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Study on Optimization of Anti-Money Laundering Strategies of Commercial Banks from the Perspective of Financial Technology

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Abstract

In recent years, money laundering has been an issue of close concern for governments, regulators and financial institutions. With more diversified and intelligent application scenarios of digital technology in the financial field, commercial banks are able to use digital technology to provide better customer experience to their customers. But the exponential growth of digital transaction scale of commercial banks also provides new ways for money laundering criminals to launder money. According to the official website of the People's Bank of China, 401 institutions were punished for anti-money laundering violations in 2021 alone, with fines amounting to $321 million. In the process of digital transformation of commercial banks, the effective use of financial technology to strengthen the money laundering monitoring capacity of commercial banks is an important part of China's anti-money laundering efforts. How to use fintech to effectively monitor and detect money laundering in the digital transformation of commercial banks is a pressing issue for regulators and major banks and other financial institutions to address. This paper takes Bank A as an example and proposes corresponding countermeasures and suggestions through an in-depth analysis of the possible shortcomings of Bank A's AML monitoring at the current stage.

Keywords

Financial Technology; Commercial Banks; Anti-Money Laundering Strategy.

1. Introduction

In recent years, with the continuous occurrence of crimes such as illegal fund raising, underground money laundering, corruption and bribery, gambling and smuggling, illegal fund transfer activities based on the above crimes have increased substantially, and the crime methods are becoming more and more hidden, preferring electronic channels. And the transaction channels are mainly mobile banking, online banking and three-party payment platforms, which circumvent counter transactions. Anti-money laundering has gradually become a major issue that banks must face in their compliance operations. With the wide application of big data, cloud computing, artificial intelligence, blockchain and other technologies in the financial sector, the application scenarios of digital technology in the financial sector have become more diversified and intelligent. And the rapid evolution of digital technology has injected abundant vitality into the digital transformation of financial service institutions, but this has also brought new regulatory challenges to the supervisory authorities. According to the statistics of the People's Bank of China, in 2021 alone, 401 institutions were punished for anti-money laundering violations nationwide, with fines amounting to RMB 321 million. And in China's financial system, commercial banks are not only the main financing channel for enterprises and residents, but also the main circulation channel for all kinds of funds. Therefore, in the process of digital transformation of banks, the effective use of financial technology to strengthen the money laundering monitoring capacity of commercial banks is an important part of China's anti-money laundering work. Unlike traditional money laundering practices such as electronic fund transfers and splitting transactions using banks and other

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savings institutions, at this stage money laundering criminals may use emerging technological means such as Internet payment systems and virtual currencies to disguise transactions and launder the proceeds of crime. New payment methods and the development of technologies such as blockchain have made customer due diligence more difficult, which has led to money laundering using virtual currencies, mobile payments and other technological means becoming more insidious. The Financial Technology Development Plan (2022-2025) clearly proposes to accelerate the all-round application of regulatory technology and strengthen the construction of digital regulatory capacity, use technologies such as natural language processing and pattern recognition to structure regulatory rules and compliance requirements, and accurately extract analytical indicators and establish digital rule bases from key operational processes, quantitative data and prohibition clauses. In the digital transformation of commercial banks, how to use fintech to effectively supervise and detect money laundering is an urgent issue for regulators and major banks and other financial institutions to solve. Taking Bank A as an example, this paper analyzes the shortcomings of Bank A's current stage of AML monitoring, combines advanced practices of money laundering detection and AML supervision in domestic and foreign financial service institutions, and proposes corresponding countermeasures.

