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The impact of Covid-19 on electronic payment system: Lesson learned from Indonesian banking

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Abstract. The Indonesian economy suffered a recession due to the COVID-19 pandemic, the first case of which was announced on March 3, 2020. In response to this disaster, various economic sectors carried out digital transformation, including the banking sector. This research is a case study of how Indonesian banking responded to the pandemic through various central bank policies complemented by literature review on the impact of the pandemic on the banking sector in the world, as well as the development of electronic payment systems before, during and after the COVID-19 pandemic. The central bank issued several regulations of relaxation to reduce the impact of the pandemic on the banking sector. From the perspective of society, the pandemic has actually accelerated the use of digital payment systems in Indonesia. The most widely used electronic payment instrument is electronic money, followed by RTGS transactions with data periods ranging from 2016 to 2021. ATM/Debit card transactions show relatively no fluctuating increases, while credit card transactions show a decline during the same observation period. The trend of increasing electronic transactions is expected to continue after the pandemic and will become a necessity in the Indonesian economy onwards.

Keywords. Digital transformation, electronic payment system, digital banking, COVID-19

1. Introduction

One of the interesting research topics is digital transformation in the banking sector which is accelerated by the COVID-19 pandemic. The pandemic and the spread of the COVID-19 virus have had a massive impact on the banking industry at the global level (Xie, Chang, Hafeez and Lilina, 2021). Banking has been hit harder than most other sectors since the rapid global spread of COVID-19 sent financial markets into shock (Aldasoro, Fender, Hardy and Tarashev, 2020). The majority of governments immediately responded to manage economic and financial shocks by providing fiscal, monetary and macrofinancial stimulus (Rizwan, Ahmad, and Ashraf, 2020; Kongsamut, Monaghan and Riedweg, 2021). Despite the devastating worldwide human and economic tolls of the COVID-19 crisis, it has created some positive economic and financial surprises and opportunities for research (Berger and Kunt, 2021). Banks are faced with a constantly changing business context which encourages modernization and diversification of bank services by considering the evolving technological environment (Souiden and Ladhari, 2020).

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The COVID-19 pandemic has become one of the lessons and a driving factor for banks to implement digital transformation towards a digital banking concept that includes both front-end and back-end. Maximizing technology and information is an innovation carried out by banks as an effort to strengthen customer relationships and trust in the services provided in the digital banking era (Chairita and Suharnomo, 2022). The pandemic has caused a significant shift in online transactions that will affect individuals, organizations, communities and countries (Salam, Saha, Rahman and Mutsuddi, 2021). The development of electronic payment services in Indonesia during the COVID-19 pandemic is the main focus of this research. This journal article also describes the response of the central bank in overcoming the impact of the COVID-19 pandemic on the banking sector through various regulations regarding electronic payments.

2. Literature Review

2.1. Digital transformation in the banking sector

The World Economy Forum (2020) in its report entitled: Digital Transformation: Powering the Great Reset, stated that business change in the digital era includes seven dimensions, which are c new value creation; digital-at-the-core business models; intelligent and agile operating models; localized and resilient supply chains; real-time decisions at the edge; data-driven investment decisions; and augmented talent. Julie Sweet (2020) in the World Economy Forum (2020) stated that digital transformation is a powerful enabler of the great reset, to generate sustainable value and shared success. Verina and Titko (2019) summarized various definitions of digital transformation from various institutions, including: (1) Digital transformation is characterized by a fusion of advanced technologies and the integration of physical and digital systems, the predominance of innovative business models and new processes, and the creation of smart products and services (European Commission); (2) Digital transformation refers to the economic and societal effects of digitization and digitalization (OECD); and (3) Digital transformation is the use of technology to radically improve the performance or reach of an organization (Deloitte).

Taking the essence of the "Global Banking Outlook 2018: Pivoting toward an innovation-led strategy (EY, 2018), banks have to make a transition from regulation-based transformation to innovation-based change in order to successfully prevent the impact of declining financial performance and business continuity in the future, in particular with the presence of financial technology companies which have become the main phenomenon in the financial sector in the era of the industrial revolution 4.0. This new transformation process requires banks to take advantage of external ecosystems and be more digitally active. The World Economic Forum (2018) explains impacts of the three digital technology forces on financial services, namely: (a) payment disintermediation, (b) data aggregation and artificial intelligence, and (c) distributed ledger technology (including cryptocurrency). These forces will become the key elements in financial services in the future.

