

Modernization System Taxation in the Midst of the Digital Economy Wave : A Study Literature

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Abstract

The growth of the digital economy in Indonesia, driven by technological developments and widespread internet access, has changed the transaction landscape from traditional to digital methods. In 2016, the value of online transactions reached IDR 75 trillion and is expected to increase to IDR 144 trillion in the next few years, with the e-commerce sector growing rapidly and expected to reach IDR 600 trillion in 2024. This change has given rise to new challenges in the taxation system, especially in addressing cross-border taxes and tax complexity on digital platforms. This article uses a literature review approach to evaluate the evolution of the tax collection system from traditional methods to a digital system. This study identifies that the paper-based taxation system, with manual processes and prone to errors, has been replaced by increased efficiency and transparency of digital technology. The implementation of e-filing and e-payment systems, as well as advanced technologies such as big data, artificial intelligence (AI), and blockchain, have improved tax administration. These technologies facilitate more data collection and analysis, improve detection of non-compliance, and provide a secure system for digital transactions. However, this evolution also brings challenges such as cross-border taxes and complex digital transaction management. The definition of permanent establishment (PE) should be expanded to include digital entities, and new taxes such as equalization levies are needed to address cross-border tax issues. Responsive and innovative tax reforms are essential to address these challenges and ensure sustainable income taxation in the digital age. International collaboration and global harmonization of tax policies are key to addressing tax issues arising from the digital economy.

1. Introduction

The growth of the digital economy in Indonesia is driven by the development of technology and increasingly widespread internet access. Transaction activities that for the past few decades have tended to use traditional or "off-site" methods have now shifted to "on-site" digital methods. The development of the online market in Indonesia began to spread in the early 2000s, when digital devices such as gadgets became increasingly popular with the Indonesian people. This progress allows people to conduct online transactions more easily and efficiently, thus supporting a significant increase in the growth of the digital economy (Digital Economy Development Institute) of Indonesian Banking, 2020).

Transactions in Indonesia have shown extraordinary normal growth. In 2016, the

value of online transactions reached IDR 75 trillion, and is expected to increase to IDR 144 trillion in the next few years. Research shows that the growth of online transactions has not only increased in terms of nominal value, but has also had a significant impact on Indonesia's overall economic growth (Ministry of Communication and Information, 2016). Data from the Ministry of Communication and Information shows that in 2014, online transactions had reached IDR. 150 trillion, which shows a continuous increase and has a major impact on the economic sector (Ministry of Communication and Information, 2014).

The development of the digital economy has also accelerated the growth of the e-commerce industry in Indonesia. The online market continues to experience rapid growth, driven by technological advances, better internet access areas, and changes in consumer

behavior. The government is targeting digital economic growth of 3.17% to 4.66% and e-commerce transaction value to reach IDR 600 trillion in 2024. This shows that the government and industry are actively supporting and developing digital infrastructure to accelerate the growth of the digital economy (Alfia Utami & Nasution, 2020).

With the development of the digital economy, new complexities have emerged in the taxation system that require adjustment. The digital economy allows cross-border transactions to be carried out quickly and easily, which brings new challenges to the taxation system, especially in the context of cross-border taxes. An adaptive and flexible taxation system is needed to address these challenges by expanding the definition of "Permanent Establishment" (PE) and developing new taxes such as *equalization levy*. This innovation is needed to increase efficiency in cross-border tax management and prevent tax avoidance (Development Institution) Perbankan Indonesia, 2020; Ortax, 2020).

The highly dynamic digital economic structure can no longer be addressed with a conventional legal approach. Therefore, the taxation system must be able to adapt to technological developments and new business models. The integration of digital technology into the taxation system such as electronic reporting, payments, audits, and tax compliance is an important step to create greater transparency and efficiency in tax management in the digital era (Expert Tax Indonesia, 2023).

The digital economy not only offers opportunities but also presents complex tax challenges. The two main challenges in digital taxation are cross-border taxes and taxes on economic platforms. Digital transactions that can be carried out without geographical limitations give rise to cross-border taxation issues, which require refinement BUT the definition and application of special taxes to accommodate digital economic activities such as *equalization levy*. This is needed to address increasingly complex tax avoidance in the

digital era (Expert Tax Indonesia, 2020; Ortax, 2020).