2. Literature Review

At this stage, domestic and foreign scholars have published numerous literatures on money laundering monitoring and anti-money laundering regulation. In terms of digital currency money laundering risks, Cheng Xue-jun (2022) studied that China has not yet introduced special laws at the level of private digital currency crime prevention, and that China should strengthen due diligence on private digital currencies and strengthen risk management for the administrators, dealers, and financial institutions of digital currencies. Wu Yun et al. (2021) found that virtual currencies have inherent risks such as the identity of the transaction subject is more hidden, decentralization does not enable the supervision of "peer-to-peer" transactions, and virtual currency transactions are not restricted by national borders. Therefore, regulators should crack down on illegal virtual currency service providers at the source. In terms of preventing money laundering risks from the perspective of information sharing, Lan Lihong (2020) argues that coordination and information sharing among China's financial intelligence agencies should be strengthened so as to form a shared and complementary information network among different departments. Regarding the application of machine learning in money laundering detection, Canhoto et al. (2021) found that the use of machine learning facilitates the identification of unusual transaction patterns and even more prevalent suspicious behavior. Mohannad Alkhalili et al.(2021) focused on summarizing the main applications of machine learning algorithms in anti-money laundering solutions by using different settings for machine learning algorithms (SVM, DT, and NB) by conducting several experiments, and the study found that SVM outperformed the other algorithms. Zheng Yingfei (2021) found that machine learning models based on random forest algorithms have better accuracy for monitoring money laundering behavior. Hong Geng et al. (2021) studied that online money laundering methods keep changing with changes in payment mechanisms, and effective identification of money laundering behaviors and traceability is an important part. In terms of anti-money laundering regulations, Isaac Ofoeda et al. (2020) found that anti-money laundering regulations usually promote the development of the financial sector and that strengthening anti-money laundering regulations will benefit developing countries. Arjan Premti et al. (2021) used a cross-sectional model to study the valuation effects of the Fourth AML Directive on a sample of European banks and the study showed that the Fourth AML Directive has a positive valuation effect on European banks and helps to reduce their systemic risk.

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The current domestic and international literature on money laundering monitoring of commercial banks focuses on the money laundering risks of using digital currencies, information sharing perspective to prevent money laundering risks, the application of machine learning in money laundering detection, and the impact of the construction of anti-money laundering regulations on financial intermediaries. Most of the literature on AML regulation focuses on the use of financial innovation technologies to detect money laundering and the construction of AML laws and regulations. There is relatively little literature on specific analysis of the money laundering monitoring aspects of individual banks. This paper focuses on analyzing the deficiencies in the money laundering monitoring link of Bank A to assist the AML supervisory department of commercial banks to further improve their efficiency and thus reduce economic losses.

3. Shortcomings of Bank A's AML Suspicious Transaction Monitoring

3.1. Insufficient Dynamic Tracking of Daily Transactions

As the digital transformation of Bank A gradually advances, money laundering criminals may use digital scenarios to conduct illegal transactions. There is a certain lag in Bank A's analysis of transaction information, which does not enable dynamic tracking of the bank's daily transaction flow and risk identification of customers, and real-time monitoring of suspicious transaction behavior. With the application of emerging technological means such as artificial intelligence and blockchain in the financial field, Bank A is facing an increasing risk environment of money laundering and fraud. Therefore, in the face of the external risks brought by emerging technological means, especially the money laundering risks that may arise when commercial banks use more fintech innovations in digital and intelligent service scenarios, Bank A can only use more advanced technological means to quickly identify and track the risks of abnormal transactions. However, as the risk monitoring models adopted by Bank A at this stage mostly monitor abnormal transaction behaviors from past transaction data, they do not monitor suspicious transaction behaviors in real time. In addition, when Bank A's AML monitoring model monitors that a customer's suspicious transaction behavior exceeds the threshold value of the system alarm, Bank A still conducts risk warning mainly through manual screening and investigation, and does not use emerging technologies such as data mining and artificial intelligence to uncover more value from a large amount of complex data, which also makes Bank A unable to identify abnormal transaction behavior effectively in real time.

3.2. Insufficient Effectiveness of Suspicious Customer Identification

Due to Bank A's stricter risk appetite, Bank A's staff may conduct more due diligence on customers when they go to Bank A for account opening. Bank A mainly adopts enhanced customer due diligence in its work with private customers, reconfirming basic information on customer identity and verifying background information on customer transactions. This will result in Bank A's customers not getting the best service experience, and will also affect customers' confidence in Bank A's service capability, which will eventually only make Bank A lose some of its sticky customers. Bank A does not use big data mining technology to understand customers' information from multiple channels in its due diligence on public and private customers, which will lead to the low accuracy of Bank A's customer due diligence. And thus this leads to the lack of accuracy of Bank A's customer due diligence, which has a negative impact on Bank A's AML monitoring.