2.2. The Impact of the Pandemic on Banking Services

The COVID-19 crisis has had a major impact on all sectors of the economy (Schillig, 2021). Barua and Barua (2021) stated that the COVID-19 pandemic is damaging economies around the world, including financial markets and institutions in all possible dimensions. The COVID-19 pandemic started as a public health crisis and became an economic crisis as economies were shut down to reduce the spread of the virus (Berger and Kunt, 2021). The impact of the COVID-19 pandemic is felt beyond the health sector and exhibits severe economic consequences (Rizwan, Ahmad and Ashraf, 2020). Kongsamut, Monaghan and Riedweg (2021)

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stated that various country authorities have implemented wide-ranging monetary, fiscal, and financial regulatory measures to help contain the impact of the pandemic on households, corporates, and financial firms. For the banking industry, COVID-19 has actually become a catalyst that accelerates the maturity of banking digitalization (Chairita and Suharnomo, 2022).

The impact of the pandemic on banking can be seen from numerous aspects or perspectives in accordance with the role and function of banking as a financial intermediary which affects the circular flow of income which may affect the micro and macro economy. Several studies regarding the impact of the pandemic on banking or banking performance during the COVID-19 pandemic are summarized in Table 1.

Table 1. Studies regarding the impact of the COVID-19 pandemic on banking

Author	Research Context	Data & Method	Key findings/Summary
Chairita and Suharnomo (2022)	Performance of 90 conventional commercial banks in Indonesia	Secondary data at the bank level with regression analysis	Significant impacts in digital banking on ROE and operational expense ratios during the COVID-19 pandemic
Xie *et al.* (2021)	Macroeconomic analysis of eight developing countries in Asia, including Indonesia	Macroeconomic variables (GDP, ROA, Bank Size, COVID variables) with panel data economic approach	GDP and Banking Size are positively related to bank performance before and during the COVID-19 pandemic era.
Salam *et al.* (2021)	The use of mobile banking in Bangladesh during the COVID-19 Pandemic	Primary data from 251 mobile banking users analyzed using the Structural Equation Model	Mobile banking users face challenges in using mobile financial services despite their intention to do banking at home and ensure health security.
Rizwan *et al.* (2020)	Systemic risk analysis in the banking sector from the eight countries most affected by COVID-19 in Asia, Europe and America	Data from the 30 largest financial institutions for each country analyzed by arithmetic mean of value at risk (VaR) estimated using GPD, SGED & non-parametric stimulation	Significant increases in systemic risk among countries at the start of the pandemic and stagnation in the spread of COVID-19 increased during April 2020 except for China, which showed some recovery.
Alabbad and Schertler (2022)	Performance of Islamic and conventional banking in 23	Panel data from 331 banks in 23 countries using a linear probability	Changes in financial income and net profit of Islamic banks increase significantly more than conventional

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	countries during the pandemic	model (two-way fixed effects regression)	banks when the government implemented income support initiatives during the pandemic.
Barua and Barua (2021)	Bangladesh as a case study by examining the impact of the pandemic on the banking sector	Data from 30 commercial banks analyzed by state-designed stress testing models	All banks are likely to experience a decline in the value of their risk-weighted assets, capital adequacy ratio, and interest income at each bank and sectoral level; and larger banks are relatively more vulnerable.
Ali et al. (2021)	The research subjects are domestic bank account holders of digital banking services during COVID-19 in Pakistan	A total of 360 respondents using simple regression analysis with e-loyalty as the dependent variable and 8 independent variables	Customization, Contact Interactivity, Caring, Convenience and Character show a significant relationship with E-loyalty in the COVID situation.
Sang (2021)	The use of mobile banking in the context of a prolonged pandemic and constant lockdowns in many provinces and cities in Vietnam.	Primary data from 314 respondents were analyzed with the PLS-Structural Equation Model	Innovativeness, attitude; perceived risk, perceived ease of use, and perceived trust have the most significant impact on customer behavior in using mobile banking applications.
Almonifi et al. (2021)	The impact of COVID-19 pandemic on the performance of the Islamic banking sector in Saudi Arabia	Using secondary data to study one of the world's leading Islamic banks with descriptive statistical analysis before and during the pandemic	The Covid crisis had little impact on Saudi Arabia's Islamic banking system, especially the bank under investigation, and that Islamic banks were able to get out the financial and economic risks associated with the crisis.
Korzeb et al. (2021)	Assess the resilience of banks in Portugal to the potential impact of the COVID-19 pandemic	Data from 19 banks were analyzed using linear ordering methods	The resilience of Portuguese banks was uneven among each bank.

