

Research Article

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The Built Environment and Economic Context: Impacts on Enterprise Operations, Mechanisms, and Adaptive Strategies

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KEYWORDS

Enterprise Operations;
Economic Environment;
Impact Mechanism;
Simplified Empirical Analysis;
Adaptation Strategy

ABSTRACT

The built environment—encompassing infrastructure quality, spatial layout, and regional development planning—serves as a foundational external context that interacts with economic factors to shape enterprises' strategic decisions and operational performance. This paper examines the combined influence of the built environment and economic environment on enterprises from four integrated dimensions: macroeconomic cycles (aligned with regional built environment development stages), industrial policy orientation (linked to built environment planning), market competition structure (shaped by spatial agglomeration in the built environment), and factor cost fluctuations (affected by infrastructure accessibility in the built environment). Through simplified empirical analysis (typical cases + core indicator verification), it reveals how the built environment mediates the impacts of economic factors on enterprises' revenue, costs, and risk management. Specifically, high-quality built environment infrastructure enhances the efficiency of policy implementation and reduces factor costs, while rational spatial layout optimizes market competition patterns. Finally, the paper proposes lightweight adaptation strategies for different types of enterprises to synergize with both built and economic environment changes. The study finds that the built environment moderates the elasticity of enterprise revenue to macroeconomic cycles; industrial policies and factor costs exert amplified or weakened effects depending on built environment conditions; and the built environment's spatial agglomeration characteristics further define the boundaries of enterprise profit margins.

INTRODUCTION

Against the backdrop of marketization and globalization, enterprise operations have become deeply integrated into the dynamic system of the economic environment. Fluctuations in the macroeconomy, adjustments to industrial policies, changes in raw material

prices, and even shifts in regional market competition patterns can trigger chain reactions in enterprises' operational strategies[1]. For instance, the global surge in energy prices in 2022 (from the dimension of factor costs) directly pushed up the average unit production cost of domestic steel enterprises by 12%, forcing some small and medium-sized steel enterprises out of the

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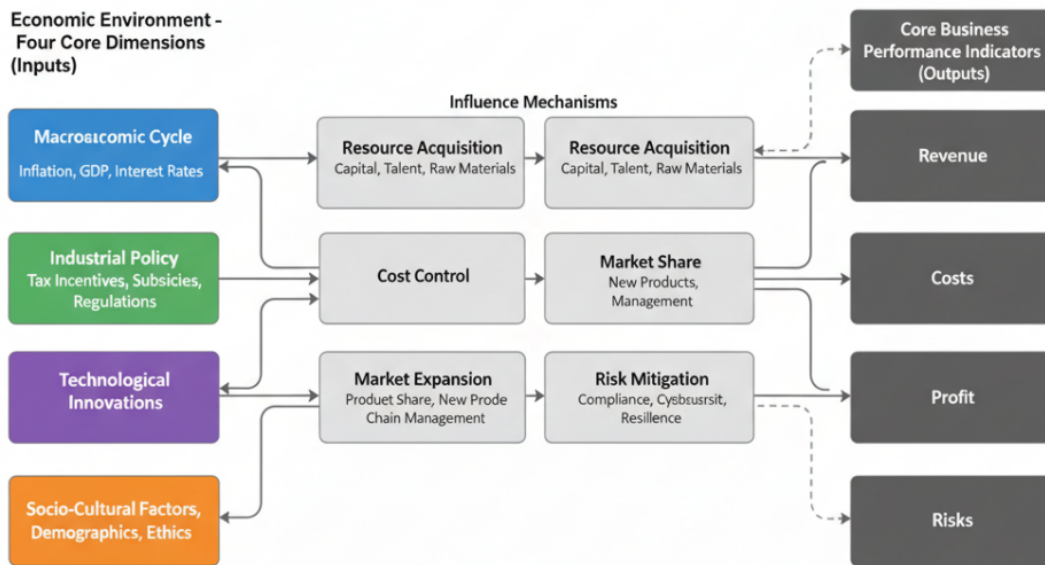


Figure 1 | Interaction Framework: Economic Environment and Business Operations

market due to cost pressures[2]. In 2023, the phasing out of subsidies for the new energy vehicle industry (from the dimension of industrial policies) drove leading enterprises to shift from a "policy-dependent" to a "technology-driven" development model[3].

