

Indonesian Economic Recovery Opportunities for Increasing Internet Users in Indonesia

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Abstract

This study examines the relationship between internet users, consumption, and economic growth in Indonesia. To achieve this goal, the Quantitative Threshold Autoregressive method is used to predict data behavior so that the relationship behavior between data can be seen and the relationship between variables of internet users, consumption, and economic growth can be seen. The hope is that knowing past behavior data can be an indicator of decisions that can be taken in the future. All data are secondary data from world banks. We found that internet users as an indication of internet technology literacy have an impact on the Indonesian economy. However, the impetus for internet users in Indonesia occurred on the supply side, where there was an increase in production, including starting new internet-based businesses in Indonesia. Where the drive for consumption occurs, there is an action by corporations that use the internet as a promotional medium so that there is a consumption boost and encourages production so that this cycle occurs which has an impact on increasing economic growth from time to time due to the internet user factor.

Keywords: Internet, Economics, Consumption

JEL Classification Code: C01,E44, E51

Introduction

Indonesia is one of the fastest-growing telecommunication markets in the world, and it is undeniable that this can happen due to the growth of cellular subscribers at this time. The pandemic of the Covid-19 coronavirus has made internet consumption of the Indonesian people increase. Internet users in Indonesia in early 2021 reached 202.6 million people. This number increased by 15.5 percent or 27 million people when compared to January 2020. The current total population of Indonesia is 274.9 million. This means that internet penetration in Indonesia in early 2021 will reach 73.7 percent. The internet activity most favored by Indonesian internet users is social media. Currently, there are 170 million Indonesians who are active users of social media. On average, they spent 3 hours 14 minutes on social networking platforms (Horswill, 2021).

The corona pandemic is a challenge in itself for business and industry players that occur throughout 2020. Even so, Indonesia's internet economic sector or digital economy has been able to survive and record positive growth in several sectors. He explained that the pandemic period, which made many people choose to stay at home and avoid crowds, actually had an impact on the increase in the internet economy in Indonesia. Where there is a digital acceleration from new internet users who continue to use digital services during the pandemic. The advancement of technology and information in this modern era has given many changes and influences in various aspects of life. People tend to prefer activities that are practical, easy, efficient, and fast. In today's digital era, everyone can take advantage of their cell phones to simplify their activities (Kaushal & Srivastava,2021).

Through communication devices connected to the internet, people can do many things easily, such as shopping without having to go to the store, ordering cinema tickets with the application without having to queue, ordering food through the application without having to go outside the house, and many more benefits. advances in technology and information that can make it easier for people to meet their every need and desire. The high use of the internet in Indonesia is in line with the proliferation of online businesses in Indonesia or so-called e-commerce. E-Commerce is the activity of buying and selling goods/services or transmitting funds/data via electronic networks, especially the internet. The development of information technology and software has made it possible for conventional transactions to be carried out electronically (Putra & Santoso,2020).

The growth of the e-commerce industry cannot be separated from the behavior of Indonesian consumers who want speed in shopping and most Indonesian consumers already understand how to use the internet and smartphones. The behavior of people who are starting to love online shopping seems to have benefited several producers in society, including selling products or services online without having to set up a shop as a place of business so that they can market their products or services to consumers anytime and anywhere. In terms of marketing, they do not need to pay for promotion because by using the internet network they can market their products or services widely to the public. For consumers themselves, it has the advantage of simplifying the purchase process and transactions carried out online (PENG et al,2021). The development of the e-commerce business greatly affects economic growth in Indonesia. The development of the number of e-commerce businesses, in this case acting as producers, contributes to encouraging product offerings in online trading. The more e-commerce producers, the more goods and services that are traded online, so the greater the potential for transactions that will occur. The effect of e-commerce on the economic growth of online and conventional sales of goods and services has similar implications for the increase in GDP (Gross Domestic Product) which is an indicator commonly used to determine economic growth from year to year.

Literature Review

Information and communication technology (ICT) infrastructure is one of the contributors that plays a major role in increasing economic growth in a country, especially in today's digital era. various benefits of ICT have been felt by various groups of society. ICT is not only used as a medium of communication but has also become the main benchmark for economic actors in doing business and entrepreneurship. Economic growth is the process of increasing output per capita in the long run by emphasizing three aspects, namely the process, increasing the output per capita, and the time perspective in the long run. Economic growth is a process, and there are dynamic aspects of an economy by viewing the economy as something that develops or changes from time to time. Economic growth is an exogenous factor or a process that is completely independent of technological progress which has two weaknesses. First, using

a neoclassical framework, it is not possible to analyze the determinants of technological progress because technological progress is completely unrelated to the decisions made by various economic institutions. Second, the theory fails to explain the large residual differences that exist between countries with similar technology (Nguyen et al,2020).

