

A Policy Analysis Framework for Assessing the “Little Giant” Enterprise Initiative: Mechanisms of SME Upgradation, Innovation Performance, and Industrial Growth Dynamics

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ABSTRACT: The “Little Giant” enterprise initiative represents a targeted industrial policy intervention designed to accelerate the development of specialized, innovation-driven small and medium enterprises (SMEs) within strategic sectors. This paper develops a comprehensive policy analysis framework to evaluate how such initiatives influence SME upgradation, innovation performance, and broader industrial growth dynamics. Building on theories of industrial policy and competition (Aghion et al., 2015), infant industry protection (Grubel, 1966), and structural transformation in emerging economies (Naughton, 2007), the study synthesizes multiple analytical dimensions including innovation incentives, financial support mechanisms, supply chain repositioning, and technological upgrading pathways.

Using a structured qualitative synthesis of existing literature, the paper conceptualizes the “Little Giant” policy as a hybrid industrial governance mechanism that combines state-guided financial allocation, competitive discipline, and innovation targeting. The framework integrates empirical insights on SME constraints (Grube et al., 2017), innovation responses to policy signals (Shao, 2024), government fund effectiveness in technological breakthroughs (Wu & Yan, 2023), and firm-level positioning within supply chains (Zhang, 2025).

Findings suggest that the initiative operates through four primary channels: (i) capability upgrading via targeted subsidies and certification effects, (ii) innovation stimulation through competition-enhancing industrial policy (Aghion et al., 2015), (iii) structural repositioning in industrial value chains, and (iv) reinforcement of technological ecosystems. However, the effectiveness of the policy is contingent upon institutional quality, firm absorptive capacity, and sectoral heterogeneity. The paper concludes with a structured evaluation model and policy recommendations for optimizing SME-oriented industrial upgrading strategies.

KEYWORDS: Little Giant enterprises, industrial policy, SME upgrading, innovation performance, supply chain position, government subsidies, technological innovation, China industrial strategy, competitive dynamics, policy evaluation framework.

1. Introduction

1.1 Background

Small and medium enterprises (SMEs) play a foundational role in industrial development, yet they frequently face structural constraints such as limited access to capital, weak innovation capacity, and vulnerability in competitive markets. In response, many governments have implemented targeted industrial policies aimed at strengthening SME capabilities. Among these, the “Little Giant” initiative represents a focused policy instrument designed to cultivate high-

quality, specialized, and innovation-driven firms within strategic sectors.

The theoretical justification for such intervention is deeply rooted in industrial policy literature, particularly the argument that state involvement can correct market failures in innovation, coordination, and risk allocation (Aghion et al., 2015). This perspective contrasts with purely market-driven approaches by emphasizing the role of policy in shaping competitive dynamics and encouraging productivity-enhancing innovation rather than inefficient protection.

From a structural transformation perspective,

economies undergoing industrial upgrading require mechanisms that facilitate movement from low-value manufacturing toward high-value, technology-intensive production systems (Naughton, 2007). The “Little Giant” initiative can be understood as an institutional response to this transition challenge, providing SMEs with targeted support to enhance specialization and technological capability.

1.2 Problem Statement

Despite increasing policy adoption, there remains limited systematic understanding of how the “Little Giant” initiative translates policy inputs into measurable outcomes such as innovation performance, supply chain repositioning, and industrial upgrading. Existing research often isolates specific dimensions—such as subsidies or innovation output—without integrating them into a unified analytical framework. Furthermore, the interaction between competitive pressure and policy support remains under-theorized in SME contexts, despite its central importance in industrial policy design (Aghion et al., 2015).

1.3 Research Objectives

This study aims to:

1. Develop a structured policy analysis framework for evaluating the “Little Giant” initiative.
2. Identify key transmission mechanisms linking policy instruments to SME upgrading outcomes.
3. Examine innovation performance and supply chain effects of targeted industrial support.
4. Integrate theoretical perspectives from industrial policy, innovation economics, and SME development literature.

1.4 Scope and Significance

The scope of this research is conceptual and analytical, focusing on synthesis of existing literature rather than primary econometric estimation. Its significance lies in providing a multi-dimensional evaluation framework that can guide policymakers, researchers, and industrial strategists in assessing SME-oriented industrial policies.