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Sudarsono et al. (2020)	Adoption of Internet Banking by customers of Islamic banks and conventional banks in Indonesia	Involved 213 respondents for Islamic banks and 410 respondents for conventional banks from 25 provinces in Indonesia which were analyzed using the PLS Structural Equation Model	During the COVID-19 pandemic, Attitude, Perceived Usefulness, Subjective Norm, and Trust from customers affected the Intention to Adopt Internet Banking in Islamic banks and conventional banks.
Wardhani et al. (2021)	The performance of 23 banks in Indonesia before and after the pandemic	The 2019-2020 data period from 24 banks were analyzed using the Wilcoxon signed-rank test	The financial performance of the banking sector in Indonesia did not experience any difference before and during COVID-19 using performance variables including: Net Profit Margin, Total Asset Turnover, Financial Leverage Multiplier, Return on assets and Return On Equity
Kerroucha et al. (2022)	The performance of 15 banks in Jordan listed on the capital market	The data period is 2018-2020 with 8 financial ratios tested by multilinear regression analysis	Financial indicators experienced a decline in value during 2020 due to the emergence of the coronavirus pandemic

3. Research Method

This research uses two approaches, which are the qualitative method and quantitative method. Qualitative approach is used to summarize digital banking policies and regulations in Indonesia as well as developments in Indonesian banking before and during the COVID-19 pandemic. Furthermore, the specific response of the banking authorities in Indonesia to the pandemic disaster is also analyzed with the aim to reduce the impact of the pandemic on the decline in Indonesian banking performance, especially protection for banking debtors whose business performance or income has decreased due to the COVID-19 pandemic.

Quantitative method is used to analyze the development of electronic transactions before and during the pandemic. The types of transactions studied are transactions using Card Payment Instruments, Real Time Gross Settlement Transactions, and electronic money. The data period consists of two periods, namely before the pandemic between 2016 and early 2020, and the period during the pandemic, which is from March 2020 to the end of 2021. The transaction time unit is per month with data sources taken from Bank Indonesia and the Financial Services Authority. The descriptive statistical technique used is time series data.

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4. Results and Discussion

4.1. Digital banking regulations in Indonesia

The pandemic has prompted businesses, including the financial and banking industries, to reorient their payment operations and their interactions with customers. Small and medium enterprises (SMEs) are increasingly aware of the payment solutions available to them and are motivated to encourage the use of payment technology according to their needs and including demands from customers, which from the perspective of community development, have entered the era of society 5.0. Numerous payment system providers have emerged in Indonesia to meet payment needs during and after the pandemic. These service providers compete to offer a variety of services that are fast, easy, safe, for example by implementing QR Code technology, a quick service with the jargon: "tap to pay," or link-based payment options in order for the customers or customers not to require special efforts which are specifically technically complex or take a long time to do transactions.

The Indonesian economy continued to contract in the first quarter of 2021 with GDP shrinking by 0.7% year on year (YoY), lower than the 2.2% YoY contraction recorded in 2020. In the first quarter of 2021, Indonesia's economic contraction eased and the handling of COVID-19 improve, with at least 13% of the targeted population receiving their first vaccination by the third week of June (Siregar, Gunawan and Saputro, 2021). The governments and central banks of the most affected countries have acted swiftly and introduced large fiscal and monetary stimulus and rescue packages (Schillig, 2021). Kongsamut, Monaghan and Riedweg (2021) stated that regulatory and supervisory policies will play an important role in maintaining financial stability and credit discipline and ensuring that the flow of credit to the real economy is sustainable. The Indonesian government, through the Central Bank and the Financial Services Authority, has taken several policies to deal with the impact of the COVID-19 pandemic on the financial and banking sector.

The Indonesian Financial Services Authority or OJK has released the Blueprint of Banking Digital Transformation for 2021. This document is used as a direction or goal in accelerating digital transformation in the banking industry thus the industry possesses resilience, competitiveness, and contributes to the development of banking as well as the national economy. The blueprint is also OJK's effort to encourage banking digital transformation. Two other important policies that form the basis for preparing the blueprint are the Indonesian Financial Services Sector Master Plan 2021-2025 and the Roadmap of Indonesian Banking Development 2020-2025. This set of policies are expected to be able to mobilize banking development in the digital era through the implementation of information technology governance and risk management.

