

Alternative Credit Scoring Regulatory Framework: Comparison Between Indonesia and Korea

* Sanjung Purnama Budiarjo, ** Chun Sung Jun



* *Indonesia Financial Services Authority (OJK), OJK Institute, Researcher*

** *Korea Credit Bureau(KCB), Global Business Department, Director*

Acknowledgment

I would like to express my deepest appreciation to Dr. Sangche Lee, Honorary Fellow of the Korea Institute of Finance, for his invaluable mentorship and guidance throughout my research journey. His insights and encouragement have been instrumental in shaping this research.

I am deeply indebted to Mr. Chun Sung Jun, Director of Korea Credit Bureau, who has not only been my co-author but also a mentor and a great friend. His expertise in the Korean credit scoring industry and his unwavering support have enriched my understanding and strengthened the depth of this research.

This endeavor would not have been possible without Dr. Min Chang, Central Head of the Council on International Financial Cooperation, for granting me the opportunity to conduct this research and for his extraordinary support in ways beyond my expectations.

I extend my heartfelt thanks to the Council on International Financial Cooperation Global Outreach Team—SeungEun Baek, Yeob Lee, Hyejin Shin, Minah Park, and Hyun Ae Lee—for their unwavering assistance throughout my research. Their efforts in facilitating discussions and arranging unforgettable experiences during my stay in Seoul have been invaluable.

Additionally, I would like to express my appreciation to the experts from the Korea Credit Bureau, Korea Credit Information Services, Korea Financial Telecommunications & Clearing Institute, and NICE Information Service. Their willingness to share knowledge and insights has played a crucial role in helping me fully understand the Korean credit infrastructure.

Lastly, I extend my gratitude to my family, especially my parents, my wife and my two incredible children—Aurelia and Hiro. Their belief in me has kept my spirits and motivation high during this process.

ABSTRACT

This research explores the regulatory frameworks for alternative credit scoring (ACS) in Indonesia and South Korea. In Indonesia, the significant unbanked population underscores the need for ACS to assess creditworthiness using alternative data sources such as utility payment records, telecommunications data, social media activity, e-commerce transactions, and other behavioral indicators. In contrast, South Korea's mature credit information system incorporates innovative frameworks such as MyData services, Data Agencies, multi-licensed credit bureaus, and a well-integrated open banking network to address the needs of thin-file individuals.

A comparative analysis reveals key differences in the regulatory approaches of both countries, including business activities, licensing processes, data management practices, the role of intermediary agencies, regulatory oversight, consumer consent mechanisms, and conditions for consumer rights and compensation. The study identifies gaps in Indonesia's ACS regulatory framework, particularly in its data infrastructure and consumer protection measures. Drawing lessons learned from Korea's practices, the research recommends the establishment of an intermediary entity to securely combine datasets, mandatory notifications to enhance transparency when consumer data is shared, and stronger consumer rights, including mechanisms for data control and compensation for misuse or breaches.

Table of Contents

1. Introduction	5
1.1 Problem Statement	7
1.2 Research Objectives	8
1.3 Research Methodology.....	8
2. Regulatory Framework for Alternative Credit Scoring in Indonesia	10
2.1 Background for alternative credit scoring in Indonesia	10
2.2 Current Indonesian Regulations on Alternative Credit Scoring.....	14
2.3 Key authorities and stakeholders	23
2.4 Legal Frameworks on Data Privacy and Consumer Protection	25
3. Regulatory Framework for Alternative Credit Scoring in Korea.....	31
3.1 Background for alternative credit scoring in Korea.....	31
3.2 Overview of Korean regulations on credit scoring	37
3.3 Key authorities and stakeholders	40
3.4 Policy Initiative for Alternative Data and MyData in Credit Scoring.....	43
3.5 Legal frameworks on data privacy and consumer protection	52
4. Comparative Analysis of Indonesian and Korean Regulatory Frameworks	56
4.1 Comparison on The Overall Public Credit Registry and Private Credit Bureau Regulatory Approaches.....	56
4.2 Comparison on Alternative Credit Scoring Institutions Regulatory Framework.....	70
4.3 Data Privacy and Consumer Protection Regulations	79
4.4 Distinctive Key Stakeholders in South Korea’s Credit Information Ecosystem.....	86
5. Recommendations for regulatory improvements for Indonesia.....	94
5.1 Optimize Data Infrastructure for Alternative Credit Scoring.....	94
5.2 Promote Transparency.....	97
5.3 Strengthen Consumer Rights	100
6. Conclusion.....	104
REFERENCES	106

1. Introduction

In recent years, credit scoring has evolved significantly with advancements in technology and data analytics, reshaping how financial institutions assess creditworthiness. According to World Bank's Global Findex Database (2022), there are 24% of global adult population or 1.4 billion individuals are considered unbanked and does not have access to a bank or similar financial organization. The survey found the number of unbanked individuals in Indonesia reached 97.74 million adults or 48.24% of Indonesian adult population. Meanwhile, Korean number of unbanked individuals was significantly lower than the global average with only 1.33% of Korean adult population.

According to the survey, the primary reason for the low access to credit is the inability of financial service institutions (FSIs) to assess the creditworthiness of potential borrowers. This issue is driven by the lack of information needed to calculate an initial credit score (Fu et al., 2020). Historically, determining eligible borrowers has depended on credit scoring, a method of that uses past financial data to indicate borrowers future loan performance as "good" credit if repayment on time is expected and as "bad" credit if repayment is expected to fail (Siddiqi, 2012). Although, the traditional credit scoring models have provided a standardized means to measure the credit risk of borrowers, but these models are often excluding individuals without sufficient credit histories or formal financial footprints (Brevoort, 2016).

To address this gap, alternative credit scoring models have emerged which aimed at enhancing credit scoring models by analyzing new data forms not used in traditional credit scoring algorithms, such as telecom data, utility payments, e-commerce transactions, and social media data. By integrating non-traditional data, these models aim to provide a more

inclusive, accurate assessment of credit risk, especially for underbanked populations. In this way, financial service institutions can better understand lending risks, even for the unbanked and underbanked populations (Onay & Öztürk, 2018). In addition to increasing financial inclusion, alternative credit scoring models are also expected to improve credit quality. Big data-based alternative credit scoring models is better at predicting non-performing loans compared to traditional credit scoring models (Kil et al., 2021). Another study found that alternative credit scoring enable a reduction of the average credit card interest rates by 10% for those (previously thin-file) subprime borrowers who had sufficient utility payment history to qualify them as full-file (Li & Koo, 2019).

Fintech companies and data-driven technologies play a crucial role in the advancement of alternative credit scoring. Fintech's innovative approaches enable the rapid processing and analysis of large volumes of data, improving the efficiency and accuracy of credit evaluations. Technologies such as artificial intelligence (AI) and machine learning (ML) enhance predictive capabilities, allowing for dynamic risk assessment models that can adapt to changing borrower behaviors and economic conditions. As these technologies continue to disrupt traditional financial models, they present both opportunities and challenges for regulatory frameworks that must balance innovation with consumer protection.

A well-defined regulatory framework is essential for the sustainable development of alternative credit scoring. Regulation will provide guidelines for the ethical use of alternative data, ensuring that consumers' rights are safeguarded, data privacy is upheld, and scoring models remain transparent and fair. Without proper regulatory oversight, there is a risk of data misuse, discrimination, and privacy violations, which could undermine consumer trust

and financial inclusion objectives. Regulatory frameworks also support innovation by establishing clear standards, enabling a secure and equitable environment for fintech companies to develop and deploy alternative credit scoring solutions.

1.1. Problem Statement

Despite the promising potential of alternative credit scoring in enhancing financial inclusion, regulatory frameworks in Indonesia face challenges in fully supporting this innovation. Meanwhile, South Korea has a relatively well-established regulatory framework that governs the use of alternative data for credit scoring, supporting responsible innovation while safeguarding consumer rights. This regulatory disparity gives opportunity to compare both nation's regulatory framework, then provide recommendations to address any gaps in Indonesia's regulatory framework.

As Indonesia aims to increase financial access for its unbanked population, it is crucial to develop a robust regulatory framework that balances innovation with consumer protection. Without it, alternative credit scoring could lead to unintended outcomes, such as financial exclusion or reduced consumer trust. Thus, this research is guided by the following research questions:

- a. What are the regulations, key authorities and stakeholders, personal data protections, and consumer rights safeguards related to alternative credit scoring in Indonesia?
- b. What are the regulations, key authorities and stakeholders, personal data protections, and consumer rights safeguards related to alternative credit scoring in South Korea?

- c. What best practices from South Korea's regulatory framework can inform policy recommendations for a more inclusive and secure alternative credit scoring environment in Indonesia?

1.2. Research Objectives

Based on the introduction and problem statement in the previous sections, this research will focus on the regulatory structures, data privacy and consumer protection laws, and the role of key stakeholders. This research has the following objectives:

- a. To examine the current regulatory landscape for alternative credit scoring in Indonesia and Korea.
- b. To identify potential gaps in Indonesia's current regulatory framework, benchmarking it against the more mature financial regulatory framework in South Korea.
- c. To provide recommendations for Otoritas Jasa Keuangan (OJK) as the regulatory authority of alternative credit scoring in Indonesia.

1.3. Research Methodology

This research utilizes a qualitative approach, drawing on both primary and secondary data sources to provide an in-depth comparative analysis of the regulatory frameworks for alternative credit scoring in Indonesia and South Korea.

1.3.1. Primary Data Collection

Data and insights for this research were gathered through in-depth interviews with members of the Council on International Financial Cooperation (CIFC) in South Korea, mainly on institutions who are involved in credit scoring and data management services such as Korea Credit Bureau (KCB), Korea Credit Information Services (KCIS), Korea Financial Telecommunications & Clearing Institute (KFTC), and Nice Information Service. These interviews provided valuable perspectives on Korea's regulatory practices, data governance structures, and consumer protection mechanisms. Additionally, discussions were held with the department in Otoritas Jasa Keuangan (OJK) which in charge for alternative credit scoring regulation and development. These discussions allowed for a deeper understanding of Indonesia's current and its future regulatory landscape which enable the research contribution to be relevant with OJK's needs.

1.3.2. Secondary Data Collection

This research also reviews relevant regulations, guidelines, policy documents, and studies related to alternative credit scoring in Indonesia and South Korea as available up to November 2024. These documents offer valuable insights into the legal frameworks, key stakeholders, data protection policies, and regulatory objectives shaping alternative credit scoring practices in both countries. Since the OJK regulation on Alternative Credit Scoring Providers is still in the finalization process, this study references the draft regulation published on the OJK's official website.

1.3.3. Analysis Method

The analysis follows a comparative framework, focusing on the similarities, differences, and regulatory gaps between Indonesia and South Korea. This approach enables a systematic examination of the policies, regulatory structures, and consumer protection mechanisms in both countries, with the aim of identifying best practices from South Korea that could be adapted to improve Indonesia's regulatory framework for alternative credit scoring.

This combination of interviews, discussions, and document review aims to yield a comprehensive understanding of the strengths and limitations in each country's regulatory approach, providing a robust foundation for the recommendations that will follow.

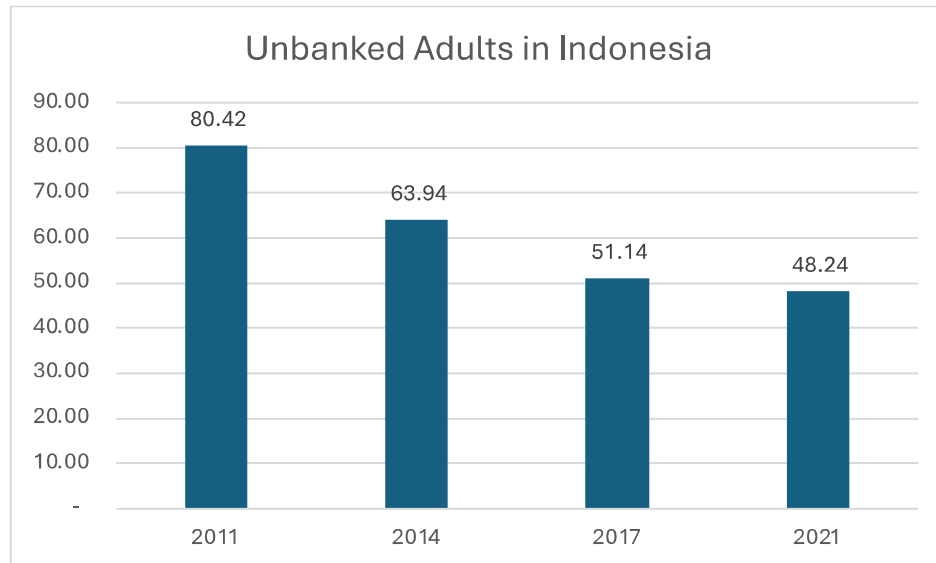
2. Regulatory Framework for Alternative Credit Scoring in Indonesia

2.1. Background for alternative credit scoring in Indonesia

2.1.1. Unbanked Population in Indonesia

According to 2021 World Bank's Global Findex Database, there are 97.74 million adults or 48.24% of Indonesian population who considered unbanked and does not have access to a bank or similar financial organization. This put Indonesia as the fourth nation with the largest number of unbanked adults with 7% of global unbanked population.

Figure 1. Percentage of unbanked adults in Indonesia (in %)

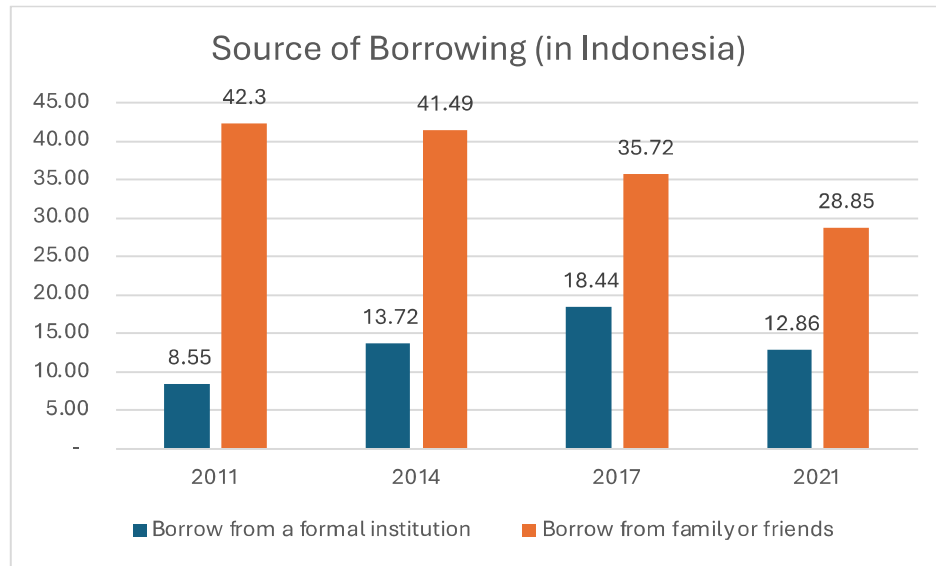


Source: The Global Findex Database 2021

One of the reasons for low financial inclusion in Indonesia is the limited access to financial services for low to middle income communities and MSMEs.

Global Findex data shows that among the poorest 40 percent of Indonesian households, only 46.93 percent have an account with a formal financial service provider. Additionally, only 12.86 percent of Indonesians borrow from formal financial institutions which is lower than the percentage of Indonesians borrow from family or friends (28.85%).

Figure 2. Percentage of Indonesian adults borrow from formal institution compared to family or friends (in %)



Source: The Global Findex Database 2021

One of the reasons limiting MSMEs' and low-income individuals' access to formal financial services is the high level of risk associated with extending credit to these communities. Meanwhile, from the Financial Services Institutions perspective, one of the challenges in extending credit to low-income communities and MSMEs are often considered unable to meet the 5C principles: character, represented by the applicant's credit history; (2) capacity, or the applicant's debt-to-income ratio; (3) capital, the amount of money an applicant has in his/her bank accounts; (4) collateral, an asset that can serve as guarantee for the loan and; (5) conditions, the purpose of the loan, the amount involved, and prevailing interest rates (Baiden, 2011). To assess the first 3Cs, banks refer to the SLIK that by no means covers unbanked individuals. Therefore, an alternative credit scoring system is needed to assess the credit risk of these communities.

2.1.2. Indonesia's Financial Inclusion Initiatives

Indonesia's financial inclusion initiatives have driven significant interest in alternative credit scoring. With a large portion of the population underbanked or unbanked, traditional credit scoring methods often exclude these individuals from accessing formal credit services. Alternative credit scoring emerges as a solution, leveraging non-traditional data sources, such as mobile usage, e-commerce transactions, and social media data, to assess creditworthiness more inclusively.

The adoption of alternative credit scoring aligns with several pillars of the OJK's Indonesian Financial Services Sector Master Plan year 2021-2025, specifically on:

- a. Financial Services Ecosystem Development pillar which focuses on expanding financial access and enhancing public financial literacy; and strengthening consumer protection in the financial services sector; as well as
- b. Acceleration pillar which promotes digital transformation by encouraging innovation and accelerating the digital transformation of the financial services sector.