2. Literature Review

2.1 Industrial Policy and Competitive Dynamics

Industrial policy has long been debated in economic literature, particularly regarding its effectiveness in enhancing productivity and innovation. A key contribution by Aghion et al. (2015) argues that industrial policy can enhance competition when designed appropriately, leading to innovation-driven growth rather than rent-seeking behavior. They

emphasize that competition and state intervention are not mutually exclusive but can be complementary under certain institutional conditions. This theoretical insight is central to understanding the “Little Giant” initiative, which combines selective support with competitive performance benchmarks.

2.2 Infant Industry and Structural Development

The infant industry argument (Grubel, 1966) provides foundational justification for temporary protection and support of emerging firms. In this context, SMEs require initial shielding from global competition to build capabilities. However, the success of such protection depends on ensuring eventual competitiveness rather than permanent dependency.

Naughton (2007) further expands this perspective by analyzing structural transformation in the Chinese economy, highlighting the importance of policy-driven industrial upgrading and state-guided market evolution. These insights support the rationale behind targeted SME enhancement programs such as the “Little Giant” initiative.

2.3 SME Constraints and Technological Barriers

Empirical studies highlight persistent constraints faced by SMEs, including automation challenges, limited access to advanced technologies, and managerial inefficiencies (Grube et al., 2017). These constraints hinder productivity growth and innovation capacity. The literature suggests that without targeted intervention, SMEs may remain trapped in low-value segments of the industrial chain.

2.4 Innovation Policy and Government Intervention

Shao (2024) demonstrates that specialized policy labels, such as “Little Giant,” significantly influence SME innovation outcomes by enhancing visibility, credibility, and access to funding. Similarly, Wu and Yan (2023) show that government-guided funds can stimulate core technological breakthroughs by reducing financing constraints and encouraging risk-taking in innovation activities.

These findings reinforce the notion that policy instruments not only provide financial support but also generate signaling effects that shape firm behavior.

2.5 Supply Chain Positioning and Industrial Upgrading

Zhang (2025) finds that the “Little Giant” label improves firms’ positioning within supply chains, enhancing bargaining power and integration into high-value networks. This suggests that policy interventions can alter not only internal firm capabilities but also external relational structures within industrial ecosystems.

2.6 Research Gap

Despite extensive literature on industrial policy and SME development, three key gaps remain:

1. Lack of integrated frameworks combining innovation, competition, and supply chain dynamics.
2. Limited understanding of multi-channel policy transmission mechanisms.
3. Insufficient synthesis of how targeted industrial policies reshape firm-level and system-level outcomes simultaneously.

This paper addresses these gaps by developing a unified analytical framework grounded in industrial policy theory (Aghion et al., 2015) and empirical SME studies.

3. Methodology

3.1 Research Design

This study adopts a conceptual analytical design based on structured literature synthesis. The goal is to construct a multi-layered policy evaluation framework by integrating theoretical and empirical insights from selected studies.

The methodological approach is non-empirical but systematic, emphasizing thematic extraction, mechanism mapping, and framework construction.

3.2 Analytical Framework Development

The framework is constructed across four analytical layers:

3.2.1 Policy Input Layer

This includes government subsidies, certification systems, innovation funding, and industrial classification mechanisms. These inputs define the initial conditions under which SMEs operate.

3.2.2 Capability Transformation Layer

This layer captures internal firm-level changes such as R&D investment, automation adoption, and managerial upgrading (Grube et al., 2017). These transformations are influenced by both financial and non-financial policy incentives.

3.2.3 Innovation Output Layer

Innovation outcomes include patent generation, technological breakthroughs, and product diversification. Government funds play a crucial role in enabling these outcomes by reducing uncertainty and financing constraints (Wu & Yan, 2023). Competitive pressure induced by industrial policy also enhances

innovation incentives (Aghion et al., 2015).

3.2.4 Structural Positioning Layer

This layer evaluates changes in supply chain integration and industrial hierarchy positioning. Firms achieving “Little Giant” status often experience improved network centrality and bargaining power (Zhang, 2025).

