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Research on Optimizing the Risk Compensation Mechanism for Agriculture-Related Loans in Yunnan Province under Inclusive Finance

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Abstract: China is currently at a critical stage of comprehensive rural revitalization, where financial investment in rural areas is closely tied to economic development. Rural regions in Yunnan Province simultaneously exhibit challenges of financial institutions' reluctance to extend credit and farmers' difficulty in accessing financing. This situation stems from high credit risks among farmers, the complexity of risk assessment, and low willingness among financial institutions to provide loans. This study examines the current state of Yunnan's agricultural loan risk compensation system. Findings reveal that the system primarily relies on government guarantees, lacks market-based risk compensation funds, suffers from insufficient capital replenishment, and features inadequate risk early warning mechanisms and rural credit system development, which are factors that constrain financial and economic growth in rural areas. Based on these findings, this paper proposes corresponding recommendations for optimizing the agricultural loan risk compensation mechanism.

Keywords: Agricultural loans; Risk compensation; Yunnan province

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1. Introduction

The 2025 Central Document No. 1 emphasizes deepening rural reforms, advancing comprehensive rural revitalization, prioritizing agricultural and rural development, improving support systems for strengthening agriculture, benefiting farmers, and enriching rural areas, and driving comprehensive growth in agricultural efficiency, rural vitality, and farmer income. Rural economic development relies on rural financial support. In the comprehensive rural revitalization initiative, inclusive finance plays a vital role as a key driver for agricultural industrial upgrading and rural economic growth. Among these, agrarian loans, a crucial component of inclusive finance, serve as the primary formal funding source for rural economies, providing robust financial backing for rural revitalization.

The scale of agriculture-related loans in Yunnan Province has steadily increased in recent years. By the first half of 2025, the outstanding balance of agriculture-related loans in Yunnan reached 1.3 trillion Chinese Yuan, marking a year-on-year growth of 3.34%. This included 1 trillion Chinese Yuan in rural loans and 21.887 billion Chinese Yuan in grain production loans. However, in absolute terms, Yunnan's outstanding balance of 1.37 trillion Chinese Yuan in agriculture-related loans ranks at a medium level in Southwest China, significantly lower than Sichuan Province's (which exceeded 3 trillion yuan by the end of 2024). In relative terms, Yunnan's 3.34% growth rate also lags behind the national average of 7.4%.

Most business entities in Yunnan's rural areas are concentrated in agricultural production related to plateau specialty crops, primarily consisting of small-scale farmers and enterprises. The majority of agricultural enterprises employ simple production and processing methods, feature short industrial and value chains, with low product value-added. Compounded by the vulnerability of agricultural products to natural disasters and price volatility, these factors result in high credit risks for farmers, challenging risk assessments, and low lending willingness among financial institutions. This further constrains financial and economic development in rural areas, hindering the ultimate realization of comprehensive rural revitalization in Yunnan Province. Therefore, analyzing the underlying issues of Yunnan's agricultural loan risk compensation mechanism and establishing a government-guided, multi-party shared risk compensation system to mitigate financial institutions' credit risks and address their low participation enthusiasm is crucial for revitalizing the province's rural financial market. This study aims to examine the current state of Yunnan's agricultural loan risk compensation system and expects to propose corresponding recommendations for optimizing the agricultural loan risk compensation mechanism.

2. Literature review

Luo et al. identified three primary categories of agricultural loans: loans to individual farmers, loans to rural enterprises and organizations, and agricultural loans extended by urban enterprises and organizations [1]. Rural areas in Yunnan Province, similar to most economically underdeveloped provinces, face the dual challenges of financial institutions' reluctance to extend credit and farmers' difficulties in accessing financing. This has become a long-standing bottleneck constraining the development of the rural financial market. On one hand, scholars both domestically and internationally generally agree that agricultural lending carries high credit risks, leading financial institutions to be hesitant or unwilling to lend.

Yang and Yang pointed out that agricultural loans have high marginal costs, posing significant potential risk costs for lenders [2]. Laffont highlighted how information asymmetry in agricultural lending facilitates adverse selection [3]. Jin and Turvey found that debt repayment challenges for agricultural borrowers are linked to commodity price volatility [4]. Yu and Zhan demonstrated from a climate risk perspective that natural disasters significantly increase default rates on bank agricultural loans [5]. Yin et al. identified market risks in agricultural services, processing, and distribution as primary sources of ag-lending risk [6]. Fu found that volatile agricultural commodity prices result in low collateralization rates, with loans predominantly unsecured or guaranteed by farmers [7]. Combined with the absence of loan guarantee institutions, ag-lending risks remain persistently high. On the other hand, the unique characteristics of agricultural loan recipients inherently elevate the risk of such lending. Copestake highlighted that borrower characteristics, such as physical health, asset status, and management capabilities, are primary risk drivers [8]. Narayana examined factors influencing farmers' borrowing decisions and associated risks, finding that lower-income individuals tend to favor loan products with higher capital return rates and greater risk exposure [9]. When loan risks materialize, low-income groups lack the capacity to withstand such high-risk scenarios.

