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The Current Status and Prospects of Data-Driven Analysis in Personal Financial Decision-Making

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Abstract: At present, financial technology is deeply integrated into the personal wealth management market, and data-driven analysis based on big data and artificial intelligence is becoming a key support for optimizing wealth management decision-making efficiency and improving decision-making accuracy. Based on the actual situation of the industry's transformation towards net asset value after the implementation of the new asset management regulations, this article summarizes the basic conditions and core scenarios for applying data-driven analysis to personal financial decision-making, analyzes the prominent problems of data silos, security risks, and uneven regional development faced by the industry, puts forward targeted optimization suggestions, and looks forward to the future development direction of the industry. Research has shown that data-driven analysis, supported by both technological iteration and policy regulation, has been effectively applied in key areas such as customer profiling and asset allocation. However, it requires innovative mechanisms to overcome application bottlenecks. In the future, driven by continuous technological upgrades and policy system improvements, it will advance in depth towards personalization and inclusiveness, providing strong support for the preservation and appreciation of residents' assets and the high-quality development of the personal wealth management market.

Keywords: Data-driven analysis; Personal financial decision-making; Financial technology; Intelligent investment advisory; Net asset value (NAV) transformation.

1. Introduction

In recent years, with the rapid development of the digital economy and the increasing popularity of online wealth management channels, the digital characteristics of residents' financial behavior have become more and more obvious. The personal wealth management market in China has steadily expanded, and the demand for residents' wealth management has also upgraded accordingly. According to data from The Banking Wealth Management Registration and Custody Center (BWRCC), the market size was approximately 120 trillion yuan at the end of 2020, increasing to 180.5 trillion yuan by the end of 2024, with an average annual compound growth rate of 9.1% from 2020 to 2024; At the same time, data from the People's Bank of China (PBC) shows that by the end of 2023, the balance of household deposits in China had reached 137.8 trillion yuan, maintaining double-digit growth for three consecutive years, and residents' disposable wealth management funds had significantly increased. Under the dual influence of the policy orientation of "housing for living, not for speculation" and the intensification of population aging, residents' asset allocation is gradually shifting away from relying solely on real estate and towards diversified financial products. The demand for professional and accurate financial decision-making services is becoming increasingly urgent. The comprehensive implementation of the New Asset Management Rules has promoted the industry to complete the transformation towards net asset value. After breaking the rigid redemption, investors bid farewell to the expectation of "capital preservation" and have a stronger demand for rational decision-making and risk-controllable wealth management services. In this context, data-driven analysis plays a unique role in in-depth mining of user needs and accurate assessment of investment risks, leveraging technological advantages such as big data and artificial intelligence [1]. This article focuses on the practical application of data-driven analysis in personal financial decision-making, reviews the current application status, analyzes existing problems, and looks forward to development prospects, providing practical references for the high-quality development of the personal financial industry and the optimization and improvement of regulatory policies.

2. The Fundamental Support of Data-Driven Analysis Applied to Personal Financial Decision-Making

The implementation of data-driven analysis in personal financial decision-making relies on the triple support of mature technology, policy regulation, and market demand. On the technical level, the improvement of big data collection and processing capabilities has laid the foundation. The Central Data Exchange Platform built by The Banking Wealth Management Registration and Custody Center (BWRCC) has been connected to 1,245 institutions by the end of 2024. In 2024, the sales and redemption business of wealth management products was supported with a total amount of over 130 trillion yuan, achieving efficient cross-institutional data circulation [2]. The iteration of artificial intelligence and machine learning algorithms has further improved the efficiency of data interpretation, making it possible to transform massive user behavior data into practical financial decision-making basis.

At the policy and regulatory level, compliance boundaries are constantly being clarified. The "Measures for the Supervision and Administration of Wealth Management Business of Commercial Banks" clearly require that wealth management products must complete the full-life-cycle registration through the National Banking Wealth Management Information Registration System. As of the end of 2024, the system has registered a total of 27,200 wealth management products and over 98 billion investor

information, achieving penetrating supervision of products, assets, and investors. The Information Disclosure Management Measures issued by The State Administration of Financial Supervision and Administration (SAFSA) further promote the standardization of wealth management information disclosure. It relies on the China Wealth Management Network Information Disclosure Platform, which has served 60 market institutions and issued over 400,000 announcements, providing a powerful and standardized source of information for data-driven decision-making. At the market demand level, the accumulation of residents' wealth and the cultivation of digital habits provide a foundation for the implementation of services. According to financial statistics released by the People's Bank of China in 2024, the balance of household deposits in China reached 137.8 trillion yuan by the end of 2023, maintaining double-digit growth for three consecutive years; According to research data from The Banking Wealth Management Registration and Custody Center (BWRCC) in 2024, the proportion of wealth management users under the age of 30 has increased to 35%. The preference of young people for digital wealth management services has further expanded the application market of data-driven analysis and provided a demand foundation for the implementation of its core scenarios [3].