This blueprint focuses on five elements of developing banking digitalization which include: (1) Data which includes data protection, data transfer, and data governance; (2) Technology which includes information technology governance, information technology architecture, and information technology adoption principles; (3) Information technology risk management which includes cybersecurity of commercial banks and outsourcing; (4) Collaboration which includes platform sharing, bank cooperation in digital ecosystems; and (5) Institutional arrangements which include funding support, leadership, organizational design, human resource talent, and culture.

The blueprint also sets out three basic characteristics. First, adhering to a principle-based concept, namely providing rules in the form of guiding principles to provide space for the industry to develop. Second, more facilitative approach. The blueprint is arranged to facilitate and encourage digital innovation without compromising the precautionary principle.

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Third, a living document which shows that the blueprint is dynamic and will continue to be updated to accommodate various developments in banking.

The definition of a digital bank according to the Financial Services Authority is listed in the Financial Services Authority Regulation Number 12/POJK.03/2021 concerning Commercial Banks. Digital Bank is an Indonesian Legal Entity Bank that provides and carries out business activities primarily through electronic channels without a physical office, other than the head office (KP) or using limited physical offices. The definition of digital banking services was previously stated in the POJK, which is Digital Banking Services are Electronic Banking Services that are developed by optimizing the utilization of customer data in order to serve customers more quickly, easily and according to customer needs (customer experience), and can be carried out completely independently by the customer, taking into account the security aspect.

Digital banking in Indonesia has become the object of inspection and supervision by regulators. Its regulation has also been issued, which is the Financial Services Authority Regulation Number 12/POJK.03/2018 regarding implementation of digital banking services by commercial banks. Electronic banking services can optimize the utilization of customer data in order to serve customers more quickly, easily and according to needs, especially customer experience, and can be carried out completely independently by customers, taking into account security aspects. Until early 2022, there were already six digital banks in Indonesia that had received permits from the Financial Services Authority. The establishment of Digital Banks in the form of commercial banks is predicted to increase in line with developments in the digital economy and finance as well as the mastery of digital technology itself by the banking sector, including developments in the needs of society in the future.

4.2. Impact of the COVID-19 Pandemic on e-payments

The first electronic payment systems were Automated Teller Machines (ATM) and debit cards. ATMs are electromechanical devices that allow authorized users, usually using machine-readable plastic cards, to withdraw cash from their accounts and/or access other services, such as checking balances, transferring funds, or receiving deposits. According to Bank Indonesia Regulations, which is PBI APMK No.11/11/PBI/2009 as amended by PBI No.14/2/PBI/2012 on implementation of card-based payment instrument activities. An ATM card is an APMK which may be used for cash withdrawals and/or fund transfers in which the obligations of the card holder must be immediately fulfilled by directly deducting the deposits of the card holder with a Bank or Non-Bank Institution authorized to gather fund based on the applicable laws and regulations.

ATM cards are generally also debit cards that can be used in the same card. However, there are also debit cards that are not/have not been equipped as an ATM card. According to regulations regarding CBPI from Bank Indonesia, a debit card is an APMK, which may be used for payment of obligations arising from an economic activity, including purchases, in which the obligations of a card holder must be immediately fulfilled by directly deducting the deposits of a card holder with a Bank or Non-Bank Institution authorized to gather fund based on the applicable laws and regulations. The development of ATM/Debit card transaction values between 2016 and 2021 is presented in Figure 1.

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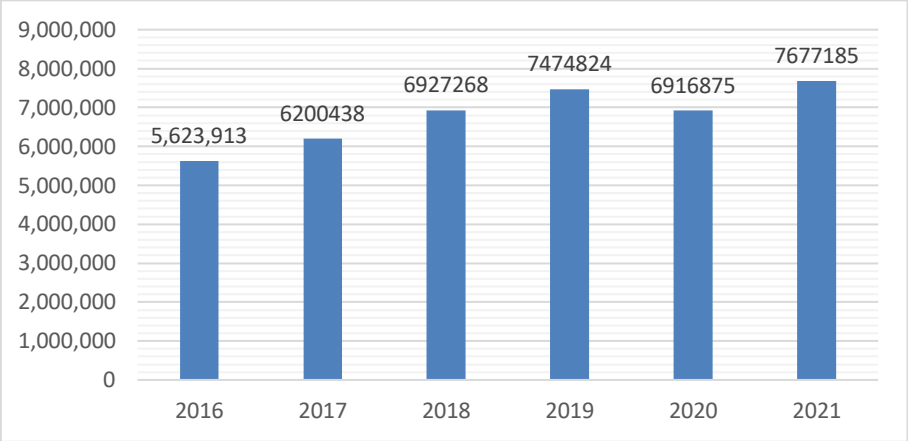