Given the inherently elevated natural and market risks associated with agricultural operations, agribusiness lending carries substantial risks. The mismatch between potential returns and risks has dampened the willingness of banks and other financial institutions to extend such loans, resulting in a lending scale that falls short of rural revitalization requirements. Scholars and governments at all levels have proposed establishing risk compensation mechanisms, such as strengthening government guarantees and setting up compensation funds. These mechanisms utilize fiscal or social capital to compensate for agricultural loan risks, thereby improving the risk-return structure of such loans and enhancing financial institutions' willingness to participate. Luan suggested that the government should establish a credit guarantee platform for agricultural enterprises, expand agricultural insurance products to indirectly safeguard agricultural loans, and diversify the recipients of agricultural loans to mitigate risks [10].

Wei argues that introducing policy-based agricultural guarantee enterprises, leveraging local fiscal funds, and expanding risk compensation mechanisms can share agricultural loan risks [11]. Liu suggests that beyond fiscal subsidies and central bank policy compensation, the government should establish a risk compensation fund involving central and local governments alongside rural financial institutions [12]. Peng contends that credit risk compensation funds can enhance the leverage effect of loans for agriculture, rural areas, and farmers, reduce financing costs for these entities, compensate for credit risks, and boost farmers' incomes [13]. However, current compensation funds face significant replenishment pressures and lack sustainable funding mechanisms.

3. Current status of Yunnan Province's agricultural loan risk compensation system

Yunnan's agricultural loan risk compensation mechanism remains centered on provincial agricultural financing guarantee companies. As a major agricultural province, Yunnan's plateau-specific agricultural resources, including specialty industries like tea, flowers, and medicinal herbs, have become core pillars of rural revitalization. However, inherent characteristics such as long agricultural production cycles, weak risk resilience, and insufficient collateral have led to prominent challenges in financing for agricultural entities, including difficulty in obtaining loans and high financing costs, thereby constraining the modernization of agricultural industries. The 2015 Yunnan Provincial Agricultural Credit Guarantee System Construction Plan called for accelerating the establishment and operation of provincial-level agricultural credit guarantee institutions. Since 2016, Yunnan has progressively built a risk compensation system centered on government-backed financing guarantees.

As the provincial core platform, Yunnan Agricultural Financing Guarantee Co., Ltd. closely aligns with the province's "1+10+3" key industrial layout for modern agriculture with plateau characteristics. Its guarantee coverage extends to new agricultural business entities across all 129 counties (cities, districts) in the province, including family farms, specialized cooperatives, agricultural micro and small enterprises, and leading agricultural industrialization enterprises. The cumulative guarantee scale has exceeded 60 billion Chinese Yuan, benefiting nearly 200,000 new agricultural business entities. As of the end of August 2025, the outstanding guarantee amount reached 19.828 billion Chinese Yuan, ranking sixth nationwide. Through a policy combination of government, banks, guarantees, and investment, it has developed specialized products like "Flower Loan" and "SanQi Loan," focusing on eight major industrial sectors in Yunnan Province: flowers, Chinese medicinal herbs, grain, animal husbandry, specialty cash crops, etc. It has cumulatively guaranteed loans totaling 33.6 billion yuan for key agricultural industries, accounting for 55.33% of its total business volume [14].

Cost compensation and fiscal incentives continue to expand. To reduce farmers' guarantee costs, Yunnan Agricultural Financing Guarantee Co., Ltd. has implemented a differentiated guarantee fee policy. The provincial government provides premium subsidies for agricultural support guarantee services conducted by government-backed financing guarantee institutions. For individual guarantees below 5 million Chinese Yuan with a guarantee fee rate not exceeding 1%, subsidies of up to 1% of the guaranteed amount are granted. To date, the province has achieved an average guarantee rate of 0.16% (one-third of the national average) and a comprehensive agricultural financing cost of 3.68% (80.9% of the national average), effectively reducing financing costs for agricultural operators and alleviating farmers' burdens. Additionally, a scientific capital replenishment and compensation subsidy mechanism has been established. On one hand, provincial finances have cumulatively allocated funds for guarantee fee subsidies, risk compensation, and fee reduction incentives, creating a sustainable capital replenishment mechanism for government-backed financing guarantee institutions to enhance their risk-bearing capacity. On the other hand, a scientifically designed compensation subsidy mechanism has been implemented to reinforce operational accountability among guarantee institutions. The scale of agricultural loans and risk control levels are incorporated into local funding allocation calculations, fostering a positive incentive orientation.