3.3 Mechanism Modeling

The framework identifies four transmission mechanisms:

1. Financial Constraint Relaxation Mechanism
2. Competitive Pressure-Induced Innovation Mechanism (Aghion et al., 2015)
3. Signal-Enhancement Mechanism through Policy Labeling
4. Supply Chain Reconfiguration Mechanism

Each mechanism interacts dynamically, producing cumulative effects on SME upgrading.

3.4 Analytical Assumptions

The model assumes:

- Firms are heterogeneous in absorptive capacity.
- Policy effects are nonlinear across sectors.
- Competition intensity moderates innovation response.
- Institutional support enhances policy effectiveness.

3.5 Evaluation Logic

The evaluation framework assesses policy effectiveness through three outcome dimensions:

1. Innovation intensity
2. Productivity upgrading
3. Industrial integration

These dimensions collectively represent the success of SME transformation under the “Little Giant” initiative.

4. Results / Findings

4.1 Policy Input Effects on SME Capability Upgradation

The analysis indicates that the “Little Giant” initiative functions primarily as a multi-channel policy input system that reshapes SME capabilities through financial, informational, and institutional mechanisms. Government subsidies and targeted funding programs reduce liquidity constraints, enabling SMEs to increase

R&D intensity and adopt advanced production technologies. This aligns with the industrial policy framework emphasizing the corrective role of state intervention in addressing market failures in innovation allocation (Aghion et al., 2015).

A key finding is that capability upgrading is not uniform across firms. High-absorptive-capacity SMEs demonstrate significantly stronger responsiveness to policy inputs, particularly in automation adoption and product specialization (Grube et al., 2017). In contrast, firms with weaker managerial systems show delayed or partial adaptation, suggesting diminishing marginal returns of policy support in structurally constrained enterprises.

4.2 Innovation Performance Enhancement Mechanisms

The “Little Giant” policy significantly enhances innovation performance through both direct and indirect channels. Direct effects arise from R&D subsidies and innovation grants, while indirect effects emerge from competitive signaling and certification-based recognition.

Empirical synthesis suggests that firms labeled as “Little Giants” experience increased patent output, improved technological diversification, and accelerated product innovation cycles. This supports findings that government-guided funds can stimulate core technological breakthroughs by reducing risk exposure and incentivizing long-term innovation strategies (Wu & Yan, 2023).

Importantly, innovation enhancement is strongly moderated by competitive pressure. Consistent with Aghion et al. (2015), increased competition induced by selective industrial policy fosters a “race to innovate” effect, where firms invest more aggressively in technological upgrading to maintain policy eligibility and market position.

4.3 Supply Chain Position Reconfiguration

A central finding of the analysis is that the “Little Giant” initiative significantly alters firm positioning within industrial supply chains. Firms receiving policy recognition demonstrate improved integration into upstream and downstream networks, increased bargaining power, and stronger relational stability with key partners.

Zhang (2025) supports this observation, showing that policy labeling enhances firms’ perceived reliability and technological capability, thereby improving their supply chain status. This effect is particularly strong in high-technology manufacturing sectors where supplier credibility is critical for contract allocation.

The mechanism operates through signaling effects: policy recognition reduces information asymmetry between SMEs and large firms, facilitating trust-based collaboration and long-term contracting.

4.4 Structural Industrial Upgrading Dynamics

At the macro level, the initiative contributes to gradual industrial upgrading by reallocating resources toward high-value-added SMEs. This structural shift is consistent with historical patterns of industrial transformation observed in emerging economies (Naughton, 2007).

The analysis shows that “Little Giant” firms tend to cluster in strategic industries such as advanced manufacturing, digital technologies, and specialized industrial equipment. Over time, this clustering effect enhances industrial ecosystem efficiency and promotes technological spillovers across firms.

4.5 Competitive Dynamics and Market Discipline

A significant outcome of the initiative is the reinforcement of competitive discipline among SMEs. Rather than insulating firms from competition, the policy introduces performance-based selection mechanisms that encourage continuous innovation and productivity improvement.

This reflects the theoretical proposition of Aghion et al. (2015), where industrial policy is most effective when it preserves or enhances competitive pressures rather than suppressing them. However, the findings also indicate potential risks of over-selection, where excessive competition for policy recognition may lead to short-term optimization strategies instead of long-term innovation investment.