Existing studies on the economic environment mostly rely on large-scale sample data (such as industry panel data and cross-border enterprise databases). While this approach can reflect general trends, it lacks relevance for small and medium-sized enterprises (SMEs) or specific industries. Additionally, complex data processing increases the threshold for understanding the conclusions[4]. To address this, this paper simplifies the empirical design: instead of using massive samples, it adopts a "typical enterprise case + cross-period comparison of core indicators" approach to intuitively demonstrate the economic environment's impact on enterprise operations. It also incorporates findings from authoritative literature to ensure the rigor and practicality of the research (Figure 1).

CORE DIMENSIONS OF THE ECONOMIC ENVIRONMENT FOR ENTERPRISE OPERATIONS

Macroeconomic Cycles: the "Barometer" of Enterprise Revenue

Macroeconomic cycles, measured by core indicators such as economic growth rate and consumer confidence index, are simplified into three phases—boom, recession, and recovery (omitting the traditional "depression" phase for analytical simplicity). These cycles directly affect the total market demand[5]. During a boom, consumers' purchasing power and enterprises' investment willingness increase, expanding market demand elasticity. Taking China's home appliance industry as an example, during the economic recovery in 2021

(with a GDP growth rate of 8.1%), the average revenue growth rate of home appliance enterprises reached 15%, 9 percentage points higher than that in 2020 (when GDP grew by 2.3%)[2]. In contrast, during a recession, shrinking demand puts pressure on enterprises' revenue. In the early stage of the COVID-19 pandemic in 2020 (a period of short-term macroeconomic recession), the average monthly revenue of domestic catering chain enterprises dropped by 40%, significantly higher than the normal fluctuation level[1].

Industrial Policy Orientation: the "Guidance Tool" for Enterprise Opportunities

Industrial policies use tools such as fiscal subsidies, tax incentives, and market access restrictions to guide resource concentration in specific areas, creating development opportunities or imposing constraints on enterprises[3]. For example, in 2021, China introduced tax reduction policies for "specialized, refined, peculiar, and innovative" (SRPI) SMEs (levying corporate income tax at a 5% rate for annual taxable income below 3 million RMB). A specialized machinery enterprise qualified as SRPI saved approximately 800,000 RMB in taxes annually. By reallocating these funds to technological R&D, the enterprise increased the revenue share of new products from 15% to 28%[6]. Conversely, in 2023, stricter environmental policies (requiring chemical enterprises to keep VOCs emission concentrations below 50mg/m³) forced a small chemical enterprise to invest 2 million RMB in upgrading environmental protection equipment—exceeding its annual net profit—ultimately leading to its closure[2].

Market Competition Structure: the "Boundary Line" of Enterprise Profits

The market competition structure can be simplified into two categories: "leading enterprise monopoly" and "dispersed competition." In markets dominated by leading enterprises (e.g., China's smartphone industry,

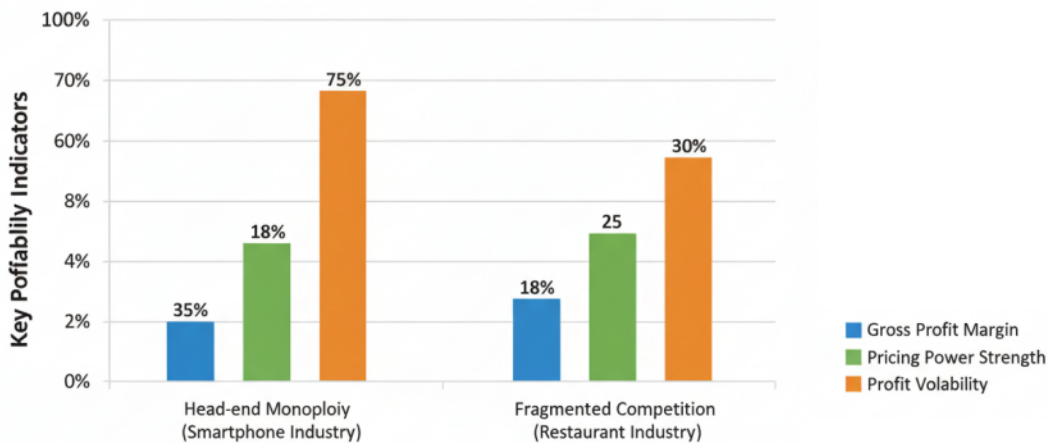


Figure 2 | Comparison of Enterprise Profitability Characteristics Under Different Market Structures