3.3. Insufficient Data Sharing and Information Cooperation

At this stage, major commercial banks have strict regulations on protecting customer information. Accounts suspected of money laundering may open multiple accounts in different banks for money laundering transactions, and Bank A may not be able to judge all the

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transactions of a single account by relying only on its own money laundering monitoring system. In terms of data sharing and information cooperation in the field of anti-money laundering, it is difficult to quickly improve Bank A's anti-money laundering supervision efficiency by relying solely on Bank A's own data capturing and mining. As far as compliance allows, Bank A still has much room for improvement in data sharing and information cooperation with other financial intermediary service providers. While emerging financial technologies such as artificial intelligence, big data and blockchain are developing rapidly, all commercial banks are actively carrying out their own digital transformation. Each commercial bank is also paying more attention to the construction of back-end AML monitoring systems. Bank A should take the initiative to strengthen cooperation with other large financial intermediary service providers in the field of AML as compliance allows, so as to take advantage of their strengths and complement their weaknesses, and thus maintain their own advantageous position.

3.4. The Comprehensive Ability of AML Talents Needs to Be Improved

New businesses such as mobile payments and digital RMB payments also pose more challenges to the AML staff of commercial banks. Bank A has staff dedicated to anti-money laundering checks. When there are abnormal transactions such as abnormal customer activities, abnormal wire transfer transactions and abnormal commercial account activities, Bank A's risk control model will calculate the threshold value based on the abnormal transaction behavior. When the threshold value exceeds a certain range, the AML staff will carry out verification of each abnormal transaction activity with the help of the system. However, as the digital transformation process of commercial banks accelerates, more new financial businesses will be generated in commercial banks. AML staff can only quickly find out whether abnormal transaction behaviors reported by the monitoring system involve money laundering if they continuously learn and understand the latest financial innovation scenarios. This also requires the comprehensive ability of Bank A's AML staff to be further improved.

4. Suggestions for Improvement

4.1. Accelerate Further Application of Blockchain Technology in Money Laundering Monitoring System

For a long time, the lack of preventive monitoring measures for money laundering has made it impossible to identify and detect criminal clues and block suspicious transactions as early as possible, which has become a major bottleneck for the further development of anti-money laundering work in the banking industry. In the common centralized storage solution, data storage is costly and easily lost. Electronic data itself is easy to copy and tamper, and when electronic data is used as evidence, the major challenge is its lack of anti-tampering ability. In recent years, blockchain technology has been widely used in the financial field. Bank A can strengthen judicial deposition with the help of blockchain technology while monitoring and verifying transaction accounts in real time, so as to prevent tampering with timestamps and ensure the security of information. Bank A should further improve the review and admissibility standards of electronic evidence, thus realizing the organic unity of law and science in judicial decisions.

4.2. Strengthening the Application of Machine Learning in Customer Identification

When managing customer information, Bank A should strengthen the use of artificial intelligence and machine learning in the basic tasks of identifying customers and their actual administrators, understanding the purpose and transactions of customers, confirming the identity of customers, and understanding the actual beneficiaries of transactions and the actual administrators of transactions. The main reason is that criminals must conceal their true

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identity and the actual purpose of the transaction when conducting money laundering activities in order to evade legal sanctions. When Bank A's AML monitoring system identifies suspicious persons and suspicious transactions of financial institutions, relying only on manual screening and verification of the real identity of customers often leads to low efficiency. And using machine learning and artificial intelligence to identify suspicious persons and suspicious transactions can improve efficiency and reduce the false alarm rate of the AML monitoring system. With more applications of machine learning in AML monitoring models of commercial banks, further optimization of the system can be achieved through training of massive data sets, which in turn enables automatic reporting of suspicious transactions. The use of artificial intelligence to exclude repetitive work allows AML staff to quickly analyze and make judgments in complex transactions. The massive transaction data of bank A can further improve the efficiency of machine learning to predict new suspicious transactions and provide early warning of new money laundering behaviors, thus realizing the control and reduction of money laundering risks at the source of bank A and effectively improving the efficiency of bank A's AML work . In addition, Bank A's information collection on customers should not be limited to the information submitted by customers, but should also flexibly use big data mining technology to obtain information on customers' negative news and customers' social networks from Internet media and social platforms. The use of big data mining can provide better data support for Bank A's monitoring and analysis work by painting a picture based on the characteristics of users.

