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"Industry Cognition + Capital" Dual-Driven Model: Innovation in Composite Equity Investment

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Abstract

This paper focuses on the core demand of the equity investment industry to transition from "capital-driven" to a collaborative model of "industry + capital." Addressing the pain points of traditional equity investment, such as information asymmetry, weak post-investment empowerment, and singular exit paths due to an overemphasis on capital, this study employs value chain theory and collaborative innovation theory to systematically define the core connotations of "industry cognition" (including track selection, enterprise identification, and post-investment empowerment) and "capital" (including capital allocation, post-investment services, and exit design). It constructs a dual-driven mechanism throughout the "decision – post-investment – exit" process and supports it with organizational structures (Industry Research Center, Post-Investment Empowerment Department) and institutional safeguards (collaborative decision-making, interest alignment). Through literature review, case analysis (Hillhouse Capital's hard technology "industry merger and acquisition" model and Sequoia China's consumer "ecologized capital" model), and comparative analysis, the practical value of the dual-driven model is verified.

Keywords: equity investment, industry cognition, capital operation, dual-driven model, innovation in model, post-investment empowerment, diversified exit, hard technology investment, consumer track investment, transformation of small and medium-sized institutions, serving the real economy

1. Introduction

1.1 Research Background and Significance

Traditional equity investment faces the dilemma of "three light and three heavy," namely, light on industry research and heavy on financial data, light on post-investment empowerment and heavy on capital injection, and light on industrial chain integration and heavy on single project exit. This has led to a non-performing rate of 12.3% and a technology implementation delay rate of over 40% in domestic projects in 2023, highlighting the contradiction of "capital detachment from industry." In terms of policy, the "14th Five-Year Plan" guides capital to serve the real economy, and the hard technology track is releasing dividends. After the transformation of leading institutions such as Hillhouse and Sequoia, the IRR of industry-empowered projects in 2023 was 9.2% higher than that of traditional projects (Xiong, X., Zhang, X., Jiang, W., Liu, T., Liu, Y., & Liu, L., 2024). In terms of research value, the theory can fill the gap in the collaborative mechanism of "industry cognition

+ capital," and the practice can provide a "lightweight" transformation plan for small and medium-sized institutions.

1.2 Domestic and International Research Status

Foreign research focuses on capital allocation efficiency and the integration of industrial capital, such as the Modigliani-Miller Theorem and Japan's "main bank system," but does not involve the role of industry cognition in equity investment. U.S. PE research focuses on capital integration, neglecting the intervention of industrial technology. In China, Chen Gongmeng emphasizes "industrial chain investment," and Liu Qiao proposes "value creation investment," but both lack a systematic design and practical strategy for "industry cognition + capital." Existing research has not combined the background of China's industrial upgrading and has not established a dual-driven mechanism throughout the process, resulting in a disconnect between theory and practice.

1.3 Research Approach and Methodology

The research follows the logic of "problem identification – theoretical support – model construction – case verification – policy recommendations." It first clarifies the issue of "capital detachment from industry," then defines the core connotations with relevant theories to design a dual-driven mechanism throughout the process. It uses leading institutional cases for verification and finally provides transformation suggestions for small and medium-sized institutions. Methodologically, it employs literature review to lay the theoretical foundation, case analysis to dissect the practices of leading institutions, and comparative analysis to highlight the advantages of the dual-driven model.

2. Theoretical Foundations of the "Industry Cognition + Capital" Dual-Driven Model

2.1 Definition of Core Concepts

Industry cognition is not traditional "industry research," but a deep judgment capability that runs through the industrial chain, technology, and policy. It is based on a complete industrial chain map, covering all links of upstream, midstream, and downstream, and forms a multi-dimensional system by combining the rules of technological iteration and policy dynamics. Its core value is reflected in the "three selections" ability of track selection, enterprise identification, and resource matching, which can accurately identify potential areas, focus on enterprises with technological barriers, and connect matching industrial resources. In the context of equity investment, "capital" has broken through the single attribute of capital and formed a triple connotation of "capital + tools + capabilities." The capital end includes diverse special funds to meet the needs of different tracks, the tool end covers S funds and equity incentive design to optimize the operation path, and the capability end provides full-stage support such as post-investment financing counseling and listing docking. The composite equity investment model takes industry cognition as the decision-making premise and capital as the operation carrier, with the core of realizing the collaborative linkage of the "investment – empowerment – exit" process. In the investment decision-making stage, industry cognition guides the direction of capital investment. In the post-investment empowerment stage, the two jointly solve the actual problems of enterprises. In the exit stage, they collaboratively design diversified solutions. Through the "1 + 1 > 2" collaborative effect, it reduces information asymmetry, amplifies industrial value, and forms a positive cycle of "industry value increase → capital return increase."

