49.48%. The coefficient between Internet Users and Indonesia's GDP is positive, this means that if Internet Users increase, Indonesia's GDP will also increase. It can be concluded that E-commerce has a significant effect on Indonesia's GDP. Based on the results of simultaneous hypothesis testing or the (F) test, it was obtained that Internet Users (X1), E-commerce Transactions (X2) and Digital Payments (X3) have an F count greater than the F table value (16.064> 3.81) and a sig. value of 0.000 which is smaller < than the significance level (0.000 <0.05). So it can be concluded that the variables of Internet Users, Digital Payments and E-commerce together have a significant effect on the GDP variable. Based on the results of partial hypothesis testing or t-test, it was obtained that the E-commerce variable (X2) has a t-count value greater than the t-table value (6.833> 1.77) and has a sig. value smaller than the significance level (0.000 <0.05). So in this case Ha and H0 are accepted. This means that there is a partial and significant influence between the E-commerce Transaction variable and Indonesia's GDP.

Based on the results of data processing output using the SPSS 22 data processing application, the regression coefficient value of the Digital Payment variable (X3) is -3.922; this means that if the other independent variables remain the same and Internet Users increase by 10%, Indonesia's GDP (Y) will increase by -39.22%. The coefficient between Internet Users and Indonesia's GDP is negative, this means that if Internet Users decrease, Indonesia's GDP will also decrease. Based on the results of simultaneous hypothesis testing or the (F) test, it was obtained that Internet Users (X1), E-commerce Transactions (X2) and Digital Payments (X3) have an F count greater than the F table value (16.064> 3.81) and a sig. value of 0.000 which is smaller < than the significance level (0.000 <0.05). So it can be concluded that the variables Internet Users, Digital Payments and E-commerce together have a significant effect on the GDP variable. Based on the results of partial hypothesis testing or t-test, it was obtained that the Digital Payment variable (X3) has a t-count value greater than the t-table value (-0.515 < 1.77) and has a sig. value greater than the significance level (0.616 >0.05). So in this case Ha and H0 are rejected. This means that there is no partial and significant influence between the E-commerce Transaction variable and Indonesia's GDP.

6. CONCLUSION

Based on the results of the partial test (T-test) Internet Users have no effect and are not significant to Indonesia's GDP. The results of the partial test (T-test) E-commerce have an effect and are significant to Indonesia's GDP. The results of the partial test (T-test) Digital Payments have no effect and are not significant to Indonesia's GDP. The results of the

simultaneous test (F-test) Internet Users, E-commerce Levels and Digital Payments together have an effect and are significant to Indonesia's GDP.

LIMITATION

Based on the background and identification of the problem, this study is limited by the variables of E-commerce, Internet Users, and Digital Payments to determine their influence on GDP.

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