4.3. Promoting the Establishment of a Sharing Mechanism for AML Security Data

While financial technology has driven the digital transformation of Bank A, it has also made AML monitoring more difficult for Bank A. As an important financial service institution, it is still far from enough for Bank A to monitor money laundering activities by using only its own daily transaction data. During Bank A's collection of customer information and transaction data, money laundering criminals may have relevant flowing transactions between different financial institutions. According to China's regulatory system, each financial institution collects and collates relevant transaction information through the People's Bank of China's unified suspicious transaction reporting system. However, since individual financial institutions cannot fully collect business between customers and other financial institutions, it is difficult to fully identify customers and thus make a comprehensive evaluation of their risks. Due to the separation between financial institutions, no effective data sharing and information sharing mechanism can be established, which leads to duplication of resources and inefficiency between Bank A and other financial service providers, and fails to ensure the security of transactions and the trustworthiness of users. Therefore, on the basis of not violating the compliance of commercial banks, Bank A can use blockchain, artificial intelligence and other emerging technology tools to build a platform for information exchange with other commercial banks, establish a unified regulatory mechanism for cross-institutional customer identification and transaction information, and combine various nodes in the books of financial institutions to improve the credibility of customers' identities and transactions, thus improving Bank A's anti-money laundering capability. At the same time, the existing information barrier should be broken and the corresponding data should be kept in the nodes of each financial institution cooperating with Bank A.

4.4. Cultivating Specialized Anti-money Laundering Talents

Nowadays, the gradual application of financial technology in commercial banks also makes more opportunities for money laundering criminals to take advantage of. In addition, the use of financial technology to launder money is more concealed, which brings more challenges to the anti-money laundering staff of Bank A. While strengthening the anti-money laundering work,

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Bank A should also focus on the training of professional anti-money laundering staff. First, Bank A should carry out targeted training for AML staff. This specifically includes hands-on learning of operational procedures, suspicious fund identification, suspicious transaction detection and disposal, as well as strengthening AML staff's knowledge of AML-related laws and regulations. At the same time, specialized AML professionals should be actively introduced to increase support for AML work, thereby improving the overall level of AML work of Bank A. Secondly, the AML performance evaluation and reward mechanism should be improved, and the proportion of each index in the performance evaluation should be increased to strengthen the attention of the internal staff of Bank A to AML work. Finally, the AML assessment system of Bank A should be improved to evaluate the whole process. It should also be changed from post-evaluation to active management, so as to motivate the personnel engaged in AML work to actively perform their duties and ensure its implementation. At the same time, it is necessary to strengthen the ideological and moral education of employees to prevent them from participating in money laundering activities, so as to enhance their prevention and control ability.

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References

[1] Canhoto A I. Leveraging machine learning in the global fight against money laundering and terrorism financing: An affordances perspective [J]. Journal of business research, 2021, 131: 441-452.

[2] CHENG Xue-jun.[Risks and Regulation of the Development of Private Digital Currencies Based on Blockchain Technology][J]. Journal of Shenzhen University(Humanities & Social Sciences),2022, 39(03):62-73.(in Chinese).

[3] Hong Geng,Yang Sen,Ye Han,Yang Zhemin,Yang Min.[Detection and Analysis Technology of Cybercrime][J].Journal of Computer Research and Development,2021,58(10):2120-2139.(in Chinese).

[4] LAN Lihong.[The Optimization of China's Exchange Mechanism for Financial Intelligence of AML & CTF: A Perspective of the Relevant International Standard][J].Financial Regulation Research,2020, No.106(10):69-84.(in Chinese).

[5] M. Alkhalili, M. H. Qutqut and F. Almasalha, "Investigation of Applying Machine Learning for Watch-List Filtering in Anti-Money Laundering," in IEEE Access, vol. 9, pp. 18481-18496, 2021.

[6] Ofoeda I, Agbloyor E K, Abor J Y, et al. Anti-money laundering regulations and financial sector development[J]. International Journal of Finance & Economics, 2020.

[7] Premti A, Jafarinejad M, Balani H. The impact of the Fourth Anti-Money Laundering Directive on the valuation of EU banks [J]. Research in International Business and Finance, 2021, 57: 101397.

[8] WU Yun,XUE Hongjiao,ZHU Wei,LUO Pan.[Money Laundering through Virtual Currencies: Inherent Risks, Typological Analysis and Regulatory Responses][J].Financial Regulation Research,2021(10): 1-19. (in Chinese).

[9] ZHENG Yingfei,TAO Wenna,ZHAO Xu,WANG Shengjin. [Construction of a Human-Machine Coupling Anti-Money Laundering Monitoring System and Optimization of Machine Learning Algorithm][J]. Journal of Systems & Management, 2021,30(06):1198-1206. (in Chinese).