2.2 Theoretical Support

The value chain theory provides the industrial logic support for the dual-driven model. The theory holds that the value creation of enterprises is composed of related activities and the added value of each link varies significantly. In the model, industry cognition focuses on high-value-added links to guide capital allocation, while capital promotes the integration of the value chain. The two work together to enhance the status and core competitiveness of invested enterprises in the value chain. The collaborative innovation theory provides the theoretical basis for resource integration in the model, emphasizing that different entities can improve innovation efficiency through resource sharing and complementary advantages. Under the "industry cognition + capital" framework, the industrial and capital sides form a collaborative innovation relationship. Through the organizational collaboration of "industry experts + investment teams" and the element collaboration of knowledge and capital, innovative activities are implemented. The

Capital Asset Pricing Model (CAPM) provides a reference for the balance of risk and return in the model. The model indicates that the expected return of a project is positively correlated with the risk premium. Industry cognition can identify and avoid risk points to reduce the risk premium, while capital diversifies risks through diversified allocation. The two together achieve the optimal balance of risk and return.

2.3 Pain Points and Transformation Needs of Traditional Equity Investment Models

Traditional equity investment models face three major pain points that constrain the sustainable development of the industry. First, information asymmetry leads to investment decision-making mistakes due to over-reliance on superficial financial data and neglect of deep industrial information, such as investing in "pseudo-chip" enterprises or projects lacking core supply chains. Second, weak post-investment empowerment capabilities mean that capital only stays at the level of capital injection and cannot solve problems such as technology implementation and market expansion for enterprises, resulting in missed opportunities. Third, the exit path is singular, with 80% relying on IPOs, which are highly affected by capital market fluctuations. During the suspension of A-share IPOs in 2023, about 30% of institutions faced difficulties in capital recovery (Lu, D., Wu, S., & Huang, X., 2025). These pain points force the industry to accelerate transformation, with the core direction being the shift from "financial investors" to "industry-empowered investors." This transformation is a reconstruction of investment logic and capability systems, requiring industry cognition to fill the "technology – market" information gap to solve decision-making and empowerment problems, while strengthening the "capital – operation" capabilities of capital to provide full-cycle support. The two work together to break through the bottleneck of traditional models and achieve high-quality development of the industry.

3. The Connotation and Operation Mechanism of the "Industry Cognition + Capital" Dual-Driven Model

3.1 Core Value and Capability Dimensions of the Dual Wheels

Industry cognition is the key to solving the information gap in traditional models and carries three core values throughout the process. In track selection, based on the judgment of the industrial life cycle, it locks in areas where "policy dividends and technological breakthroughs" overlap to ensure that capital and industry are in sync. In enterprise identification, it breaks through the limitations of financial indicators and focuses on technological barriers and supply chain positions to determine the irreplaceability of enterprises in the industrial chain. In the post-investment empowerment stage, it is transformed into the ability to connect resources and implement technology, promoting the transition of technology from "laboratory samples" to "market products."

Capital, as the operation carrier, has core capabilities in three dimensions of collaborative upgrading. In capital allocation, it balances risks through a diverse combination of "government-guided funds + social capital" and "merger and acquisition funds." Post-investment services extend to full-cycle refined support, such as assisting with compliance sorting in the Pre-IPO stage and providing daily tax planning. Exit design constructs an "IPO + industrial merger and acquisition + S fund" path to shorten the cycle, enhance liquidity, and stabilize returns.

3.2 Operation Mechanism of Dual-Wheel Collaboration

In the investment decision-making stage, a collaborative logic of "industry preliminary screening + capital due diligence" is formed, implemented by a dual-team of "industry experts + investment managers." Industry experts lead the preliminary screening of tracks and enterprise evaluation, drawing industrial chain maps to mark core information.

Investment managers conduct financial due diligence and risk assessment to ensure capital security. For example, in the investment of new energy vehicle companies, industry experts lock in enterprises with leading electric control technology, investment managers verify financial risks, and then capital follows up with the investment.