Internet is a form of technology. The internet does not only provide an impetus for increasing productivity on the production side. But also a boost in the consumption or demand side. The increasing use of the internet in Indonesia shows an increase in technology. The development of ICT can transform society with the amount of information and tools that are constantly evolving. In this case, access to ICT is a vital development tool that is an indicator of the progress of a nation and a country. The development of internet users in Indonesia is increasing from year to year. However, the increase in internet users does not guarantee a large number of consumers in digital economy transactions. This is due to the fact that Indonesians use the internet more to play games or socialize with social networks. However, communication and information technology do not only provide a boost in terms of demand or consumption but also production. So that the opportunity for economic recovery in terms of increasing technology lottery has the possibility of running on two sides, namely demand and supply or one of both (Wal et al,2020). A country is said to have a developing Digital Economy marked by the growing number of businesses or trade transactions that use the internet as a medium of communication, collaboration, and cooperation between companies or between individuals. Take a look at how many new and old companies have plunged into the e-business and e-commerce electronic business format. With the increasing number of new and old companies based on e-business or e-commerce, there is more competition. To be able to survive and win the competition, players need to understand the characteristics of the concept on which they are based because it is very different from the classical economy that has been known so far. It is not uncommon for companies to carry out business transformation (changing business models) so that they can optimally play in the digital economy arena.

Research Methods and Materials

This study examines the relationship between internet users, consumption, and economic growth in Indonesia. To achieve this goal, the Quantitative Threshold Autoregressive method is used to predict data behavior so that the relationship behavior between data can be seen and the relationship between variables of internet users, consumption, and economic growth can be seen. The hope is that knowing past behavior data can be an indicator of decisions that can be taken in the future. In this study we used the autoregressive equation as follows:

$$AR_{(p)} = Y_t = c + \Phi_1 Y_{t-1} + \Phi_2 Y_{t-2} + \dots + \Phi_p Y_{t-p} + e_t$$

Where AR is Y and Yt is Y over time in a time series which is influenced by Yt-1 or Y over time in the past in period 1 and Yt-1 itself is also influenced by Yt-2 which is Y in the past in the period 2 and so on which is influenced by et which is the error term for the time in the study period. This study focuses on secondary data sourced from the world bank. With the econometric equation as follows:

$$Y_t = \beta_0 + \beta_1 IU_{t1} + \beta_2 C_{t2} + e_t$$

Where Y is a gross domestic product, t is a time period, β is constant, IU is Internet User, C is Consumption, and e is error term. All data are secondary data from world banks.

Results and Discussion

To see the data on the behavior of internet users, consumption, and GDP, an autoregressive threshold estimate was carried out. The following are the estimation results that we have done:

$$\text{GDP} = (-3.63679820307 * \text{CONSUMPTION} + 37613.6515594 * \text{INTERNET_USER}) + (2.621922896 * \text{CONSUMPTION} - 33174.3729281 * \text{INTERNET_USER}) * @\text{LOGIT}(1.28338743874e-11 * (\text{GDP}(-3) - 375316401549)) + 1.31085181578e+12$$

The estimation results from the first estimate can be seen in table 1 below:

