

COMPARATIVE ANALYSIS OF CBDC AND TAX LAW ENFORCEMENT IN SELECTED COUNTRIES

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Abstract

This study explores the prospective Central Bank Digital Currency (CBDC) transactions whilst implementing the Automatic Exchange of Information (AEOI) procedures as part of tax law enforcement in Indonesia. The study seeks to address the challenges and opportunities associated with AEOI within a CBDC framework, considering their potential impact on financial transparency, data privacy, and regulatory compliance. Through normative research, comprehensively reviewing relevant literature and policy analysis, the study identifies best practices from other countries, including ASEAN, East Asia, Oceania, The Bahamas, and Sweden, and it aims to develop recommendations for designing an efficient and secure AEOI framework for CBDC transactions in Indonesia. The findings of this study are derived from lessons learnt from selected countries regarding AEOI practices: Australia, Brunei Darussalam, China, Japan, South Korea, Malaysia, New Zealand, and Singapore. Additionally, Sweden and the Bahamas provide aspirational benchmarks for CBDC implementation while simultaneously implementing AEOI. Recommendations are also generated to improve Indonesia's CBDC and AEOI implementation progress.

Keywords: *Central Bank Digital Currency, Automatic Exchange of Information, tax law enforcement, fiscal coordination*

I. INTRODUCTION

In an increasingly interconnected global landscape, there is a growing focus on the monetary system and its response to technological advancements. One notable development is the emergence of CBDC, an intriguing concept with the potential to revolutionise the monetary system. CBDC is a pivotal tool for central banks to maintain stability within the digital realm, effectively addressing the limitations of traditional forms of money. This article explores the potential expansion of CBDC in the global monetary system, with particular emphasis on the opportunities and challenges Indonesia encountered in its CBDC implementation. By delving into this subject matter, the article provides a comprehensive analysis of the global implications and

considerations surrounding CBDC adoption while also examining the context and factors influencing Indonesia's journey towards implementing CBDC.

To begin, it is crucial to delve into the fundamental concepts of digital currency. CBDC denotes a form of digital currency issued by a central bank. CBDC represents a recognised medium of exchange firmly grounded in robust legal frameworks. This distinguishes CBDC from electronic money offered by financial institutions (FIs) and stablecoins, which are privately created cryptocurrencies designed to maintain a stable value by pegging to other currencies, commodities, or financial instruments.¹ A CBDC can be conceptualised as a digitised representation of conventional banknotes, effectively merging digital technology's characteristics with fiat currency's functions. CBDC can be classified into two distinct types:² retail CBDC (r-CBDC) and wholesale CBDC (w-CBDC). The former facilitates individual transactions, enabling users to pay for businesses, stores, or peers. The latter focuses on supporting trade settlements among FIs within the broader financial markets. BI Regulation No. 20/6/PBI/2018 ("PBI 20") on Electronic Money established the regulatory framework governing electronic money in Indonesia.³ However, it's crucial to recognise the inherent differences between electronic money and CBDC. Currently, PBI 20 does not serve as a legal basis for BI's issuance of CBDC. The implementation of digital Rupiah requires the formulation of a separate BI regulation. Notably, existing BI regulations on Financial Technology on PBI 19/12/PBI/2017 ("PBI 19")⁴ and Payment Transaction Processing on PBI 18/40/PBI/2017 ("PBI 18")⁵ explicitly prohibit the use of any form of digital currency as a means of payment. In Indonesia's broader context of electronic systems, the Electronic Information and Transaction Law⁶ governs their use, obligating Electronic System Operators

¹ McKinsey, "What is CBDC (Central Bank Digital Currency)," McKinsey, March 1, 2023, accessed February 7, 2024, <https://www.mckinsey.com/featured-insights/mckinsey-explainers/what-is-central-bank-digital-currency-cbdc>.

² Novi Maryaningsih et al., "Central Bank Digital Currency: What Factors Determine Its Adoption?," *Buletin Ekonomi Moneter Dan Perbankan* 25, no. 1 (June 20, 2022): 1–24, <https://doi.org/10.21098/bemp.v25i1.1979>.

³ Bank Indonesia Regulation No. 20/6/PBI/2018 on Electronic Money (Hereinafter PBI 20), May 7, 2018, <https://www.bi.go.id/id/publikasi/peraturan/Pages/PBI-200618.aspx>.

⁴ Bank Indonesia Regulation No. 19/12/PBI/2017 on Financial Technology (Hereinafter PBI 19), December 30, 2017, https://www.bi.go.id/id/publikasi/peraturan/Documents/PBI_191217.pdf.

⁵ Bank Indonesia Regulation No. 18/40/PBI/2017 on Payment Transaction Processing, November 9, 2016, https://www.bi.go.id/id/publikasi/peraturan/Pages/pbi_184016.aspx.

⁶ Law No. 11 of 2008 on Electronic Information and Transactions (2008), <https://peraturan.bpk.go.id/Details/37589/uu-no-11-tahun-2008>.

under Article 15 to provide secure and reliable systems. However, no official publication details BI's CBDC's technical aspects.⁷

Presently, the regulation of the Indonesian currency falls under Law Number 7 of 2011 on Currency (the Currency Law).⁸ However, this legislation does not encompass provisions for digital currency. Consequently, the government must amend the legal framework, incorporating electronic money provisions. This revision should encompass comprehensive details such as definitions, implementation guidelines, types, and the inherent nature of electronic money, thereby establishing it as a viable substitute for traditional fiat currency.⁹ If CBDC is officially recognised as legal tender in Indonesia, it is essential to establish an adequate regulatory framework. This framework should grant Bank Indonesia the authority to issue CBDC, specifying its role and positioning within the Indonesian monetary system.¹⁰

In 2023, Indonesia enacted Law Number 4 of 2023 on Development and Strengthening of the Financial Sector (the P2SK Law).¹¹ The P2SK Law grants Bank Indonesia the authority to issue and manage Digital Rupiah, stating that central banks can only carry out tasks as specified by the law and Digital Rupiah implementation requires further technical regulations.¹²

The introduction of CBDC brings forth potential cybersecurity concerns that differ from those in the current digital financial system. These challenges encompass centralised financial data, reduced visibility for regulatory agencies, increased complexity in client key custody, dependence on the integrity of third-party validators, heightened reliance on trusted hardware manufacturers for security, enhanced difficulty in transaction revocation, and the potential for amplified errors in scope and scale due to programmable transactions.¹³

⁷ Giulia Fanti, "Missing Key: The Challenge of Cybersecurity and Central Bank Digital Currency," *Atlantic Council*, June 15, 2022, <https://www.atlanticcouncil.org/in-depth-research-reports/report/missing-key/>.

⁸ Law No. 7 of 2011 on Currency (2011).

⁹ Arman Nefi and Agus Sardjono, "The Urgent Need to Amend the Indonesian Law on Currencies to Face the Digital Age," *Journal of Central Banking Law and Institutions* 1, no. 1 (December 28, 2021): 23–46, <https://doi.org/10.21098/jcli.v1i1.8>.

¹⁰ Fransiska Ari Indrawati, "Central Bank Digital Currency Under the State Theory of Money: A Preliminary Legal Analysis," *Journal of Central Banking Law and Institutions* 1, no. 3 (September 8, 2022): 371–404, <https://doi.org/10.21098/jcli.v1i3.23>.

¹¹ Indonesia, "Law No. 4 of 2023 on Development and Strengthening of the Financial Sector (Hereinafter P2SK Law)" (2023).

¹² Rafi Fadhilah Muhammad and Rianda Dirkareshza, "Legalitas Penerapan Central Bank Digital Currency (CBDC) Di Indonesia," *Jurnal USM Law Review* 6, no. 3 (November 12, 2023): 913, <https://doi.org/10.26623/julr.v6i3.7370>.

¹³ Zahrashafa Mahardika, Rizky Banyualam Permana, and Nadia Maulisa, "Going Digital Rupiah: Some Considerations from Sovereignty and Cybersecurity Perspectives," *Journal of Central Banking Law and Institutions* 2, no. 1 (January 31, 2023): 25–54, <https://doi.org/10.21098/jcli.v2i1.42>.

Significantly, a survey conducted by the Bank for International Settlements (BIS) in 2021 shed light on the current landscape of CBDC exploration. The findings indicated that a substantial proportion of central banks worldwide, approximately 86%, were actively exploring CBDC's possibilities. Among these central banks, 60% conducted experimental studies to evaluate CBDC technology, while 14% had already initiated pilot projects. These figures underscore central banks' growing interest in and commitment to exploring the transformative potential of CBDCs.¹⁴ Several countries, such as The Bahamas, Sweden, Malaysia, and Singapore, have initiated CBDC experiments, showcasing its innovative potential.