In the post-investment stage, capital supports the implementation of industry cognition with a "special fund for industrial empowerment," specifically allocated for technology research and development and supply chain integration. For example, in the investment of semiconductor equipment enterprises, capital

uses the special fund to promote the establishment of a joint venture between the enterprise and a wafer factory, shortening the research and development cycle by nearly half and achieving rapid commercialization of technology.

In the exit stage, a system of "demand identification + path design" is constructed. Industry cognition explores industrial chain merger and acquisition opportunities and judges synergistic value, while capital designs diverse transaction structures, such as stock swap mergers to meet both parties' demands. This model shortens the exit cycle by 1-2 years and drives a 5-8% increase in project IRR.

3.3 Support System for Dual-Driven Model

In terms of organizational structure, an "Industry Research Center" is established to output industry cognition and integrate technical and policy information. A "Post-Investment Empowerment Department" is set up to build an industrial resource pool and develop personalized plans. The "project full-cycle responsibility system" is implemented, allowing investment managers to run through research and post-investment, breaking down departmental barriers.

Institutional design provides long-term support. In performance evaluation, the "track prediction accuracy rate" of industry experts is assessed and linked to bonuses. In incentives, a "profit-sharing" system is promoted, with project returns allocated according to the contribution of industry cognition. At the same time, the "industrial value enhancement" indicator is added to ensure that the dual-driven model aims at "win-win for industry and capital."

4. Case Verification of the Dual-Driven Model

4.1 Case 1: Hillhouse Capital's "Hard Technology + Industrial Merger and Acquisition" Model

Hillhouse focuses on hard technology fields with in-depth industry cognition, forming a 30-person professional team (including academicians and semiconductor experts) and collaborating with universities to build a "technology tracking platform" to update the full industrial chain data and policy dynamics in real-time, accurately judging industrial bottlenecks and opportunities. In terms of capital operation, from 2021 to 2023, it focused on semiconductor equipment and new energy battery fields, investing in 15 companies such as Zhongwei Company and Ningde Times with a scale of over 20 billion yuan. Post-investment empowerment targets enterprise weaknesses, such as assisting Zhongwei in acquiring overseas technical teams and setting up an industrial fund to inject 1 billion yuan into Ningde for solid-state battery research and development. Exit strategies adopt an "IPO + industrial merger and acquisition" path, with five projects going public and three being acquired by industry leaders, achieving an average IRR of 32%, 10% higher than the industry average. In terms of effectiveness, the R&D investment ratio of invested companies increased from 15% to 30%, and the proportion of overseas customers of Ningde Times increased from 20% to 45%, enhancing global industrial chain discourse power. (Wu, S., Huang, X., & Lu, D., 2025)

Table 1.

Indicator/Description	Value/Details
Average IRR	32%
Excess Industry Average IRR	10%
Increase in R&D Investment Ratio of Investee Companies	From 15% to 30%
Increase in Overseas Customer Ratio of Contemporary Amperex Technology Co. Limited (CATL)	From 20% to 45%

4.2 Case 2: Sequoia China's "Consumer + Ecologized Capital" Model

Sequoia focuses on the consumer field by exploring the trend of consumption upgrading, drawing a "new consumer industry chain map," anticipating the explosion of "zero-sugar beverage" demand, and locking in niche brands such as Yuanqi Forest and Perfect Diary. Capital operations adopt an "ecologized capital" strategy, accompanying investment from seed/A round to Pre-IPO round. Post-investment empowerment is precise, such as helping Perfect Diary connect with contract manufacturers to reduce costs by 20% and assisting in expanding into the Southeast Asian market. Exit strategies are combined with enterprise characteristics, with Perfect Diary going public (IRR 45%) and Yuanqi Forest exiting through strategic investment (cycle 3 years). The results are

significant, with the average market share of invested companies increasing from 5% to 15%, and the brand expansion cycle shortened by 2-3 years (Liu, Z., 2025). Yuanqi Forest achieved nationwide layout in just 2 years, becoming a benchmark in the new consumer sector.

Table 2.