In addition, platform-based economies such as e-commerce and other digital services require a more flexible tax approach. Rigid tax regulations are no longer relevant to face new challenges arising from the digital economy. Therefore, tax reforms involving tax collection on digital platforms and the application of technologies such as big data, artificial intelligence, and blockchain are needed to increase efficiency and transparency in tax management (Expert Tax Indonesia, 2023).

2. Literature Review

Digital Economy The digital economy refers to economic activities that focus on the use of digital technologies, including the internet, mobile devices, and artificial intelligence, to increase efficiency and market coverage. According to Blog Door (2022), the digital economy includes aspects such as hyperconnectivity, digitalization, and virtualization, which enable companies and individuals to connect and transact globally without geographical limitations. **Transformation** This has brought significant changes in business operation methods and how consumers interact with products and services (Door Blog, 2022).

The rapid growth of the digital economy in Indonesia, which started to occur in the early 2000s, was driven by the adoption of technology and improved internet access. The Ministry of Communication and Information (2014) noted that online transactions in Indonesia reached Rp. 150 trillion in 2014, with mark ongoing transactions increase in a number of next year . **Development** This shows the impact of the big digital economy towards growth of the country's economy and highlights the importance of adaptation system taxation To follow this development (Ministry of Communication and Information, 2014).

System Taxation System taxation is framework laws and administration that regulate collection tax from individuals and entities For to fund government activities.

According to Ortax (2020), traditional taxation systems often rely on manual and data-based methods paper, which can eat time and increase the risk of error. Changes in technology have pushed the taxation system to adopt a more efficient approach, such as digitalization of reporting and payment processes, to increase accuracy and efficiency of taxation administration (Ortax, 2020).

Along with the development of the digital economy, taxation systems must adapt to handle new challenges emerging from cross-border transactions and digital business models. Development Institute Indonesian Banking (2020) highlights the need for innovation in regulatory taxation, including development of new taxes such as equalization levies, to overcome complex taxation problems and ensure greater compliance both in the digital era (Institute for Development of Indonesian Banking, 2020).

E-Filing E-filing is an electronic tax reporting system that allows taxpayers to submit their tax reports online. The Ministry of Finance (2018) noted that the e-filing system has become an important step in modernizing taxation administration, reducing the need for physical archiving and simplifying the reporting process. The implementation of e-filing helps increase tax administration efficiency by reducing the burden of manual work and minimizing the possibility of error (Ministry of Finance, 2018).

The e-filing system also improves accessibility for mandatory taxes by allowing them to report tax from any location and at any time flexibly. This is leading to compliance with higher taxes and reducing the risk of delays or errors in reporting. Innovation This plays an important role in supporting transparency and effectiveness of taxation systems in the digital era (Ministry of Finance, 2018).

E-Payment E-payment refers to the electronic payment system that allows must tax For do payment tax online . According to Expert Tax Indonesia (2023), e-payment offers advantages such as speed transactions, reduced risk errors, and convenience for mandatory

taxes. This system facilitates a more seamless payment process efficiently with reduced need for physical transactions and manual processing (Expert Tax Indonesia, 2023).

The implementation of e-payment also supports better financial management and reduces operational costs for government. By adopting electronic payment technology, tax authorities can increase tax compliance and reduce the risk of payment delays. This system became an important component in modernizing taxation administration and ensuring a more efficient process, smooth and accurate (Expert Tax Indonesia, 2023).

Big Data Big data refers to large and complex data sets that require special technology to collect, store, and analyze information. According to Expert Tax Indonesia (2023), big data enables tax authorities to identify patterns and trends in behavior must tax with more accuracy. Big data analysis can increase ability to detect potential avoidance taxes and optimize audit strategies (Expert Tax Indonesia, 2023).

The use of big data in taxation systems also supports transparency and compliance by providing more deep insight about Transaction activity. This technology helps in real-time monitoring and enables tax authorities to respond to taxation problems in a more effective way. Big data integration with digital taxation system contributes to modernization of tax administration (Expert Tax Indonesia, 2023).