Yunnan Province continuously advances the digital transformation of its financing guarantee system. Leveraging the "One-Stop Mobile Loan for Enterprises" platform, it has disbursed 25 billion Chinese Yuan in agriculture-related loans. Collaborating with institutions like China Construction Bank, it has innovated products such as "Livestock Loans" and "Facility Agriculture Loans," exploring big data-driven credit lending models. The province has achieved full coverage of the National Financing Guarantee Fund's SaaS system across all prefectures (cities), enhanced the functionality of Yunnan's Financing Credit Service Platform, and established an information hub for the government-backed financing guarantee system. This facilitates information exchange and shared applications among government, banks, and enterprises. By integrating big data, intelligent risk control, and other fintech tools, Yunnan has innovatively developed new "credit + guarantee" financial products, improving financing accessibility and convenience for small and micro enterprises as well as entities in agriculture, rural areas, and farmers.

4. Shortcomings in Yunnan Province's agricultural loan risk compensation mechanism

Insufficient coverage and service penetration for agricultural loan products. Compared to Shandong Province's comprehensive financial support and credit risk diversification through products like the "Lu Dan Grain Loan" and "Agricultural Machinery Loan," Yunnan has focused on advantageous industries such as tea and flowers. However, the scale of agricultural loans for weak links like grain production and cold chain logistics remains inadequate, and corresponding loan risk compensation measures are insufficient. Furthermore, compared to Sichuan Province's "Financial Service Station in Every Village" initiative, Yunnan's frontier ethnic regions still lack sufficient coverage of agricultural guarantee personnel and service outlets. In some mountainous areas, loan processing cycles can extend up to one month, failing to meet the urgent capital needs of agricultural production. Funding timeliness requires improvement.

Risk sharing for agricultural loans is primarily government-led, lacking market-based capital. As plateau specialty agriculture scales up and integrates into industrial chains, the existing agricultural loan compensation mechanism's inadequacies in funding security, risk sharing, and operational efficiency are becoming apparent. The Chinese government has repeatedly emphasized exploring and encouraging local governments to establish agricultural credit risk compensation funds, develop inclusive financial services, and leverage the fiscal leverage and risk mitigation functions of these funds to alleviate farmers' financing difficulties and promote rural economic development. Provinces and autonomous regions including Shandong, Hunan, Hubei, and Chongqing have leveraged government-guided funds to attract social capital for risk compensation. In January 2018, the General Office of the Yunnan Provincial People's Government issued the Administrative Measures for Yunnan Provincial SME Loan Risk Compensation Funds (Trial). Nevertheless, at the provincial level, there is currently no "comprehensive agricultural industry loan risk compensation fund" covering all agricultural sectors. Yunnan has yet to explore a diversified funding model combining fiscal resources with social capital. This imbalance between risk-bearing capacity and the scale of agricultural lending growth places excessive pressure on government finances, making it difficult to sustain full subsidies.

Risk warning and assessment systems for agriculture-related loans require improvement. Compared to developed provinces like Zhejiang, which utilizes big data to construct "agricultural risk maps" and integrates risk compensation mechanisms into rural revitalization assessment systems, Yunnan has launched digital products such as the "YunLing Revitalization Loan." Constrained by the topography of certain prefectures and counties, risk warning efficiency remains low with limited coverage. Insufficient integration between risk data, such as agricultural meteorological conditions and pest infestations, and financial systems results in relatively lagging risk identification and assessment.

5. Future recommendations

For government-backed financing guarantees, a three-tier guarantee structure should be established: "National Financing Guarantee Fund-Provincial Reinsurance Institutions-Prefecture (Municipal) Guarantee Institutions." This three-layer risk dispersion model positions provincial institutions primarily for reinsurance operations, strengthening their capacity to underwrite risks for grassroots agricultural guarantees. Concurrently, prefectural (municipal) authorities at all levels should leverage local agricultural development characteristics to strengthen cooperation with regional banks and insurance providers. This collaboration should innovate bank-insurance-government risk-sharing models and guarantee ratios, thereby dispersing banking credit risks and leveraging local financial institutions to extend agricultural loans.

Accelerating the establishment of the Yunnan Province Agricultural Loan Risk Compensation Fund is essential for strengthening agricultural financial support. This system should adopt a multi-tiered and differentiated structure, guided at the provincial level, coordinated at the prefecture-level city level, and implemented at the county level. To enhance the fund's risk-bearing capacity, compensation expenditures should be incorporated into local government budgets as targeted allocations, while provincial, municipal, and county governments contribute according to designated ratios. For impoverished counties and districts, fiscal support should be provided by higher-level governments. In addition, private capital should be actively encouraged to participate in the fund to expand its scale, allowing corporate investment returns and agricultural production benefits to reinforce each other. Risk compensation policies also require further refinement, with streamlined approval procedures and the phased promotion of a “bank + insurance + compensation fund” risk-sharing model to improve the participation incentives of agricultural financial institutions. Establishing this fund will complement the existing government-backed agricultural guarantee system, foster a sustainable risk compensation mechanism, and extend comprehensive coverage to poverty-prone populations, characteristic industries, and county-level agricultural entities across Yunnan.