Indicator/Description	Value/Details
Perfect Diary's Cost Reduction Ratio with Contract Manufacturers	20%
Perfect Diary's IPO IRR	45%
Genki Forest's Strategic Investment Exit Period	3 years
Average Market Share Increase of Investee Companies	From 5% to 15%
Brand Expansion Cycle Shortened	2-3 years
Time for Genki Forest to Expand from Regional to National Layout	2 years

4.3 Case Comparison and Insights

The two cases demonstrate the differentiated logic of dual-driven models in different tracks. In terms of industry cognition, hard technology focuses on the autonomy and compliance of technology, avoiding "pseudo-technology"; consumption focuses on user demand and supply chain efficiency. In terms of capital tools, hard technology relies on long-term industrial funds and merger and acquisition tools to match the research and development cycle; consumption uses follow-up funds and IPO tutoring to adapt to rapid growth. In terms of effectiveness, hard technology shortens the research and development cycle by 15-20%, and consumption increases market share by 10-15%. The insight is that dual-driven models need to be "tailored" to local conditions: hard technology focuses on "long-term capital + technology empowerment," consumption focuses on "rapid expansion + channel docking," and adjusting the collaborative method according to the track characteristics can maximize value.

5. Innovation Points and Industry Value of the Model

5.1 Innovation Points of the Model: Breaking Through Three Boundaries

The core innovation of the "industry cognition + capital" dual-driven model is first to break through the "information boundary" of traditional equity investment. Traditional models rely on superficial enterprise information and lack understanding of industrial technology and supply chain logic, which can easily lead to investment misjudgment. In the dual-driven model, industry cognition constructs a multi-dimensional information network by deeply exploring the industrial chain, tracking technological iteration, and interpreting policies. It can identify the actual value of patents, sort out the cost laws of the supply chain, and predict market trends, increasing the accuracy rate of project selection by 20-30% and fundamentally reducing the risk of information misjudgment.

Second, it breaks through the "empowerment boundary," upgrading from "single financial empowerment" to "industry + capital dual empowerment." Traditional models only inject capital and cannot solve non-financial problems such as enterprise technology and market. The dual-driven model covers the full life cycle of enterprises' "technology – market – capital." It connects research and development resources and provides special funds at the technology end, digs channel resources and supports promotion at the market end, and optimizes equity structure and connects financing at the capital end, significantly enhancing the enterprise's risk resistance capability and increasing the enterprise survival rate by 15%. (Huang, T., Yi, J., Yu, P., & Xu, X., 2025)

Finally, it breaks through the "exit boundary," solving the over-reliance on IPOs. Traditional models rely on IPOs for 80% of projects, which are highly affected by capital market fluctuations and have long cycles. The dual-driven model constructs a diversified exit path of "IPO + industrial merger and acquisition + S fund," which can promote rapid exit through collaborative enterprise mergers and acquisitions or enhance capital liquidity through S funds, increasing capital liquidity by 30% and forming a virtuous cycle of "exit – reinvestment."

5.2 Industry Value

For equity investment institutions, the dual-driven model significantly enhances core

competitiveness. In terms of returns, the collaboration of the two increases the average IRR of projects by 8-10%. In terms of LP relationships, the exit rate increases by 25%, enhancing LP stickiness. Small and medium-sized institutions can transform through a "lightweight" path by cooperating with industry think tanks and leading institutions, reducing transformation costs.

For invested companies, the model accelerates the growth process. The technology implementation cycle is shortened by 15-20%, and AI companies achieve technology mass production in just 6 months, nearly half the industry average cycle. The financing success rate is increased by 40%, and consumer brands successfully complete Pre-IPO rounds with the guidance of capital and industry cognition. At the same time, the industrial chain resources can be integrated, such as new energy vehicle companies connecting with suppliers and promoting joint ventures to reduce costs and enhance discourse power.

Table 3.

Indicator/Description	Value/Details
Average IRR of Projects Increased	8-10%
Exit Rate Increased	25%
Technology Implementation Cycle Shortened	15-20%
Mass Production Cycle of AI Company's Technology	6 months
Mass Production Cycle of AI Company's Technology Shortened Compared to Industry Average	Nearly half
Financing Success Rate Increased	40%

For the real economy, the model guides capital to flow accurately into strategic areas. In 2023, 75% of the projects of leading institutions using the dual-driven model were related to the real economy, far higher than traditional models. In the semiconductor field, it promoted a 10% increase in domestic substitution rate, alleviating "bottleneck" problems. In the new energy field, it helped enterprises expand into overseas markets, and in the consumer field, it supported domestic brands, building a bridge for "capital serving the real economy" and becoming a "booster" for industrial upgrading.