Figure 1. Development of ATM/Debit Card transaction values in billions of Rupiah (Source: Bank Indonesia, 2022)

Another means of card payment is a credit card. Credit cards offer significant advantages over all forms of money: they are pocket-sized, easy to carry around, relatively safe, and have no intrinsic value. Credit cards also give time to pay bills with the terms of the fees set by the bank. Referring to regulations from Bank Indonesia, namely PBI APMK No.11/11/PBI/2009 as amended by PBI No.14/2/PBI/2012 concerning the implementation of payment instrument activities using cards, credit cards may be used for payment of liabilities arising from an economic activity, including purchases and/or cash advances, in which payment obligation of a card holder must be first fulfilled by an acquirer or issuer, and the card holder is required to subsequently make payment in the agreed time, whether in whole (charge card) or in installments. The development of credit card transaction values from 2016 to 2021 can be seen in Figure 2.

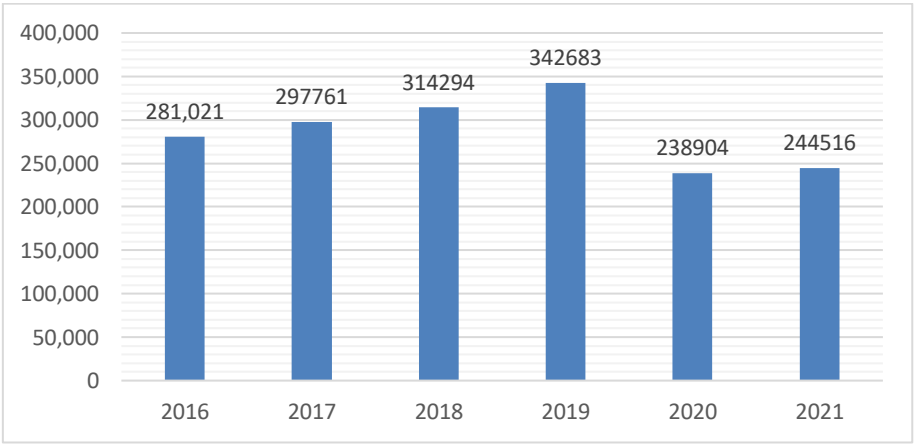

Figure 2. The development of credit card transaction values in billions of Rupiah (Source: Bank Indonesia, 2022)

An interesting phenomenon is that credit card transactions have decreased during the pandemic, from 342.7 trillion Rupiah in 2019 to 238.9 trillion in 2020 and 244.5 trillion rupiah in 2021. This condition shows that Indonesian people do not take advantage of credit card facilities from banks in making payments or shopping. There are two factors that cause the decrease. First, Indonesian people are more aware of the loan facility because of the limited

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capacity of its repayment. Large-scale social restrictions during the early pandemic in Indonesia appear to be one of the contributing factors because people could not shop at outlets that provided payment by credit card. Second, people are starting to switch to other types of payment, such as mobile banking or electronic money, which in general are not affected by social violence during the pandemic in their use. Online transactions and electronic money are the main choices for Indonesian people in making transactions.

The last means of payment using the card is electronic money. Electronic money has experienced significant development in Indonesia from year to year and experienced extraordinary transaction growth during the Covid19 pandemic. The growth of electronic money is driven by the advantages or characteristics of electronic money, that it is intended for micro-payments and fast and massive transaction processing. Electronic money was specifically or first regulated by Bank Indonesia in 2009 by issuing Bank Indonesia Regulation Number 11/12/PBI/2009 concerning Electronic Money. This regulation has been amended twice, which are Bank Indonesia Regulation Number 16/8/PBI/2014 and Bank Indonesia Regulation Number 18/17/PBI/2016. These three Bank Indonesia regulations are no longer valid and have been replaced by Bank Indonesia Regulation Number 20/6/PBI/2018 concerning Electronic Money.