Artificial Intelligence (AI) Intelligence artificial intelligence (AI) refers to enabling machine technology to learn and create decisions similar to the abilities of humans. According to Expert Tax Indonesia (2023), AI is used in taxation systems to detect anomalies in tax reports and predict behavior, compliance must be tax. Technology This helps in increasing audit accuracy and efficiency as well as facilitating a more efficient sophisticated monitoring process (Expert Tax Indonesia, 2023).

AI also plays an important role in developing a more responsive and adaptive taxation system. By utilizing sophisticated algorithms, AI can identify potential taxation problems more early and provide recommendations for improvements. Implementation of AI in administration taxation supports creation of more efficient and effective systems in the digital era (Expert Tax Indonesia, 2023).

Blockchain is a large distributed book technology which provides a safe and secure system that can be changed. For taking notes transactions . According to Expert Tax Indonesia (2023), blockchain improves transparency and security in digital transactions with provided verified and unverified records can be manipulated . Technology This can be used to track and verify transaction tax in real-time (Expert Tax Indonesia, 2023).

Blockchain implementation in taxation system also helps in reducing risk of fraud and increasing administration efficiency. By providing A transparent and decentralized system, blockchain enables tax authority To monitor transactions in a way more effective and ensure greater compliance good all over chain transactions (Expert Tax Indonesia, 2023).

Cross Border Tax Cross-border tax refers to taxes imposed on transactions that cross national borders. Ortax (2020) explains that cross-border tax has become a major challenge in the era of the digital economy because transactions can be done without geographical limitations. This is the cause of the need to expand the definition of fixed business forms (BUT) and develop new regulations to overcome cross-border taxes (Ortax, 2020).

To overcome this challenge, it is necessary to exist harmonization policy taxation at the international level and develop a more effective tax collection mechanism. Collaboration between countries to increase transparency and exchange very important information To ensure that taxes can be collected fairly and efficiently (Ortax, 2020).

Equalization Levy Equalization levy is a tax imposed on digital companies that earn income from local markets without their own physical presence in the country. Development Institution Indonesian Banking (2020) explains that equalization levy was designed to overcome tax inequality between traditional companies and digital companies. Tax This aims to ensure that digital companies contribute in a fair way to the country's income tax they operate (Institution for Development of Indonesian Banking, 2020).

The application of levy equalization requires adjustment in policy taxation For covers digital entities and cross-border transactions. This is supporting government efforts to overcome avoidance taxes and ensure greater compliance both in the digital economy era (Institution for Development of Indonesian Banking, 2020).

3. Method

Research Design Study This uses a literature review approach to study the evolution of tax collection systems in digital economy. Literature review chosen as method main Because study This aims For understanding concepts, challenges, and proposed solutions in existing literature, related to system taxation in the digital economy era.

Data source Primary data sources in study This originates from previous relevant studies academic journals, books, and official reports from government and related institutions. Secondary data This is collected from various academic platforms such as Google Scholar, ScienceDirect, as well as official source information from government institutions such as the Ministry of Finance and the National Tax Agency.

Criteria Election Literature Election literature focuses on related studies directly with digital economy and taxation. Selected literature must fulfill a number of criteria, namely: (1) relevance with Topic taxation in digital economy, (2) publication in 10 years final

To ensure the data is up to date, and (3) available in trusted sources such as indexed journals, textbooks, and government reports. Besides that, literature containing discussions about challenges cross-border digital taxation, international tax regulations, and solutions policy digital taxation is also prioritized.

Data Analysis Techniques Data collected is analyzed using thematic analysis method. Approach This used To identify trends, challenges, and solutions discussed in literature related to taxation systems in digital economy. Analysis process thematic covering stage data encoding to find patterns or themes frequently used keys appear, such as tax cross border, development technology taxation, as well as government policy in response to changing digital economy.

4. Results and Discussion

4.1 Evolution of the Voting Tax System

Evolution of the taxation system from traditional method to digital system is one of the most significant developments in the era of the digital economy. In the beginning, the traditional Lots taxation system relies on manual processes based on paper, where it is mandatory tax must be filled in the form in a physical way and send it directly to the tax authority office. This process often eats time, requires Lots of source power, and risks high to error human beings, who can slow down administration taxation as well as create obstacles in implementing tax compliance (Development Institution) Indonesian Banking, 2020).

