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Attention allocation, factor stock adjustment, and high-quality product development

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ABSTRACT

The manufacturing industry is the foundation for building and strengthening a country. Micro-manufacturing enterprises are the basis for the development of manufacturing, and products are the core and life of enterprises. Based on micro data from industrial enterprises, this study conducts a statistical measurement on the indicators of high-quality product development. Taking the Baidu Index as the proxy variable for attention allocation, the influence of attention allocation on high-quality development of products is systematically examined both theoretically and empirically; Additionally, it seeks to ascertain whether factor stock adjustment has a mediating effect. The findings are as follows: 1. Within the full sample, 63.63% of the attention allocation process to promote high-quality development of products is achieved by optimizing the factor stock adjustment channels. 2. Capital stock and labor stock adjustment have a partial mediating effect on the high-quality development of products in capital-intensive industries, while labor stock adjustment has a partial mediating effect on labor-intensive industries. 3. The regional results show that the adjustment of capital and labor stock has a partial mediating effect in the eastern region. This conclusion provides a theoretical basis for realizing the high-quality development of China's manufacturing industry.

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Introduction

High-quality products are not only a weapon for the survival of enterprises, but also the fundamental embodiment of their high-quality development.¹ In today's networked world, the attentional allocation of entrepreneurs remains an important factor in the production of enterprises (Ocasio et al., 2020). This new development stage requires good-quality products that are aligned with the concept of 'innovation, coordination, green, openness, and sharing'. In other words, to develop high-quality products, entrepreneurs must pay attention to market demand.

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The stock adjustment of production factors is the reorganization or reallocation of production factors, which is an adaptive and routine adjustment. When entrepreneurs notice that the marginal productivity of production factors is not equal across enterprises, they adjust stock to promote the flow of production factors to sectors with high productivity levels or growth. As a result, the marginal productivity of production factors gradually becomes more equal, production efficiency improves, and enterprises can achieve high-quality product development.

Therefore, in this study, the impact of attention allocation on the high-quality development of products is examined from the perspective of factor stock adjustment. The remainder of this paper is organized as follows. The following section reviews the existing literature, Following this, the third section presents an analysis of the underlying theoretical mechanism, The fourth section presents our empirical results, and the final section concludes the paper.

Literature review

The concept of ‘attention’ originated from cognitive psychology and was introduced into management research by Simon (1947). Simon believed what is scarce in an organization is the ability to process information, rather than the information itself (Simon, 1947). The limitation of attention is that it must be allocated among a certain number of alternate uses, and the allocation of entrepreneurs’ attention involves limited allocation. This attention must be distributed among external information and internal organizational coordination, and among productive, unproductive, and even destructive activities (Simon, 1955). Entrepreneurs may try to acquire new projects by ignoring current operations, which means business growth may face opportunity costs. If successful, this can lead to business growth and profitability (Helfat & Peteraf, 2015); if it fails, the business is likely to face an existential crisis. At this point, entrepreneurs’ attention will be shifted toward the survival of the business rather than on new projects (Ocasio et al., 2020).

The effectiveness of attention depends on what the entrepreneur focuses on. An entrepreneur’s attention allocation can determine the firm’s size, growth rate, and level of innovation activity (Gifford, 1992). When entrepreneurs turn their attention to customers by continuously interacting with them, they can gain valuable information about future market demand, which helps them decide whether to adjust the size of the business. In contrast, when entrepreneurs turn their attention to R&D, it can increase the level of innovation activity and the rate of new product introductions (Srivastava et al., 2021).

By giving their limited attention to the stimuli related to decision-making, decision-makers can adjust the stock of production factors, optimize resource allocation, stimulate innovation and entrepreneurial behavior, and achieve high-quality product development (Barnett, 2008; Ocasio, 1997;; Ren & Guo, 2011; Sullivan, 2010).

In summary, attention allocation is very important in terms of enterprise production decisions, and it affects the high-quality development of enterprise products. There is abundant literature on the impact of attention allocation on enterprise development, but few studies examine attention allocation to promote high-quality product

development; furthermore, no research has examined the impact of attention allocation on high-quality product development from the perspective of factor stock adjustment. Based on the above considerations, it is of great practical significance to study the mechanism of attention allocation in high-quality development of enterprise products. From a microscopic perspective, this study examines the impact of attention allocation on high-quality product development by constructing an indicator of high-quality product development, and discusses the mediating effect of factor stock adjustment. It enriches the theoretical results on high-quality development at the micro level.