CBDC possesses several advantages that could strengthen the global monetary system. Firstly, CBDC has the potential to reduce international transaction costs significantly.¹⁵ Using blockchain technology and smart contracts enables more efficient cross-border fund transfers, eliminating the need for expensive intermediaries. In its broadest sense, an example of a recognised blockchain form is Distributed Ledger Technology (DLT), which possesses distinct characteristics, including data organisation in a sequential chain of interconnected blocks. It can be accessed and acted upon by a network of diverse participants.¹⁶

The use of CBDC can enhance the resilience of domestic payment systems. It has security and transparency within the monetary system, reducing the risks of fraud and money laundering. Additionally, CBDC has the potential to increase transparency in the flow of money and may contribute to lowering currency substitution, which occurs when a country utilises a foreign currency alongside or instead of its own.¹⁷

However, the vulnerability of digital currency lies in its anonymity. This characteristic not only gives rise to criminal activities such as theft and counterfeiting but also serves as a primary means for money laundering, tax

¹⁴ Central Bank of Indonesia, "Project Garuda: Navigating the Architecture of Digital Rupiah," Central Bank of Indonesia, 2020, <https://www.bi.go.id/en/rupiah/digital-rupiah/default.aspx>; BIS, "BIS Innovation Hub Work on Central Bank Digital Currency (CBDC)," BIS, February 4, 2021, <https://www.bis.org/about/bisih/topics/cbdc.htm>.

¹⁵ Bastian Muzbar Zams et al., "Designing Central Bank Digital Currency for Indonesia: The Delphi-Analytic Network Process," *Buletin Ekonomi Moneter dan Perbankan* 23, no. 3 (December 2, 2020): 413–40, <https://doi.org/10.21098/bemp.v23i3.1351>.

¹⁶ Parma Bains et al., "Regulating the Crypto Ecosystem: The Case of Unbacked Crypto Assets," *Fintech Notes*, September 26, 2022, <https://www.imf.org/en/Publications/fintech-notes/Issues/2022/09/26/Regulating-the-Crypto-Ecosystem-The-Case-of-Unbacked-Crypto-Assets-523715>.

¹⁷ Andrew Stanley, "The Ascent of CBDCs," *IMF*, September 2022, <https://www.imf.org/en/Publications/fandd/issues/2022/09/Picture-this-The-ascent-of-CBDCs>.

evasion, and funding terrorist activities.¹⁸ If a central bank decides to introduce such a CBDC, it must ensure compliance with anti-money laundering and counter-financing terrorism (AML/CFT) regulations.¹⁹ Central banks must meet the public policy requirements of other supervisory and tax systems.

Therefore, this study seeks to address how existing literature describes the influence of CBDC implementation on tax law enforcement within the AEOI framework and to identify best practices from countries exemplifying effective CBDC and tax law enforcement integration to derive valuable lessons.

This study aims to analyse how implementing CBDC transactions can enhance law enforcement through an automatic exchange of information (AEOI) framework. Moreover, this study investigates the best practices from other countries implementing AEOI and CBDC transactions on coordination among relevant stakeholders, including the central bank, Indonesian Financial Transaction Reports and Analysis Centre (INTRAC), and fiscal bodies. The findings will contribute significantly to policymakers and stakeholders regarding the potential benefits and challenges of CBDC implementation and future recommendations for the relevant parties.

The following sections will discuss AEOI, by definition, supporting financial security protocols such as Know Your Customer (KYC) and their implementation in CBDC transactions. Section III will specifically explore the CBDC launched by The Bahamas and the pioneer CBDC pilot project, Sweden's e-Krona. This section will also cover the BIS Cross-border project, which includes 18 global projects, and AEOI implementation with practical takeaways from selected countries. The last section will present a summary table along with conclusions and recommendations for Indonesia as a baseline for comparison.

II. GENERAL OVERVIEW

This study relies on previous research and available data sources to investigate the implementation of AEOI and prospective CBDC transactions in Indonesia. The data used for this research consists primarily of relevant documents issued by the Central Bank of Indonesia, regulatory authorities, and other relevant institutions. Additionally, academic papers and reports from international organisations such as the Organisation for Economic Co-operation and

¹⁸ Sergio Luis Nández Alonso, Javier Jorge-Vazquez, and Ricardo Francisco Reier Forradellas, "Central Banks Digital Currency: Detection of Optimal Countries for the Implementation of a CBDC and the Implication for Payment Industry Open Innovation," *Journal of Open Innovation: Technology, Market, and Complexity* 7, no. 1 (March 2021): 72, <https://doi.org/10.3390/joitmc7010072>.

¹⁹ Benoît Cœuré and Jacqueline Loh, "Central Bank Digital Currencies," accessed February 7, 2024, <https://www.bis.org/cpmi/publ/d174.pdf>.

Development (OECD) and the Financial Action Task Force (FATF) provide a comprehensive understanding of AEOI, KYC, and CBDC-related issues.

The study also examines case studies and best practices from other countries that have implemented CBDC and AEOI. A comparative analysis draws insights and lessons that could apply to the Indonesian context. This comparative approach contributes to a comprehensive understanding of the potential benefits, challenges, and implementation strategies for AEOI in CBDC transactions in Indonesia.

II.A. Enhancing Transparency: Exploring the Impact of AEOI on Combating Tax Evasion

The primary goal of AEOI is to enhance transparency and combat tax evasion on a global scale.²⁰ The regulation for the AEOI system in Indonesia is Law Number 9 of 2017 on the Stipulation of Government Regulations in Lieu of Law Number 1 of 2017 concerning Access to Financial Information for Tax Purposes into Law.²¹ It requires FIs, including banks, investment funds, insurance companies, and other entities, to identify and report relevant financial account information to their respective tax authorities systematically and without any prior request. By implementing frameworks, namely Common Reporting Standard (CRS), FIs must report financial account information to their local tax authorities, automatically shared with other jurisdictions, along with due diligence procedures aligned with CRS through a Common Transmission System (CTS).²²

Based on Law Number 9 of 2017, Indonesia has promulgated several regulations regarding AEOI, namely: (a) Presidential Decree No. 13 of 2018 on Implementation of the Principle of Recognising the Beneficial Owners of Corporations in the Context of Preventing and Eradicating Crimes of

²⁰ Markus Meinzer, "Automatic Exchange of Information as the New Global Standard: The End of (Offshore Tax Evasion) History?," SSRN Electronic Journal, 2017, <https://doi.org/10.2139/ssrn.2924650>; OECD, "Automatic Exchange of Information: Guide on Promoting and Assessing Compliance by Financial Institutions," OECD, December 8, 2020, <https://www.oecd.org/tax/forum-on-tax-administration/publications-and-products/automatic-exchange-of-information-guide-on-promoting-and-assessing-compliance-by-financial-institutions.htm>; OECD, "AEOI Terms of Reference," OECD, 2021, <https://www.oecd.org/tax/transparency/documents/AEOI-terms-of-reference.pdf>; OECD, "Toolkit for the Implementation of the Standard for Automatic Exchange of Financial Account Information," OECD, 2022, https://www.oecd.org/tax/transparency/documents/aecoi-implementation-toolkit_en.pdf; OECD, "Crypto-Asset Reporting Framework and Amendments to the Common Reporting Standard (Public Consultation Document)," OECD, 2022, <https://web-archiv.oecd.org/2022-03-22/627496-public-consultation-document-crypto-asset-reporting-framework-and-amendments-to-the-common-reporting-standard.pdf>.

²¹ Law No. 9 of 2017 on Stipulation of Government Regulation in Lieu of Law No. 1 of 2017 on Access to Financial Information for Tax Purposes Becoming Law (2017).

²² OECD, "AEOI Terms of Reference."

Money Laundering and Terrorism Financing Crimes;²³ (b) PMK Number 70/PMK.03/2017 on Technical Instructions regarding Access to Financial Information for Tax Purposes;²⁴ (c) PMK Number 73/PMK.03/2017 on Amendments to PMK Number 70/PMK.03/2017 on Technical Instructions regarding Access to Financial Information for Tax Purposes;²⁵ (d) PMK Number 19/PMK.03/2018, the Second Amendment to PMK Number 70/PMK.03/2017 on Technical Instructions regarding Access to Financial Information for Tax Purposes;²⁶ (e) Regulation of the Director General of Taxes Number PER-04/PJ/2018 on Registration Procedures for Financial Institutions and Automatic Submission of Reports containing Financial Information;²⁷ (f) OJK Regulation Number 25 /POJK.03/2015 on Submission of Foreign Customer Information related to Taxation to Partner Countries or Partner Jurisdictions;²⁸ (g) OJK Regulation Number 12 /POJK.01/2017 on Implementation of Anti-Money Laundering and Terrorism Financing Prevention Programs in the Financial Services Sector;²⁹ and (h) OJK Circular Letter Number 16 /SEOJK.03/2017 on Submission of Information to Foreign Customers Related to Taxation in the Context of Automatic Exchange of Information Between Countries Using Common Reporting Standards.³⁰

II.B. Safeguarding Financial Integrity: The Interconnected Roles of KYC, AML, CFT in Preserving Global Cybersecurity

KYC, AML, and CFT are critical components of global efforts to combat financial crimes and ensure the financial system's integrity. KYC serves as a crucial first line of defence against financial crimes, including drug trafficking

²³ Presidential Decree No. 13 of 2018 on Implementation of the Principle of Recognizing the Beneficial Owners of Corporations in the Context of Preventing and Eradicating Crimes of Money Laundering and Terrorism Financing Crimes (2018).

²⁴ Ministry of Finance Regulation No. 70/PMK.03/2017 on Technical Instructions Regarding Access to Financial Information for Tax Purposes (2017).

²⁵ Ministry of Finance Regulation No. 73/PMK.03/2017 on Amendments to PMK Number 70/PMK.03/2017 on Technical Instructions Regarding Access to Financial Information for Tax Purposes (2017).

²⁶ Ministry of Finance Regulation No. 19/PMK.03/2018 on Second Amendment to PMK Number 70/PMK.03/2017 on Technical Instructions Regarding Access to Financial Information for Tax Purposes (2018).