Deepening the construction of Yunnan’s rural credit system and strengthening early warning mechanisms for agricultural loan risks are equally critical. As Yunnan enters a pivotal stage of consolidating poverty alleviation outcomes and preventing a return to poverty, credit system development has become a central lever for alleviating financing constraints and enhancing endogenous development capacity. Improved rural credit infrastructure can reduce information asymmetry between rural economic actors and financial institutions, thereby increasing farmers’ willingness to repay and financial institutions’ willingness to lend. Leveraging digital technologies, a blockchain-based agricultural credit information platform should be established to facilitate multi-party information sharing and integrate the functions of “farmer loans + government guarantees + fund supplementation + bank–insurance collaboration.” Building agricultural loan credit risk prediction models that account for income volatility and disaster-induced shocks will further strengthen the early warning capabilities of Yunnan’s agricultural loan risk compensation mechanism.

6. Conclusion

Against the backdrop of achieving comprehensive rural revitalization, Yunnan’s rural financial development still faces numerous challenges, making the optimization of the risk compensation mechanism critically important. A well-developed risk compensation mechanism can reduce financial institutions’ risk expectations, attract more financial resources to rural areas, alleviate the problem of insufficient rural financial supply, provide more adequate financial support for rural revitalization, and promote rural economic development and increased farmer income. Yunnan’s agricultural loan risk compensation mechanism should center on the development of plateau-specific modern agriculture and the strategic needs of rural revitalization, forming a comprehensive and diversified system featuring “multi-level fiscal guarantees, capital fund supplementation, digital precision targeting, and risk early warning construction.”

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References

[1] Luo J, Zhang H, Zhou L, 2022, Credit Decision Authority, Organizational Incentives, and Performance of Hybrid Financial Institutions: A Longitudinal Case Comparison of Rural Credit Cooperatives and Agricultural Bank of China’s Rural Business Divisions. Financial Review, 14(4): 43–60.

[2] Yang Y, Yang S, 2019, Research on the Effectiveness of Rural Commercial Banks' Agricultural Support from a Target Deviation Perspective: Evidence from 107 Rural Commercial Banks in Hunan Province. China Soft Science, 2018(2): 42–53.
[3] Laffont J, N' Guessan T, 2000, Group Lending with Adverse Selection. European Economic Review, 44(4): 773–784.
[4] Jin Y, Turvey C, 2002, Hedging Financial and Business Risks in Agriculture with Commodity-Linked Loans. Agricultural Finance Review, 62(1):41–57.
[5] Yu X, Zhan A, 2021, Stress Testing Analysis of Climate Transition Risks for Chinese Commercial Banks Based on Carbon Tax Shocks. Southern Finance, 2021(6): 20–33.
[6] Yin Z, Xie H, Wei Z, 2014, Agricultural Loans, Monetary Policy, and Default Risk. Chinese Rural Economy, 2014(3): 14–26.
[7] Fu L, 2019, A Study on Agricultural Loans of Leshan Sanjiang Rural Commercial Bank, thesis, Southwestern University of Finance and Economics.
[8] Copestake J, 2007, Mainstreaming Microfinance: Social Performance Management or Mission Drift? World Development, 2007(10).
[9] Narayana S, Ponduri S, 2015, Factors Influencing Agriculture Loan Repayment by Small Farmers. International Journal of Agriculture Innovations & Research, 4(1): 83–90.
[10] Luan J, 2020, Research on Optimization Pathways for Informatization Levels in Agricultural Economic Management. Shanxi Agricultural Economics, 2020(11): 76–78.
[11] Wei J, 2022, Revitalizing Rural Industries Through Agricultural Loans. China Finance, 2022(14): 101.
[12] Liu X, 2008, Designing Rural Financial Risk Sharing and Compensation Mechanisms. Journal of Guangdong University of Finance, 2008(3): 79–85.
[13] Peng Y, 2018, Investigation and Analysis of Credit Risk Compensation Funds for Agriculture, Rural Areas, and Farmers. Qinghai Finance, 2018(11): 31–36.
[14] Cumulative Guarantees Exceed 60 Billion, Injecting Financial "Vitality" into Plateau Specialty Agriculture, 2025, National Party Media Information Public Platform, Yunnan.