The financial access and inclusion expansion program for unbanked and/or underbanked individuals and Micro, Small, and Medium Enterprises (MSMEs) by Financial Services Institutions requires technological support and adequate data/information to make informed decisions, especially on assessing the loan feasibility or credit scoring. As alternative data becomes integral to credit

assessment, OJK's role in regulating this sector remains critical to balancing innovation with the protection of public interests.

2.2. Current Indonesian Regulations on Alternative Credit Scoring

2.2.1. Credit Reporting System in Indonesia

Indonesia's credit reporting system follows a dual-model approach in which the Public Credit Registry (PCR) and Private Credit Bureaus (PCB) serve complementary roles. The PCR is managed by the Financial Information Service System (SLIK), under the authority of OJK. Meanwhile, PCBs, also known as Lembaga Pengelola Informasi Perkreditan (LPIP), are regulated and supervised by OJK. According to SLIK regulations, financial institutions are required to report credit data monthly through SLIK. Access to SLIK data is available to all SLIK reporters and LPIP, which covers all financial sector institutions in Indonesia ranging from banks, insurances, securities, fintech, multi-finance, guarantee companies, and other financial institutions. LPIPs are also permitted to collect additional data outside of SLIK, allowing them to generate credit information and value-added insights, such as credit scores, fraud alerts, and other reports by combining SLIK data with external sources.

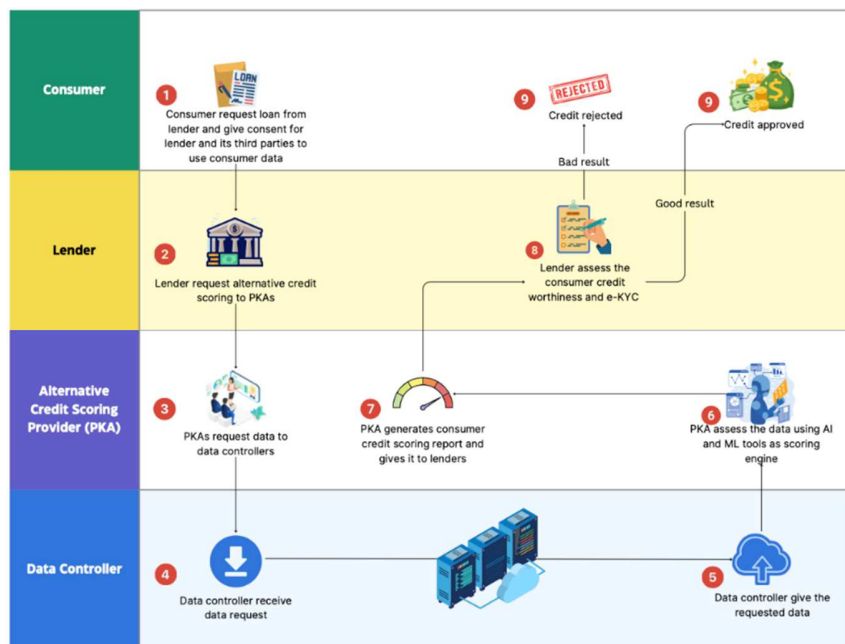
In addition to SLIK and LPIP, the credit reporting system now includes Alternative Credit Scoring (ACS) providers. While LPIPs operate under OJK Regulation Number 5/POJK 03/2022 concerning Credit Information Management Agencies, ACS Providers are governed by OJK Regulation Number 3 of 2024 concerning the Implementation of Financial Sector

Technology Innovation (Inovasi Teknologi Sektor Keuangan or FSTI). ACS Providers use alternative data or non-financial data to assess consumer profiles for financial service eligibility, offering credit scoring for consumers without relying on SLIK credit data.

2.2.2. Alternative Credit Scoring Practices in Indonesia

In the initial phase of the regulatory sandbox, there were 20 ACS Providers entered for testing. By April 2024, OJK’s sandbox assessment recommended ten ACS Providers. As of November 2024, four had been registered with OJK: PT Trusting Social Indonesia, PT Semangat Digital Bangsa, PT Scoring Teknologi Indonesia, and PT Prime Analytics Indonesia.

Figure 3. Alternative credit scoring business process



Source: Focus Group Discussion

The business process of Alternative Credit Scoring (ACS) Providers in the credit application process is shown in figure 3 above. It begins with a loan application submitted by a prospective borrower to a lender (banks, financing companies, peer to peer lenders) along with customer consent granting the lender to use consumer data for credit assessment purpose. Next, lender requests a credit score assessment to ACS Providers through an Application Programming Interface (API) which serves as a tool to enable various software and applications to interact and communicate with each other.

The ACS Providers initiates the credit scoring process by requesting data from data controller, such as utility payment records, telecommunications data, social media usage, payment data, e-commerce data, and other information that can help evaluate the behavior of the prospective debtor. Once the data is received, the ACS Providers performs a credit scoring using a scoring engine that applies artificial intelligence (AI) and/or machine learning (ML) methods. This assessment process generates output in the form of a credit score and/or probability of default, which serves as an indicator of creditworthiness.

Afterward, the credit score scoring reports are sent to lender through API, and lender makes the decision to approve or reject the loan application for the prospective borrower.

2.2.3. Alternative Credit Scoring Regulation before Financial Sector Omnibus Law

Before Law No. 4 of 2023 concerning the Development and Strengthening of the Financial Sector or Financial Sector Omnibus Law (FSOL) was passed on January 12th, 2023, the ACS Providers are regulated under OJK Regulation number 13/POJK.02/2018 concerning Digital Finance Innovation in The Financial Services Sector and OJK Circular Letter number 21 /SEOJK.02/2019 concerning Regulatory Sandbox. This sandbox enables fintech companies to trial new credit scoring approaches under OJK supervision, allowing authorities to assess potential risks and benefits before widespread implementation. The regulation defines Digital Financial Innovation (DFI) as activities that modernize business processes, business models, and financial instruments and provide new value added in the financial services sector by involving the digital ecosystem. Under this definition, alternative credit scoring is considered as one of the DFI scope as the other digital finance support.

OJK Regulation number 13/POJK.02/2018 mandates financial providers that will or have operated within the DFI scope and meet the DFI criteria must submit a recordation application to OJK. Then, OJK will create the Regulatory Sandbox to ensure the DFI meets the DFI criteria, and determines which Providers are approved for Regulatory Sandbox trials. The Regulatory Sandbox is implemented for a maximum period of 1 year, which can be extended for up to 6 months if required.

The result of the Regulatory Sandbox for Providers is stated based on the following status:

- a. If recommended, the Provider has the right to submit a registration application to OJK no later than 6 months from the determination of recommended status;
- b. If it requires refinements, the Provider could request to OJK for an extension of up to 6 months from the date of status; or
- c. If not recommended, the Provider will be unable to test or trial the same DFI again and will be removed as a recorded Provider.

For Providers that has been registered at OJK, they must submit monthly self-assessment reports, submit quarterly performance reports, establish an association of Providers, and locate data centers and disaster recovery centers within Indonesia.

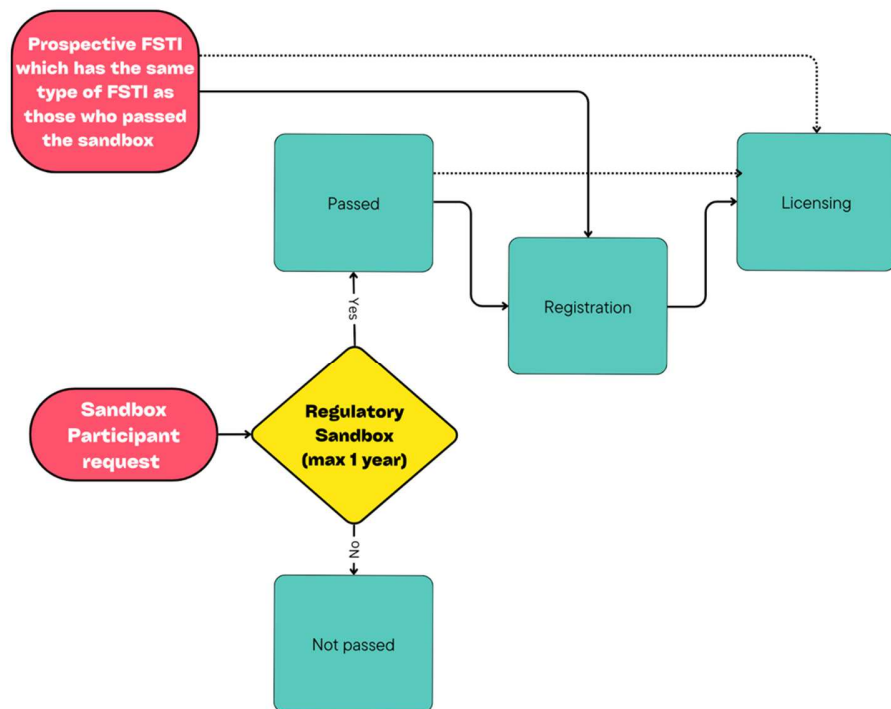
2.2.4. Alternative Credit Scoring Regulation after Financial Sector Omnibus Law

The ever changing development of digital innovations in the financial sector has prompted the Indonesian government to further strengthen and develop the country's financial sector. This is done by establish the Financial Sector Omnibus Law, which expanded OJK's mandate to include regulation and supervision of Financial Sector Technological Innovation (FSTI) and digital asset entities. Financial Sector Omnibus Law entrusted OJK with the regulation and supervision of FSTI and emphasized the principle of balancing efforts in supporting innovation with risk mitigation.

Following the enactment of the Financial Sector Omnibus Law, OJK introduced OJK Regulation Number 3 of 2024 concerning Organization of Financial Sector

Technology Innovation (FSTI Regulation) which supersedes OJK Regulation number 13/POJK.02/2018 concerning Digital Finance Innovation in The Financial Services Sector (DFI Regulation). OJK enhanced several aspects of DFI Regulation through FSTI Regulation, including the addition of eligibility criteria, the introduction of test plan requirements, and the establishment of procedures for determining results and exiting the sandbox. In general, the alternative credit scoring regulatory process according to FSTI Regulation is shown in Figure 4 as follow:

Figure 4. FSTI Regulatory Sandbox and Licensing Process



Source: OJK Regulation Number 3 of 2024 concerning Organization of Financial Sector Technology Innovation

2.2.4.1. Alternative Credit Scoring in the FSTI Framework

The regulation defines Financial Sector Technological Innovation (FSTI) as technology-based innovation that has an impact on products, activities, services and business models in the digital financial ecosystem. Under this definition, alternative credit scoring is considered as one of the FSTI scope as the other digital finance service activities.

2.2.4.2. Eligibility for the Regulatory Sandbox

The eligibility criteria for innovations to participate in the Regulatory Sandbox have evolved significantly between DFI Regulation and FSTI Regulation, reflecting a shift toward a more comprehensive and purpose-driven framework. While the DFI Regulation primarily required administrative and structural qualifications, the FSTI Regulation emphasizes consumer impact, testing readiness, and regulatory adaptation:

- a. The scope now includes innovations that are specifically applicable to the financial services sector and intended for consumers, partners, or the public in Indonesia.
- b. The requirement for novelty has expanded to include a focus on significant distinguishing features, setting a clearer standard for what qualifies as innovative.

- c. Innovations must demonstrate value and improve services which places emphasis on the benefits and practical improvements for consumers and the financial ecosystem.
- d. Innovations are required to be ready for testing and development, indicating that the sandbox is intended for solutions closer to deployment rather than those still in early conceptual stages.

2.2.4.3.Regulatory Sandbox Process

In terms of regulatory sandbox processes, there is a slight difference between DFI Regulation and FSTI Regulation. After the providers submit an application to join the regulatory sandbox, the “application stage” no longer recognizes the recordation step which was introduced by DFI Regulation. Now, providers who wish to undergo the regulatory sandbox should apply to become a “participant” in the OJK regulatory sandbox. OJK will evaluate the test plan and eligibility criteria of potential participants of the regulatory sandbox.

If OJK approve the provider to participate in regulatory sandbox, participants are required to carry out trials and develop innovations according to the test plan which is reported periodically to OJK. The sandbox is implemented within a maximum period of 1 year after approval is given by OJK, and OJK can determine a period for testing and developing innovations differently. After conducting tests and developing innovations in the sandbox, the participant must submit a final report 20 days before the end of sandbox period.

The mechanism for determining sandbox results is different between DFI Regulation and FSTI Regulation. Under DFI Regulation, the regulatory sandbox results for the providers were categorized as recommended, requires refinements, or not recommended. Meanwhile, FSTI Regulation specifies that the sandbox results are simply categorized as pass or fail, without providing participants an opportunity to improve their test results.

2.2.4.4.Registration and Licensing Post-Sandbox

If the participant fails the sandbox testing, it must stop its business operation, run its exit policy, and complete all obligations to consumers and related parties within 3 months. Participants who pass the sandbox may be required by OJK to register before applying for a business license within 6 months of the approval letter. Registration involves submitting documents covering aspects like governance, business model, IT systems, and partnerships. The licensing process will then follow OJK's regulations for each type of FSTI. Additionally, parties offering similar FSTI services to those that passed the sandbox can apply skip the sandbox process and proceed to the registration or a business license process.

Until November 2024, the regulation on ACS providers has not been established, but 10 ACS Providers have passed the sandbox. Therefore, prospective ACS providers can proceed until the registration process. Once the OJK Regulation regarding ACS Providers has been established,

all registered ACS Providers should proceed the licensing process.

According to the OJK Regulation Draft regarding Alternative Credit Scoring Providers, after the licensing process is approved, ACS providers must secure a registration certificate as electronic system operators within 60 days before commencing their business activities.

2.3. Key authorities and stakeholders

The Indonesian credit information system operates within Financial Sector Omnibus Law. This law has expanded OJK's mandate to include the regulation and supervision of Financial Sector Technological Innovation (FSTI) and Digital Asset entities, providing a clearer foundation for overseeing alternative credit scoring providers.

Primary oversight of Indonesian credit information system provided by OJK which ensures compliance and orderly operation of credit information systems, including alternative credit scoring. In Indonesia's credit information system, several key authorities and stakeholders play vital roles:

- a. **Otoritas Jasa Keuangan (OJK)** is the central regulatory body responsible for the financial services sector, including credit information. It develops regulations for credit bureaus and alternative credit scoring providers and supervises compliance, ensuring the proper functioning and fairness of the system.

OJK also managed the Public Credit Registry (PCR) through the Financial Information Service System (SLIK). The PCR collects and distributes credit data from financial institutions in Indonesia such Bank, Insurance, Multi-finance, Fintech, Guarantee Company, Securities, and Other Financial Institutions. In the

case of alternative credit scoring providers, they do not have access to SLIK as their purpose is to assess consumer worthiness using only alternative data.

- b. **Private Credit Bureaus** (Lembaga Pengelola Informasi Perkreditan or LPIP) are private entities regulated by OJK under specific licensing requirements. They collect credit data from SLIK and other sources to produce credit reports, scores, and value-added services for financial institutions.
- c. **Alternative Credit Scoring (ACS) Providers** are a newer addition to the credit information system, regulated under OJK's framework for financial sector technology innovation. They use alternative data sources to assess consumers' creditworthiness.
- d. **Financial Institutions:** Bank, Insurance, Multi-finance, Fintech, Guarantee Company, Securities, and Other Financial Institutions are critical participants, as they report credit data to the SLIK system and use credit information to provide financial services and products.
- e. **Fintech Association** represents the interests of fintech companies, including those involved in alternative credit scoring. The association works closely with OJK and other regulatory bodies to support innovation and establish standards and best practices within the fintech sector.
- f. **Data Providers** include entities responsible for storing and managing alternative data, such as telecommunications companies, utility providers, e-commerce platforms, and other organizations that collect behavioral or transactional data. These data controllers are crucial to alternative credit scoring models, as they provide the non-traditional data points used to assess consumer creditworthiness.

2.4. Legal Frameworks on Data Privacy and Consumer Protection

2.4.1. Personal Data Protection Law

Historically, there was no unified framework related to personal data protection in Indonesia, hence the Indonesia's data protection measures were fragmented across various regulations and sectors. However, this changed with the introduction of the Law Number 27 of 2022 concerning Personal Data Protection (PDP Law) which established a comprehensive legal structure to protect personal data across all sectors.

The motivation for Indonesia's dedicated Personal Data Protection Law was driven by a mix of international trends towards stricter data privacy regulations and domestic challenges, including several data breaches incidents in Indonesia. In addition, the booming digital economy in Indonesia and an increase in personal data usage, required a robust legal framework to protect the privacy and build trust in digital services. PDP Law is a comprehensive legal framework enacted to safeguard personal data which applies to every individual or company, public agency, and international organization within and beyond the borders of Indonesia.