²⁷ Director General of Taxes Regulation No. PER-04/PJ/2018 on Registration Procedures for Financial Institutions and Automatic Submission of Reports Containing Financial Information (2018).

²⁸ Financial Service Authority Regulation No. 25 /POJK.03/2015 on Submission of Foreign Customer Information Related to Taxation to Partner Countries or Partner Jurisdictions (2015).

²⁹ Financial Service Authority Regulation No. 12 /POJK.01/2017 on Implementation of Anti-Money Laundering and Terrorism Financing Prevention Programs in the Financial Services Sector (2017).

³⁰ Financial Service Authority Circular Letter No. 16 /SEOJK.03/2017 on Submission of Information to Foreign Customers Related to Taxation in the Context of Automatic Exchange of Information Between Countries Using Common Reporting Standard (2017).

and terrorism, enabling institutions to identify and mitigate risks before they occur.³¹ AML and CFT regulations require FIs to establish robust compliance programs, including risk assessments, transaction monitoring, and reporting suspicious activities to the appropriate authorities.³² FIs play a vital role in implementing AML and CFT measures. They are required to establish internal policies, procedures, and controls to prevent and detect suspicious transactions. These measures include conducting ongoing customer activity monitoring, reporting suspicious transactions to the relevant authorities, and cooperating with law enforcement agencies in investigations. By implementing AML and CFT frameworks, FIs contribute to the overall security and stability of the global financial system.³³

II.C. Ensuring Financial Security: Exploring AEOI, KYC, AML, and CFT Protocols in CBDC Transactions

Regarding CBDC transactions, AEOI implementation, KYC, AML, and CFT measures are critical. AEOI, a global standard developed by the OECD, enables the automatic exchange of financial information among participating jurisdictions. This exchange of information enhances transparency and accountability in CBDC transactions by allowing central banks to access relevant financial data and detect potential tax evasion, money laundering, and other illicit activities.³⁴ KYC procedures play a vital role in digital transactions as they enable FIs and central banks to verify the identities of individuals and entities involved in digital currency transactions. Meanwhile, AML and CFT regulations provide frameworks and guidelines for FIs and central banks to detect and prevent financial crimes in digital transactions.

By implementing these measures, central banks and FIs can enhance the security and integrity of digital currency transactions. These measures contribute to maintaining the trust and confidence of users, as well as preventing the misuse of CBDC for illicit purposes. Furthermore, such measures demonstrate a commitment to international cooperation and the global fight against

³¹ Pradnya Patil and M. Sangeetha, “Blockchain-Based Decentralized KYC Verification Framework for Banks,” *Procedia Computer Science* 215 (2022): 529–36, <https://doi.org/10.1016/j.procs.2022.12.055>.

³² FATF, “FATF Recommendations,” FATF, 2023, <https://www.fatf-gafi.org/content/dam/fatf-gafi/recommendations/FATF%20Recommendations%202012.pdf.coredownload.inline.pdf>.

³³ OECD, “Automatic Exchange of Information: Guide on Promoting and Assessing Compliance by Financial Institutions,” OECD, 2020, <https://www.oecd.org/tax/forum-on-tax-administration/publications-and-products/guide-on-promoting-and-assessing-compliance-by-Financial-Institutions.pdf>.

³⁴ Kevin Cohen, “Automatic Exchange of Information - KPMG Ireland,” KPMG, October 23, 2023, <https://kpmg.com/ie/en/home/insights/2022/11/automatic-exchange-of-information.html>; OECD, “Crypto-Asset Reporting Framework and Amendments to the Common Reporting Standard (Public Consultation Document),” 2022.

financial crime. Central banks and FIs must establish robust procedures, systems, and partnerships to ensure compliance and continuously adapt to the digital currency landscape's evolving risks and regulatory frameworks.

III. DISCUSSION

III.A. Assessing the Prospective Impact of CBDC Implementation on AEOI

Implementing CBDC provides an avenue for enhanced efficiency in conducting financial operations across national borders. Consequently, the integration of AEOI plays a pivotal role in augmenting the capacity of tax authorities and central banks to expand the traceability of such transactions.

By adopting CBDC, people are afforded a mechanism for engaging in cross-border transactions, eliminating many of the challenges associated with traditional methods. Using CBDC enhances the speed and ease with which funds can be transferred internationally. Integrating AEOI further enhances this improved transparency, enabling tax authorities and central banks to acquire comprehensive, real-time data about cross-border transactions.

In general, the implementation of the AEOI framework is still in its nascent stages, as it was introduced relatively recently in 2016. AEOI mandates that FIs adhere to greater transparency standards concerning their customers' financial data. However, the implementation of AEOI policies in Indonesia poses challenges due to the existence of domestic laws pertaining to bank secrecy.

According to the IMF, bank secrecy can have negative consequences, mainly when it covers individuals engaged in corrupt activities seeking to conceal their illicit actions. Nonetheless, combating corruption and money laundering requires diligent monitoring of transaction size reports and suspicion reports. Adherence to KYC standards, recordkeeping and retention obligations, comprehensive staff training, and prohibition of alerting suspected individuals are commonly employed strategies.³⁵ Banks have confidentiality principles to protect their customers' data. However, the 'principle of confidentiality' can generally be breached for tax purposes, civil cases between banks and their customers, and the exchange of information among banks.³⁶

³⁵ Philip R. Wood, *Current Legal Issues Affecting Central Banks, Volume V* (IMF: 1998), <https://doi.org/10.5089/9781557756954.071>.

³⁶ Muh Afdal Yanuar, "The Discrepancy Between the Object of Reporting Obligation for Banks Under Anti Money Laundering Law and That Which Must Be Kept Confidential Under Anti-Tipping Off Provisions," *AML/CFT Journal the Journal of Anti Money Laundering and Countering the Financing of Terrorism* 2, no. 1 (December 2, 2023): 45–57, <https://doi.org/10.59593/amlcft.2023.v2i1.73>.

Before implementing AEOI, Indonesia faces obstacles for tax authorities in accessing financial information confidentiality issues. For example, laws in the banking sector, Sharia banking, taxation, capital markets and other laws and regulations. These confidentiality provisions can create obstacles for tax authorities in strengthening tax databases.³⁷ Under the AEOI system, every participating country automatically exchanges financial information each year, allowing the Directorate General of Taxes (DGT) to supervise Indonesian taxpayers' overseas banking transactions more effectively and increasing the chances of capturing tax evaders.³⁸

Essentially, individuals subject to taxation tend to opt for offshore accounts in jurisdictions with lower tax rates than their respective host countries. Previous scholarly research has identified a correlation between a reduction in corporate tax rates and the inclination of taxpayers to invest in a particular country. Specifically, the present study's findings indicate that a 1% reduction in the corporate tax rate leads to a significant 4.38% increase in capital inflows to the host country.³⁹

AEOI implementation in Indonesia has involved the Voluntary Disclosure Program (VDP). The VDP, sometimes called a "tax holiday", initiated by the Indonesia DGT, was launched in 2008 and renewed in 2016 and 2022. The program encouraged taxpayers to declare their undisclosed funds and assets abroad voluntarily. At the latest VDP in 2022, the outcomes of the VDP reveal that many participants made declarations and repatriations from various jurisdictions. Assets held in Singapore accounted for the most participant accounts, with 7,997, followed by the British Virgin Islands with 50 participants and Hong Kong with 432. The total offshore amount disclosed through the VDP amounted to IDR 74,308.04 billion, accompanied by additional income tax payments totalling IDR 9,485.61 billion. These figures indicate the scale of previously undisclosed funds and assets that were brought to light because of the VDP implementation.

³⁷ Muh. Afdal Yanuar, "Optimalisasi Penerapan Automatic Exchange of Information (AEOI) Dalam Mendorong Pendapatan Negara Atas Pungutan Pajak Penghasilan," *Scientax* 4, no. 2 (April 27, 2023): 219–32, <https://doi.org/10.52869/st.v4i2.320>.

³⁸ Budi Ispriyarso, "Automatic Exchange of Information (AEOI) dan Penghindaran Pajak," *Masalah-Masalah Hukum* 49, no. 2 (April 30, 2020): 172–79, <https://doi.org/10.14710/mmh.49.2.2020.172-179>.

³⁹ Adi Lesmana, "The Effect of Corporate Tax Policy on Foreign Direct Investment: Empirical Evidence from Asian Countries," *Buletin Ekonomi Moneter dan Perbankan* 25, no. 4 (January 20, 2023): 647–72, <https://doi.org/10.21098/bemp.v25i4.1729>.