Theoretical mechanism

This section combines the modeling ideas of Lai et al. (2006) with the endogenous growth model of Rivera-Batiz and Romer (1991), establishes a theoretical model, and theoretically shows that attention allocation and factor stock adjustment are essential for high-quality product development. In doing so, this study aims to provide a theoretical basis for future empirical research. Compared with the existing research, this can result in three improvements: (1) separating the physical capital in the production function into the original capital of the enterprise and adjustment of the capital stock, and separating labor into the original labor of the enterprise and adjustment of labor stock, which is different from the research of Lai et al. (2006), (2) introducing attention allocation as a production factor in the C-D production function, and (3) introducing high-quality product development into the utility maximization function of the household sector.

Model

The model takes as an assumption that there are two sectors in society: the final product production sector and household sector.

Final product production sector

Entrepreneurs' attention allocation is the process by which entrepreneurs use their knowledge and abilities to discover various potential profit opportunities and resource allocation methods. Therefore, attention allocation can be regarded as a factor of production. This study incorporates attention allocation *Atte* into the production function (together with capital and labor), separates capital into *K* and *Capi*, and separates labor into *L* and *Empl*. *Capi* and *Empl* represent the adjustments of enterprise capital stock and labor stock, respectively.

At this point, the production function can be written as

$$Y = A(K + Capi)^\alpha (L + Empl)^\beta Atte^\xi \quad (1)$$

In the formula, *A* is the total factor productivity, α is the output elasticity of the enterprise's original capital *K* and capital stock adjustment *Capi*, β is the output elasticity of the enterprise's original labor *L* and labor stock adjustment *Empl*, and ξ is the output elasticity of attention allocation. By minimizing the cost, we obtain

$$s.t. \quad \min\{r(K + Capi) + w(L + Empl) + \gamma Atte\} \quad (2)$$

where w is the labor price, r is the price of capital, and γ is the cost of attention allocation. Assuming that both the capital and labor markets are perfectly competitive, the prices of K and $Capi$ are the same and the prices of L and $Empl$ are the same.

Household sector

Consumption and wealth (i.e., the savings of households) can bring positive utility to people. According to macroeconomic theory, saving equals investment. Therefore, this study assumes that all funds needed by enterprises to increase capital investment come from household savings; that is, the increase in enterprise capital investment is equal to the decrease in household savings. Since labor brings bad experiences to people, the utility of labor to people is negative. To obtain maximum utility, households use all their savings for investment. Therefore, the utility maximization function of the household sector can be expressed as:

$$\max \int_0^{+\infty} [\ln C + \theta \ln Capi - \eta \ln (L + Empl)] e^{-\rho t} dt \quad (3)$$

In the formula, C is household consumption; and θ and η represent the importance of wealth and labor to the personal welfare of households, respectively; ρ is the subjective discount rate; and θ , η , and ρ are all positive numbers.

Additionally, the number of products that consumers consume is related to the product's cost-effectiveness. To maximize their own utility, consumers will choose to consume cost-effective products; that is, they will choose products with good quality and low prices. According to Khandelwal et al. (2013) enterprise product quality heterogeneity model, the number of products consumed by consumers by q can be expressed as

$$q = p^{-\sigma} Qual^{\sigma-1} \frac{E}{P} \quad (4)$$

In the formula, $Qual$ represents product quality, which this study uses to represent the high-quality development of the product (where p is the product price, E is consumer expenditure, P is the price index faced by consumers, and $\sigma > 1$ is the elasticity of substitution between product categories).

Since it is assumed that there are only two sectors in society, the number of products consumed by consumers in equation (4) is the total consumption of household sectors in equation (3):

$$C = q \quad (5)$$

Substituting Equations (4) and (5) into equation (3), the utility maximization function of the household sector will be as follows:

$$\max \int_0^{+\infty} [(\sigma - 1) \ln Qual - \sigma \ln p + (\ln E - \ln P) + \theta \ln Capi - \eta \ln (L + Empl)] e^{-\rho t} dt \quad (6)$$

$Capi$ is the total investment in the household sector (that is, household savings), and its accumulation equation can be expressed as:

$$\dot{Capi} = w(L + Empl) + rCapi - C \quad (7)$$

Market general equilibrium

Final product production sector

Assuming that the price of the final product is 1, the profit maximization function of the final product production department can be obtained as follows:

$$\max \pi = A(K + Capi)^\alpha (L + Empl)^\beta Atte^\xi - r(K + Capi) - w(L + Empl) - \gamma Atte \quad (8)$$