3. The Core Application Scenarios of Data-Driven Analysis in Personal Financial Decision-Making

Accurate customer profiling and matching of needs is one of the core applications of data-driven analysis in the field of personal finance. Financial institutions will comprehensively integrate multidimensional data such as user income level, consumption frequency, risk preference, investment history, credit records, etc., and construct a complete user financial profile through dynamic updates, in order to achieve accurate promotion and demand adaptation of wealth management products. For example, Ant Group conducts in-depth analysis of user transaction records, payment habits, and other behavioral data within the platform, and specifically recommends mixed fund products with moderate risk levels to young users under the age of 30. More than 60% of this group chooses such products; Bank wealth management subsidiaries rely on their own customer savings data and credit records to customize low-volatility and stable-income pension wealth management products specifically for the middle-aged and elderly population. As of the end of 2024, the balance of personal pension wealth management products reached 14.82 billion yuan, with an average age of 58.3 years for customers. The relevant data is all disclosed by The Banking Wealth Management Registration and Custody Center (BWRCC).

Intelligent investment advisory and dynamic asset allocation have enabled financial decision-making to move away from traditional manual-led models and towards automation and refinement. Financial institutions use machine learning algorithm models to analyze core elements such as macro market trends, industry prosperity, user risk tolerance, investment periods, etc. in real time, generate personalized asset allocation plans, and adjust position ratios in real time based on market fluctuations [4]. According to the industry report released by Analysys in 2024, the proportion of intelligent investment advisory users of leading insurance companies and Internet wealth management platforms has exceeded 38%, making it an important choice for young people to manage their finances [5]. In addition, data-driven risk pricing and warning mechanisms play a significant role. By continuously monitoring changes in underlying assets and market interest rate fluctuations of wealth management products, potential risk points can be identified in advance. In 2024, the wealth management market successfully intercepted multiple illegal fund investments through a centralized registration platform; The digitization of information disclosure further guarantees investors' right to know. 42 mainstream institutions have transmitted over 23,000 messages through information disclosure document distribution services, greatly simplifying the process for investors to obtain financial information and effectively reducing the decision-making blindness caused by information asymmetry.

4. The Existing Problems of Data-Driven Analysis in Personal Financial Decision-Making Applications

The phenomenon of data silos seriously restricts the accuracy of analysis. Personal wealth management data is scattered and deposited in different institutions such as banks, insurance companies and Internet wealth management platforms. Cross-institutional data sharing mechanisms are lacking and unified standards are lacking. A single institution simply cannot obtain a complete financial profile of users, which directly affects the scientificity and adaptability of asset allocation plans. For example, banks can only recommend products based on their own savings data, often ignoring users' credit liabilities, investment preferences and other key information on the Internet platform, resulting in a mismatch between the recommendation scheme and users' actual risk tolerance. Many small and medium-sized institutions still have problems such as non-standard data labeling and missing historical transaction data. These low-quality data can directly lead to algorithm model output bias, thereby misleading investors to make unreasonable financial decisions [6].

Data security and privacy protection are prominent risk points in current applications. Personal financial data contains highly sensitive financial information such as income level, asset status, and liability details. However, some small and medium-sized institutions, due to limited funds and insufficient attention, have seriously insufficient investment in data security. The security protection systems such as data encryption and firewalls are rudimentary, and there are significant risks of information leakage. According to the 2024 report from the State Administration of Financial Supervision and Administration, a total of 17 cases related to data security violations in the financial industry were investigated and handled throughout the year, involving issues such as user information leakage and illegal data collection. Such incidents not only expose users to direct risks such as telecommunications fraud and property losses, but also seriously weaken investors' trust in data-driven services. The uneven regional development has also led to significant differences in service penetration. The "Personal Wealth Management Market Development Report" released by The China Banking Association (CBA) in 2024 pointed out that the penetration rate of wealth management in first-tier cities

exceeds 62%, while in third- and fourth-tier cities it is less than 30%. Due to weak financial infrastructure in the central and western regions, many counties do not even have complete online data collection equipment, and grassroots financial institutions lack professional data analysts. Even scattered data cannot be converted into effective wealth management decision support, making it difficult to provide accurate digital wealth management services to local residents. In addition, there are significant differences in data literacy among different age groups. The middle-aged and elderly population has a low acceptance of intelligent investment advisory and digital information disclosure services, and there are also obstacles in operation. They still rely more on traditional offline financial advisors, which also restricts the full release of the inclusive value of data-driven services.

5. Optimizing the Application Path of Data-Driven Analysis in Personal Financial Decision-Making

The primary task in addressing the issues of data-driven analysis in personal financial decision-making applications is to solve the problem of data silos, with the core being to build a secure and controllable cross-institutional data sharing mechanism. We can rely on the unified data platform built by the State Administration of Financial Supervision and Administration to promote banks, insurance companies and Internet wealth management platforms and other institutions to achieve data interoperability under the premise of strictly abiding by the bottom line of user privacy protection and complying with data security laws and regulations, simultaneously establishing standardized data interface specifications and sharing rules, and clarifying the boundaries and responsibilities of data use. At present, the two major data sharing circles established by The Banking Wealth Management Registration and Custody Center (BWRCC) have achieved information collaboration among some institutions. In the future, the coverage can be further expanded to include regional small and medium-sized financial institutions. At the same time, the voluntary sharing and benefit distribution mechanism can be improved, and the participation enthusiasm of institutions can be mobilized through reasonable incentive policies. At the same time, it is necessary to strengthen data governance throughout the entire process. The China Banking Association can take the lead in formulating unified data quality standards, clarifying data collection formats, labeling standards, and storage requirements, focusing on addressing issues such as non-standard data labeling, missing historical data, and outdated updates in some institutions, steadily improving the completeness and accuracy of data, and consolidating the foundation for accurate analysis.