Table 1.
List of Country Destination and Voluntary Disclosure Program (VDP) Participants, Asset Value, and Additional Income Tax

No.	Country Name	Asset Value (in billion IDR)	VDP Participants	Additional Income Tax (in billion IDR)
1	Singapore	56.960,11	7.997	7.295,14
2	British Virgin Island	4.977,39	50	601,90
3	Hong Kong	3.580,77	432	440,71
4	Australia	2.766,32	1.154	372,14
5	China	1.512,37	332	180,63
6	Malaysia	1.184,18	422	162,24
7	United States	1.272,80	399	160,39
8	India	417,47	141	59,01
9	Switzerland	342,74	45	49,10
10	United Kingdom	357,79	120	42,48
11	US Virgin Island	326,21	3	29,04
12	Canada	177,12	63	26,70
13	Cayman Island	147,05	135	24,19
14	Philippines	164,26	16	22,97
15	UAE	121,46	26	18,97
Total		74.308,04	11.335	9.485,61

Source: Indonesia Tax Office, 2022

In addition, The Indonesian Financial Transaction Reports and Analysis Centre (INTRAC), also known as “Pusat Pelaporan dan Analisis Transaksi Keuangan (PPATK),” has released a report identifying the destination countries for outgoing transfers. According to the report, the primary destinations for these transfers are the United States, Singapore, and China. The number of reported outgoing transfer cases is 41,817 for the United States, 48,542 for Singapore, and 83,674 for China. The statistics were recorded in the following table:

Table 2.
Destination Country and The Number of Outgoing Transfer Cases

Destination Country	Outgoing Transfer Cases	Outgoing Transfer Amount
China	83.674	74.707
Singapore	48.542	238.879
United States	41.817	242.754

Source: INTRAC, 2022

Furthermore, the report provides insights into the transaction amounts associated with these destinations. The reported transaction amount for transfers to the United States was IDR 242,754 billion, while Singapore recorded

IDR 238,879 billion. The transaction amount for transfers to China was IDR 74,707 billion.⁴⁰ Moreover, the reported outgoing transfers to countries like the United States, Singapore, and China highlight the significance of these destinations in financial flows.

Knowing that the outgoing transfer remains high, Bank Indonesia has been obtaining membership with the FATF since November 2023.⁴¹ The goal of this membership is to promote the creation of strong systems and infrastructure capable of effectively managing and reducing the risks linked to money laundering, terrorism financing, and the spread of weapons of mass destruction. The aim is also to comprehensively address these critical issues and establish a solid framework for combatting illicit activities and upholding financial integrity within the Indonesian financial system.⁴²

Integrating CBDC and AEOI can foster improved coordination between central banks, INTRAC, and fiscal authorities, leading to enhanced traceability, transparency, and enforcement in cross-border financial activities. This integration can advance global efforts in combatting tax evasion and money laundering and ensuring greater financial integrity.

III.B. The Implementation, Pilot Projects, and Experimental Initiatives of CBDC

II.B.1. The Bahamas Sand Dollars

The development of CBDC first emerged in 2016 in The Bahamas.⁴³ Initially, The Bahamas was classified as a high-income country, with a Gross Domestic Product (GDP) of USD 12.9 billion, according to the World Bank.⁴⁴ The Bahamas, comprising a collection of 700 islands located southeast of Florida and north of the Greater Antilles, introduced the Sand Dollar in October 2020. The implementation of this digital currency aimed to enhance financial inclusion, streamline government expenditures and tax administration systems, and achieve cost savings by reducing reliance on physical cash. The implementation of The Bahamas Sand Dollar has extended beyond merchant

⁴⁰ PPAATK, "Buletin Statistik APUPPT Vol. 11, No. 3 - Edisi Maret 2023," PPAATK, April 18, 2023, <https://www.ppatk.go.id/publikasi/read/195/buletin-statistik-apuppt-vol-11-no-3---edisi-maret-2023.html>.

⁴¹ Ministry of Finance, "Indonesia Resmi Jadi Anggota Penuh FATF, Menkeu: Bawa Dampak Positif Bagi Kredibilitas Perekonomian Negara," Ministry of Finance, November 2, 2023, <https://www.kemenkeu.go.id/informasi-publik/publikasi/berita-utama/Indonesia-Resmi-Jadi-Anggota-Penuh-FATF>.

⁴² Central Bank of Indonesia, "Anti-Money Laundering and Counter-Terrorism Financing," Central Bank of Indonesia, n.d.

⁴³ Raphael Auer et al., "Central Bank Digital Currencies: Motives, Economic Implications, and the Research Frontier," *Annual Review of Economics* 14, no. 1 (August 12, 2022): 697–721, <https://doi.org/10.1146/annurev-economics-051420-020324>.

⁴⁴ "World Bank Open Data," World Bank, 2023, <https://data.worldbank.org/>.

transactions and encompasses its integration into the payroll system.⁴⁵ The Central Bank of the Bahamas' annual report for 2021, published in May 2022, revealed that the amount of Sand Dollars in circulation at the end of 2021 reached \$303,78, representing an increase from the previous year's figure of \$0.08 million. In addition, for the last quarterly report of April 2023, the amount of Sand Dollars circulation reached \$1,080,000, which increased by \$500,000 over the two years.⁴⁶ The following table illustrates in detail the amount of the Sand Dollars growth as of June 2023:

Table 3.
General Sand Dollars Statistics June 2023

Description	Status
Sand Dollars in circulation	\$1.093.373,71
e-wallet provider	9
Active e-wallet provider	7
e-wallet users	106.147
e-wallet merchants	1.608

Source: Central Bank of Bahamas, 2023

II.B.2. Sweden e-krona

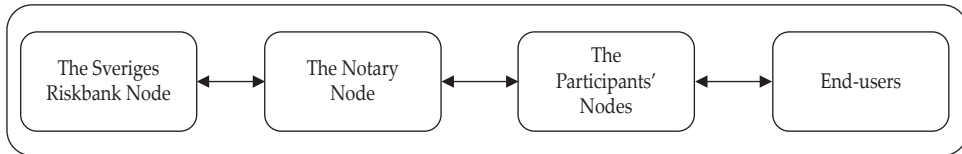
Sweden has also been at the forefront of CBDC development with its pilot project, the e-krona. The e-krona has undergone several phases of development, showcasing the country's progress in implementing a digital currency system. The initial pilot phase, conducted in 2017, focused on exploring the legal aspects to be addressed before the e-krona could be implemented.

Various challenges emerged throughout the e-krona pilot project's phases, from investigating new technologies and offline payment capabilities to refining token models and addressing legal considerations. The focus shifted to ensuring technical solutions providing programmability and collaboration models while defining e-krona design and requirements. Below framework is how the pilot project is going through three stages:

⁴⁵ Ian Hall, "Bahamas 'Sand Dollar' CBDC Put to Use for Payroll," Global Government Fintech, October 22, 2021, <https://www.globalgovernmentfintech.com/bahamas-sand-dollar-cbdc-put-to-use-for-payroll/>; Jim Wyss, "Licking Its FTX Wounds, Bahamas Steps Up Push for Digital Fiat," Bloomberg.com, January 14, 2024, <https://www.bloomberg.com/news/articles/2023-01-14/ftx-collapse-challenges-bahamas-sand-dollar-central-bank-digital-currency-cbdc>.

⁴⁶ "Central Bank of the Bahamas Statement of Assets and Liabilities 30 April 2023," Central Bank of Bahamas, 2023, <https://www.centralbankbahamas.com/viewPDF/documents/2023-06-29-16-55-49-Statement-of-Assets--Liabilities-as-at-April-30-2023-website.pdf>.

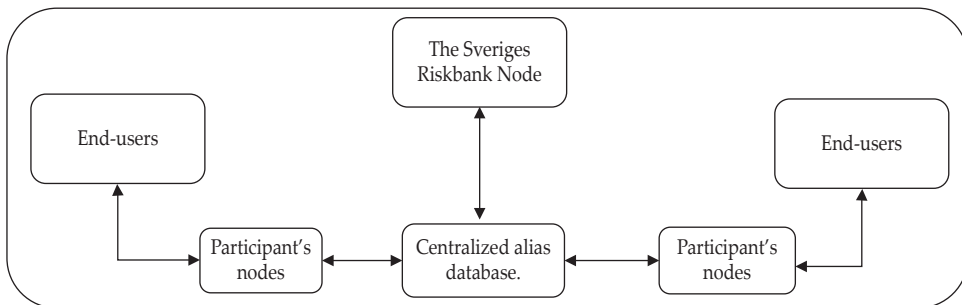
Figure 1.
The First e-krona Pilot Phase



Source: Sveriges Riksbank, 2021

The initial e-krona pilot project demonstrated that participant nodes can communicate with end-users and the central bank. In the project's framework, a notary node is present, a function operated by the Central Bank of Sweden. This notary node operates in real-time, functioning 24/7 to ensure seamless and continuous communication among the participating entities. Sveriges Riksbank.