PDP Law defined Personal Data as any information relating to an identified or identifiable individual. This data can be identified or linked to an individual directly or indirectly, through combination with other information, whether processed through electronic systems or non-electronic means. PDP Law distinguishes between two main categories of personal data: general and

specific (sensitive) personal data. General Personal Data includes data typically found on identification documents and other general records, while Specific Personal Data covers more sensitive information such as medical information, biometric data, criminal records, family data, and personal financial data. The handling of specific personal data is subject to stricter regulatory requirements due to the higher risk it poses to an individual's privacy and security. Therefore, organizations processing sensitive data may be required to appoint a Data Protection Officer (DPO) to ensure compliance with the PDP Law.

Under Indonesia's PDP Law, stringent protocols have been established to address data breaches. When a data breach occurs, both the data controller and processor are mandated to notify the affected data subjects and the Indonesian Data Protection Authority (DPA) within 72 hours. In addition, all personal data controllers, processors, and other relevant entities are required to align their policies and operational procedures in two years since the PDP law took an effect on October 17th, 2022.

2.4.2. OJK Regulation Related to Data Privacy and Consumer Protection in Alternative Credit Scoring Industry

The legal landscape governing data privacy and consumer protection in financial sector has evolved significantly with Law Number 27 of 2022 concerning Personal Data Protection (PDP Law) and Law No. 4 of 2023 concerning the Development and Strengthening of the Financial Sector (Financial Sector Omnibus Law or FSOL). In response to these developments,

OJK issued Regulation Number 22 of 2023 concerning Consumer and Public Protection in the Financial Services Sector (Consumer Protection Regulation).

The main principle of Consumer Protection Regulation is the obligation for financial service institutions to maintain the confidentiality and security of consumer data and information. This requirement extends to individual data, which includes personal identifiers such as full name, national identification number, address, date of birth or age, phone number, mother's name, and any other information submitted by the consumer. Similarly, corporate data protection encompasses the name, address, phone number, identification documents, and any additional information provided or accessed by the consumer.

To enforce these protections, financial service institutions are strictly prohibited from sharing consumer data or information with third parties unless they have obtained explicit consent from the consumer or there is a legal obligation to disclose such data under applicable laws. Furthermore, institutions are not allowed to use the data of consumers who have terminated their agreements for products and services, nor can they utilize the data of prospective consumers whose applications have been rejected or who have withdrawn their applications.

Additionally, financial service institutions are required to establish and implement mechanisms for handling consumer complaints, ensuring that consumer complaints are addressed promptly and effectively. This includes receiving complaints, managing them, and providing resolutions within a

specified timeframe. When a resolution cannot be achieved, consumers have the right to escalate their complaints to the OJK or seek resolution through the Financial Services Sector Alternative Dispute Resolution (LAPS) or through legal channels.

Furthermore, OJK's FSTI regulation includes specific requirements for FSTI Providers regarding the use of user data and information. FSTI Providers must obtain user consent for data usage, clearly inform consumers about the limitations on data and information usage, notify them of any changes in the purpose of data usage, and ensure that data collection methods guarantee confidentiality, security, and integrity.

2.4.3. OJK's Cyber Security Guideline

To complement regulation concerning data privacy and consumer protection in financial sector, OJK publish cyber security guideline for Financial Sector Technological Innovation (FSTI) entities which include Alternative Credit Scoring (ACS) Provider. This guideline aims to equip all FSTI providers with a structured framework and practical mechanisms for implementing effective cybersecurity risk management. It outlines strategies for managing cyber risks and responding to cyber incidents in a manner that meets Indonesia's rigorous regulatory standards.

Data protection begins with encryption, which is crucial for safeguarding sensitive information such as credit card numbers, banking details, and personal identification data. This encryption relies on strong cryptographic algorithms,

implement end-to-end encryption for all data exchanges, and encrypt all sensitive information. In addition to encryption, data storage security mandates that servers be equipped with firewalls to prevent unauthorized access or cyber intrusions, while robust access controls serve as an additional barrier to unauthorized data access. Routine testing and auditing of these security measures are required to ensure that FSTI providers consistently meet high standards.

The framework for information security is structured on Confidentiality, Integrity, and Availability principles:

- a. Confidentiality requires that all sensitive data be encrypted using high-standard cryptographic algorithms, ensuring data remains secure even if accessed by unauthorized parties.
- b. Integrity involves preserving the accuracy and completeness of data throughout its lifecycle. This includes keeping detailed records of data destruction activities, such as the methods used, personnel involved, and destruction dates.
- c. Availability addresses data access and recoverability. Providers must establish data retention policies that comply with regulations such as Law Number 43 of 2009 on Archiving and the Personal Data Protection Law No. 27 of 2022 (PDP Law) which covers detailed data retention standard for personal information of consumer and employee, financial reporting data, consumer transaction data, business communication logs, and operational data logs. For data disposal, secure methods like data erasure, degaussing, or

physical destruction are required once data has reached the end of its retention period. Additionally, a comprehensive Business Continuity Plan (BCP) outlines recovery strategies that cover critical aspects and locate data recovery centers at a minimum distance of 35 km from the primary data centers.

2.4.4. Artificial Intelligence Code of Ethics

In light of the growing use of Artificial Intelligence (AI) within the Fintech industry, there is an emerging need for a robust code of conduct that can guide Fintech companies and related parties in responsibly implementing AI-based applications. Therefore, OJK and Fintech associations design this framework to mitigate potential risks while maximizing AI's positive impact, ensuring that AI applications align with core principles of:

- a. Align with national principle (Pancasila): Providers ensure that their use of AI technology upholds national values and ethical considerations, particularly those based on Pancasila, Indonesia's foundational philosophy, which emphasizes social justice and responsibility.
- b. Beneficial: AI applications in Fintech should provide tangible value not only for business operations but also for consumer welfare. AI should assist consumers in making informed decisions, reduce inequalities, expand financial inclusion, and support sustainable economic development.
- c. Fair and accountable: AI-driven business models and applications avoid causing harm to consumers, violation on privacy, or leading to discrimination. Fintech providers must ensure that the data used in AI is

valid, current, free from bias, and compliant with personal data protection laws.

- d. **Transparent and explainable:** Fintech providers should adopt a risk management framework for AI, which includes mechanisms to address inaccurate outputs, assign clear levels of responsibility, and implement recovery procedures if processing errors occur. These measures aim to clarify AI operations and ensure that both providers and consumers understand AI-driven decisions.
- e. **Robust and secure:** Fintech providers must prioritize cybersecurity by ensuring that AI systems are resilient to cyber-attacks and equipped with recovery mechanisms. Perform regular audits and security enhancements as part of its commitment to protect consumer data and maintain trust in AI-based services.

3. Regulatory Framework for Alternative Credit Scoring in Korea

3.1. Background for alternative credit scoring in Korea

3.1.1. Financial Exclusion and Inclusive Finance Policies in Korea

Despite Korea's rapid economic growth and the development of its financial industry, wealth inequality and financial exclusion have persisted as significant social issues. To address these challenges, the Korean government has established and implemented various policies to promote inclusive finance as part of its efforts to revitalize the public finance sector.

Against this backdrop, the Korean government has increasingly promoted inclusive finance as a core financial policy, particularly since 2018. As the global emphasis on financial inclusion has grown, aimed at enhancing the financial accessibility of underrepresented populations, the Financial Services Commission (FSC) has embraced inclusive finance to improve access to financial services for financially marginalized individuals and businesses, thereby expanding their opportunities.

3.1.2. The Thin-Filer Issue in Korea's Credit Mature Society

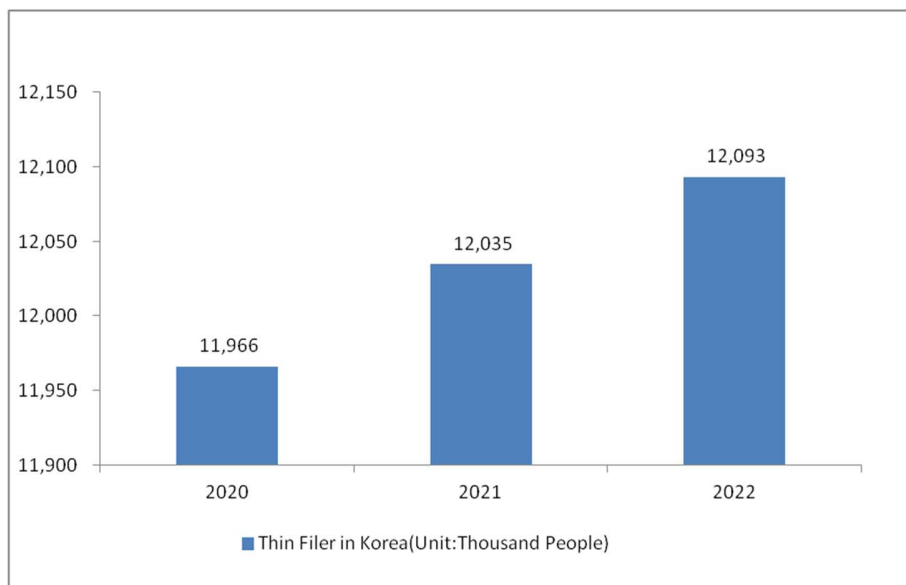
Although Korea is considered a credit-mature society with broad access to credit products, including loans and credit cards, concerns have emerged regarding the increasing number of thin-filer groups—individuals who lack sufficient financial history to obtain traditional credit products. This issue remains pressing, even as access to financial services, particularly through credit cards, continues to expand within the general population.

The concept of Thin Filers is relatively clear and is typically defined as a group of individuals with insufficient credit history. However, the specific number of individuals categorized as Thin Filers within a population can vary slightly depending on the Credit Bureau (CB) technical methodology. Credit Bureaus make use of unique development methodologies, based on statistical or data engineering approaches, to create proprietary value-added products such as credit bureau scores, which is representative measures of an individual's creditworthiness. Due to these proprietary methodologies, each Credit Bureau

evaluates creditworthiness using different credit scoring models, resulting in technical differences in how Thin Filers are defined.

In this context, Thin Filers refer to individuals with insufficient credit histories for a comprehensive credit assessment. These technical variations are considered natural and accepted in advanced markets such as the United States and Europe. Similarly, in South Korea, differences in credit scores among Credit Bureaus are recognized as a result of disparities in data and technological methodologies. KCB (Korea Credit Bureau) defines Thin Filers as individuals who have had no credit transactions of any kind within the past three years. In contrast, NICE CB considers individuals as Thin Filers if they have no credit card usage within the past two years and no loan experience within the past three years.

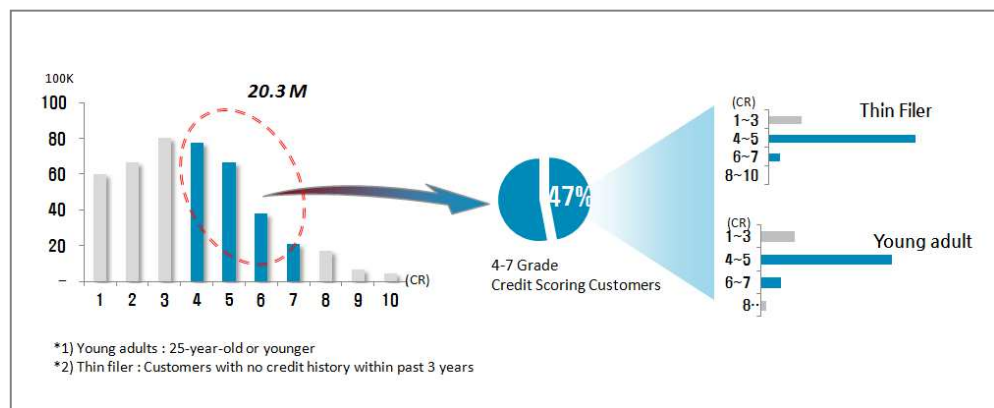
Figure 5-1. The Number of Thin Filers in Korea



Source: Korea Credit Bureau

According to KCB, the number of Thin Filers was 11,965,844 at the end of 2020, increasing to 12,034,867 at the end of 2021, and further to 12,093,356 by the end of 2022. Based on NICE CB's criteria, the number of Thin Filers at the end of 2022 was 12,095,641. This upward trend underscores the urgency of establishing alternative credit evaluation frameworks to support these individuals.

Figure 5-2. The Number of Thin Filers in Korea



Source: Korea Credit Bureau

Thin filers are defined as individuals with no credit card records within the past two years and no loan history in the last three years. Due to their lack of credit transaction history, they are less likely to receive high credit scores. According to KCB's credit scoring data, mid-tier credit score customers (grades 4-7) make up approximately 47% of all customers, totaling 20.3 million people. Within this group, there is a particularly high proportion of young adults under 25 and thin filers with limited credit activity in the past three years. This is largely due

to the CB (Credit Bureau) system's reliance on historical credit transactions for its evaluations, naturally disadvantaging groups with limited or no credit history.

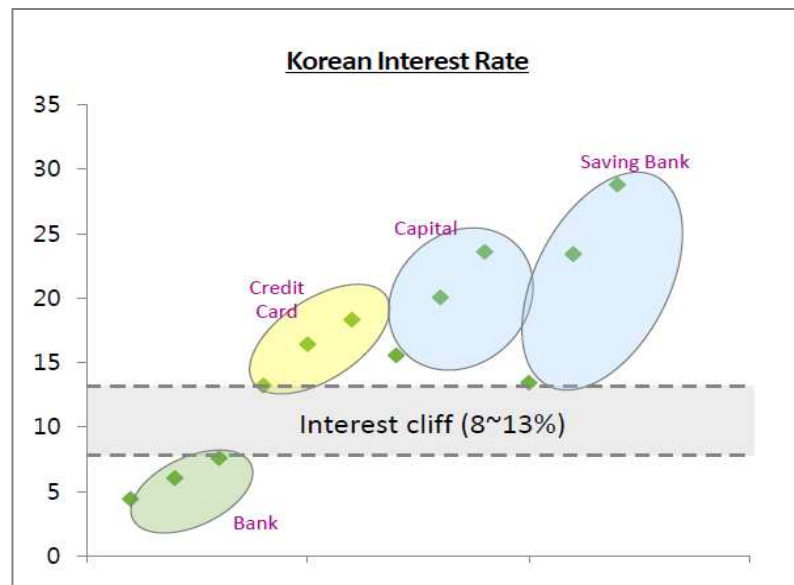
The impact of a low credit score among thin filers goes beyond the scoring itself, significantly affecting their financial opportunities. A low credit rating can restrict access to bank loans or credit cards and, even when financing is available, often subjects these individuals to relatively high interest rates. Consequently, thin filers face systemic disadvantages, fueling societal consensus around policies that expand the use of non-financial data to enhance credit evaluations. This has led to policy directions that not only encourage individuals to voluntarily provide non-financial information but also establish legal frameworks allowing firms to utilize such data in credit assessments for thin filers.

3.1.3. Expansion of Mid-Interest Rate Loans and Improvement of the Personal Credit Evaluation System

The policy direction taken by Korean financial authorities is largely motivated by the "Interest Cliff" issue in the lending market. Korea's personal lending market is mainly served by banks, credit card companies, capital companies, and savings banks. While banks, serving primarily prime clients, offer loans at low interest rates under 8%, lending institutions targeting low- to medium-credit individuals, such as credit card companies, capital firms, and savings banks, charge considerably higher interest rates, often exceeding 15%. This disparity, often referred to as the "Interest Cliff," results in borrowers, despite their

potential eligibility for lower rates, facing structural limitations and thus incurring higher interest burdens due to the lack of mid-rate loan options.

Figure 6. Korean Interest Rate



Source: Korea Credit Bureau

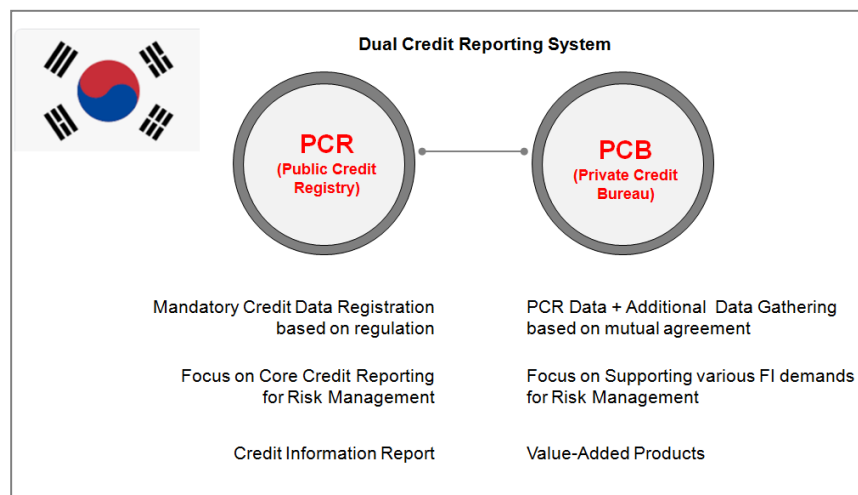
In response to the shortage of mid-rate lending options, Korean financial authorities announced the "Inclusive Finance Policy Direction and Mid-Rate Loan Activation Plan" in 2018, building on their ongoing inclusive finance initiatives. This policy approach emphasizes institutional enhancements to facilitate mid-rate loan products. The FSC aims to advance the credit evaluation system by supporting big data analysis and simplifying intra-group data-sharing processes among financial holding companies. This direction will also expand the range of information shared between institutions, thereby refining credit assessment accuracy.