Referring to Bank Indonesia regulations, the definition of electronic money is a payment instrument that fulfills the following elements: (a) issued on the basis of the value of money paid in advance to the issuer; (b) money values are stored electronically in a media server or chip; and (c) the value of electronic money managed by the issuer is not a deposit as referred to in the Act that regulates banking. Electronic Money Value is the value of money that is stored electronically in a media server or chip that can be transferred for the purposes of payment transactions and/or fund transfers. Electronic Money is divided into (a) closed loop, Electronic Money which can only be used as a payment instrument to Goods and/or Service Providers who are Issuers of said Electronic Money; and (b) open loop, Electronic Money that can be used as a payment instrument to Goods and/or Service Providers who are not Issuers of said Electronic Money.

Electronic Money can be distinguished based on: (a) Electronic Money Value storage media in the form of: (1) server-based, which is Electronic Money with server storage media; and (2) chip-based, Electronic Money with chip storage media; and (b) recording of User identity data in the form of: (1) unregistered, which is Electronic Money whose User identity data is not registered and not recorded at the Issuer; and (2) registered, Electronic Money whose User identity data is registered and recorded at the Issuer. Transaction data using electronic money between 2016 and 2021 are presented in Figure 3.

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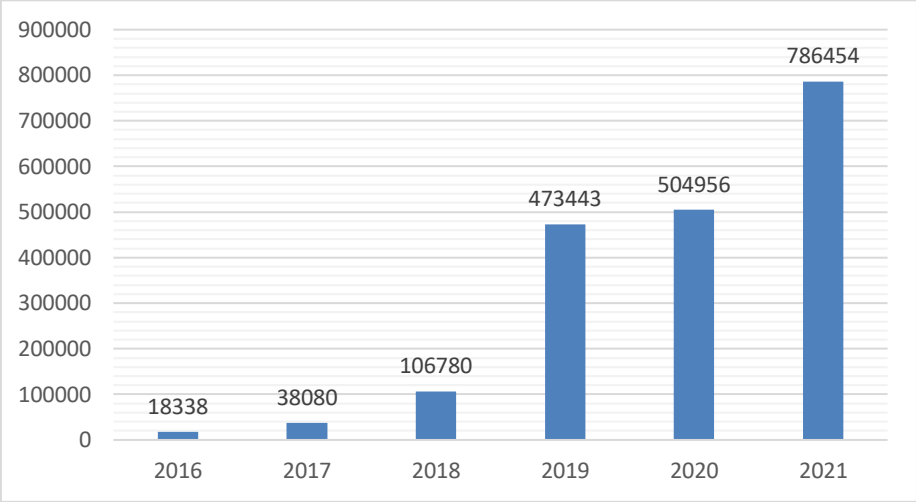

Figure 3. The development of electronic money transaction values in billions of Rupiah (Source: Bank Indonesia, 2022)

Electronic money is one of the non-cash instruments that has steadily increased both in terms of volume and nominal transactions per year. The means of payment using the card whose usage has increased the most drastically in Indonesia is electronic money, especially during the Covid19 pandemic. A very drastic increase in transactions occurred in 2019 with a transaction value of IDR 473.4 trillion, an increase of 342.4% compared to the previous year. The value of electronic money transactions has continued to increase during the pandemic with a transaction value in 2021 reaching IDR 786.5 trillion.

The means of payment using the card are basically used by bank customers for retail or individual transactions according to their daily needs. These payments ultimately impact the interbank payment system for the settlement of transactions at the aggregate level. These interbank payments require a special electronic payment system. Bank Indonesia (BI) introduces to the public a payment settlement process that is made per transaction and is real-time in nature, that is Real Time Gross Settlement (RTGS). Currently, the BI-RTGS system application is running in all Bank Indonesia Offices (KBI) throughout Indonesia. The application for BI-RTGS began on 17th November 2000. BI needed three years to develop and test the system, which was originally owned only by the G-10 countries. Indonesia was one of the countries in Asia that was at the forefront of using systems that were technologically advanced and complex at that time. The BI-RTGS system is designed to ensure that final settlements can be carried out in gross, real-time, final, and irrevocable. The development of RTGS transaction values from 2016 to 2021 can be seen in Figure 4.