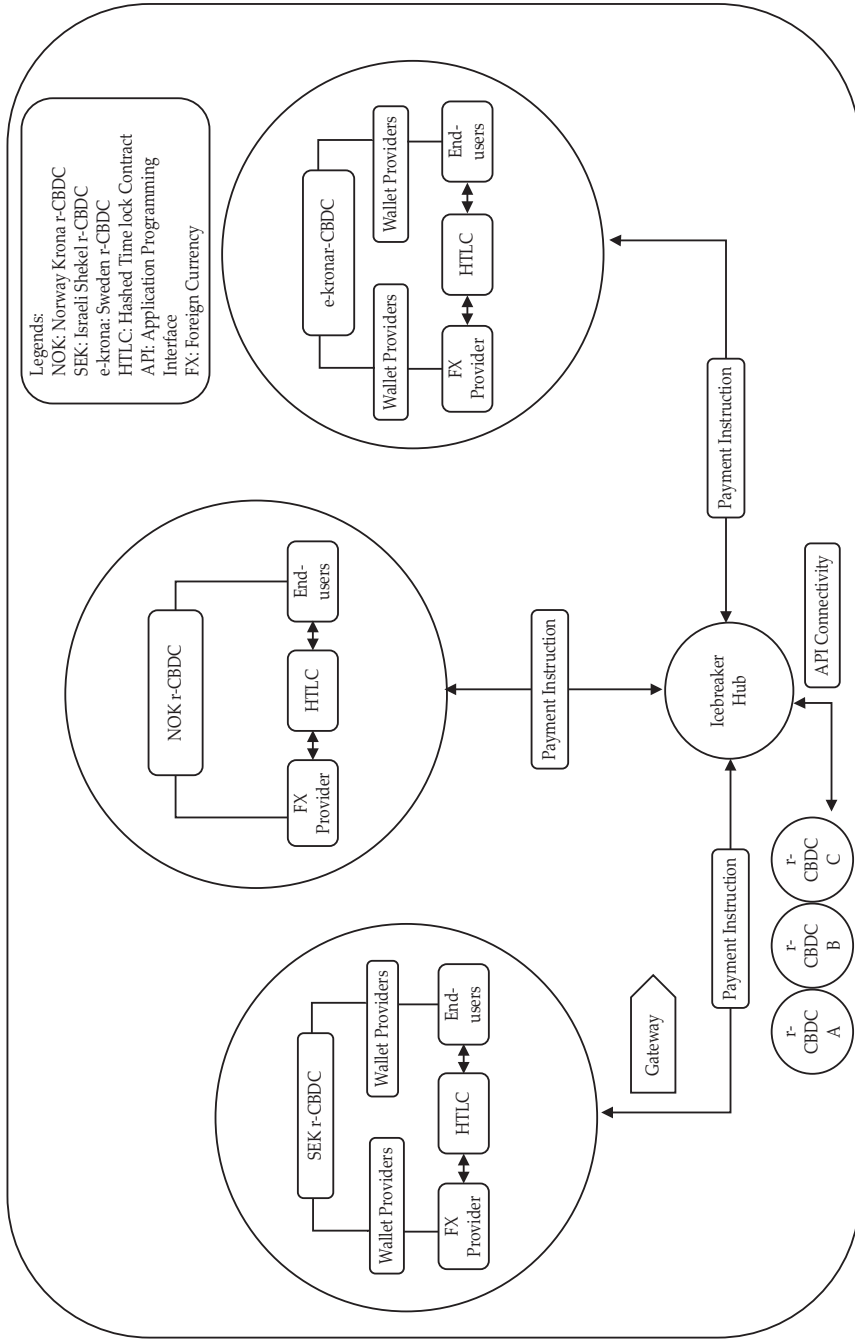
Figure 2.
The Second e-krona Pilot Phase



Source: Sveriges Riksbank, 2022

In the second stage of the e-krona project, there was a change in the node responsible for the central bank's operations. Specifically, the centralised alias database, which manages aliases used within the network, was outsourced to a third-party company. While this centralised alias service offers certain advantages, such as streamlined alias usage, there is a potential disadvantage associated with dependency on a centrally stored service in Sveriges Riksbank.

Figure 3.
The Third e-krona Pilot Phase (Icebreaker Project)



In the third stage of the e-krona, this model essentially excluded the payment service from a specific participant in the CBDC network to make currency-transfer payments, allowing the payment service to continue to offer the possibility to do so regardless of the participants to which it was connected. By separating the payer from the participant, the end user is not bound by exchange rate agreements offered by the participant and always receives the best exchange rate via the hub. The separation thus increases competition between foreign currency (FX) providers, while the model gives the payer greater transparency in the way the provider executes the payment. This model allows payments from across currencies to be made entirely in CBDC, and the use of hashed time locked contracts (HTLC) allows payment to be technically closed and reduces the risk of counterparty in payments.

II.B.3. Bank for International Settlements (BIS) and Cross-border CBDC Projects

The Eurosystem has entered the inquiry phase of its Digital Euro initiative, demonstrating a growing interest in CBDC across different regions. The European Commission intended to introduce a legislative proposal on the digital euro in early 2023. This indicated a proactive approach towards exploring the potential implementation of a CBDC within the European Union. The consideration and advancement of a Digital Euro align with the broader global trend of central banks exploring the opportunities and challenges associated with digital currencies. By initiating this inquiry stage and setting forth legislative plans, the Eurosystem and the European Commission actively engage in the ongoing discourse surrounding the development and implementation of CBDCs, highlighting the importance of these digital innovations in the future of monetary systems European Central Bank (ECB), “Exploring Anonymity in Central Bank Digital Currencies”.

However, CBDC could rely on unbanked or underserved populations in traditional cash-based economies to enhance financial inclusion in emerging markets. Although access to digital financial services is provided, it remains crucial to establish viable channels for utilising digital currency effectively or enabling convenient conversion to cash. This requirement is particularly significant in numerous emerging markets.

According to BIS Papers, in 2020, 66 jurisdictions participated in the BIS Survey on CBDC. The results are underway for the implementation of pilot projects by 45 advanced economic jurisdictions and 21 emerging markets economic jurisdictions. As previously mentioned, there were two classifications of CBDC: wholesale CBDC for advanced economies and retail or general

purposes CBDC for emerging economies.⁴⁷ The table below represents some jurisdictions with ongoing CBDC implementations, joining with another jurisdiction with specific names of projects.⁴⁸

Table 4.
List of Project Name, Country Name, Type of CBDC on BIS and Cross-border CBDC Project

No.	Project Name	Country	Type
1	Multiple CBDC Bridge (mBridge)	Thailand, China, Hong Kong, UAE, BIS	w-CBDC
2	Dunbar Project	Australia, Singapore, Malaysia, South Africa	w-CBDC
3	Sela Project	Israel, Hong Kong, BIS	r-CBDC
4	Ice-breaker Project	Israel, Norway, Sweden, BIS	r-CBDC
5	Mariana Project	France, Switzerland, Singapore, BIS	w-CBDC
6	Jura Project	France, Switzerland	w-CBDC
7	Venus Initiative	France, Luxembourg, and European Investment Bank	w-CBDC
8	Rosalind Project	United Kingdom, BIS	r-CBDC
9	Aurum Project	Hong Kong, BIS	r-CBDC & w-CBDC
10	Halvetia Project	Switzerland, BIS	w-CBDC
11	Digital Euro	Euro area	w-CBDC
12	Cedar x/Ubin+ Project	United States (NY Fed), Singapore	w-CBDC
13	Polaris Project	Nordic Centers	r-CBDC
14	D-Cash	Eastern Caribbean Central Union: Anguilla, Antigua and Barbuda, Dominica, Grenada, Montserrat, Saint Kitts and Nevis, Saint Lucia and Saint Vincent and the Grenadines	r-CBDC
15	Tourbillon Project	BIS Swiss Centre	r-CBDC & w-CBDC
16	Agorá Project	France (Eurosysteem), Japan, South Korea, Mexico, Switzerland, England, United States (Federal Reserve Bank of New York)	w-CBDC
17	Mandala Project	Australia, South Korea, Malaysia, and Singapore	w-CBDC
18	e-CNY	China, Hong Kong, Macau	r-CBDC

Source: Atlantic Council, 2024

From Table 5, the following paragraphs explain those two projects, the Ice-breaker Project and the Nexus Project. The Ice-breaker Project is the experiment of interlinking different r-CBDC from the Bank of Israel, Central Bank of Norway, Sveriges Riksbank Sweden, and BIS Innovation Hub Nordic Center. The project was done throughout 2022, and the report was released in

⁴⁷ Codruta Boar, Henry Holden, and Amber Wadsworth, "Impending Arrival - a Sequel to the Survey on Central Bank Digital Currency," BIS, January 23, 2020, <https://www.bis.org/publ/bppdf/bispap107.htm>.

⁴⁸ "Central Bank Digital Currency Tracker," Atlantic Council, 2021, <https://www.atlanticcouncil.org/cbdctracker/>.

March 2023. The digital currency's name for Israel is Israeli Shekel (ILS), e-krona (SEK) for Sweden CBDC, and Norwegian Krone (NOK) for Norway. From the Ice-breaker Project, the PvpP for three currencies is being developed by FX providers that exchange one currency of r-CBDC into another r-CBDC. The simulation of currency exchange is presented into this below table:

Table 5.
Three r-CBDC with Two FX Providers Currency Exchange Experiment

FX provider	Currency	P buy (Bid)	FX sell (Ask)
Provider 1	NOK/SEK	1,05	1,2
Provider 2	NOK/SEK	1	1,1
Provider 1	SEK/ILS	0	0,7
Provider 2	SEK/ILS	0	0,5
Provider 1	NOK/ILS	0,44	0,65
Provider 2	NOK/ILS	0,4	0,54

Source: BIS (2023)

Table 6 considers a scenario where a payer in Sweden intends to remit funds to a payee in Israel. However, due to the unavailability of a competitive bid rate for the SEK/ILS pairs, the Icebreaker Hub comes into play to bridge the gap. The proposed solution involves designating NOK as the intermediary currency. To facilitate the exchange, the Icebreaker Hub identifies Provider 2 as the preferred source for converting SEK to NOK, offering a rate of 1.10 SEK for 1 NOK. Similarly, Provider 1 is recognised as the optimal provider for converting NOK to ILS, with a rate of 0.44 ILS for 1 NOK. Consequently, the bridge rate for the SEK/ILS currency pair is calculated as 0.40, derived from dividing 0.44 by 1.10.