6. Challenges and Optimization Strategies

6.1 Core Challenges

The primary obstacle for small and medium-sized equity investment institutions to implement the dual-driven model is the difficulty in building industry cognition. Leading institutions can support independent research teams and high-end data procurement, while small and medium-sized institutions face an annual cost of 500-1000 million yuan for cognition building (Yu, D., Liu, L., Wu, S., Li, K., Wang, C., Xie, J., ... & Ji, R., 2025), far exceeding their financial capacity. At the same time, high-end industry experts tend to choose leading institutions, and small and medium-sized institutions face a talent gap, resulting in an industry cognition accuracy rate of only 50% of that of leading institutions, falling into a dilemma of "not daring to invest and not investing accurately."

The low efficiency of dual-wheel collaboration stems from the goal conflict between the industry and investment teams. The industry team focuses on the long-term implementation of technology and is willing to give a 3-5 year cultivation cycle; the investment team, influenced by LP's short-term return requirements, pursues a 1-3 year exit cycle. This conflict increases communication costs, accounting for 30% of the total project time. For example, the post-investment planning is extended from 3 months to more than 4 months due to disputes, missing the key window period.

Table 4.

Indicator/Description	Value/Details
Average Annual Cognitive Construction Cost for SME Institutions	5-10 million yuan
Cognitive Accuracy Rate of SME Institutions Relative to Leading Institutions	50%
Cultivation Cycle Willing to Be Provided by the Industry Team	3-5 years
Exit Cycle Pursued by the Investment Team	1-3 years

Proportion of Communication Costs in Total Project Time	30%
Time Extended Due to Disputes in Post-Investment Planning	Over 1 month

6.2 Optimization Strategies

To address the difficulty in building industry cognition, small and medium-sized institutions can take a "lightweight" path: externally, collaborate with industry think tanks and universities to build a "cognition sharing platform," with an annual cooperation cost of 100-200 million yuan, to share data and expert resources. In terms of tracks, focus on 1-2 narrow fields, concentrate efforts to accumulate in-depth cognition, and avoid decision-making mistakes.

To improve collaboration efficiency, mechanisms and interests need to be addressed: establish a "Dual-Wheel Collaborative Decision-Making Committee," with industry experts leading long-term matters such as technology routes and resource docking, and investment managers leading capital matters such as financial due diligence and exit timing, reducing disputes. Implement a "project follow-investment system," requiring both teams to follow-invest no less than 5% of their own funds, achieving risk-sharing and interest-sharing, and balancing long-term and short-term goals.

To cope with risks, a "forward-looking prediction + diversified hedging" system needs to be built: establish a dedicated policy position to predict policy impacts 6-12 months in advance; on the market side, balance liquidity through "60% hard technology + 40% consumption" cross-track investment, and plan multiple exit paths such as "IPO + industrial merger and acquisition + S fund" in the early stage of investment to avoid capital sedimentation.

7. Conclusion and Outlook

7.1 Research Conclusions

The "industry cognition + capital" dual-driven model has become an inevitable trend for the transformation of the equity investment industry. Its core logic lies in using industry cognition to solve the dilemma of "what to invest in and how to help" — accurately locking in high-potential tracks and enterprises with technological barriers, connecting industrial resources for invested companies, and promoting technology implementation. At the same time, it relies on capital to solve the operation problems of "how to invest and how to exit," balancing risks through diversified capital allocation, and enhancing liquidity through multi-path exits.

7.2 Future Outlook

In the future, the dual-driven model will further upgrade with the help of technology, tracks, and policies. In terms of technology, AI and big data can improve the efficiency of industry cognition by analyzing dynamic industrial chain data to predict technological trends. Blockchain can optimize the transparency of capital operations, such as transaction tracing in S fund share transfers. In terms of tracks, it will focus more on hard technology, dual carbon, biomedicine, and other national strategic fields, combining track technical characteristics and policy guidance to explore more precise collaborative models.

7.3 Research Limitations and Future Directions

This study has certain limitations. The cases are mainly from leading institutions, and the practical analysis of small and medium-sized institutions with limited resources is insufficient. Moreover, the evaluation of industry cognition still stays at the qualitative level, lacking quantitative indicators. Future research can explore the "lightweight dual-driven model" of small and medium-sized institutions, summarize their landing experience in niche tracks, and construct a quantitative evaluation system for industry cognition. By using data-based indicators to measure its value to investment decision-making, more precise references can be provided for model optimization.

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