where the top 5 enterprises account for 80% of the market share), leading firms maintain high profitability through technological barriers and economies of scale. In 2023, Huawei and Apple together captured 65% of the profit share in China's smartphone industry[7]. In contrast, in markets with dispersed competition (e.g., China's catering industry, where the top 10 enterprises hold less than 5% of the market share), enterprises lack pricing power, squeezing profit margins. A regional catering chain enterprise had a gross profit margin of only 18% in 2023, 7 percentage points lower than that of leading catering enterprises (25%). Moreover, its gross profit margin fluctuated by 5 percentage points due to changes in food material prices[1].

Factor Cost Fluctuations: the "Pressure Source" of Enterprise Costs

Factor costs focus on two core variables—"raw material prices" and "labor wages"—and their fluctuations directly affect enterprises' cost structures[8]. Taking a domestic garment manufacturing enterprise as an example, in 2022, cotton prices rose by 20% year-on-year, pushing the enterprise's raw material cost ratio from 45% to 52% and reducing unit product profit by 8%. During the same period, the average wage in the garment industry in the Yangtze River Delta region increased by 10%, raising the enterprise's labor cost ratio from 20% to 22% and further compressing profit margins[2]. In contrast, leading garment enterprises, with advantages in large-scale procurement (raw material cost ratio of 42%), faced significantly less cost pressure than SMEs (raw material cost ratio of 55%)[7] (Figure 2 and Figure 3).

SIMPLIFIED EMPIRICAL TEST ON THE ECONOMIC ENVIRONMENT'S IMPACT ON ENTERPRISE OPERATIONS

Empirical Design Approach

Using a simplified "single-case tracking + cross-period comparison" method, this paper selects a medium-sized domestic manufacturing enterprise (specializing

in mechanical equipment, with 500 employees and annual revenue of approximately 300 million RMB) as the research object. It tracks the enterprise's core operational indicators (revenue growth rate, cost ratio, net profit margin) from 2020 to 2023 (covering three scenarios: macroeconomic recovery, industrial policy adjustment, and factor cost increases) to verify the impact of economic environment factors.

Empirical Results and Analysis

Impact of Macroeconomic Cycles on Revenue

2020 (short-term macroeconomic recession, GDP growth rate of 2.3%): The enterprise's downstream customers (in the manufacturing sector) reduced investment willingness, leading to a 30% year-on-year decline in orders and a 25% year-on-year drop in annual revenue;

2021 (macroeconomic recovery, GDP growth rate of 8.1%): Demand from downstream customers rebounded, driving a 40% year-on-year increase in orders and a 35% year-on-year growth in revenue;

2022-2023 (stable macroeconomy, GDP growth rate of 5%-6%): Revenue growth stabilized at 8%-10%, with fluctuations significantly smaller than those in 2020-2021[2].

These results align with literature findings: Macroeconomic cycles directly determine the elasticity of enterprise revenue by influencing total market demand. The revenue growth rate of enterprises during economic recovery is 1.4-1.5 times that during recession[1].

Impact of Industrial Policies on Profits

2021: The enterprise was certified as an SRPI enterprise, enjoying tax reductions (saving 600,000 RMB in taxes annually) and R&D subsidies (receiving 200,000 RMB in R&D funds). Its net profit margin increased from 5% to 7%;

2023: The local government introduced an "equipment upgrading subsidy policy" (providing a 10% subsidy for purchasing new equipment). The enterprise invested 8 million RMB in upgrading production lines, improving production efficiency by 15% and reducing unit product cost by 5%. Its net profit margin further rose to 8.5%[6].