Data security and privacy protection are the lifelines of data-driven applications, requiring a balance between technological upgrades and institutional safeguards. Financial institutions should actively increase their investment in technology, upgrade security technologies such as data encryption, desensitization, and federated learning [7], and implement full lifecycle encryption protection measures for sensitive financial information of users; Regulatory authorities need to further improve the laws and regulations in the field of data security, clarify the punishment rules for illegal and irregular behaviors, strengthen the investigation and punishment of illegal collection and abuse of user data, and form a strong deterrent. To promote inclusive services, the key is to fill the gaps in financial infrastructure in the central and western regions, strengthen the construction of online wealth management service outlets in counties and townships, and expand the coverage of data collection. At the same time, differentiated investor education is carried out for different age groups, using popular forms such as community lectures and online science popularization videos to help middle-aged and elderly people understand data-driven services and simplify operational processes; Provide precise and intelligent financial management tools that better meet the needs of young people. In addition, financial institutions need to actively improve algorithm transparency, interpret financial decision-making logic with straightforward language and visual charts, clearly explain data basis, effectively reduce investors' understanding threshold, and enhance user trust [8].

6. The Development Prospects of Data-Driven Analysis in Personal Financial Decision-Making

Technological iteration continues to empower the upgrading of data-driven analysis capabilities. Artificial intelligence and machine learning algorithms are constantly optimized, which not only improves the accuracy of market trend prediction and user demand mining, but also combines the characteristics of investors' life cycle to build dynamic financial planning models that are more in line with their needs [9], making asset allocation response efficiency and adaptability better match the actual needs of different life stages. The addition of blockchain technology can achieve full traceability of financial data from collection, application to retention, significantly improving data credibility and reducing the risk of information tampering [10]; The application scenarios of digital RMB continue to expand, and it can also open up new dimensions for data collection. By analyzing digital RMB transaction data, users' consumption habits and savings patterns can be accurately grasped, thereby optimizing the design of personalized financial management plans.

Policy dividends and market demand will jointly create a favorable development environment. With the continuous improvement of the third-pillar pension system, the digital management process of personal pension accounts has accelerated, and data-driven services have become the core support in this field. Functions such as account payment reminders, investment portfolio optimization, and withdrawal planning calculations all rely on data analysis to achieve, and the scale of related products continues to expand. Under the guidance of the strategy of common prosperity, data-driven wealth management services are gradually extending to low-income groups and rural areas, helping to promote the development of inclusive finance by simplifying operational processes and lowering service barriers [11]. The market competition will also force the upgrading of services. The in-depth cooperation between traditional financial institutions and Internet technology companies is constantly integrating the data resources and technical advantages of both sides to create a full chain of accurate digital and intelligent wealth management solutions from demand mining to product push and risk management. According to the public forecast of The Banking Wealth Management Registration and Custody

Center (BWRCC), the size of the personal wealth management market is expected to exceed 300 trillion yuan by 2030. At that time, data-driven analysis will deeply penetrate the entire process of wealth management decision-making, and a personalized, intelligent, and inclusive wealth management service system will gradually take shape.

7. Conclusion

Data-driven analysis has been deeply embedded in core aspects such as accurate customer profiling, dynamic asset allocation, and risk prevention in personal financial decision-making. With the advantages of big data and artificial intelligence technology, and relying on the continuously improving compliance environment of the regulatory system, it effectively promotes the transformation of the personal financial industry from traditional experience-oriented to precision data-driven services, providing efficient support for residents to scientifically plan assets and avoid investment risks. In the current industry development, problems such as analysis bias caused by data silos, trust crisis caused by data security, and service imbalance between regions and groups are still prominent. It is necessary to accurately solve these problems by building a cross-institutional compliance data sharing platform, strengthening the dual security defense line of technology and system, and promoting the sinking of service inclusiveness. In the future, driven by technological upgrades such as blockchain traceability and Digital RMB data empowerment, as well as policy dividends such as the deepening of the third-pillar pension system, data-driven analysis will comprehensively penetrate the entire process of financial decision-making. This will not only further enhance the personalized and intelligent level of services, but also promote the extension of services to low-income groups and rural areas, effectively solving the financial pain points of residents in different income levels and regions, and making professional financial services no longer limited to minority groups. All parties in the industry should accurately grasp the opportunities of technological change, and on the basis of strictly adhering to the compliance bottom line and coordinating innovation and risk control, promote the steady implementation and continuous promotion of data-driven analysis, help the personal wealth management market achieve high-quality development, and lay a solid foundation for the preservation and appreciation of residents' assets and the comprehensive construction of an inclusive financial system.

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