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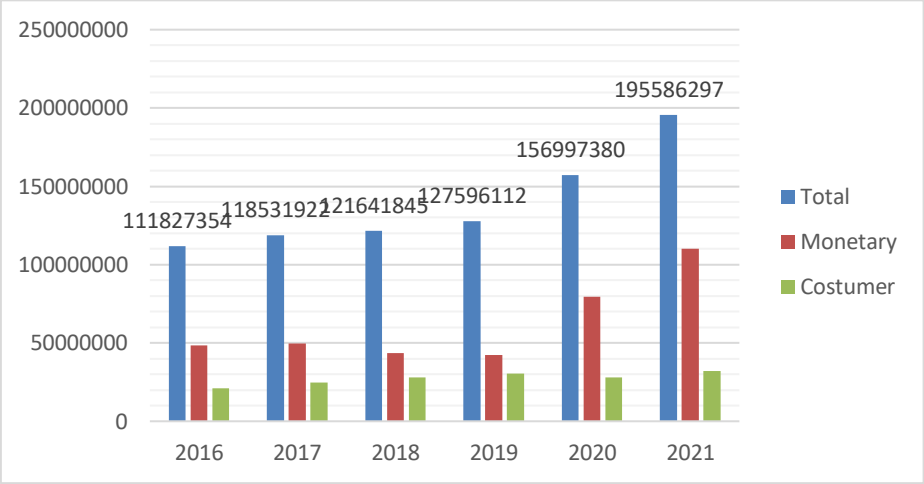

Figure 4. RTGS transactions in billions of Rupiahs
(Source: Bank Indonesia, 2022)

In the period 2019 to 2022, RTGS transactions show an increase at rates of 23.04% and 24.58% per year. The biggest contributor to the increase in RTGS transactions in terms of transaction types was monetary management. RTGS transactions for monetary management increased dramatically from IDR 42119 trillion in 2019 to IDR 110265 trillion in 2021 or an increase of 161.79%. RTGS transactions carried out by customers increased from 30609.9 trillion Rupiah in 2019 to 32167.2 trillion Rupiah in 2021 or an increase of 5.09%. These developments show that RTGS is the backbone of interbank transactions, including supporting monetary management through fund settlement from monetary operations/open market operations conducted by Bank Indonesia.

5. Conclusion

The use of information and communication technology in national banking is relatively more advanced compared to other sectors. Digital banking is a business model that can be held by commercial banks in Indonesia. Bank operations fully apply digital technology to all business processes and banking services. It is enough for a bank to have only one office, yet customers can receive full services without having to visit the bank, or through various communication channels. Digital banks are a strategic choice if you look at the development of digital technology in the era of society 5.0 and the increasing digital literacy of the community. Digital banking is a necessity in the future, or it can be said, digital banking is the future of banking.

A number of digital banking innovations have emerged in Indonesia in the past five years and have accelerated during the COVID-19 pandemic. Most of these innovations will modify the service process at the front end which is directly connected to consumers so as to enhance the bank's customer experience and directly offer various bank services. The development of digital banks will reduce the use of cash and make the payment process more visible to bank customers. This also allows banks and merchants to work together to process payments or exchange other data in the digital ecosystem. The success of these innovative payment solutions means that customers do not have a compelling reason to switch from financial institutions and bank services because they perceive that the previous payment system has now been transformed according to their needs.

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The value of digital transactions in Indonesia during the period 2016 to 2021 tends to increase, especially during the co-19 pandemic. The percentage increase in electronic money transactions is the highest among electronic payment systems in Indonesia, followed by RTGS transactions. The development of credit card transactions during the pandemic actually decreased, while ATM/Debit card transactions did not show extreme fluctuations such as electronic money and RTGS. The development of these transactions shows that the covid19 pandemic accelerated digital transactions in Indonesia. This phenomenon will continue after the pandemic because Indonesian banking has also carried out digital transformation which is supported by a series of policies or regulations from Bank Indonesia.

References

[1] Alabbad, A. & Schertler, A. (2022). COVID-19 and bank performance in dual-banking countries: an empirical analysis. Journal of Business Economics (2022), 92, pp. 1511-1557.

[2] Aldasoro, I., Fender, I., Hardy, B. & Tarashev, N.. (2020). Effects of COVID-19 on the banking sector: the market's assessment. BIS Bulletin, 7 May 2020, pp.1-7.

[3] Ali, M., Rashid, H.A., Ali, M.H., Usman, M. & Sohail, A.. (2021). Assessment of Customers E-loyalty in digital banking During COVID-19: An application of 8C model. International Journal of Disaster Recovery and Business Continuity, Vol. 12, No. 1, (2021), pp. 1054-1062.

[4] Almonifi, Y.S., Rehman, S.U., & Gulzar, R. (2021). The COVID-19 Pandemic Effect on the Performance of the Islamic Banking Sector in KSA: An Empirical Study of Al Rajhi Bank. International Journal of Management (IJM), Volume. 12, No. 4, April 2021, pp.533-547.