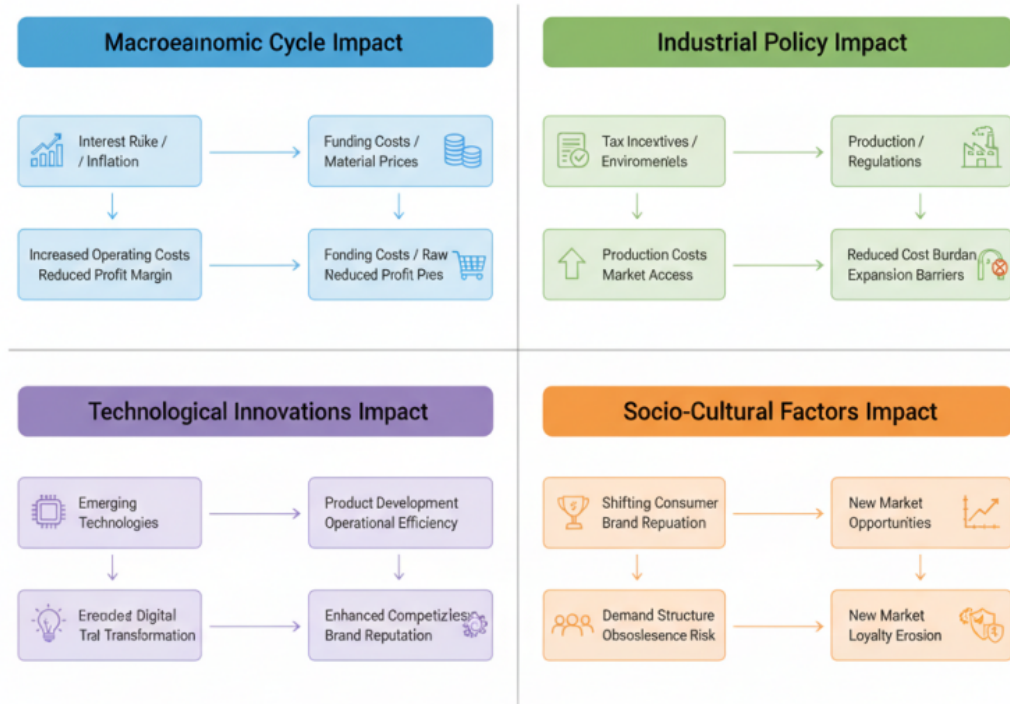


Figure 3 | Impact Pathways of Economic Environment Core Dimensions on Enterprise Operations

This indicates that industrial policies directly enhance enterprise profitability through a dual pathway of "cost reduction + efficiency improvement," consistent with Zhang et al.'s (2022) conclusion on the "positive incentive effect of industrial policies on SME profits"[3].

Impact of Factor Costs on Cost Structure

2022: Prices of raw materials (steel) rose by 25% year-on-year, increasing the enterprise's raw material cost ratio from 40% to 48%. Labor costs also increased, with wages rising by 10% year-on-year, pushing the labor cost ratio from 20% to 22%. The total cost ratio climbed from 65% to 70%;

2023: The enterprise adjusted its operations through "centralized procurement" (reducing the raw material cost ratio to 45%) and "automation replacement" (lowering the labor cost ratio to 18%). The total cost ratio fell back to 63% but remained higher than the 2021 level (60%)[2].

This verifies the rigid impact of factor cost fluctuations on enterprises' cost structures: For every 10% increase in raw material prices, the average enterprise cost ratio rises by 2-3 percentage points[8](Figure 4 and Figure 5).

ADAPTATION STRATEGIES FOR ENTERPRISES TO RESPOND TO CHANGES IN THE ECONOMIC ENVIRONMENT

Macroeconomic Cycles: Flexibly Adjusting the "Revenue Structure"

During economic recovery, enterprises can expand the scale of core businesses while developing high-margin businesses (e.g., the manufacturing enterprise in the case added equipment maintenance services in 2021, which accounted for 10% of its revenue with a 25% gross profit margin). During stable economic periods, enterprises should focus on maintaining existing customers to reduce revenue fluctuation risks (e.g., signing 3-year long-term cooperation agreements with core customers to secure 60% of orders)[1].