Along with rapid development technology, the taxation system is starting to switch to a digital approach. Technology information has allowed authority taxes in many countries, including Indonesia, to automate Lots previous function done manually. One of the important milestones in transformation This is the introduction of the *e-filing* system, where it is mandatory tax can submit their tax reports online. This is not only makes the process easier for must taxes, but also increases the efficiency of tax authority in

processing millions of document tax every year (Ministry of Finance, 2018).

More next, advanced technology such as big data, artificial intelligence, and blockchain are now more applied in management taxation to overcome challenges in the digital era. Big data enables transaction data collection and analysis in real-time, so that helps tax authorities in identifying potential tax avoidance with more accuracy. AI is used to detect anomalies in tax reports as well as provide predictions related to tax compliance behavior. Meanwhile, blockchain technology provides greater transparency by providing a safe and secure system that can be changed, which is very important in cross-border digital transactions (Expert Tax Indonesia, 2023).

Besides that, the integration of cloud computing in the taxation system also plays an important role in ensuring flexibility and scalability of the digital tax system. By storing data in the cloud, tax authorities can access information quickly and manage large volumes of data without physical infrastructure limitations. This is important, especially in the era of the digital economy where online transactions continue to increase in a way exponential every year. Progress This Not only increases efficiency taxes administration, but also helps reduce operational costs for government (Alfia Utami & Muhammad Irwan Paddy Nasution, 2020).

Ultimately, digital transformation in the taxation system has brought big impacts to efficiency, transparency and tax compliance. Governments in various countries, including Indonesia, are now more ready to face taxation challenges arising from the digital economy continues to grow developing. However, along with development technology, challenges also just appeared, such as tax cross-border and complexity digital transactions, which require sustainable innovation in regulation of taxation in the future (Ortax, 2020).

4.2 The Impact of the Digital Economy on Voting Tax and Administration Taxation

The digital economy has changed the economic landscape in a profound way, and its impact on the taxation system cannot be ignored. With increasing digital transactions, complexity in collection taxes are also increasing. Transactions that take place in cyberspace, such as digital services, e-commerce, and the platform economy, bring new challenges to traditional taxation systems. Tax on digital services, for example, require adjustments to operating method companies pay online taxes in the country where they operate, even though they have no physical presence in the country.

Government in various parts of the world face urgent need to innovate in development regulation harmonized taxation with dynamics of digital economy. Innovation This covers expansion definition form business still (BUT) which is currently This is more limited to physical presence, for covers digital entity that does not have its own physical presence but still gets income from the local market. Besides that, it is necessary to exist a newly designed tax development specifically to handle cross-border tax problems, such as the equalization levy applied to reduce inequality in tax between traditional companies and digital companies operating worldwide.

Implementation of this new tax aims to ensure that companies that utilize digital markets also provide fair contributions to the country tax income they operate. Effective regulation in the field of This needs international collaboration To overcome cross-border tax challenges and to ensure that taxation policies applied can be adapted to fast change in technology and business models. Therefore, responsive and adaptive tax reform is very important. To face challenges of the digital economy and ensure sustainability of income taxes in the digital age.

4.3 Key Challenges in Implementation Digital Tax

Main challenges in implementing digital tax include a number of critical aspects that need to be handled with Be careful To ensure

the success of the taxation system in the digital age. One of the biggest challenges is identifying entities as perpetrators of the digital economy. Government needs to determine appropriately How digital entities that do not have their own physical presence However produce income from local markets will be charged tax. This is necessary adjustment in definition of fixed business form (BUT) and tax collection mechanism to suit the characteristics of digital business.

Besides that, cross-border transaction management is a significant challenge for others. With the greater the amount of transactions that cross national borders, taxation systems must be able to overcome differences in taxation rules in various jurisdictions and ensure that tax can be collected fairly and efficiently. This requires harmonization of taxation policies at the international level and strict monitoring of current global transactions.

The complexity of the digital economy structure also adds challenges in implementing taxes. Digital business models often involve very complex structures, such as integrated platform networks and hassle-free transactions tracked. Therefore, the taxation system applied must be sufficiently adaptive and flexible to face various scenarios that emerge from the structure of this digital economy.