3.2. Overview of Korean regulations on credit scoring

3.2.1. Credit Information System in Korea

The credit information industry refers to businesses that systematically manage and distribute credit information, as well as the infrastructure that enables these operations. In Korea, the credit information industry is composed of credit bureaus (CBs), which operate as credit information businesses, and credit information concentration agencies that serve as supporting infrastructure.

Figure 7. Credit Information System in Korea



Source: Korea Credit Bureau

Credit bureaus (CBs) are responsible for collecting, providing, and managing credit information on individuals and corporations, and they assess creditworthiness for financial transactions. Meanwhile, credit information concentration agencies, such as the Korea Credit Information Services (KCIS), gather and manage credit information from financial institutions and public

agencies. This centralized data is then shared with CBs and financial institutions, facilitating more comprehensive credit evaluations.

3.2.1.1. Current Status of Credit Information Concentration Agencies

Credit information concentration agencies serve as public information infrastructures, managing credit information received from financial companies and public institutions and sharing it with financial companies and Credit Bureaus (CBs). These agencies differ from private CBs in the following ways:

- a. They do not produce new credit information, such as credit scores.
- b. They provide only raw data (source information) they have collected and managed.
- c. Their services are restricted to the financial sector.

Currently, the Korea Credit Information Services (KCIS) serves as the designated credit information concentration agency with authorization from the Financial Services Commission. KCIS was established in January 2016, integrating the credit information functions of five financial associations—the Korea Federation of Banks, the Korea Financial Investment Association, the Korea Life Insurance Association, the General Insurance Association of Korea, and the Credit Finance Association—as well as the Korea Insurance Development Institute. KCIS operates as a non-profit corporation under civil law, having obtained permission in December 2015 to

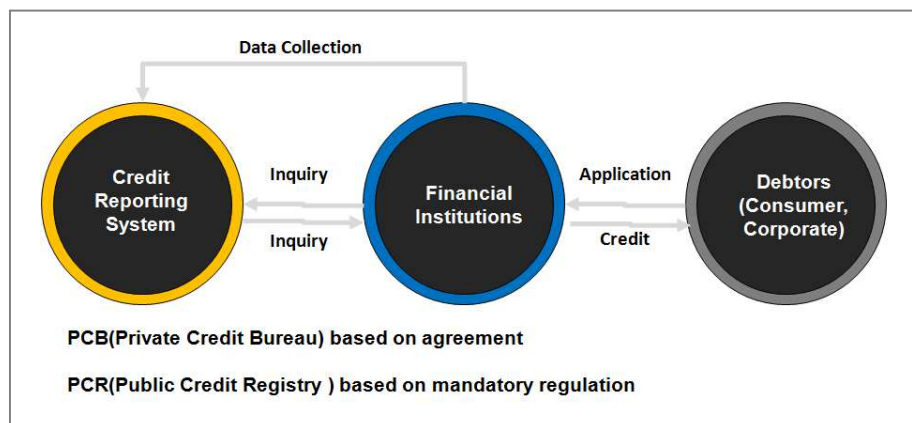
function as a comprehensive credit information concentration agency under the Credit Information Act.

3.2.1.2. Status of Private Credit Bureaus (CBs) before 2020

Before the 2020 amendment to the Credit Information Act, which introduced further segmentation in Credit Bureau licensing, six credit rating companies operated in Korea, classified into personal and corporate CBs based on their main business functions:

- a. Personal CBs: assess individuals' credit scores based on financial transaction data, providing core information for credit evaluations used by financial institutions.
- b. Corporate CBs: assess corporate credit scores required for financial transactions or gather diverse corporate information, including technology credit information, for distribution.

Figure 8. Private Credit Bureau Business Process



Source: Korea Credit Bureau

The credit information industry framework introduced in 2009 has faced limitations in driving data innovation due to constraints in regulation, scope of operations, and infrastructure. Key challenges include:

- a. **Entry Barriers:** The lack of a systematic classification of industry segments and licensing units has hindered the emergence of new players, such as MyData service providers.
- b. **Scope of Operations:** While CBs in other countries are leading in the big data market, domestic CBs face restrictions in engaging in big data-related activities.
- c. **Information Infrastructure:** The scope of information shared within the financial sector is limited, and as infrastructure institutions, CBs are expected to enhance their support functions across the financial industry.

Against this backdrop, amendments to the Credit Information Act and policy improvements in the credit assessment system have been pursued through the enactment of the three major data laws.

3.3. Key authorities and stakeholders

The credit information system in Korea operates under a structured legal and regulatory framework that provides licensing and oversight. Key regulatory components include:

- a. Credit Information Use and Protection Act
- b. Enforcement Decree
- c. Enforcement Rules

d. Supervisory Regulations on Credit Information Industry

The primary supervisory authorities are the Financial Services Commission (FSC) and the Financial Supervisory Service (FSS), which ensure compliance and oversee the proper functioning of credit information services.

In the context of Korea's credit information system, several key authorities and stakeholders play crucial roles in its governance and operation:

- a. **Financial Services Commission (FSC):** The FSC is the primary regulatory body responsible for formulating and implementing policies related to financial services, including credit information. It oversees the licensing of credit bureaus and ensures compliance with relevant laws.
- b. **Financial Supervisory Service (FSS):** The FSS operates under the FSC and is tasked with supervising and inspecting financial institutions, including credit bureaus. Its role includes ensuring the accuracy and fairness of credit information and the overall integrity of the financial system.
- c. **Korea Credit Information Service (KCIS):** As the designated credit information concentration agency, KCIS collects and manages credit information from various financial institutions. It plays a vital role in aggregating data and providing it to credit bureaus and financial companies.
- d. **Personal Credit Rating System Verification Committee:** A committee responsible for ensuring the accuracy, transparency, and fairness of personal credit rating systems. Established under the KCIS, this committee oversees and evaluates personal (including SPCR) and sole proprietor credit rating companies. The

committee conducts annual evaluations of credit scoring systems, and report the result to the Financial Services Commission (FSC), which then discloses the findings to the public through FSC's website.

- e. **Credit Bureaus (CBs):** Various private credit bureaus operate in Korea, providing credit scoring and information services. These entities assess creditworthiness based on the data they collect and contribute to the credit information ecosystem.
- f. **Financial Institutions:** Banks, insurance companies, and other lending organizations rely on credit information to make lending decisions. Their participation in the credit information system is essential for its effectiveness.
- g. **MyData Company:** A company that allows consumers to consolidate and manage their credit, financial, and certain non-financial data from various institutions on a single platform. Consumer have the right to data portability by choose which data could be share to a third party from a data provider.
- h. **Data Agency:** An entity designated by the Financial Services Commission to securely combine data sets from credit information companies and third parties, ensuring compliance with data protection standards through anonymization or pseudonymization. It evaluates the appropriateness of anonymization and implements risk management systems to address potential risks. Combined data is transferred in a pseudonymized or anonymized state to protect consumer privacy.
- i. **Data Provider:** A company responsible for storing and managing alternative data sources. In Korea, these data providers not only supply essential non-traditional data points for alternative credit scoring models but also play a vital role in transferring consumer data to licensed MyData companies. This data-sharing

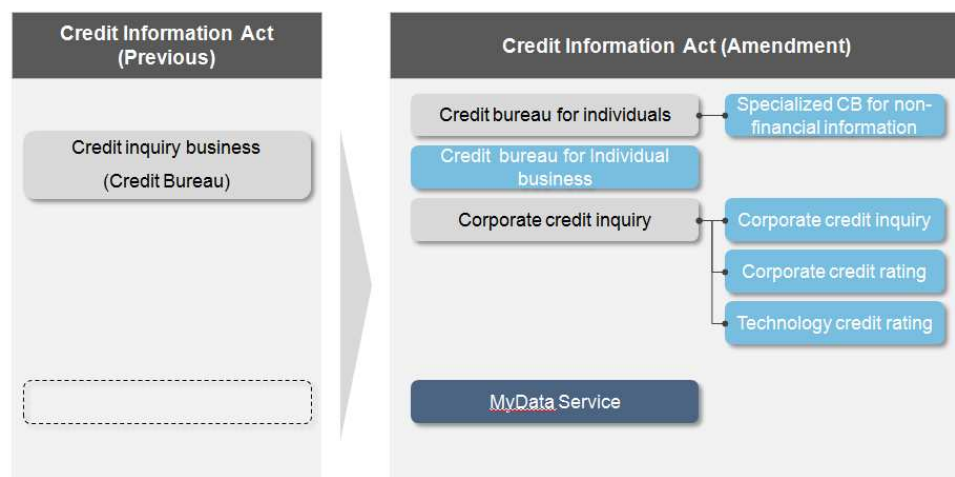
enables MyData companies to provide consumers with a unified view of their financial and credit data, further supporting credit assessment and consumer data ownership.

3.4. Policy Initiative for Alternative Data and MyData in Credit Scoring

Korea's amendments to the Credit Information Use and Protection Act are reshaping the credit scoring ecosystem by diversifying credit bureau licensing and introducing MyData companies as illustrated in Figure 9. Previously, all credit bureaus operated under a single license, but now, the Act enables specialized licenses to support distinct roles, enhancing flexibility and competition.

This reform also integrates MyData companies, which aggregate personal financial data, including alternative sources like telecommunications and utilities. By allowing consumers greater control over their data, this policy not only modernizes credit scoring with non-traditional data but also supports financial inclusion by accommodating individuals with limited credit histories.

Figure 9. Credit Information Use and Protection Act



Source: Credit Information Use and Protection Act

3.4.1. Encouraging the Emergence of Innovative New Players and Segmentation of Credit Bureau Functions

3.4.1.1. Introduction of the MyData Industry

The financial sector systematically manages and utilizes personal credit information; however, individuals often find themselves unable to effectively manage their own data. There is a lack of active engagement in exercising information sovereignty (the right to self-determination regarding personal data), as evidenced by limited requests for interest rate reductions and appeals for credit score corrections. To enable individuals to take a proactive role in managing and utilizing their credit information, the introduction of a MyData industry in the financial sector is essential. The main purposes of MyData establishment are:

- a. **Integration of Personal Credit Information.** The MyData initiative aims to consolidate personal credit information scattered across financial institutions and public agencies, facilitating the ability for individuals to access, manage, and utilize this information in a comprehensive manner. This initiative draws inspiration from the European Union's General Data Protection Regulation (GDPR), which introduced the right to data portability, and the Revised Payment Services Directive (PSD2), which includes provisions for Account Information Service Providers (AISP). Through the establishment of the 'right to request credit

information transmission,' MyData businesses will be able to easily collect data from financial institutions and public agencies.

- b. **Lowering Barriers to Entry.** To foster competition and innovation within the MyData industry, the initiative sets a minimum capital requirement of 500 million KRW while minimizing the investment requirement for financial institutions (previously set at 50%). This approach aims to lower barriers to entry for new market participants.
- c. **Role of MyData Service Providers.** MyData Service Providers will assist individuals in managing their credit information based on the data they collect. They will be empowered to offer personalized product recommendations and financial product consulting services. Additionally, MyData Service Providers will be authorized to perform activities such as representing individuals in information correction requests, providing investment advisory services, and offering financial product consulting.
- d. **Ensuring Data Protection and Security.** Establishing a secure service delivery system that prioritizes data protection and security is critical. The transmission of personal credit information will be designed to minimize the risk of misuse and abuse of personal data. Measures will include robust identity verification processes and mandatory liability insurance to address potential data breaches.
- e. **Empowering Individuals with Control Over Their Data.** The MyData initiative will create a foundation for returning control over

credit information, which has traditionally been managed and utilized by financial institutions and credit bureaus, back to individuals as the data subjects. This shift will empower individuals to actively manage their credit profiles, leading to the provision of more personalized and equitable financial services.

3.4.1.2. Introduction of SOHO Credit Bureaus for Individual Business

Owners

Individual business loans possess characteristics that intertwine both personal and corporate lending; however, there is a notable deficiency in credit assessment systems that reflect the unique attributes of individual entrepreneurs. As of the end of July 2018, there were approximately 6.63 million individual business owners, with individual business loans amounting to 598.4 trillion KRW as of the end of 2017. To address the unique characteristics of individual business loans, a new credit bureau for individual business owners (SOHO CB) will be established. This initiative aims to:

- a. **Allow Entry of New SOHO Credit Bureaus:** The SOHO credit bureau will be officially established, permitting new entrants into the market. The minimum capital requirement is proposed to be set at 5 billion KRW, in line with that for personal credit bureaus. Efforts will be made to enhance the sharing of public-sector information regarding individual business owners.

- b. **Integration with Card Companies:** Card companies that possess comprehensive data on individual businesses will be allowed to operate as dual entities, acting as both credit bureaus and card issuers. These companies hold detailed sales records by merchant, as well as information on individual business complaints and incident history, enabling a thorough evaluation of business growth potential. Card companies will be able to provide credit assessment results for individual businesses to banks and other financial institutions or use them in their internal assessment models.
- c. **Regulatory Measures Against Unsound Business Practices:** Regulations will be put in place to prevent unsound business practices, such as discrimination between commercial partners and non-partners and the coercion of purchasing products and services from credit bureaus or their affiliates.

By establishing a specialized credit assessment framework for individual business owners, this initiative will facilitate efficient allocation of funds to small business owners who have struggled to obtain financial support due to challenges in accurate credit assessment. Additionally, it aims to promote stable management of household debt.

3.4.1.3. Introduction of Non-Financial Information Specialized Credit Bureaus

Currently, personal credit assessments primarily rely on financial information such as loans and credit card usage. As a result, individuals

with insufficient financial history (commonly referred to as "thin filers") face challenges in obtaining credit evaluations.

a. **Limitations of Current Credit Evaluation Systems**

While individual credit bureaus do utilize non-financial information, their criteria for usage are not systematic, leading to low utilization rates. For example, some credit bureaus obtain customer delinquency information from specific leasing and rental companies; however, this information is often limited to a few entities, compromising the accuracy and fairness of credit assessments.

b. **Establishment of Specialized Non-Financial Information Credit Bureaus**

To systematically leverage non-financial information, the establishment of specialized non-financial information credit bureaus is proposed. These credit bureaus will focus exclusively on evaluating personal credit using non-financial data, such as payment records for telecommunications, electricity, and gas, as well as online shopping history and social media information.

c. **Regulatory Adjustments for Non-Financial Information Credit Bureaus**

To encourage the entry of these specialized credit bureaus, the following measures will be implemented:

- Lower Capital Requirements: The minimum capital requirement will be reduced from 5 billion KRW to 2 billion KRW for credit bureaus utilizing structured data (such as payment histories from telecommunications companies) and to 500 million KRW for those analyzing unstructured data (such as social media information).
- Exemption from Financial Institution Investment Obligations: The requirement for financial institutions to hold at least 50% equity will be waived to alleviate entry barriers.

d. Regulatory Compliance and Prevention of Unsound Business Practices

These new credit bureaus will be subject to the same information protection regulations as existing credit bureaus. Additionally, measures will be put in place to prevent unsound business practices, such as unfairly inflating credit scores for customers of affiliated companies.

e. Enhancing Financial Accessibility for Underserved Populations

By utilizing alternative credit assessments based on non-financial information, this initiative aims to improve financial accessibility

for individuals such as recent graduates or homemakers who lack extensive financial history. Individuals who consistently pay telecommunications and utility bills will see improvements in their credit scores, thus enhancing their financial transaction conditions.

3.4.2. AI Governance and Operational Guidelines in Korean Financial Services

In July 2021, the Korea Financial Services Commission (FSC) introduced The Korean Financial AI Operation Guidelines to bolster public trust in AI-based financial services while continuing to promote innovation in the financial industry. The guidelines provide clear directives for planning, developing, operating, and monitoring AI systems. The guidelines apply to financial institutions and non-financial companies offering financial products or services through AI, such as credit evaluations and product recommendations.

To uphold ethical AI practices, the guidelines require financial institutions to **establish robust governance frameworks**. This includes defining roles, responsibilities, and authorities of members in detail throughout the entire process of the AI system and, where necessary, forming AI ethics committees to manage risks and ensure compliance with ethical standards. Financial institutions should evaluate potential risks, such as bias or misuse, and design risk management policies that include monitoring, auditing, and reporting mechanisms. Institutions must also maintain internal controls, particularly for high-risk services where AI decisions significantly impact consumer rights and interests.

Similar to the Indonesian AI Code of Ethics, the Korean AI Governance and Operational Guidelines also outline **key ethical principles**—such as fairness, accountability, transparency, and safety—that must guide the development and operation of AI systems. Financial companies are expected to evaluate AI use's social, economic, and cultural impacts, particularly in contexts involving high-risk services like credit assessments. Risk management policies must address data accuracy, prevent bias, and include data anonymization and pseudonymization measures to protect consumer privacy.