Table 1. Estimation Result

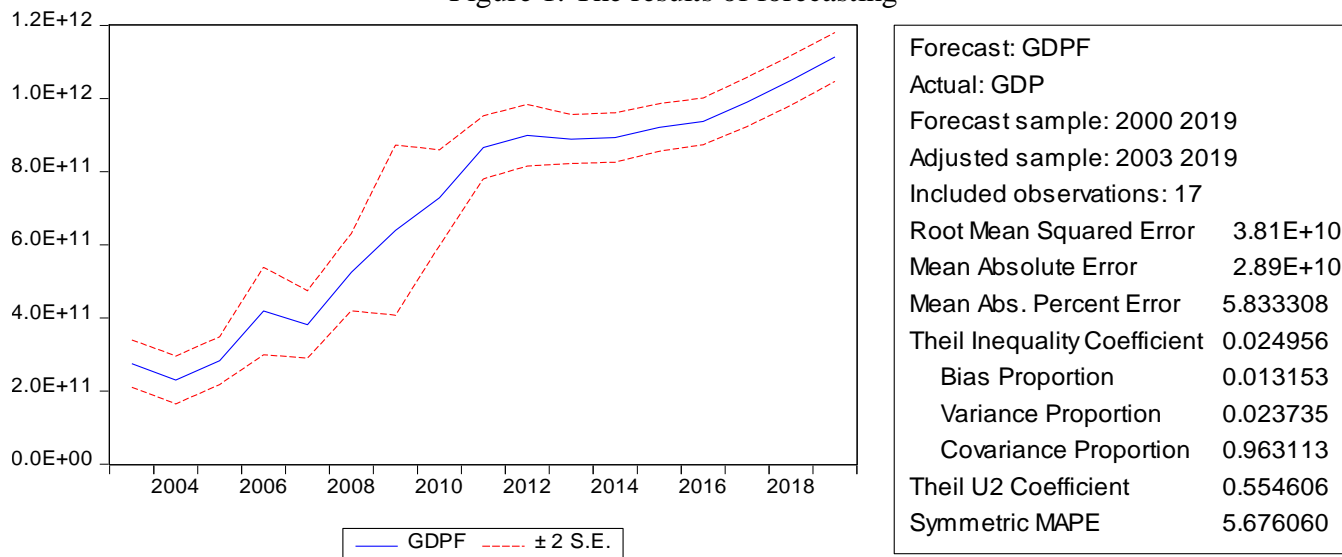
Variable	Coefficient	Std. Error	t-Statistic	Prob.
Threshold Variables (linear part)				
CONSUMPTION	-3.636798	1.88705	-1.92724	0.0828
INTERNET_USER	37613.65	7772.692	4.839205	0.0007
Threshold Variables (nonlinear part)				
CONSUMPTION	2.621923	0.838802	3.125796	0.0108
INTERNET_USER	-33174.37	6379.128	-5.200456	0.0004
Non-Threshold Variables				
C	1.31E+12	5.57E+11	2.35298	0.0404
Slopes				
SLOPE	1.28E-11	6.51E-12	1.971074	0.077
Thresholds				
THRESHOLD	3.75E+11	4.34E+10	8.653465	0
R-squared	0.992563	Mean dependent var		7.04E+11
Adjusted R-squared	0.9881	S.D. dependent var		3.03E+11
S.E. of regression	3.31E+10	Akaike info criterion		51.57528
Sum squared resid	1.09E+22	Schwarz criterion		51.91837
Log likelihood	-431.3899	Hannan-Quinn criter.		51.60939
F-statistic	222.4246	Durbin-Watson stat		2.110681
Prob(F-statistic)	0			

Source : Data world Bank Compiled

It can be seen that the relationship between GDP per capita and internet users and consumption is positive, where Internet users have a positive effect on the linear threshold and consumption on the non-linear level. This means that in Indonesia, the internet's push to production or the economy as indicated by GDP occurs on the supply side so that when supply is pushed to encourage companies to carry out promotions and the internet is one of the media for promotion and marketing communication so that from this push causes an increase in consumption which is indicated by a positive direction of consumption at the nonlinear side. When there is a consumption impulse where Indonesians are more accustomed to making direct purchases, there is a reversal of direction on the nonlinear side of internet users. Where when there is a boost of production, Indonesian society will be more absorbed in the production sector so that internet usage is reduced and it is indicated by a reversal of the direction of the

internal user from positive on the linear side to negative on the non-linear side. Internal push on the production side can be seen from the forecasting results in the following graph:

Figure 1. The results of forecasting



Source : Data world Bank Compiled

From the forecast results shown in Figure 1, it can be seen that the per capita GDP graph tends to increase from time to time, this indicates a technological boost in economic growth followed by a consumption boost as the estimation results.

Conclusions

Internet users as an indication of internet technology literacy have an impact on the Indonesian economy. However, the impetus for internet users in Indonesia occurred on the supply side, where there was an increase in production, including starting new internet-based businesses in Indonesia. Where the drive for consumption occurs, there is an action by corporations that use the internet as a promotional medium so that there is a consumption boost and encourages production so that this cycle occurs which has an impact on increasing economic growth from time to time due to the internet user factor.

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