To overcome this challenge, the government needs to increase international cooperation between jurisdictions using create uniform and effective taxation policies. Improving transparency and exchange information between countries is very important For identifying and verifying transactions as well as entities involved . Sustainable supervision to practice digital taxation is also needed To ensure that policies implemented are still relevant and effective in the face of rapid change in digital technology and business models (Ortax, 2020). With a coordinated and comprehensive approach, these challenges can be overcome to create a sustainable and fair digital taxation system.

4.3 Innovations and Solutions Implemented by Governments in Various Countries

Innovation in digital taxation system has become an important step in increasing efficiency and transparency of taxes in various countries. One of their main innovations is the implementation of an electronic tax reporting system (e-filing) and electronic tax payments (e-payment). The e-filing system allows must tax For submit tax reports online , which reduces the need For physical archiving and simplifies the reporting process . With e-payment, it is mandatory tax can do tax payments in a way electronically, which speeds up the transaction process and reduces the risk of error or delay in payment. Implementation system This not only creates a tax process more efficient for must taxes, but also increases the efficiency of tax administration by reducing the burden of manual work and minimizing the possibility of fraud or error administration (Expert Tax Indonesia, 2023).

Besides that, the use of big data and analytics has changed the tax authority's method in monitoring and improving tax compliance. Big data enables collection and analysis of information in large amounts that can be used to identify patterns and trends in behavior must be taxed. By utilizing analytics, tax authorities can develop more advanced systems to detect potential non-compliance and optimize audit strategies. Analytics can also provide more intuitive and user-friendly assistance to must taxes , such as recommendations For fulfillment obligation taxes and relevant information in real-time. With this method, technology not only increases the effectiveness of supervision taxation but also provides convenience to must tax in fulfilling their obligations (Expert Tax Indonesia, 2023).

In general overall, innovations play a crucial role in modernizing the taxation system and contribute to the environment creating more fair and efficient taxation in the digital age. By continuing to adopt and refine this technology, countries can increase their ability

to manage tax in a more effective and transparent way.

5 Conclusion

5.1 Conclusion

Evolution of tax collection systems from traditional methods to digital administration systems has brought big changes in taxation methods. The traditional paper-based taxation system, with a manual process that consumes time and risks high human error, has been replaced by digital technology that offers efficiency and transparency. Introduction e-filing and e-payment systems have been implemented to simplify the tax reporting and payment process, reduce administration burden and risk error. Technologies such as big data, artificial intelligence (AI), and increasingly blockchain are being applied to increase the ability of tax authorities in managing transaction data, detecting non-compliance, and ensuring security of digital transactions. Cloud computing integration also strengthens flexibility and scalability of taxation systems, allowing big data management with more efficiency.

However, this transformation also brings new challenges, especially related to tax cross-border and complexity of digital transactions. The taxation system must adapt to overcome difference rules in various jurisdictions and structures of the complex digital economy. Therefore, responsive and innovative tax reform is required. To handle this challenge and make sure tax income sustainability in the digital age. International collaboration and harmonization of global taxation policies will be key in overcoming this problem in an effective way.

5.2 Suggestion

- a. Development Adaptive Policies: Countries need to Keep going to develop and adapt taxation policies To reflect fast changes in technology and digital business models. Policy must be capable of accommodating digital entities that do not have their own

physical presence however operate and earn income from local markets.

- b. **Collaboration International:** Required cooperation more international close to overcome cross-border tax challenges and ensure that taxation policies applied can be adapted globally. Exchange information and transparency between countries must be improved. To identify and verify transactions as well as entities involved.
- c. **Improvement Technology and Infrastructure:** Investment in advanced technology such as big data, AI, and blockchain must continue to be pushed to increase efficiency and safety system taxation. Government needs to ensure that infrastructure technology used For administration taxation can handle large data volumes and complex transactions .
- d. **Education and Training:** Improvement of knowledge and skills among tax officials as well as must taxes are very important to ensure good understanding about the digital taxation system. Education and training programs can help in optimizing the use of new technology and minimizing the risk of errors.
- e. **Monitoring and Evaluation Periodic:** The digital taxation system must continue to be monitored and evaluated to identify potential problems and do necessary repairs. Sustainable supervision will help in ensuring that policies implemented are still relevant and effective in the face of changing technology and market dynamics.

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