The guidelines outline **operational stages for managing AI systems**:

- a. **Planning and Design:** Financial institutions must ensure that AI systems align with ethical principles, evaluate their potential societal impacts, and design mechanisms to maintain oversight and accountability.
- b. **Development:** During this stage, financial institutions must investigate the quality, reliability, and fairness of data used in AI training. They must take steps to prevent misuse of sensitive data, such as obtaining prior consent or taking de-identification measures when the AI system uses sensitive information. Financial institutions must incorporate explain-ability features into AI models for customer-facing applications.
- c. **Evaluation and Verification:** Financial institutions are tasked with evaluating the AI performance metrics that balance ethical considerations with performance and fairness target level. Fairness evaluation indicators must be monitored to identify and correct imbalances, ensuring AI systems operate equitably.

- d. **Operation and Monitoring:** Regular performance monitoring, security checks, and updates are mandated to ensure whether the AI system has potential for misuse or abuse, such as data contamination attacks and hostile attacks by customers or third parties and introduce measures to minimize misuse and abuse within the available technology range. Financial companies must receive regular notifications about security vulnerabilities in AI development environments, such as open source-based AI development frameworks, and strive to build the best security system.

3.5. Legal frameworks on data privacy and consumer protection

The laws related to the protection of personal credit information and consumer protection include the Personal Information Protection Act and the Credit Information Use and Protection Act. The Personal Information Protection Act serves as a general law applicable without specific limitations to individuals, locations, and matters, while the Credit Information Use and Protection Act functions as a special law, specifically governing the use and protection of credit information by credit information companies, credit information concentration agencies, and credit information providers and users.

From a legal application perspective, financial institutions are subject to the Credit Information Use and Protection Act, and when processing information classified as personal credit information, the provisions of the Credit Information Use and Protection Act apply. In cases where the Credit Information Use and Protection Act does not specifically delineate regulations, the provisions of the Personal Information Protection Act will apply.

Key obligations concerning the protection of personal credit information under the Credit Information Use and Protection Act include the following:

- a. Collection and use of personal credit information
- b. Provision of personal credit information
- c. Delegation of personal credit information processing
- d. Secure storage of personal credit information
- e. Deletion (destruction) of personal credit information
- f. Disclosure of credit information utilization systems
- g. Designation of credit information managers and internal controls
- h. Guaranteeing the rights of credit information subjects

Highlighted below are significant aspects of the aforementioned personal information protection provisions:

- a. Principles of Personal Credit Information Collection

In accordance with the Credit Information Use and Protection Act and the Personal Information Protection Act, personal credit information must be collected and processed through reasonable and fair means within the minimum scope necessary to achieve specific purposes. The collection of certain types of information, such as individuals' political beliefs, is prohibited under the Credit Information Use and Protection Act. Consent from the credit information subject is required for the collection of personal credit information; collecting such information without consent must be based on a separate legal foundation.

b. Consent for Collection and Use of Personal Credit Information

The distinction between mandatory and optional consent must be explained to the credit information subject, and consent must be obtained for both categories. Mandatory consent requirements should clarify their relevance to service provision, while optional consent should inform the subject that they can choose not to agree to the collection of information. The credit information subject must be informed of the following:

- 1) The purpose of collecting and using personal credit information;
- 2) The specific items of personal credit information to be collected;
- 3) The retention and utilization period of personal credit information; and
- 4) The right to refuse consent and the implications of such refusal.

Considerations for classifying mandatory and optional consent:

- 1) Whether financial transactions with the credit information subject can be established or maintained without their consent.
- 2) Whether the personal credit information provided or utilized due to consent is directly related to goods or services provided to the credit information subject as part of a transaction with credit information companies.
- 3) Whether the credit information subject's non-consent would prevent compliance with obligations under laws or regulations.

c. Basis for the Use of Personal Credit Information

Personal credit information can only be utilized under the conditions permitted by Articles 33 and 40 of the Credit Information Act. This includes cases where it is necessary to determine the establishment and maintenance of financial transactions or where the individual has consented to use it for other purposes.

d. Consent for Inquiry of Personal Credit Information

When obtaining personal credit information from credit inquiry companies or credit information concentration agencies, consent must be secured from the credit information subject. The consent process must inform the subject of the following:

- 1) The provider of the information;
- 2) The purpose of use by the recipient;
- 3) The specific items of personal credit information provided;
- 4) The duration of the effectiveness of the consent; and
- 5) The date on which the financial transaction or relationship ends.

e. Basis for Providing Personal Credit Information

Consent from the credit information subject is required when providing personal credit information to others. However, it is permissible to provide such information without consent if it falls under the exceptions outlined in Article 32, Paragraph 6 of the Credit Information Act.

f. Consent for Providing Personal Credit Information

Similar to the process for collection and use, the credit information subject must be informed of mandatory and optional consent requirements and must provide consent for both. The mandatory consent must relate to the service provision, while the optional consent must inform the subject that they may choose not to agree to the provision of information. The credit information subject must be informed of:

- 1) The recipient of the information;
- 2) The purpose of use by the recipient;
- 3) The contents of the personal credit information provided; and
- 4) The retention and utilization period of the recipient's personal credit information.

4. Comparative Analysis of Indonesian and Korean Regulatory Frameworks

4.1. Comparison on The Overall Public Credit Registry and Private Credit Bureau Regulatory Approaches

4.1.1. Comparison on Public Credit Registry Framework

Indonesia and Korea both utilize a dual-model approach in their credit reporting systems, incorporating Public Credit Registries (PCR) alongside Private Credit Bureaus (PCB). This structure allows for a comprehensive data collection and distribution model, with public and private institutions contributing to and drawing from an extensive credit data pool. However, significant differences exist in how the PCR operates in each country, specifically regarding PCR

operators, data providers and users, credit information scope, and report update frequency.

4.1.1.1.PCR Operator

In Indonesia, the Financial Information Service System (SLIK) is regulated and operated by the Otoritas Jasa Keuangan (OJK). This setup gives OJK direct oversight and operational control, centralizing both regulatory and management roles within a single institution. Meanwhile, in Korea, the PCR is regulated by the Financial Services Commission (FSC), while its daily operations are managed by the Korea Credit Information Services (KCIS). This separation allows the FSC to focus on providing an overarching regulatory framework and oversight, while KCIS handles the practical, day-to-day functioning of the PCR.

4.1.1.2.Data Providers and Users

Korea's PCR data provider network is broader than Indonesia's, encompassing financial institutions and various government/public agencies such as the Court, National Tax Service, Ministry of the Interior, Public Procurement Service, Korea Asset Management Corporation (KAMCO), Credit Counselling and Recovery Service (CCRS), and National Health Insurance Service. In contrast, Indonesia's SLIK primarily draws from financial institutions, including banks, finance companies, securities firms, insurance providers, guarantee

companies, fintech, cooperatives, and other financial entities offering loans or financing.

The PCR data users also vary between the two countries. In Korea, the data is accessible to all financial institutions, government/public agencies, credit bureaus (with exceptions for specialized CBs handling non-financial data), and consumers. Meanwhile, SLIK data users in Indonesia include all financial institutions, private credit bureaus, some government institutions permitted by law (e.g., Central Bank, Central and Regional Government bodies, Indonesia Deposit Insurance Corporation, Courts, Financial Transaction Reports and Analysis Center, and law enforcement). In addition, non-financial institutions could request SLIK information on limited purposes such as employee recruitment, partnership, vendor selection, or other activity that require a proof of credit integrity.

4.1.1.3.Scope of Credit Information

Indonesian SLIK provides more granular credit information from financial institutions, covering debtor information (such as address, national ID, business owners, and directors), loan details (including outstanding amounts, quality, sector, type, interest rate, and delinquency causes), collateral information, and debt guarantees. Although Korean PCR data from financial institutions includes debtor information, outstanding loan data, quality, delinquencies, and debt guarantees, it

lacks the same level of detail found in Indonesia’s SLIK. However, the scope of overall data provided by Korea’s PCR is more extensive since Korean government/public agencies also contribute valuable information to the registry. The Korean government/public agencies provide information as follows:

Name of agencies	Information Provided
Courts	Bankruptcies, Debt Exemptions, Individual Rehabilitation, List of Defaulters, etc.
National Tax Service	National Taxes in Arrears
Korea Customs Service	Customs in Arrears
Ministry of the Interior and Safety	Local Taxes in Arrears, Information on the Deceased, National ID Number Changes, etc.
Ministry of Employment and Labor	Overdue Wages
National Health Insurance Service	Employment Insurance and Worker’s Compensation Insurance in Arrears
Credit Counseling & Recovery Service	Credit Recovery Information

Source: Korea Credit Information Services

4.1.1.4. Report Update Frequency

The frequency of report updates represents another key distinction.

Korea’s PCR updates on a daily basis, allowing financial institutions to perform timely credit scoring and effective risk management.

Information providers to the Korean PCR also have a seven-day window to make any necessary revisions. In contrast, SLIK updates on a monthly basis, which introduces delays for financial institutions seeking up-to-date credit information on their debtors. This delay is particularly challenging for fintech and banks that offer short-term credit products,

such as buy-now-pay-later or peer-to-peer lending, as they need real-time credit data to assess total loan exposure accurately. To mitigate this issue, the OJK has introduced a Fintech Data Center, which provides prospective borrower credit histories updated daily, offering fintech firms a more updated visibility into the creditworthiness of potential borrowers.

4.1.2. Comparison on Private Credit Bureau Regulatory Framework

In both Korea and Indonesia, Public Credit Registries (PCRs) gather credit data from financial institutions, but Private Credit Bureaus (PCBs) are essential for effective risk management and expanding financial inclusion. PCBs add value by aggregating, analyzing, and enhancing credit information. Both countries have regulatory frameworks to govern PCBs, with oversight by their respective financial regulatory authorities: the Financial Services Commission (FSC) in Korea and the Financial Services Authority (OJK) in Indonesia. Despite this common ground, there are significant differences in each country's PCB regulations regarding license types and data sources or access.

4.1.2.1.Types Of Credit Bureau License

Originally, PCBs in Korea operated under a single license type, similar to Indonesia. However, with recent amendments to the Credit Information Use and Protection Act, Korea now offers multiple PCB license types, tailored to different market needs:

- a. Personal Credit Rating: Focuses on individual credit scores and creditworthiness.

- b. Specialized Personal Credit Rating: Processes additional types of data, including unstructured data or large volumes of structured data.
- c. Sole Proprietor Credit Rating: Assesses the creditworthiness of individual business owners.
- d. Corporate Credit Inquiry: Divided into three types of service:
 - i. Corporate information inquiry: providing credit information to indicate the details of transactions and capacity of a corporation.
 - ii. Corporate credit ratings: generating a corporate credit rating by assessing the credit standing of a corporation.
 - iii. Technology credit ratings: assessing the credit standing and the value of technology of a corporation.

Each license type has distinct minimum capital requirements as illustrated by Figure 10, further structuring the credit information market based on specialization and investment thresholds.

Figure 10. The Minimum Capital Required for Credit Bureau

Credit Information Act (Previous)	Credit Information Act (Amendment)		
Credit inquiry business 5 billion	Permission License type	Minimum Capital (KRW)	
	Individual CBs		5 billion
		Specialized CB for non-financial information: unstructured data (SNS etc.)	500 million/
		Specialized CB for non-financial information: large amount of structured data (telecommunications etc.)	2 billion
	Individual business CBs		5 billion
	Corporate credit inquiry	Corporate credit inquiry	500 million
		Corporate credit rating	2 billion
		Technology credit rating	2 billion
MyData		500 million	

Source: Credit Information Use and Protection Act

Meanwhile, Indonesia has a single license type for PCBs, known as Lembaga Pengelola Informasi Perkreditan (LPIP), under OJK Regulation No. 5/POJK.03/2022. The licensed LPIPs include PT Pefindo Biro Kredit, PT Kredit Biro Indonesia Jaya, and PT CRIF Lembaga Informasi Keuangan. LPIPs initially focused on credit histories through SLIK and borrowers' financial data. With the amendment of OJK Regulation concerning LPIP, LPIPs start to incorporate more diverse data sources into their credit scoring models. Besides LPIP, there are alternative credit scoring providers, or ACS Providers, emerges to provide credit scoring assessment by solely using alternative data. ACS Providers are governed under OJK Regulation No. 3 of 2024 related to Financial Sector Technology Innovation (FSTI), which do not grant them access to SLIK database.

4.1.2.2. Business Activities

Indonesian credit bureaus (LPIP) focus on core activities like collecting and processing credit data and other relevant data to provide credit scoring, credit ratings, and generate value-added credit information. These activities are primarily centered on consumer credit assessment using traditional credit data, such as financial transactions and borrowing history, with an increasing use of alternative data sources.

Meanwhile, Credit Bureaus in Korea, depending on the type of credit rating company which is personal, sole proprietor (MSME), corporate, engage in a broader range of business activities.

Figure 11. Business Activities for Private Credit Bureau in Korea

<p>B2B : Consumer Credit Evaluation</p> <ul style="list-style-type: none"> ✓ Credit Ware ✓ Value-up Ware ✓ Fraud Ware: ✓ Alternative Information Ware ✓ Consulting & Solution Services 	<p>B2B : MSME Credit Evaluation</p> <ul style="list-style-type: none"> ✓ Risk Assessment Ware ✓ Repayment Capacity Ware ✓ Watch Index & Monitoring Ware ✓ Alternative Information Ware
<p>B2B : Business Credit Evaluation</p> <ul style="list-style-type: none"> ✓ Biz-Ground : Corporate credit ratings, corporate credit reports (designated as a credit rating agency by the Public Procurement Service) ✓ Corporate Growth Support Ware: Credit management for biz partners, CEO credit ratings 	<p>B2C : Consumer Service</p> <ul style="list-style-type: none"> ✓ AllCredit : B2C Web & Mobile ✓ Mobile Authentication ✓ i-Pin Service ✓ Real Name Verification
<p>B2B : Big Data Business</p> <ul style="list-style-type: none"> ✓ KCB Big Data Store ✓ GRANData Business : Data DAM Biz ✓ K-Atlas : Big Data Solution & Service ✓ Alternative Big Data Service 	<p>B2B : Consultation & Solution</p> <ul style="list-style-type: none"> ✓ Credit Scoring Consultation ✓ Artificial Intelligence Modeling Technology ✓ Analytic Solution Business

Source: Korea Credit Bureau

According to KCB product & service line, KCB provides more than 100 products & services, which include more than 60 different credit scoring model services. The business operations of Private Credit Bureaus (PCBs), particularly in the realm of individual credit evaluation, encompass the development of a wide range of services beyond basic credit report. These services are employed by financial institutions to enhance their credit evaluation and decision making processes. For example of KCB, the Credit Ware product line primarily evaluates a

customer's willingness to repay, while the Value-Up Ware suite extends this capability by assessing repayment capacity and behavioral tendencies. This includes offerings such as income estimation models, the K-DSR (Korea Debt Service Ratio), and various scoring tools that aid in credit limit determination and customer management decision-making.

Additionally, PCBs provide comprehensive fraud detection and prevention solutions. In case of KCB, these include services aimed at mitigating loan application fraud (Namely A-Fraud), credit card transaction fraud (T-Fraud), electronic transaction scams (E-Fraud), and voice phishing scams. Together, these offerings address both credit risk and fraud risk management, providing a holistic suite of services and solutions to financial institutions.

The extensive array of scoring and analytic products offered by PCBs is underpinned by their proprietary expertise in scoring and modeling, leveraging AI-driven solutions and the technical acumen of data scientists. These professionals support key business activities, including consulting on the development of in-house models for financial institutions and delivering tailored solutions. In this background, capacity building for both man-power & analytic technology are very crucial for PCBs business activity expansion and enhancement.

Recently, PCBs have expanded their scope beyond traditional financial credit information. Under the framework of the Specialized Personal Credit Bureau business license, they actively develop and deliver alternative credit assessment models and products. These are designed to serve both individuals and sole proprietors, utilizing big data to innovate in the area of alternative credit scoring.

In general, the activities of Private Credit Bureaus are structured around four primary business domains, each aligned with specific licensing categories. These activities reflect the evolving role of PCBs in advancing financial analytics and risk management in an increasingly data-driven financial ecosystem.

The Personal Credit Bureau (PCB) business primarily involves collecting information necessary to assess an individual's creditworthiness, evaluating their credit status, and providing the results—including personal credit scores—to mainly financial institutions. The Specialized Personal Credit Bureau business focuses exclusively on handling non-financial information while excluding financial data from its operations. This business model provides alternative credit evaluation services by leveraging non-financial information as its primary resource. The Sole Proprietor (or Individual Business) Credit Bureau business specializes in collecting information necessary to assess the creditworthiness of sole proprietors or individual

businesses, evaluating their credit status, and delivering the results to mainly financial institutions. The Corporate Credit Bureau (or Credit Rating) business is categorized into three main operational areas: corporate information inquiry services, corporate credit rating services, and technology credit evaluation services.