Several technological, policy and legal factors must be carefully evaluated to operationalise the Icebreaker models. Policy considerations encompass the establishment of governance structures, assessing the sustainability of the business models, ensuring adequate liquidity provisions, addressing privacy concerns, complying with AML and CFT regulations, and adhering to payment initiation-related standards of the BIS.

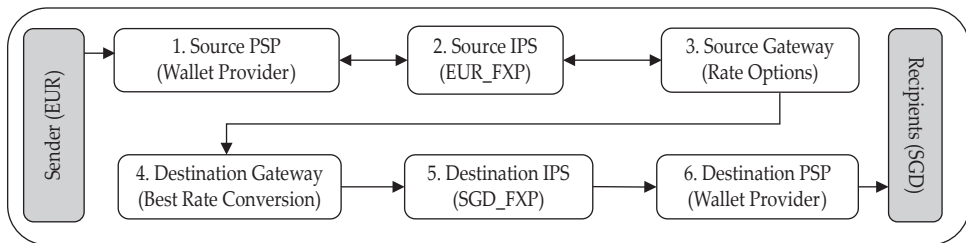
The Nexus Project, on the other hand, is a collaborative effort involving various countries, such as Eurosystem, Malaysia, Singapore, Indonesia, Philippines, and Thailand. One aspect of this project focuses on establishing Instant Payment Systems (IPS). Currently, there are three IPS systems in place: Banca d'Italia's Eurosystem Target Instant Payment Settlement (TIPS) on behalf of the Eurosystem, under the supervision of the European Central

Bank;⁴⁹ the Malaysian Real-Time Retail Payments Platform (RPP) under the supervision of Payments Network Malaysia (PayNet) and Bank Negara Malaysia;⁵⁰ and the Singaporean Fast and Secure Transfer Payment System (FAST) under the supervision of the Singaporean Financial Authority.⁵¹

In addition to IPS, these countries aim to enable their proxies to shorten the International Bank Account Number (IBAN). European countries have TIPS's Mobile Proxy Lookup (MPL),⁵² Malaysia has DuitNow,⁵³ and Singapore has PayNow.⁵⁴ However, there are other challenges associated with the Nexus Project, including the development of a technical framework, the formulation of the Nexus scheme rulebook, the creation of working software, and the implementation of sanctions screening.

To address these challenges and promote the development of the Nexus Project, the Bank for International Settlements Innovation Hub (BISIH) in Singapore plans to enhance global collaboration with central banks in the ASEAN region. This collaborative effort aims to advance the project and overcome the obstacles above. The figure below illustrates how the Nexus FX providers are involved in the project's operations.

Figure 4.
Nexus FX Providers Transaction Chain



Source: BIS, 2023a

⁴⁹ “Bank of Italy - TIPS: The Settlement of Instant Payments,” Banca d’Italia, 2022, <https://www.bancaditalia.it/compiti/sistema-pagamenti/pagamenti-tips/https%3A%2F%2Fwww.bancaditalia.it%2Fcompiti%2Fsistema-pagamenti%2Fpagamenti-tips%2Findex.html%3Fcom.dotmarketing.htmlpage.language%3D1>.

⁵⁰ “Real-Time Retail Payments Platform (RPP),” Payments Network Malaysia Sdn Bhd, 2023, <https://paynet.my/fi-rpp.html>.

⁵¹ Monetary Authority of Singapore, “Payment Services Act (PS Act)” (2024).

⁵² “TIPS MobileProxy Lookup,” European Central Bank, 2021, https://www.ecb.europa.eu/paym/groups/shared/docs/2c80d-7-2021-10-04_tips-cg_-_tips_mobile-proxy_lookup.pdf.

⁵³ “DuitNow QR | Customer,” Payments Network Malaysia Sdn Bhd, 2021, <https://www.duitnow.my/QR/index.html>.

⁵⁴ “PayNow Singapore,” The Association of Banks in Singapore, 2016, <https://www.abs.org.sg/consumer-banking/pay-now>.

As illustrated in Figure 4, the transaction system begins with determining if higher-value transactions are eligible for preferential rates, the corresponding thresholds for such rates, and the magnitude of improvement (in basis points) for those rates. Secondly, identifying if specific payment service providers (PSPs), such as preferred customers of an FX provider, qualify for enhanced rates and specifying the precise improvement (in basis points) to be applied to those rates. Then, supply the Source PSP with the relevant FX provider accounts. Lastly, it allows the transfer of funds to be credited to FX providers' accounts in the Source IPS and debited from the FX providers' accounts in the Destination IPS.

While the Nexus Project holds great promise, it is crucial to emphasise the importance of compliance within each jurisdiction involved. Specifically, AML and CFT sanction screening is mandatory for PSP sending and receiving Nexus payments. Compliance plays a crucial role in the Nexus Project, and efforts are being made to develop tools and streamline processes that help PSPs meet AML/CFT requirements and navigate the complexities of different purpose codes across jurisdictions. The implementation of the Bahama Sand Dollars digital currency involves the sponsorship of KYC procedures. Previous research suggests that KYC is an integral part of the anticipated strategy.⁵⁵ In line with this, the Bahama Central Bank has set limits on non-interest-bearing digital currency. It has taken measures to prevent substituting deposits or savings, mitigating the risks associated with illicit financial crime.

III.C. AEOI and CBDC Practices: Selected Countries Across ASEAN, East Asia, Oceania, The Bahamas, and Sweden

The implementation of the AEOI is subject to review across various categories. These categories include: 1) Review of the AEOI legal framework; and 2) Initial assessment of the effectiveness of AEOI in practice. The first category is further divided into two key requirements: the domestic legal framework and the international legal framework. The second category encompasses the assessment of the AEOI implementation.

The assessment of the first category focuses on evaluating the status of the AEOI legal framework and is classified into three ratings: “implemented” for a well-established framework; “Present but requiring enhancement” for areas that require enhancements; and “non-in place”, indicating the absence of a suitable legal framework.

The second category assesses the effectiveness of AEOI in practice and is rated based on three classifications: “progressing” for compliant practices;

⁵⁵ Boar, Holden, and Wadsworth, “Impending Arrival - a Sequel to the Survey on Central Bank Digital Currency.”

“partially obedient” (yellow) for areas that need improvement; and “non-obedient” for practices that do not meet the required standards.

Based on the data availability in the OECD report, the BIS CBDC Project report, and considering Regional Comprehensive Economic Partnership (RCEP) in 2020, the provided table presented the results of the peer-review assessments conducted by the OECD as of 2021 for selected countries in the ASEAN (Singapore, Malaysia, and Indonesia), East Asia (Mainland China, Japan, South Korea), and Oceania regions (Australia), we can focus on their AEOI legal frameworks, implementation practices related to AEOI. The Bahamas as a CBDC pioneer and Sweden for executing the first pilot project are also included to enrich the understanding of AEOI in the context of CBDC implementation simultaneously.

Table 6.
A Summary of The Decisions on The Legal Framework and The Effectiveness Assessment in Practice for Assessed Jurisdictions

Jurisdictions	AEOI Legal Framework Review			AEOI Practical Effectiveness Review		
	CR 1 (DLF)	CR 2 (ILF)	Overall	CR 1 (DICR)	CR 2 (IIE)	Overall Rating
Australia	Present but requiring enhancement	Implemented	Present but requiring enhancement	Progressing	Progressing	Progressing
China	Implemented	Implemented	Implemented	Progressing	Progressing	Progressing
Indonesia	Implemented	Implemented	Implemented	Progressing	Progressing	Progressing
Japan	Present but requiring enhancement	Implemented	Present but requiring enhancement	Progressing	Progressing	Progressing
Korea (ROK)	Implemented	Implemented	Implemented	Progressing	Progressing	Progressing
Malaysia	Implemented	Implemented	Implemented	Progressing	Progressing	Progressing
Singapore	Implemented	Implemented	Implemented	Progressing	Progressing	Progressing
Sweden	Implemented	Implemented	Implemented	Progressing	Progressing	Progressing
The Bahamas	Present but requiring enhancement	Implemented	Present but requiring enhancement	Non- Obedient	Progressing	Non- Obedient

Source: OECD (2022b)

Notes:

CR = Core Requirement

DLF = Domestic Legal Framework

ILF = International Legal Framework

DICR= Domestic Information Collection and Reporting

IIE = International Information Exchange

III.C.1. Australia

Table 7.
Number of Exchange Partners, Financial Institutions, Financial Account Information Exchanged (Australia)

	2018	2019	2020	2021
Exchange partner	57	64	70	72
Financial institutions - 2021		3,076		
Reported financial accounts - 2021		6,966,261		

Source: OECD (2022b)

Australia has been noted regarding the jurisdiction-specific excluded account, as it lacks effective penalties for non-compliant withdrawals. Australia needs to revise its legislation to exclude Scholarship Plans⁵⁶ from the jurisdiction-specific excluded accounts list, as they do not comply with the AEOI Standard requirements and lack penalties for non-educational withdrawals. Therefore, a lesson learned from Australia is to review the legal aspects of the excluded accounts in their scholarship plans to ensure future compliance and tax law enforcement.