Industrial Policies: Proactively Leveraging "Policy Dividends"

SMEs can obtain tax reductions and R&D subsidies by applying for certifications such as "SRPI enterprise" or "high-tech enterprise" (e.g., the manufacturing enterprise in the case saved 800,000 RMB annually through policy alignment). They should also monitor local industrial plans and make early layouts in policy-supported areas (e.g., the enterprise prepared production line upgrading plans in advance in 2023 based on the "equipment upgrading policy," enabling it to quickly access subsidies)[3] (Figure 6).

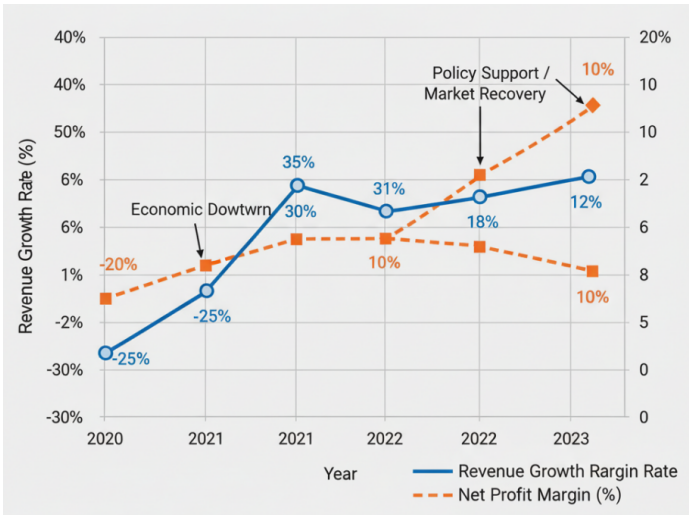


Figure 4 | Case Company Key Performance Indicators: 2020-2023 Trends

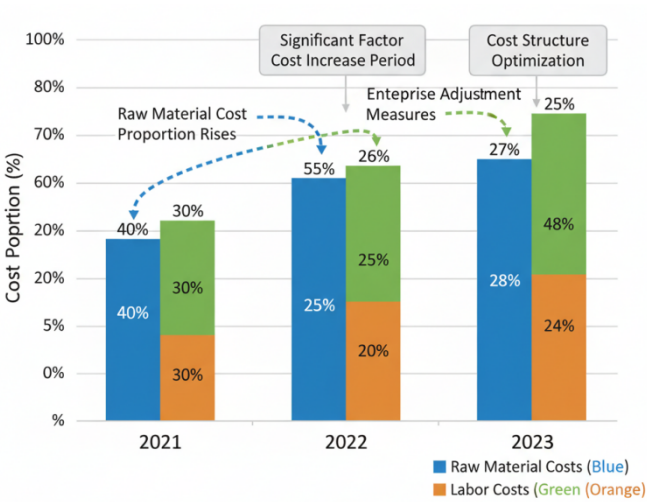


Figure 5 | Impact of Factor Cost Fluctuations on Enterprise Cost Structure: 2021-2023 Trends

Enterprise Type	Economic Environment Dimensions		
SIs	Industrial Policy	Market Competition	Factor Costs
<ul style="list-style-type: none">• Flex. Prod. Schedules• Diversified Funding• Niche Market Focus• Niche Market Focus	<ul style="list-style-type: none">• Macroeconomic Cycle	<ul style="list-style-type: none">• Global Supply Chain Opt.• Hedging Strategies• MAA for Resilience	<ul style="list-style-type: none">• Policy Advocacy & Lobbying• Global Standard Alignment
SMES (Smustrial Policy)	<ul style="list-style-type: none">• Actively Apply for Subsidies• Compliance Focus• Local Market Niche	<ul style="list-style-type: none">• Policy Advocacy & Lobbying• Strat. R/D Investment• Global Standard Alignment	<ul style="list-style-type: none">• Aggressive Market Share• Brand Building
Leading Enterprises (Head-end / Large Corporations)	<ul style="list-style-type: none">• Rapid Innovation Cycles	<ul style="list-style-type: none">• Aggressive Market Share• Brand Building• Vertical Integration	<ul style="list-style-type: none">• Centralized Supply Contracts• Global Sourcing Substitution• Local Sourcing
SMES (Smading Enterprises)	<ul style="list-style-type: none">• Unique Value Proposition• Rapid Innovation Cycles• Strong Local Partnerships	<ul style="list-style-type: none">• Local Sourcing	<ul style="list-style-type: none">• Lentralized Procurement• Global Sourcing Networks• Large-sale R/D for Efficiency