Figure 12. Credit Bureau License and Licensed Player in Korea

Credit Bureau License Type & Licensed Player
Personal Credit Bureau
▶ KCB, NICE Info, SCI Info, KoDATA
Specialized Personal Credit Bureau
▶ KCB, Telco CB , CrePASS,
Sole Propriety(or Individual Business) Credit Bureau
▶ KCB, NICE D&B, ECREDIBLE, KoDATA, NICE Info, SCI Info, ShinhanCard, KB Kookmin Card, BC Card, KCS, Samsung Card
Corporate Credit Bureau
[Corporate Information Inquiry]
▶ KoDATA, NICE Info, ECREDIBLE, KCB NICE D&B, SCI Info, TechFinRatings, BC Card
[Corporate Rating]
▶ ECREDIBLE, , KoDATA, NICE Info, KCB ,NICE D&B, SCI Info, TechFinRatings,
[Technology Rating]
▶ ECREDIBLE, KoDATA, NICE Info, NICE D&B, SCI Info, K-TCB

Source: Credit Information Provider Association

Aside from credit scoring and rating services similar to services provided by LPIP, PCBs in Korea are involved in several concurrent business affairs, such as:

- a. Claims collection: Korean credit bureaus can also engage in credit collection, providing a wider array of services for managing defaulted accounts.
- b. Identification services: These companies may provide identification services related to data security and authentication.
- c. Asset management: Corporate credit inquiry companies can manage asset-backed securitization.

Another notable business activity is the presence of technology credit ratings that assess the value of a company's technological assets and its ability to generate value from them. This type of scoring helps to evaluate companies in sectors where technology plays a critical role in determining creditworthiness, offering a more modern and granular view of financial health.

4.1.2.3.Data Sources and Access

Korean Private Credit Bureaus (PCBs) have progressively expanded their data collection efforts within the private sector to enhance the credit risk assessment capabilities of financial institutions. A defining characteristic of Korean PCBs is their differentiation from the Public Credit Registry (PCR), known as the Korea Credit Information Services (KCIS). Unlike PCR, which aggregates nationwide credit data under

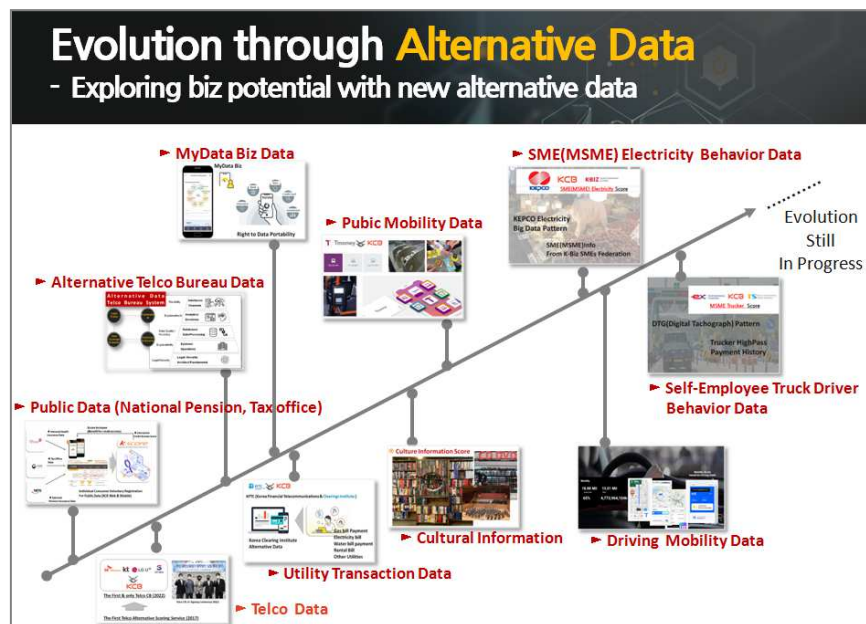
regulatory mandates, Korean PCBs have built a competitive edge by utilizing proprietary data collection formats to gather financial information directly from financial institutions.

While PCR benefits from comprehensive national coverage of credit data, Korean PCBs focus on collecting more detailed positive credit data from financial institutions including credit card payment behavior data, detailed personal data, income, job information etc. Also, Korean PCBs collect more recency data. For instance, in the case of delinquency information, PCR collects and provides data on long-term delinquencies exceeding 90 days. In contrast, Korean PCBs gather short-term delinquency data (5 business days or more) daily basis from financial institutions, offering granular and timely information to their members. Moreover, Korean PCBs excel in collecting urgent fraud-related information on a near-real-time basis. In recent years, they have expanded into non-financial alternative credit information services and alternative credit scoring through business collaborations with non-financial data-holding entities. These collaborations allow Korean PCBs to develop and deliver innovative services by leveraging non-traditional datasets.

Additionally, Korean PCBs have utilized B2C service channels to collect in-depth financial and non-financial information directly from consumers. This includes data categories such as telecommunications, utility usage, e-commerce activity, real estate, cultural activities, vehicle

navigation and operation, and e-toll transactions. By integrating these diverse datasets, Korean PCBs are extending their big data ecosystems beyond traditional financial information, building a comprehensive picture of individual lifestyles and behaviors to support advanced credit assessment and risk management.

Figure 13. Alternative Credit Scoring Business Expansion in Korea



Source: Korea Credit Bureau

Also, Korean PCBs benefit from a comprehensive data network, with access to diverse data sources enhanced by the establishment of MyData companies and PCR. The MyData companies are licensed to aggregate personal financial data from various sources, including consumer data in all financial institutions and alternative data providers, thus broadening

the data accessible for credit assessments. Furthermore, the PCR in Korea collects data not only from financial institutions but also from government and public agencies. This expanded access allows Korean PCBs to have a more robust and accurate credit scoring model.

In Indonesia, LPIPs more rely on SLIK and financial information as their basis of credit scoring. Meanwhile, ACS Providers are not have access to SLIK, thus their data source for credit scoring are limited to use alternative data such as utility payment records, telecommunications data, social media usage, payment data, e-commerce data, and other information that can help evaluate the behavior of the prospective debtor. This limitation prompts innovation but restricts ACS Providers in comparison to the broader data sources available in Korea's framework.

4.2. Comparison on Alternative Credit Scoring Institutions Regulatory Framework

4.2.1. Business Activities

The business activities of Korean Specialized Personal Credit Rating (SPCR) entities and Indonesian Alternative Credit Scoring (ACS) Providers reveal significant differences in scope and regulatory frameworks. Indonesian ACS Providers can operate in individual and SME markets, allowing them to address a wider demographic. This inclusive approach aligns with Indonesia's financial inclusion goals, particularly for underrepresented groups such as underbanked and unbanked individuals and SMEs. By leveraging alternative data sources,

Indonesian ACS Providers contribute to bridging the gap for businesses and individuals who might otherwise lack access to traditional financial services.

Unlike their Indonesian counterparts, Korean SPCR entities have a unique role in the credit rating industry. They are primarily focused on serving individual consumers, as defined by the Credit Information Use and Protection Act. This regulatory limitation narrows their operational focus to personal creditworthiness assessments, leaving the SME segment to another type of credit bureau (Credit Bureau for Individual Business). However, this limitation does not hinder their ability to engage in a broader spectrum of business activities. Both Indonesian and Korean regulations allow them to engage in businesses that add value to users, such as fraud warning, consumer profile mapping, and monitoring and consumer evaluation. However, Korean SPCR are allowed to provide credit scoring and claim collection business, develop and sell computerized processing systems, solutions, and software, and provide consultations based on personal credit information. This regulatory flexibility supports innovation and the development of sophisticated financial products tailored to individual needs.

On the other hand, Indonesian ACS Providers operate under stricter boundaries. Their business activities are primarily focused on providing credit scores and processing alternative data for governance and risk management purposes. While these constraints ensure a focused and regulated approach to data utilization, they may also restrict the ability of ACS Providers to diversify their

offerings or introduce innovative products and hinder the agility ACS Providers need to compete in an increasingly dynamic financial services environment.

4.2.2. Data Source

The comparison of data sources between Korean SPCR entities and Indonesian ACS Providers also highlights notable differences in data ecosystem robustness and accessibility. Both entities share a limitation in that they cannot access the Public Credit Registry (OJK's SLIK and KCIS's PCR). This restriction reflects a regulatory approach designed to maintain data confidentiality and ensure only authorized entities, such as primary credit bureaus, can directly interact with the registry.

Despite this shared limitation, the credit information ecosystem supporting Korean SPCR entities is significantly more robust than that of Indonesian ACS Providers. Korean SPCR entities benefit from access to a well-established data ecosystem that includes information from MyData service providers and a sophisticated open banking framework. The MyData initiative in Korea enables individuals to share their financial information securely with third-party providers, creating a seamless flow of consumer-authorized data. This system enhances the breadth and depth of data available to SPCR entities, enabling them to offer more precise and comprehensive credit ratings. Additionally, Korea's advanced open banking infrastructure facilitates financial data integration from various institutions, including banks, credit card companies, and fintech providers. This interconnected system ensures that SPCR entities

have access to high-quality, real-time financial data, further enhancing their ability to assess individual creditworthiness effectively.

In contrast, Indonesian ACS Providers, while having a broader mandate to include SMEs in addition to individuals, operate within a less integrated data ecosystem. Although they can leverage alternative data from diverse sources such as utility payments, telecommunications, and e-commerce platforms, the absence of a well-connected system like Korea's MyData and open banking framework limits the consistency and quality of the data. This disparity poses challenges in creating reliable and standardized credit scores, particularly for SMEs, where data may need to be more structured and readily available.

4.2.3. Credit Scoring Result

Data scoring results between Korean SPCR entities and Indonesian ACS Providers reveal similarities and differences shaped by their regulatory frameworks. Indonesian regulations explicitly define the minimum requirements for credit scoring results, mandating that scores must include information presented in the form of symbols, letters, colors, or numbers accompanied by a brief explanation of the score. This clear regulatory guidance ensures that the scoring outputs are accessible and understandable to users, promoting transparency and usability in the credit assessment process. Korean regulations do not specify a standardized format or minimum requirements for presenting credit scoring results. This absence of explicit requirements allows Korean SPCR entities greater flexibility in designing and presenting their scoring models, enabling them to tailor their outputs to the needs of financial

institutions and individual consumers. However, this flexibility may also result in variability in how scores are interpreted across different entities and users, potentially complicating standardization efforts.

Despite the differences in their regulatory frameworks, both Korea and Indonesia share a commitment to ethical credit scoring practices. They prohibit the use of data from unknown or potentially discriminatory sources, such as ethnicity, religion, or race, in the scoring process. This shared commitment reflects a mutual goal of promoting fairness and integrity in credit assessment practices while safeguarding consumer rights and data fairness.

4.2.4. Licensing Process

The licensing and regulatory scope for Indonesian ACS Providers and Korean SPCR entities reflect contrasting regulatory frameworks tailored to their respective financial systems. The licensing regulations for ACS providers in Indonesia have evolved over the years. Initially governed by OJK Regulation concerning Digital Financial Innovation, this framework was revised through OJK Regulation concerning Financial Sector Technology Innovation (FSTI). Under the FSTI framework, Prospective FSTIs are required to enter a regulatory sandbox as an initial step. This sandbox phase allows the Providers to conduct trials and develop innovations according to the test plan in a controlled environment. After the sandbox, OJK evaluates the FSTI participants and determines whether they pass or fail. Upon successfully passing the sandbox assessment, participants have two pathways: they can either register their

business with OJK or proceed directly to the licensing process if specific OJK regulations on their business models have been established. Prospective FSTI Providers with the same type of FSTI business model as those who have passed the sandbox could skip the sandbox process and proceed to the registration or licensing process.

Until November 2024, the regulation on ACS providers has not been established, but 10 ACS Providers have passed the sandbox. Therefore, prospective ACS providers can proceed until the registration process. Once the OJK Regulation regarding ACS Providers has been established, the registered ACS Providers could proceed to the licensing process. According to the OJK Regulation Draft regarding Alternative Credit Scoring Providers, after the licensing process is approved, ACS providers must secure a registration certificate as electronic system operators before commencing their business activities.

In contrast, Korea adopts a direct licensing process for SPCR entities without the preliminary sandbox phase. SPCR entities apply directly for a license under the Credit Information Use and Protection Act, with the flexibility to obtain multiple licenses for various activities or engage in other business domains. This streamlined process supports Korea's focus on fostering innovation and encouraging a competitive, diverse personal credit rating services market. The licensing framework allows SPCR entities to expand their operations beyond credit scoring, reflecting Korea's goal of leveraging technological advancements in data analytics and financial services.

4.2.5. Data Management

Indonesia and Korea share similarities in their regulatory frameworks for data management, reflecting a mutual commitment to ensuring secure and ethical handling of personal information in the alternative credit scoring ecosystem.

Both countries emphasize robust data privacy and protection measures underpinned by comprehensive legal frameworks. Both countries mandate the appointment of dedicated data protection personnel to oversee compliance and manage risks. In Indonesia, entities must designate Personal Data Protection Officers, while Korea requires Credit Information Administrators or Guardians. Although the roles differ slightly in scope, they are crucial in ensuring compliance with regulatory standards and protecting consumer data integrity.

A focus on risk mitigation is another area of convergence. Indonesia and Korea require organizations to implement measures to protect data from unauthorized access, breaches, and misuse. While Korea emphasizes pseudonymization and anonymization practices, Indonesia mandates encryption and secure storage that are aligned with its cybersecurity guidelines. Despite these differences in approach, the underlying goal of minimizing risks to consumer data is consistent across both countries.

Indonesia and Korea regulatory frameworks also advocate for data retention policies that align with the original purpose of data collection. This ensures that data is not stored indefinitely, reducing risks associated with prolonged

retention. ACS Providers in both countries are required to securely delete or anonymize data once it is no longer needed.

However, a significant difference in their regulatory framework is Korea's establishment of a Data Agency, a unique feature that significantly enhances the accuracy of credit scoring. This agency serves as an intermediary, combining datasets from various data providers and transferring them to SPCR companies in a pseudonymized or anonymized format. By providing combined data sets, the Data Agency enhances the SPCR entities' scoring method to make a more accurate prediction of debtors' creditworthiness using alternative data.

Alternative credit scoring providers use Artificial Intelligence (AI) and Machine Learning (ML) methods to generate scores. Therefore, the more data collected, the more accurate the result. Indonesia, by contrast, lacks a comparable entity, leaving individual alternative credit scoring providers responsible for collecting and processing data directly from various sources, which may create inconsistencies and elevate privacy risks.

4.2.6. Artificial Intelligence Guidelines

The Indonesian AI Code of Ethics and the Korean Financial AI Operation Guidelines share common objectives of ensuring ethical, transparent, and responsible use of artificial intelligence (AI) in financial services. However, they differ significantly in their purpose. The Indonesian AI Code of Ethics provide a broad ethical framework to guide financial technology providers on the core principles: alignment with Pancasila (national principle), benefits,

fairness, accountability, transparency, and security. In contrast, the Korean Financial AI Operation Guidelines focus on operational and technical details of using AI in financial institution, addressing the entire lifecycle of AI systems from planning, development, evaluation, to monitoring and operation. At the same time, Korean AI guidelines also outline the key ethical principles that must be adhere in the development and operation of AI systems.

Governance is an area of contrast. Indonesia's framework relies on principles-based oversight, encouraging fintech providers to adhere to ethical values without mandating specific organizational structures. In contrast, Korea mandates the establishment of governance frameworks, including AI ethics committees within financial institutions to manage risks and enforce compliance. Both frameworks underscore the need for risk mitigation and data security, but Korea's guidelines go further by requiring technical measures like pseudonymization and de-identification of data, along with regular updates to AI models to prevent misuse or biases. Indonesia's framework emphasizes fairness and non-discrimination but provides less technical specificity in its approach.

Transparency is a shared priority, with both frameworks requiring clear communication about AI processes and decision-making. Indonesia's Code of Ethics focuses on making AI outputs explainable and accessible to consumers, aligning with ethical principles. Similarly, Korea emphasizes the use of explainable AI technologies, particularly in high-risk services like credit scoring,

to ensure customers understand AI-driven decisions and have the right to object or seek remedies.

4.3. Data Privacy and Consumer Protection Regulations

4.3.1. Personal Data Protection Regulatory Scope

Indonesia and Korea exhibit both similarities and differences in their approaches to personal data protection, reflecting their distinct regulatory priorities and the nature of their respective financial ecosystems. Both countries have enacted comprehensive legal frameworks to safeguard personal data, yet they diverge in scope and explicitness.

A significant difference lies in the scope of data covered by the respective regulations. In Indonesia, OJK's consumer protection regulation scope extends its reach to both personal consumer data and corporate data, while Korea's Credit Information Use and Protection Act focuses on personal data. This broader scope aligns with Indonesia's ACS providers' business model, which covers individual and SME markets. In contrast, Korea considered corporate data as public information and thus was not explicitly covered under Korea's personal data protection scope.