Australia joined the Dunbar Project in March 2022. The Reserve Bank of Australia uses the Ethereum private blockchain for the pilot project.⁵⁷ According to the report, the Reserve Bank of Australia, Bank Negara Malaysia, the Monetary Authority of Singapore, the South African Reserve Bank, and the BISHS have built Corda and Partior CBDC sandboxes as prototypes.⁵⁸

III.C.2. China

Table 8.
Number of Exchange Partners, Financial Institutions, Financial Account Information Exchanged (China)

	2018	2019	2020	2021
Exchange partner	52	64	69	75
Financial institutions - 2021		2,627		
Reported financial accounts - 2021		18,994,224		

Source: OECD (2022b)

⁵⁶ *Peer Review of the Automatic Exchange of Financial Account Information 2022* (OECD, 2022), <https://doi.org/10.1787/36e7cded-en>.

⁵⁷ "Central Bank Digital Currency Tracker," Atlantic Council, 2021, <https://www.atlanticcouncil.org/cbdctracker/>.

⁵⁸ BIS Innovation Hub, "Project Dunbar - International Settlements Using Multi-CBDCs," 2022, https://www.bis.org/innovation_hub/projects/mbridge_brochure_2311.pdf.

The implementation of AEOI in China showed that 4% of exchange partners faced a technical barrier, and 50% of the files reported rejections. Considering this, a lesson learnt from China is that any information exchanged should be prepared and validated per the CRS XML Schema within the CRS XML Schema User Guide and the File Error and Correction-related validations in the Status Message User Guide.

Regarding the status of China's CBDC, Chinese media reported that mBridge would transition to the Dashing protocol from the Byzantine Fault Tolerance (BFT),⁵⁹ developed by the PBoC's (People Bank of China) Digital Currency Research Institute and Tsinghua University. The Bank of China employs both DLT and non-DLT infrastructure. China uses an intermediated CBDC architecture, distributing it through banks, payment service providers, and digital wallets. Despite this distribution method, the CBDC remains a central bank liability.⁶⁰

III.C.3. Indonesia

Table 9.
Number of Exchange Partners, Financial Institutions, Financial Account Information Exchanged (Indonesia)

	2018	2019	2020	2021
Exchange partner	59	66	69	72
Financial institutions - 2021		869		
Reported financial accounts - 2021		389,448		

Source: OECD (2022b)

According to OECD (2022b), three exchange partners highlighted delays in Indonesia's sending of information, while six exchange partners, representing 6% of its partners, have reported delays in sending status messages. In addition, three exchange partners rejected more than 50% of documents because of incomplete requirements met. A lesson learnt is that Indonesia should ensure it consistently sends timely status messages to the jurisdictions upon receiving files and should continue addressing the issues its exchange partners raised.

As previously mentioned, Indonesia is involved in the Nexus project; however, this is a cross-border payment development and does not include a CBDC pilot project. Regarding the status of Indonesia's CBDC, it is currently in the development phase. Therefore, among developing countries in Southeast

⁵⁹ BIS Innovation Hub, "Project MBridge Update: Experimenting with a Multi-CBDC Platform for Cross-Border Payments (October 2023)," 2023, <https://www.bis.org/publ/othp47.pdf>.

⁶⁰ "Central Bank Digital Currency Tracker," Atlantic Council, 2021, <https://www.atlanticcouncil.org/cbdctracker/>.

Asia, Indonesia is behind Malaysia, which is further along in implementing a CBDC project under the Dunbar Project.

III.C.4. Japan

Table 10.
Number of Exchange Partners, Financial Institutions, Financial Account Information Exchanged (Japan)

	2018	2019	2020	2021
Exchange partner	55	67	70	75
Financial institutions - 2021		595		
Reported financial accounts - 2021		688.425		

Source: OECD (2022b)

According to OECD (2022b), some areas need improvement in Japan's AEOI implementation. Japan's legislation falls short of fully defining "Controlling Persons" as mandated, and its due diligence protocols for their identification are also absent. Aside from this, one of Japan's exchange partners has identified issues with the International Bank Account Numbers (IBAN) from Japanese financial institutions, resulting in a 25% file rejection rate with less than 50% technical barriers. Additionally, 20 exchange partners have found invalid Tax Identification Numbers (TIN).

Therefore, a takeaway from Japan's CBDC programme is to amend its laws to ensure that reporting financial institutions consistently identify and evaluate the status of Controlling Persons to address trust, legal arrangements, and tax compliance. Furthermore, Japan should ensure compliance with the CRS Schema and maintain effective procedures to address incorrect information or non-compliance with due diligence and reporting requirements.

Japan's CBDC status is part of the Stella pilot project in collaboration with the ECB. The Bank of Japan (BoJ) is developing the CBDC infrastructure using DLT systems, including Corda, Elements, and Fabric. However, the BoJ utilise a single ledger for Delivery versus Payment (DvP). The concept behind the single-ledger DvP is for the two counterparties to agree on the transfer instructions' contents, which are then processed as a single transaction⁶¹. Under the BIS, the Agorá project has not yet been initiated.

⁶¹ European Central Bank, "Securities Settlement Systems: Delivery-versus-Payment in a Distributed Ledger Environment – Stella Project Report Phase 2," 2018, https://www.ecb.europa.eu/pub/pdf/other/ecb.stella_project_report_september_2017.pdf.

III.C.5. Korea (ROK)

Table 11.
Number of Exchange Partners, Financial Institutions, Financial Account
Information Exchanged (ROK)

	2018	2019	2020	2021
Exchange partner	59	67	70	74
Financial institutions - 2021	1.778			
Reported financial accounts - 2021	1.094.114			

Source: OECD (2022b)

Regarding the domestic legal framework, South Korea has demonstrated a higher adherence level than Japan. In addition, the National Tax Service has implemented technical solutions, including the AXIS⁶² reporting system, to receive and validate the information reported by FIs. However, South Korea has encountered a few problems, including 1) several undocumented accounts reported by its Reporting FIs and 2) accounts without valid TINs that cannot be matched. Based on these issues, it is evident that effective enforcement mechanisms are needed to address non-compliance by Reporting FIs. This includes the imposition of penalties and sanctions and mandating valid self-certification.

South Korea's CBDC is currently in the initial stages of the BIS's Agora Project alongside seven other central banks, including the Bank of France (representing the Eurosystem), the Bank of Japan, the Bank of Korea, the Bank of Mexico, the Swiss National Bank, the Bank of England, and the Federal Reserve Bank of New York (the "Agorá Public Sector Group").⁶³ Additionally, the Bank of Korea collaborates with the Central Bank of Malaysia (BNM), the Monetary Authority of Singapore (MAS), and the Reserve Bank of Australia on the Mandala Project.⁶⁴ Neither project has yet been published. However, the Bank of Korea has conducted several CBDC experiments internally, evaluating transaction volume per second, the number of nodes, and access traffic.⁶⁵ Samsung and Ground X are expected to be partners in piloting the CBDC.⁶⁶

⁶² *Peer Review of the Automatic Exchange of Financial Account Information 2022* (OECD, 2022), <https://doi.org/10.1787/36e7cded-en>.

⁶³ BIS Innovation Hub, "Project Agora - Call for Participation - Private Sector," 2024, https://www.bis.org/innovation_hub/projects/agora_application_package.pdf.

⁶⁴ "Project Mandala: shaping the future of cross-border payments compliance," BIS, 2024, <https://www.bis.org/about/bisih/topics/cbdc/mandala.htm>

⁶⁵ "Central Bank Digital Currencies – 1st Proof of Concept Experiments!," Bank of Korea (Economic Research Institute), 2024, <https://www.bok.or.kr/eng/main/contents.do?menuNo=400411>

⁶⁶ "Central Bank Digital Currency Tracker," Atlantic Council, 2021, <https://www.atlanticcouncil.org/cbdctracker/>.

III.C.6. Malaysia

Table 12.
Number of Exchange Partners, Financial Institutions, Financial Account
Information Exchanged (Malaysia)

	2018	2019	2020	2021
Exchange partner	42	64	65	69
Financial institutions - 2021	641			
Reported financial accounts - 2021	1.791.196			

Source: OECD (2022b)

In 2019, Malaysia's Minister of Finance introduced the Special Voluntary Disclosure Program (SVDP),⁶⁷ from November 2018 to September 2019. Malaysia's SVDP adopted a tier-based penalty system based on taxpayer compliance with the program and timely payment of debts. A 10% penalty applies for declaratory declarations made until June 2019 and paid before July 1. For declarations made between July and September 2019 and payments made before 1 October, the penalty rate has been raised to 15%. Taxpayers who had not participated in the SVDP and were then identified by the tax authorities were subject to penalties ranging from 45% to 300%.

According to the OECD Report 2022, seven exchange partners were facing issues with preparing and formatting the information sent by Malaysia. Five exchange partners highlighted delays in sending status messages by Malaysia, and four exchange partners reported 25% rejections. Considering this, the takeaways for Malaysia are to take all appropriate measures to address errors and ensure that timelines meet requirements.

Since then, Bank Negara Malaysia has joined the Dunbar Project, positioning its CBDC development a step ahead of Indonesia. While Australia and Singapore are developing wholesale CBDCs (w-CBDCs) and retail CBDCs (r-CBDCs), Bank Negara Malaysia has focused solely on retail CBDCs.⁶⁸

⁶⁷ "BDO Worldwide Tax News Issue 51 - Malaysia," BDO, 2019, <https://www.bdo.global/en-gb/microsites/tax-newsletters/corporate-tax-news/issue-51-may-2019/malaysia-special-voluntary-disclosure-programme>.