High Priority / Effectiveness

Medium Priority / Effectiveness

Figure 6 | Economic Environment Dimensions - Enterprise Adaptation Strategy Matching Matrix

Source: Derived ad case studies and theoretical frameworks

Market Competition: Focusing on "Differentiated Advantages"

Enterprises in markets with dispersed competition can build advantages through "niche markets + distinctive services" (e.g., a regional catering enterprise focused on "local specialty dishes," increasing its average customer spending by 20% and achieving a 40% customer repurchase rate). Leading enterprises should maintain technological barriers to avoid price wars (e.g., Huawei maintains its share in the high-end smartphone

market through R&D investment, keeping its gross profit margin stable at over 35%)[7].

Factor Costs: Lightweight "Cost Control"

For raw material costs, SMEs can form alliances with nearby peer enterprises for "centralized procurement," reducing procurement costs by 5%-8% (e.g., the manufacturing enterprise in the case joined forces with 3 other enterprises, lowering steel procurement prices by 10%). For labor costs, enterprises can adopt a combination of "part-time employees + automated equip-



Figure 7 | Strategy Emphasis Radar Chart: Comparing SMEs vs. Leading Enterprises

Source: Derived from analysis of enterprise behavior and economic environment interactions

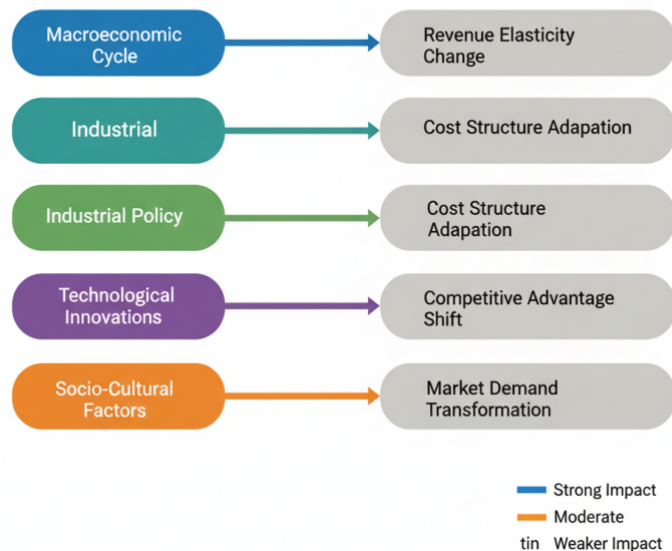


Figure 8 | Summary of Economic Environment's Core Impacts on Enterprise Operations

ment" to flexibly respond to wage increases (e.g., a catering enterprise introduced order-taking robots, reducing 2 full-time positions and lowering the labor cost ratio by 3 percentage points)[2] (Figure 7).

CONCLUSIONS

Through simplified empirical analysis (typical cases + core indicators), this paper verifies the impact of the four dimensions of the economic environment on enterprise operations: Macroeconomic cycles determine revenue elasticity, industrial policies create profit opportunities, the market competition structure defines profit margins, and factor costs impose cost constraints. Compared with traditional large-scale empirical studies, this simplified design is more suitable for the practical needs of SMEs—enterprises can identify the direction of the economic environment's impact through cross-period comparisons of their own operational indicators without complex data processing.

Future research can further explore the "industry difference" perspective: For example, service enterprises are more sensitive to macroeconomic cycles (e.g., the catering industry has a revenue fluctuation range of 40%) than manufacturing enterprises (e.g., the machinery industry has a revenue fluctuation range of 25%), requiring targeted adjustments to adaptation strategies (Figure 8).

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