Another distinction is the level of regulatory explicitness regarding protected data. Korea's regulations provide a highly detailed list of the types of personal data that must be safeguarded. This granularity ensures clarity for all stakeholders, including consumers, credit bureaus, and regulators. In contrast, Indonesia's Personal Data Protection Law (PDP Law) and OJK Regulation

regarding Consumer Protection categorize data into broad groups such as general data (name, address, date of birth, etc.) and sensitive data (biometrics, health records, financial data, etc.). While this generalization allows for interpretative flexibility, but without a detailed list reduces clarity in implementation, particularly in sectors like alternative credit scoring where diverse datasets are utilized.

4.3.2. Consumer Consent Mechanism

The consumer consent mechanisms in Indonesia and Korea reflect a shared commitment to safeguarding consumer data while enabling transparent data usage within the alternative credit-scoring ecosystem. Both countries employ an opt-in system, meaning consumers must explicitly provide consent for every data point they are willing to share. This approach contrasts with the opt-out system adopted by countries like the United States, where consumer data can be used by default unless they explicitly object. While the opt-in system offers a robust framework for protecting consumer rights and ensuring transparency, it is generally more resource-intensive to implement. In contrast, an opt-out system might offer a cheaper and more scalable option but comes with significant trade-offs in consumer autonomy and trust.

The requirement for explicit consumer consent is fundamental to the regulatory frameworks of both countries. Indonesia's PDP Law, OJK Regulation (FSTI and Consumer Protection), and AFTECH Code of Ethics, all require consumer consent to be specific, informed, and voluntarily given before personal data processing occurs. Korea's regulations build on this by requiring a layered

consent process for different purposes of data use. For example, if data is to be shared with third parties or used for non-essential purposes, Korea mandates separate (optional) consent agreements beyond the initial mandatory consent. The law also specifies that no credit information company may refuse to provide services to a credit data subject because consumers do not consent to information subject to optional consent. This distinction ensures that consumers in Korea retain greater control over how their data is used compared to Indonesia, where such granular consent processes are not explicitly outlined.

Both countries require data controllers to notify consumers about the collection and use of their data. Indonesia's PDP Law mandates that notifications provide clear information on the purpose, type, relevance, and retention period of data collection using accessible formats such as written agreements or electronic notifications. Korea's regulation takes a more detailed approach, specifying acceptable notification formats to ensure reliability and transparency.

Both Indonesia and Korea mandate notification to data owners under specific conditions, such as changes in the purpose of data usage or data breaches.

Indonesian regulations require data controllers to inform consumers in these cases promptly. Korea's regulation takes this a step further by obligating SPCR entities to notify consumers not only about breaches or changes in data usage but also when their data is transferred to third parties. This requirement addresses a significant concern among Indonesian data owners, who are often

hesitant to give consent to financial institutions due to the lack of clarity or notification regarding the specific parties with access to their data.

Introducing mandatory notifications for data transfers in Indonesia would significantly enhance consumer trust and confidence, particularly in cases involving ACS Providers operating under the Business-to-Business-to-Consumer (B2B2C) scheme. In this scheme, ACS Providers support the credit scoring processes of financial institutions such as banks, peer-to-peer lending platforms, or multi-finance companies without the consumers being aware of the ACS Providers' involvement. Data entry and credit scoring processes occur entirely within the financial institution's interface but are transmitted through specific channels to the systems owned by the ACS Providers.

Under this model, consumers typically only recognize that they have applied for a loan or financing through a financial institution. While they may become aware through terms and conditions that the institution might share their data with third parties, they are unlikely to know the identity of those third parties or the extent of data sharing. Implementing clearer and mandatory notification requirements in Indonesia would not only address these transparency gaps but also build greater consumer confidence in the ACS ecosystem by ensuring accountability in data handling.

4.3.3. Consumer Rights

The consumer rights aspect of the regulatory frameworks in Indonesia and Korea is underpinned by the common principle of empowering consumers to

control their personal data and ensuring transparency. This principle is crucial in both countries, as it allows consumers to manage their data and be informed of potential risks. However, there are distinct differences in the specific rights granted and mechanisms for exercising them, which will be explored in this analysis.

Both Indonesia and Korea recognize the fundamental rights of consumers to access, correct, and delete their personal data. These rights, preserved in Indonesia's Personal Data Protection Law and Korea's Credit Information Use and Protection Act, enable consumers to manage inaccuracies or errors in their data during credit evaluation. The frameworks also stress the significance of data breach notifications, ensuring companies promptly inform affected consumers. This shared commitment to transparency is vital in informing consumers of potential risks and enabling them to take necessary actions to protect themselves, thereby keeping them informed and aware. In addition, both countries give consumers the right to access their credit score without charges once a year.

However, differences arise in the right to withdraw consent. Korea's Credit Information Use and Protection Act explicitly allows consumers to withdraw optional consent for non-essential data processing, such as marketing or sharing data with third parties, without affecting their access to essential services. SPCR entities in Korea must honor these withdrawals promptly, reinforcing consumer autonomy. While Indonesia's PDP Law recognizes the right to withdraw

consent, it lacks detailed provisions on how this applies to different data processing contexts, creating potential inconsistencies in implementation.

Another dimension of consumer rights is the right to compensation for violations or damages resulting from data misuse or breaches. In Korea, the Credit Information Use and Protection Act specifies the mechanism by which consumers can seek compensation from credit information companies or third parties who mishandle their data. The law also specifies that companies are liable unless they can prove an absence of negligence. Courts may consider various factors, such as the degree of negligence and the extent of the consumer's loss when determining compensation. In Indonesia, the PDP Law similarly provides for consumer compensation for data misuse or breaches, but it lacks detailed procedural guidelines or explicit method for calculating and enforcing compensation.

4.3.4. Alternative Credit Scoring Providers Obligation on Data Privacy and Consumer Protection

The obligations of Alternative Credit Scoring (ACS) providers regarding data privacy and consumer protection are a critical element of the regulatory frameworks in both Indonesia and Korea. These obligations reflect a shared commitment to ensuring that ACS providers operate responsibly, transparently, and securely while balancing innovation with consumer trust. However, the specific requirements and implementation strategies differ between the two countries, reflecting their unique regulatory landscapes.

In both Indonesia and Korea, ACS Providers must implement robust data protection measures to ensure consumer data's confidentiality, integrity, and security. In Indonesia, OJK's FSTI Regulation mandates that FSTI (including ACS providers) encrypt sensitive data, establish secure storage facilities, and implement disaster recovery systems to safeguard data against breaches or unauthorized access. Similarly, in Korea, the Credit Information Use and Protection Act requires providers to adopt technical, managerial, and physical measures to prevent unauthorized access, alterations, or data destruction.

Transparency is another shared obligation, with both countries requiring ACS providers to disclose how consumer data is collected, processed, and used. In Indonesia, ACS providers must clearly inform consumers about the purpose and scope of data collection and ensure that consumer consent is obtained before processing data. Korea's framework builds on this by requiring providers to offer detailed explanations of how data contributes to credit assessments, including disclosures about algorithms and scoring methodologies. This additional layer of transparency ensures that consumers in Korea are better informed about how their personal information is used in credit evaluations.

A key difference lies in the obligation to educate and empower consumers. Korean regulations strongly emphasize consumer empowerment, requiring ACS Providers to ensure that consumers are aware of their rights, including their ability to access, correct, or delete data, and to withdraw consent for non-essential (optional) data processing. This education often includes guidance on

understanding credit scores and managing financial health. In Indonesia, while ACS Providers are required to obtain informed consent and provide general information about data usage, there needs to be more emphasis on proactive consumer education. Strengthening this area could enhance financial literacy and consumer empowerment in Indonesia, leading to more informed and empowered consumers.

4.4. Distinctive Key Stakeholders in South Korea's Credit Information Ecosystem

South Korea's credit information system benefits significantly from the coordinated roles of the Personal Credit Rating System Verification Committee, the Data Agency, and the MyData Service. The committee ensures personal credit rating systems' integrity, fairness, and transparency by verifying underlying data, assessing model stability and predictive power, and safeguarding consumers' right to understand their credit scores. Meanwhile, the Data Agency and MyData Service play complementary roles in fostering innovation and ensuring the secure management of credit-related information. The Data Agency combines and anonymizes data from multiple sources, enhancing the accuracy of credit scoring models, while the MyData Service empowers consumers to manage and share their financial data securely. Together, these entities protect consumer data, promote transparency, and enable stakeholders to leverage data effectively for financial decision-making, contributing to a robust and inclusive credit ecosystem.

4.4.1. The Role of Personal Credit Rating System Verification Committee

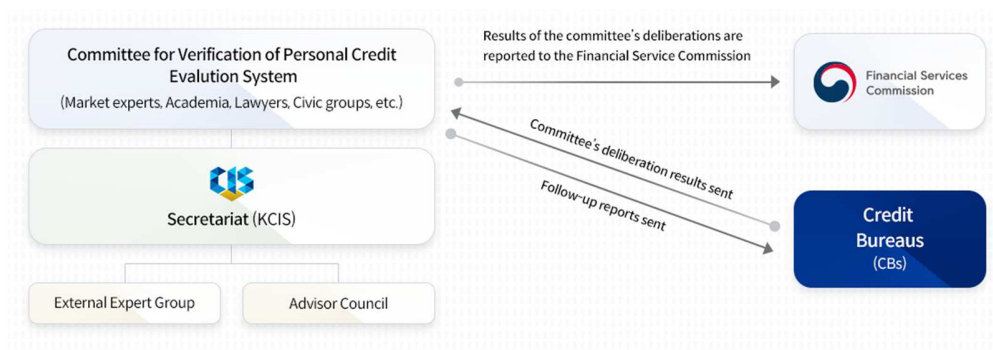
In Korea's credit information ecosystem, the Personal Credit Rating System Verification Committee plays a critical role. It is responsible for ensuring the

accuracy, transparency, and fairness of personal credit rating systems.

Established under the Korea Credit Information Services (KCIS) as mandated by the Credit Information Use and Protection Act, this committee oversees and evaluates personal (including SPCR) and sole proprietor credit rating companies. Its primary goal is to uphold robust and consumer-centric credit evaluation practices, thereby fostering trust and confidence in the credit information system. The committee conducts annual evaluations of credit scoring systems. The results are reported to the Financial Services Commission (FSC), which then discloses the findings to the public through FSC's website as illustrated by Figure 11.

Figure 14. The Personal Credit Rating System Verification Committee

Operational Framework



Source: Korea Credit Information Services

The Personal Credit Rating System Verification Committee is designated with several key responsibilities to maintain the integrity and efficacy of credit rating systems:

- a. **Verification of Underlying Information:** The committee reviews the data inputs used in credit scoring models to ensure compliance with regulatory standards. This includes identifying and preventing the use of information that is legally prohibited or contains discriminatory factors. This rigorous examination ensures that credit scoring remains unbiased and fair.
- b. **Evaluation of Credit Scoring Model:** The committee quantitatively assesses the predictive capabilities and reliability of credit scoring models. By verifying their stability and forecasting accuracy, the committee ensures that credit scores reflect a realistic evaluation of creditworthiness.
- c. **Consumers’ Right to Explanation:** An integral responsibility of the committee is to ensure that credit rating companies adhere to public disclosure requirements. This includes verifying whether companies provide clear and comprehensive disclosures to the public about how their credit scores are calculated. Such transparency is crucial for fostering consumer trust and understanding in the credit assessment.

The Personal Credit Rating System Verification Committee employs a structured and thorough framework for evaluating credit scoring systems to fulfil its responsibilities as illustrated by Figure 12.

Figure 15. Verification Criteria of The Personal Credit Rating System

Verification Committee

Domain	Stage
Credit scoring model	Model design

	Model development
	Model interpretation
	Model validation
	Monitoring
	Internal control
Non-credit scoring model	Complaint and disclosure systems
	Credit reports and related services

Source: Korea Credit Information Services

The verification begins with model design, where the committee ensures the underlying data used is diverse, reliable, and statistically significant. It also verifies that definitions for high and low credit quality, population groups, and thin-file consumers are appropriate. In the model development stage, the committee examines the validity of the methodology and criteria used to select variables. During model validation, the committee examines test datasets for biases, evaluates the distribution of scores and defaulters, and monitors changes in the ratios and patterns of scores over time. This helps ensure that models remain accurate and consistent under real-world conditions.

The committee evaluates the monitoring frequency, methodology, and standards used to track the performance of credit scoring systems, ensuring they maintain reliability and effectiveness. Additionally, internal control processes are reviewed to verify the operational guidelines for internal validation and the adequacy of criteria and methods used for external validation.

Beyond credit scoring models, the committee also evaluates non-credit scoring systems. This includes assessing the mechanisms for handling consumer

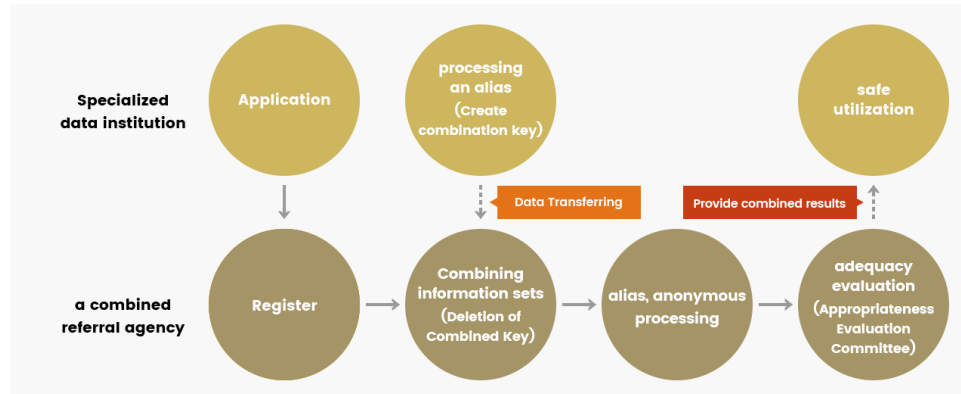
complaints and disclosure processes, ensuring these systems are transparent, accessible, and effectively resolving issues. The committee further reviews the processes for generating credit reports and related services to ensure they meet high standards of accuracy, transparency, and respect for consumers' rights.

The Personal Credit Rating System Verification Committee exemplifies a proactive regulatory approach to managing credit information systems. The committee helps mitigate risks of misuse, discrimination, and inaccuracies in credit evaluations by focusing on data accuracy, model robustness, and consumer rights. This model offers a valuable benchmark for enhancing Indonesia's regulatory framework for alternative credit scoring. Establishing a similar verification mechanism could improve transparency, accuracy, and consumer trust in Indonesia's emerging alternative credit scoring landscape.

4.4.2. The Role of Data Agency

The Data Agency in South Korea plays a unique and crucial role as a central intermediary that facilitates secure and efficient data exchange within the credit information ecosystem. It serves as a key player, combining datasets from diverse sources under the Credit Information Use and Protection Act. This combination, which includes data from credit bureaus, financial institutions, and non-financial data providers, is done in a way that preserves consumer privacy (in pseudonymized or anonymized form) while enabling the development of accurate and comprehensive credit scoring models.

Figure 16. Data consolidation procedures through data agencies



Source: Financial Security Institute

The key services of the data agency are combination of dataset, assessment on anonymized data and remote analysis center. The Data Agency, for example Financial Security Institute, pseudonymizes and anonymizes the datasets (two or more) that have been pseudonymized by the requesting institutions by combining them and assesses adequacy of the data (if necessary) before provision. The Data Agency assesses the data anonymized by an assessment requesting institution and notifies the assessment result and provides a remote analysis service to safely and conveniently analyze the data combined by the Financial Security Institute and access only the analysis results.

By centralizing data integration, the Data Agency addresses critical challenges in the credit information system, including fragmentation, duplication, and privacy risks. Its use of pseudonymization and anonymization not only minimizes the risk of personal data misuse but also fosters trust among

consumers and stakeholders. This centralization ensures data quality and compatibility, improving the accuracy and inclusiveness of credit assessments.

The Data Agency has had a transformative impact on South Korea's credit information system. It has facilitated better risk assessment and decision-making for financial institutions by providing richer, consolidated datasets. For consumers, it has enhanced privacy protection by limiting the direct access of multiple entities to their raw data. Additionally, for SPCR companies, it has streamlined the data integration process, enabling them to focus on refining their credit scoring methodologies and delivering more tailored services.

Collectively, the Data Agency ensures that South Korea's credit information system operates efficiently and ethically, strengthening trust and inclusivity in the ecosystem.

4.4.3. The Role of MyData Service

The MyData Service in South Korea is a cornerstone of its consumer-centric credit information system, enabling individuals to consolidate, access, and actively manage their financial data. By empowering consumers to exercise information sovereignty, the MyData initiative shifts control over personal credit information—traditionally managed by financial institutions and credit bureaus—back to individuals.

At its core, the MyData Service integrates personal credit information scattered across financial institutions and public agencies into a unified platform. This consolidation allows consumers to seamlessly access, manage, and utilize their

financial data, simplifying processes that were previously fragmented. By granting individuals the right to request the transmission of their credit information, MyData enables more informed financial decision-making and empowers consumers to negotiate better terms for loans and other products, thereby reducing information asymmetry between consumers and financial institutions.