⁶⁸ "Central Bank Digital Currency Tracker," Atlantic Council, 2021, <https://www.atlanticcouncil.org/cbdctracker/>.

III.C.7. Singapore

Table 13.
Number of Exchange Partners, Financial Institutions, Financial Account
Information Exchanged (Singapore)

	2018	2019	2020	2021
Exchange partner	50	63	66	70
Financial institutions - 2021		6.152		
Reported financial accounts - 2021		4.070.212		

Source: OECD (2022b)

As of 2022, a similar issue was faced by Singapore's exchange partners, with 4% of jurisdictions reporting that they rejected more than 25% of the files received, and one partner had dismissed more than 50% of files due to unmet technical requirements. Additionally, four exchange partners highlighted issues with the received information, such as missing names, dates of birth, addresses, or invalid TINs. The lesson from Singapore was ensuring effective procedures to address errors, inaccuracies, and timeliness in due diligence and reporting processes.

Furthermore, concerning Voluntary Disclosure Programs (VDPs), as of January 1, 2013, there were revised penalties for disclosures meeting specific qualifying criteria. If a disclosure occurred within the one-year "grace period," no penalties would be enforced. However, for disclosures made after this grace period, penalties varied depending on the type of tax.

For Individual Income Taxes and Corporate Taxes, a reduced penalty of 5% would be imposed on the undercharged tax or the excess cash payout/bonus obtained beyond entitlement for each year following the late rectification of errors. For Withholding Tax, a flat 5% reduced penalty was applied to the outstanding tax. In the Goods and Services Tax (GST) case, a flat 5% reduced penalty was imposed on the undercharged tax.⁶⁹

Singapore's milestone was significant in the ASEAN context, both for the AEOI and CBDC context. Since the 2022 report, the involvement of the BIS CBDC pilot project includes the Dunbar project, the Mariana project, and the Ubin+ project. These projects are designing wholesale CBDC. In the Mariana project, Automated Market Makers (AMMs) are introduced to drive the global foreign exchange code. Borrowing ideas and concepts from decentralised finance (DeFi), Mariana allows traders to exchange one crypto asset (or tokenised assets more generally) for another using a shared liquidity

⁶⁹ "IRAS | E-Tax Guides," IRAS, accessed February 7, 2024, <https://www.iras.gov.sg/quick-links/e-tax-guides?pg=1>.

pool. A pre-specified algorithm determines prices.⁷⁰ As multiple benchmarking studies, the Mariana, Dunbar, and Ubin+ project become a role for Indonesia to develop w-CBDC. It reflects the White Paper of the Garuda Project and CDIBC Public Consultation Paper (2023), which cited Gridlock resolution and Financial Stability Board of Cross Border Payment.

III.C.8. Sweden

Table 14.
Number of Exchange Partners, Financial Institutions, Financial Account
Information Exchanged (Sweden)

	2018	2019	2020	2021
Exchange partner	61	66	70	73
Financial institutions - 2021			518	
Reported financial accounts - 2021			1.255.729	

Source: OECD (2022b)

According to the OECD report, STA introduced an electronic service that allowed FIs to submit and validate information by uploading XML files. The European Union (EU) uses Common Transmission Systems (CTS) and Common Communication Networks (CCNs) to facilitate secure data transmission and comply with file preparation and encryption requirements.⁷¹ However, 3% of Sweden's exchange partners reported 25% rejection of 50% of the files received due to unmet requirements. Therefore, a takeaway from Sweden is to review the due diligence and reporting procedures addressing errors and non-compliance reporting FIs.

Furthermore, the collaboration between the Swedish Central Bank and the Swedish Tax Agency, as evident in the Icebreaker Project Report and Pilot 1, 2, and 3 CBDC, has proven significant since 2017. Establishing an interconnected information network has facilitated the development of the e-krona network, involving various entities such as the central bank, instant service payment provider, foreign currency provider, gateway, and end-users. Handelsbanken is the only bank that joins the Sweden pilot project. The successful implementation of the Icebreaker Project, the three-stage CBDC pilot project, and AEOI compliance are expected to pave the way for faster international transactions and a digitalised economy in Sweden and inspire other countries.

⁷⁰ BIS Innovation Hub, Project Mariana: Cross-Border Exchange of Wholesale CBDCs Using Automated Market-Makers, 2023, <https://www.bis.org/publ/othp75.pdf>.

⁷¹ Peer Review of the Automatic Exchange of Financial Account Information 2022 (OECD, 2022), <https://doi.org/10.1787/36e7ceded-en>.

III.C.9. The Bahamas

Table 15.
Number of Exchange Partners, Financial Institutions, Financial Account Information Exchanged (Bahama)

	2018	2019	2020	2021
Exchange partner	36	48	56	60
Financial institutions - 2021		5,895		
Reported financial accounts - 2021		113,522		

Source: OECD (2022b)

The Bahamas provides guidance stating that if a person has no beneficial interest in a trust but exercises control over it, their account balance is considered zero.⁷² Reporting the account balance is essential for adequately functioning under the AEOI Standard. The lesson learned and recommendations are that the Bahamas should amend the domestic laws to prevent substituting reporting in another jurisdiction when required in both jurisdictions.

Besides, The Bahamas should develop a comprehensive compliance strategy based on a thorough risk assessment that considers relevant information sources. Adequate resources must be allocated to implement AEOI effectively. Last, The Bahamas should ensure that FIs correctly apply the definitions of Reporting FIs and non-reporting FIs and disclose information as required. It should also establish a robust verification framework to ensure that Reporting FIs effectively implement the AEOI Standard. This framework should include in-depth reviews and active monitoring of the interaction between the AML and CRS frameworks.

The Bahamas launched its CBDC in 2020. NZIA Limited is developing the infrastructure for this digital fiat currency system, leveraging expertise and know-how from IBM and Zynesis Pte Ltd to create their private blockchain technology. Additionally, to comply with Exchange Control Regulations, the Bahamas is actively implementing measures to monitor and control money laundering and terrorist financing.

III.C.10. Summary: AEOI Implementation and CBDC Development

In the previous section, we explored the stages of various countries implementing AEOI and CBDC simultaneously. However, we also acknowledged that Indonesia is lagging behind others. Therefore, the summary table below provides insight for Indonesia to see and compare the activities undertaken by other countries and responses to the global digital economy.

⁷² Peer Review of the Automatic Exchange of Financial Account Information 2022 (OECD, 2022), <https://doi.org/10.1787/36e7cded-en>.

Table 16. Table of Comparison Between Indonesia and Selected Countries: AEOI Implementation and CBDC Development

Country	AEOI				CBDC				
	Overall Legal Framework	Overall Practical Effectiveness	Status	Use Case	Architecture	Infrastructure	Technology	Cross border Projects	Technology Partnership
Australia	Present but requiring enhancement	Progressing	Pilot	Retail, Wholesale	Not Available	Not Available	Ethereum	Dunbar Project	Not Available
China	Implemented	Progressing	Pilot	Retail, Wholesale	Intermediated	Conventional, DLT	Not Available	mBridge	Not Available
Indonesia	Implemented	Progressing	Development	Retail, Wholesale	Not Available	Not Available	Not Available	Not Available	Not Available
Japan	Present but requiring enhancement	Progressing	Pilot	Retail, Wholesale	Intermediated	DvP within DLT	Not Available	Stella* Project, Agorá Project	Not Available
Korea (ROK)	Implemented	Progressing	Pilot	Retail	Intermediated	DLT	Ethereum	Agorá Project, Mandala Project	Samsung, Ground X
Malaysia	Implemented	Progressing	Pilot	Wholesale	Not Available	Not Available	Not Available	Dunbar Project	Not Available
Singapore	Implemented	Progressing	Pilot	Retail, Wholesale	Not Available	Not Available	Not Available	Dunbar, Mariana, Ubin+ Project	Not Available
Sweden	Implemented	Progressing	Pilot	Retail	Intermediated	DLT	Not Available	Icebreaker Project	Svenska Handelsbanken
The Bahama	Present but requiring enhancement	Non-Obedient	Launched	Retail	Intermediated	Conventional, DLT	NZIA Limited	Not Available	NZIA Limited

*Stella Project: European Central Bank and Bank of Japan Collaboration Project
Source: Atlantic Council (2024)

IV. CONCLUDING REMARKS

This study explores the added benefits of implementing CBDC coincident with AEOI. This paper sheds light on the implementation of CBDC and AEOI from other countries' experiences, emphasising the importance of the due diligence process and the specific context of each jurisdiction in determining the effectiveness of AEOI efforts. To enhance its financial system and strengthen regulatory efforts, Indonesia should consider the following steps:

Ensure the financial security of utilising KYC protocols, including AML and CFT measures, by continuously contributing to the status of full membership with FATF for strengthened anti-money laundering and counter-terrorism financing measures.

Support CBDC pilot project through BIS Cross-border Projects and regional ASEAN collaboration projects by improving the architecture, infrastructure, and technology partnership of the CBDC prototype.

Enhance CRS Schema and due diligence for non-reporting FIs to increase the effectiveness of the AEOI framework and improve information exchange in reporting financial information.

Strengthen coordination among the Central Bank of Indonesia, INTRAC, Financial Service Authority, and the Ministry of Finance (Directorate General of Taxes) to ensure effective implementation of CBDC and AEOI.

By prioritising these areas, Indonesia can bolster its financial governance, foster transparency, and improve its standing in the global financial arena.

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