5. Discussion

5.1 Theoretical Implications

The findings reinforce the theoretical argument that industrial policy can be compatible with competitive market structures when properly designed. The “Little Giant” initiative demonstrates a hybrid model of state intervention that combines targeted support with competitive selection mechanisms.

Consistent with Aghion et al. (2015), the results confirm that competition-enhancing industrial policy fosters innovation rather than distortions when allocation is performance-based. This extends traditional infant industry arguments (Grubel, 1966) by showing that protection is no longer the dominant mechanism; instead, selective enhancement and competitive pressure jointly drive firm upgrading.

Furthermore, the study contributes to structural transformation theory (Naughton, 2007) by illustrating

how micro-level policy interventions aggregate into macro-level industrial restructuring.

5.2 Practical Implications

From a policy perspective, the results suggest that the effectiveness of SME-targeted industrial policy depends on three critical design features:

First, selectivity and performance-based allocation ensure that resources are directed toward high-potential firms rather than distributed uniformly. This enhances overall innovation efficiency.

Second, integration of financial and non-financial support mechanisms is essential. While subsidies reduce financial constraints, certification and labeling effects play a critical role in improving supply chain access and market credibility.

Third, dynamic policy adjustment mechanisms are required to avoid stagnation. Firms may become overly dependent on policy support, necessitating periodic reassessment of eligibility criteria.

5.3 Trade-offs and Structural Limitations

Despite positive outcomes, the analysis identifies several structural limitations. One key issue is the potential for selection bias, where already high-performing firms are more likely to qualify as “Little Giants,” thereby limiting inclusiveness.

Additionally, excessive reliance on policy-driven innovation incentives may create dependency risks, where firms prioritize compliance with policy indicators over genuine technological breakthroughs.

Another limitation is the heterogeneous regional effectiveness of the policy. Regions with stronger institutional capacity and industrial ecosystems exhibit significantly better outcomes compared to less developed regions, indicating uneven policy transmission.

5.4 Comparison with Existing Literature

The findings are consistent with empirical studies on SME innovation and industrial upgrading. Shao (2024) similarly identifies positive innovation effects of the “Little Giant” policy, particularly in R&D-intensive SMEs. Wu and Yan (2023) further confirm that government funding mechanisms significantly enhance technological breakthrough probability.

However, this study extends existing literature by integrating these micro-level findings into a unified framework that connects innovation, competition, and supply chain restructuring. Unlike Zhang (2025), which focuses primarily on supply chain positioning, this paper demonstrates that supply chain effects are part of

a broader systemic transformation process driven by multi-layer policy interactions.

5.5 Limitations of the Framework

The proposed framework is primarily conceptual and does not include econometric validation. While it integrates multiple theoretical perspectives, it lacks quantitative calibration of effect sizes. Additionally, the framework assumes relatively stable institutional conditions, which may not hold in rapidly changing policy environments.

Future research should incorporate panel data analysis and firm-level datasets to empirically validate the proposed mechanisms and quantify heterogeneous treatment effects.

6. Conclusion

This paper developed a comprehensive policy analysis framework for evaluating the “Little Giant” enterprise initiative, focusing on its role in SME upgrading, innovation enhancement, and industrial restructuring. By synthesizing industrial policy theory (Aghion et al., 2015), infant industry arguments (Grubel, 1966), and structural transformation literature (Naughton, 2007), the study constructed a multi-layered model capturing policy inputs, capability transformation, innovation outputs, and supply chain repositioning.

The findings demonstrate that the initiative operates through four interconnected mechanisms: financial constraint relaxation, competition-induced innovation, signaling effects, and supply chain reconfiguration. Together, these mechanisms contribute to improved innovation performance and industrial upgrading among SMEs.

The study makes three primary contributions: first, it provides an integrated analytical framework linking policy instruments to multi-dimensional outcomes; second, it highlights the importance of competitive industrial policy design; and third, it extends existing SME innovation literature by incorporating supply chain dynamics into policy evaluation.

Future research should focus on empirical validation using firm-level datasets, cross-country comparative analysis, and dynamic modeling of policy evolution effects. Strengthening measurement precision will further enhance the applicability of the framework for policymakers and industrial planners.

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