MyData Service Providers play a pivotal role in credit information ecosystem. They assist individuals in managing their credit information and offer tailored financial solutions, such as personalized recommendations, investment advisory services, and financial consulting. These providers also represent consumers in filing correction requests for inaccurate credit information, ensuring fairness and transparency in the credit system. By collecting and organizing data from authorized sources, MyData Service Providers enable the delivery of personalized financial services, enhancing consumer experiences and satisfaction.

The MyData Service significantly enhances South Korea's credit information system across multiple dimensions. For consumers, it fosters financial inclusion by improving access to personalized financial services and empowering individuals to better manage their credit and financial decisions. For financial institutions, it opens opportunities to develop innovative products informed by comprehensive consumer insights. For SPCR companies, it provides

standardized, high-quality datasets that improve the precision and relevance of credit scoring models.

5. Recommendations for regulatory improvements for Indonesia

5.1. Optimize Data Infrastructure for Alternative Credit Scoring

Optimizing the Data Infrastructure for Alternative Credit Scoring is critical to strengthening Indonesia's regulatory framework for alternative credit scoring. The first recommendation is to establish an entity similar to Korea's Data Agency, which aggregates, pseudonymizes, and distributes data securely. In Korea, the Data Agency would act as an intermediary, combining datasets from various data providers and transferring them to ACS entities in a pseudonymized or anonymized format. This combined dataset allows ACS providers to build more accurate and predictive scoring models by leveraging diverse and reliable data inputs. Data Agency eliminates the inefficiencies of decentralized data sourcing, where inconsistent data quality and privacy risks can undermine scoring accuracy and consumer trust.

The current operation of ACS providers in Indonesia underscores the need for a centralized and robust data infrastructure. Currently, ACS providers rely on decentralized data sources, collecting information from various providers such as telecommunications companies, e-commerce platforms, and utility services. With a centralized mechanism to aggregate, standardize, and secure these data streams, ACS providers can build more reliable credit scoring models. Notably, based on the list of 10 recommended ICS providers identified in OJK's Sandbox, it is evident that most of these providers rely on a single data source to generate credit scores. This reliance limits the

scope and accuracy of their credit scoring models, as no single data source can capture the multidimensional financial behaviors of consumers. The lack of integrated datasets prevents these ACS providers from fully realizing the potential of alternative credit scoring to deliver comprehensive and fair creditworthiness assessments. A combined dataset incorporating diverse sources such as telecommunications, e-commerce, utilities, and other non-traditional data would significantly enhance scoring models' predictive power and reliability.

Establishing a centralized entity similar to Korea's Data Agency would address these challenges by providing a unified platform for data aggregation, pseudonymization, and secure distribution. This entity would act as an intermediary, combining datasets from various sources into a single, high-quality dataset that ACS providers can access efficiently. By integrating diverse data points into a unified format, the Data Agency would enable ACS providers to optimize their scoring methods, leading to more accurate predictions of debtors' creditworthiness and greater inclusivity in financial decision-making.

Moreover, the centralized Data Agency could implement mandatory pseudonymization and de-identification standards, ensuring that sensitive consumer information is protected throughout the data handling process. These measures would mitigate the risk of data breaches and unauthorized access, addressing one of the key concerns in Indonesia's current decentralized data ecosystem. With privacy protections built into the system, consumers are more likely to trust the alternative credit scoring framework and share their data willingly, which is crucial for the system's success.

However, the challenge in establishing a Data Agency in Indonesia lies in the legal foundation for its creation and operation. Without a clear legal framework, the Data Agency would lack the legitimacy to function effectively as a centralized data intermediary. The current OJK Regulation regarding Financial Sector Technology Innovation (FSTI) outlines a broad scope of activities that fall under financial technology innovation, including securities transactions, capital raising, risk management, fund collection, digital asset activities, and other digital financial services. However, the regulation does not explicitly recognize or account for entities like a Data Agency, which would primarily operate as a centralized intermediary for aggregating, pseudonymizing, and distributing data to ACS providers. This absence creates a legal gap, as a Data Agency does not fit neatly into any categories currently defined under the FSTI framework.

Moreover, while the regulation of ACS providers falls squarely under OJK's jurisdiction, many of the key data sources for alternative credit scoring, such as telecommunications companies, e-commerce platforms, and utility providers, operate outside OJK's regulatory scope. These Alternative Data Providers are often governed by other regulatory bodies, such as the Ministry of Communication and Informatics (KOMINFO) or the Ministry of Trade. This regulatory fragmentation necessitates coordination between multiple government institutions, which adds another layer of complexity to establishing a Data Agency. Achieving alignment on data-sharing protocols, privacy protections, and operational standards across these entities would require inter-agency agreements and potentially new legislative instruments to bridge jurisdictional gaps.

Moreover, the regulatory updates would need to address the operational and governance aspects of the Data Agency. These include its relationships with data providers, ACS entities, and regulators and its responsibilities for maintaining data privacy, ensuring compliance with consumer protection laws, and supporting financial inclusion objectives. Without these explicit provisions, the Data Agency would lack a clear mandate, creating uncertainty for stakeholders and limiting its ability to function effectively within Indonesia's regulatory framework.

By providing ACS providers with a combined dataset sourced from diverse data providers, Indonesia can unlock the full potential of alternative credit scoring. This data integration would enhance scoring accuracy and enable ACS providers to help underserved populations that might not be visible in traditional financial data. However, the creation of a Data Agency requires a legal foundation and support from several regulatory bodies in Indonesia, which adds another layer of complexity to establishing a Data Agency.

5.2. Promote Transparency

Promoting transparency is about more than just building trust and accountability in the alternative credit scoring ecosystem. It's about empowering consumers with the knowledge of what data was used, who accessed it, why it was accessed, when it was accessed, and how it was accessed. Transparency ensures that consumers are not merely passive participants in the credit scoring process but informed stakeholders with a clear understanding of how their personal data is being used and the implications of these processes on their financial opportunities.

Currently, many consumers in Indonesia remain unaware of the extent to which their personal data is shared within the financial ecosystem. This situation undermines consumer confidence, often leading to skepticism and reluctance to participate in data-sharing agreements critical to the development of robust alternative credit scoring models. A key recommendation for promoting transparency is the introduction of mandatory notifications whenever consumer data is transferred to third parties. By requiring financial institutions and ACS providers to inform consumers of data transfers, including details of the third-party recipients and the purpose of the transfer, regulatory frameworks can address this significant gap. Such notifications should be clear, accessible, and timely, ensuring that consumers are fully informed without being overwhelmed by technical jargon or excessive details.

Transparency also requires that consumers have a clear understanding of how their data influences credit scoring decisions. While consumer rights frameworks often focus on consent, ensuring that consumers can access information about the methodologies used to assess their creditworthiness is equally important. Regulations should mandate that ACS providers disclose key aspects of their scoring models in a consumer-friendly format, such as the general categories of data used and their relative weight in scoring.

Beyond individual empowerment, transparency has broader systemic benefits. A transparent ecosystem attracts more participants— consumers and data providers—who are willing to contribute to a fair and ethical credit scoring process. This enhanced participation improves the diversity and quality of data used, resulting in more accurate and inclusive credit scoring outcomes. Moreover, a transparent credit scoring ecosystem

can potentially lead to increased financial inclusion, which in turn can stimulate economic growth. Transparency also enhances competition among ACS providers, encouraging innovation in scoring methodologies and fostering an equitable and efficient financial system.

A systematic approach is required to implement mandatory notifications for data transfers, starting with regulatory adjustments. The existing legal framework, such as the OJK regulations regarding Consumer Protection or ACS Providers, should be amended to explicitly require institutions to notify consumers whenever their data is transferred to third parties. Notifications should be mandated in specific circumstances, including when data is shared with third parties, when there are changes in the purpose of data usage, or in cases of security incidents involving transferred data. The regulations should also define the content of these notifications to ensure clarity and consistency. Key details should include the identity of the third party, the type of data being transferred, the purpose of the transfer, the date of transfer, and the retention duration by the recipient, as well as instructions for raising concerns or objections.

Financial institutions and ACS providers must develop internal systems to automate and streamline the notification process. Notifications should be delivered through accessible digital platforms such as apps, email, or SMS, ensuring they reach consumers efficiently. These communications should be concise, free of technical jargon, and provided in a user-friendly format that makes complex terms understandable for all consumers. Integrating notifications into consent workflows is also essential. For example, when consumers initially consent to data processing, they should be informed that they will

receive notifications for future data transfers, with clear explanations about the purpose and scope of the data sharing.

Oversight and monitoring are critical to ensure compliance. OJK should conduct regular audits and compliance checks to verify that notifications are being issued as required. Institutions should also be mandated to submit regular reports detailing their data transfer activities and corresponding notifications. Penalties, including fines and sanctions, should be imposed on institutions that must notify consumers or provide complete or accurate information to discourage non-compliance.

Finally, consumer empowerment should be an integral part of this process. Public awareness campaigns can educate consumers about their right to be notified of data transfers, what to expect in a notification, and how to act if concerns arise. Additionally, consumers should be given the option to opt out of non-essential data transfers, with clear instructions for doing so included in the notifications.

5.3. Strengthen Consumer Rights

Strengthening consumer rights is essential to creating a fair and transparent ecosystem for alternative credit scoring in Indonesia. In the rapidly evolving landscape of alternative credit scoring, consumers are increasingly required to share their personal data with financial institutions and ACS Providers. Without robust consumer rights protections, this reliance on data creates significant risks of misuse, privacy breaches, and erosion of public trust. Strengthening consumer rights safeguards individuals against these risks and empowers them to participate actively and confidently in the financial system.

Consumers need to be made aware of the extent to which their data is shared or processed, leaving them vulnerable to misuse or unclear decision-making processes. By giving consumers greater control over their data—such as the ability to withdraw optional consent or seek compensation for misuse—Indonesia can bridge this trust gap and encourage more consumers to engage with alternative credit scoring systems. This is critical for financial inclusion, as consumers are more likely to participate in systems they perceive as fair, transparent, and protective of their interests.

One key recommendation is establishing a robust mechanism that allows consumers to seek compensation for violations or damages resulting from data misuse or breaches. This mechanism should provide a clear process for claiming compensation and establish transparent criteria for determining the amount of compensation for violations or damages resulting from data misuse or breaches. In Korea, the Credit Information Use and Protection Act specifies how consumers can seek compensation from credit information companies (including Alternative Credit Scoring Providers) or third parties who mishandle their data. According to Korea's framework, courts are guided by specific criteria, including:

- a. Degree of the knowledge of the possible intention or occurrence of loss;
- b. The extent of damage suffered from the violation;
- c. Economic gains acquired by the credit information company or any other credit information user by committing the violation;
- d. Any regulatory fines or penalties imposed on the violator for the same offense;
- e. Duration and frequency of the violation;
- f. The financial status of the violating party;

- g. Actions taken by the violator to retrieve lost, stolen, or leaked personal credit information; and
- h. Efforts made by the violator to mitigate the impact of the breach on the affected consumer.

Incorporating similar criteria into Indonesia's regulatory framework would enhance consumer trust using alternative credit scoring and entrust the use of consumers' personal data. At the same time, the regulatory bodies tasked with imposing compensation claims would have a clear and consistent calculation guideline, ensuring fairness while discouraging negligent practices by ACS providers and financial institutions.

Another critical aspect is ensuring consumers have the explicit right to withdraw optional consent for non-essential data processing—such as data used for marketing or sharing with third parties—without affecting their access to essential services. This condition guarantees that consumers can maintain control over their personal data while safeguarding their access to critical financial services, such as credit evaluations and lending. Regulations should require financial institutions and ACS providers to differentiate between essential and non-essential data processing clearly, provide rights for consumers to withdraw consent, and ensure that such actions do not result in penalties or denial of services.

By mandating clear and enforceable guidelines for financial institutions and ACS providers, regulations can ensure that consumers have the explicit right to withdraw optional consent for non-essential data processing. These regulations should define optional consent as any agreement related to non-essential data processing, such as data

used for marketing or sharing with third parties, and guarantee that withdrawing such consent does not affect consumers' access to essential services like credit evaluations, lending, or basic account management. This means that consumers can still use their accounts and access necessary financial services even if they withdraw consent for non-essential data processing.

Currently, the OJK Draft Regulation on ACS Providers only addresses consent in the context of ensuring data acquisition and processing are approved by the data owner. Specifically, it states that:

- a. If the data owner is the end-user, the ACS provider must obtain their consent through terms and conditions and privacy policies for each credit score request from users.
- b. If the data owner is a data source provider, the ACS provider must include conditions regarding data confidentiality guarantees in agreements between the data source controller and the ACS provider.

Similarly, the OJK Regulation regarding Financial Sector Technology Innovation (FSTI) includes identical requirements, emphasizing the need for ACS providers to ensure consent is obtained without addressing consent withdrawal for non-essential data processing. While these provisions establish a foundation for securing initial consent, they fall short of empowering consumers with mechanisms to modify or revoke their consent, particularly for optional uses of their data.

To further reinforce compliance, regulations should mandate clear reporting requirements. Institutions should periodically report to regulators on the number of consent withdrawals, how these requests were handled, and the measures taken to ensure uninterrupted access to essential services for consumers exercising this right. These reports would enable regulators to monitor compliance patterns, identify any potential issues, and take corrective actions. By doing so, the reporting requirements will not only ensure transparency but also help to maintain a fair and consumer-centric approach in the industry.

6. Conclusion

Alternative credit scoring systems hold the promise of offering a more inclusive and accurate assessment of creditworthiness, particularly for unbanked individuals. This is a significant opportunity, given that these individuals represent 48.24% of the Indonesian adult population. This aligns closely with OJK's financial inclusion objectives and broader digital transformation agenda.

This study highlights the regulatory gaps in Indonesia's current framework for alternative credit scoring, particularly in comparison to South Korea's more established system. While Indonesia has made significant progress in regulating and supervising alternative credit scoring providers, some room for improvement persists. For Indonesia to realize the full potential of alternative credit scoring, some recommendations include:

- a. Optimizing data infrastructure by establishing an entity to combine datasets;

- b. Strengthening consumer rights by allowing consumers to seek compensation for data misuse or breaches and having separation of mandatory and optional consumer consent;
and
- c. Promoting transparency in data usage by giving notifications to consumers when their personal data is shared.

These measures will not only ensure a secure and ethical alternative credit scoring ecosystem but also build consumer trust, which is critical for widespread adoption.

By adopting best practices from South Korea and tailoring them to the unique needs of its financial ecosystem, Indonesia can develop a regulatory framework that not only balances innovation with consumer protection but also unlocks the transformative power of alternative credit scoring. This will enable Indonesia to advance financial inclusion and support the nation's broader economic development goals.

REFERENCES

- Baiden, J. (2011, June 26). The 5C's of Credit in the Lending Industry. SSRN. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1872804
- Brevoort, K.P. et al. (2016). Credit Invisibles and the Unscored. SSRN Electronic Journal. 18, 2 (2016), 9–34. DOI:<https://doi.org/10.2139/ssrn.2743007>.
- Financial Security Institute. (2024) . *Business Introduction to data agency*. Retrieved from <https://www.fsec.or.kr/bbs/541>
- Financial Services Commission. (2017). Press Conference with the Chairman of the Financial Services Commission.
- Financial Services Commission. (2018). Policy Directions for Inclusive Finance and Plans to Promote Mid-Interest Rate Loans.
- Financial Services Commission. (2018). Comprehensive Measures for Data Utilization and Information Protection in the Financial Sector.
- Fu, G., Sun, M., & Xu, Q. (2020). *An alternative credit scoring system in China's consumer lending market: A system based on digital footprint data*. Retrieved from SSRN: <https://ssrn.com/abstract=3638710>
- Korea Credit Bureau. (2024). Product and
- Kil, K., Ciukaj, R., & Chrzanowska, J. (2021). Scoring models and credit risk: The case of cooperative banks in Poland. *Risks*, 9(7), 132.

- Lee, G., & Chung, C. (2010). Policy Improvements for Financial Inclusion and Low-Income Financial Support. Korea Institute of Finance.
- Li, Y., & Koo, J. (2019). Alternative Credit Scoring and Some Challenges. Academia. Retrieved from https://www.academia.edu/41372509/Alternative_Credit_Scoring_and_Some_Challenges
- Onay, C., & Öztürk, E. (2018). A review of credit scoring research in the age of Big Data. *Journal of Financial Regulation and Compliance*, 26(3), 382-405.
- Siddiqi, N. (2016). *Intelligent Credit Scoring: Building and Implementing Better Credit Risk Scorecards*. Retrieved from https://www.scribd.com/book/334817767/Intelligent-Credit-Scoring-Building-and-Implementing-Better-Credit-Risk-Scorecards?utm_medium=cpc&utm_source=google_search&utm_campaign=3Q_Google_DSA_NB_RoW&utm_term=&utm_device=m
- World Bank. (2022). *The Global Findex Database 2021*. Retrieved from <https://www.worldbank.org/en/publication/globalindex>