[5] Bank Indonesia. (2022). Indonesian payment systems and financial market infrastructure statistics, November 2022.

[6] Barua, B. & Barua, S. (2021). COVID-19 implications for banks: evidence from an emerging economy. SN Business & Ecomomics, 1, 19, pp.1-28.

[7] Berger, A.N. & Kunt, A.D. (2021). Banking research in the time of COVID-19. Journal of Financial Stability 57 (2021), pp. 1-20.

[8] Chairita, S.U.N & Suharnomo. (2022). The Effect of Digital Banking on Banking Performance during the COVID-19 Pandemic. Budapest International Research and Critics Institute-Journal (BIRCI-Journal), Vol.5, No. 2, May 2022, pp. 13907-13914.

[9] EY. (2018). Global banking outlook 2018 Pivoting toward an innovation-led strategy. https://assets.ey.com/content/dam/ey-sites/ey-com/en_gl/topics/digital/ey-global-banking-outlook-2018.pdf dowloaded in October 23, 2022.

[10] Kerroucha, F.Z., Abbassia, R., & Zohra, D.F. (2021). The Effects of Coronavirus on The Profitability of the Banks Operating in Jordan: An Empirical study. Technium Social Science Journal, vol.33, pp. 293-308.

[11] Kongsamut, P., Monaghan D., & Riedweg, L. (2021). Unwinding COVID-19 Policy Interventions for Banking Systems. IMF Monetary and Capital Markets: Special Series on COVID-19, March 10, 2021, pp. 1-19.

[12] Korzeb, Z., Niedziółka P., & Silva, A. (2021). Impact of the COVID-19 crisis on the Portuguese banking system. Linear ordering method. Estudios Gerenciales vol. 37, no. 159, 2021, pp. 226-241.

[13] Indonesian Financial Services Authority. (2021). Blueprint of Banking Digital Transformation. Department of Banking Research and Regulation, Financial Services Authority.
[14] Rizwan, M.S., Ahmad, G., & Ashraf, D. (2020). Systemic risk: The impact of COVID-19. Finance Research Letters, 36 (2020), pp. 1-7.
[15] Salam, M.A., Saha, T., Rahman, M.H., & Mutsuddi, P.. (2021). Challenges to Mobile Banking Adaptation in COVID-19 Pandemic. Journal of Business and Management Sciences, 2021, Vol. 9, No. 3, pp. 101-113.
[16] Sang, Ng.M. (2021). Critical Factors Affecting Consumer Intention of Using Mobile Banking Applications During COVID-19 Pandemic: An Empirical Study from Vietnam. Journal of Asian Finance, Economics and Business Vol 8 No 11 (2021), pp. 0157–0167.
[17] Schillig. (2021). Banking and Finance after COVID-19. King's Law Journal, 32:1, pp. 49-59.
[18] Siregar, R.Y., Gunawan, A.H., & Saputro, A.N. (2021). Impact of the COVID-19 Shock on Banking and Corporate Sector Vulnerabilities in Indonesia, Bulletin of Indonesian Economic Studies, 57:2, pp. 147-173.
[19] Souiden, N. & Ladhari, R. (2020). Mobile banking adoption: a systematic review. International Journal of Bank Marketing, Vol. 39 No. 2, pp. 214-241.
[20] Sudarsono, H., Nugrohowati, R.N.I & Tumewang, Y.K. (2020). The Effect of COVID-19 Pandemic on the Adoption of Internet Banking in Indonesia: Islamic Bank and Conventional Bank. Journal of Asian Finance, Economics and Business Vol 7 No 11 (2020), pp. 789–800.
[21] Verina, N. & Titko, J. (2019). Digital Transformation: Conceptual Framework. International Scientific Conference on Contemporary Issues In Business, Management And Economics Engineering, 9–10 May 2019, Vilnius, Lithuania.
[22] Wardhani, R.S., Rosalina, E., Elvany, R., & Awaluddin, M. (2021). Banking financial performance during COVID-19. Technium Social Science Journal, vol.19, pp. 302-310.
[23] World Economic Forum. (2018). The Global Financial and Monetary System in 2030. Global Future Council on Financial and Monetary Systems, May 2018.
[24] World Economic Forum. (2020). Digital Transformation: Powering the Great Reset. July 2020.
[25] Xiea, H., Chang, H.L., Hafeez, M. & Saliba, C. (2021). COVID-19 post-implications for sustainable banking sector performance: evidence from emerging Asian economies. Economic research-ekonomska istraživanja, pp. 1-16.