By calculating the first-order partial derivatives of [equation \(8\)](#) with respect to $Capi$, $Empl$, and $Atte$, and making them 0, the first-order conditions for maximizing profit can be obtained as follows:

$$\alpha \cdot \frac{Y}{K + Capi} = r \quad (9)$$

$$\beta \cdot \frac{Y}{L + Empl} = w \quad (10)$$

$$\xi \cdot \frac{Y}{Atte} = \gamma \quad (11)$$

From (9) and (11), we obtain

$$Capi = \frac{\alpha \gamma}{r \xi} Atte - K \quad (12)$$

From (10) and (11), we obtain

$$Empl = \frac{\beta \gamma}{w \xi} Atte - L \quad (13)$$

Household sector

Assuming that the savings of the household sector constitute the entire capital accumulation of the enterprise, the present value Hamiltonian function can be expressed as:

$$H_U = [(\sigma - 1) \ln Qual - \sigma \ln p + (\ln E - \ln P) + \theta \ln Capi - \eta \ln (L + Empl)] e^{-\rho t} + \lambda [w(L + Empl) + rCapi - C] \tag{14}$$

Assuming that $\frac{E}{P} = 1^2$, then

$$H_U = [(\sigma - 1) \ln Qual - \sigma \ln p + \theta \ln Capi - \eta \ln (L + Empl)] e^{-\rho t} + \lambda [w(L + Empl) + rCapi - C] \tag{15}$$

By calculating the first-order partial derivatives of [equation \(15\)](#) with respect to *Capi*, *L*, *C*, and λ , and combining [Equations \(7\) \(9\) \(10\)](#), and [\(11\)](#), we obtain

$$Qual = \left[\frac{\alpha \beta A^2 L Capi (K + Capi)^{2\alpha-1} (L + Empl)^{2\beta-1} Atte^{2\xi}}{\rho \eta Capi - \theta w L} \right]^{1-\sigma} \tag{16}$$

Based on the above theoretical analysis, it can be seen from [Equation \(12\)](#) that the allocation of attention has a positive impact on the adjustment of capital stock. Additionally, according to [Equation \(16\)](#), the adjustment of capital stock will affect the high-quality development of products; thus, Hypothesis 1 is obtained.

Hypothesis 1: Attention allocation affects the development of high-quality products by influencing the adjustment of capital stock. By allocating attention to capital, entrepreneurs can adjust the amount of capital used to improve technological processes, increase the marginal output of capital and production efficiency, and promote high-quality product development.

From [Equation \(13\)](#), attention allocation positively affects the adjustment of labor stock. By combining this with [Equation \(16\)](#), we obtain Hypothesis 2.

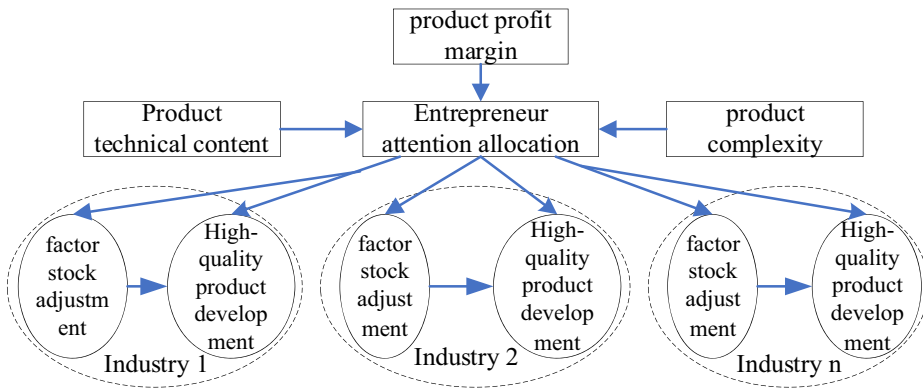
Hypothesis 2: Attention allocation affects the high-quality development of products by influencing the adjustment of labor stock. Entrepreneurs allocate their attention to human capital. Adjusting the stock of human capital in various departments can increase the marginal output of human capital, improve efficiency, promote enterprise technological innovation, and achieve high-quality product development.

In different industries, the products produced by enterprises have different technical content, degrees of complexity, and product profit margins, thereby resulting in different levels of attention among entrepreneurs (Shi & Jin, 2019). Therefore, Hypothesis 3 is obtained.

Hypothesis 3: The influence of attention allocation on high-quality product development is heterogeneous across industries.

The mechanism of action is presented in [Figure 1](#).

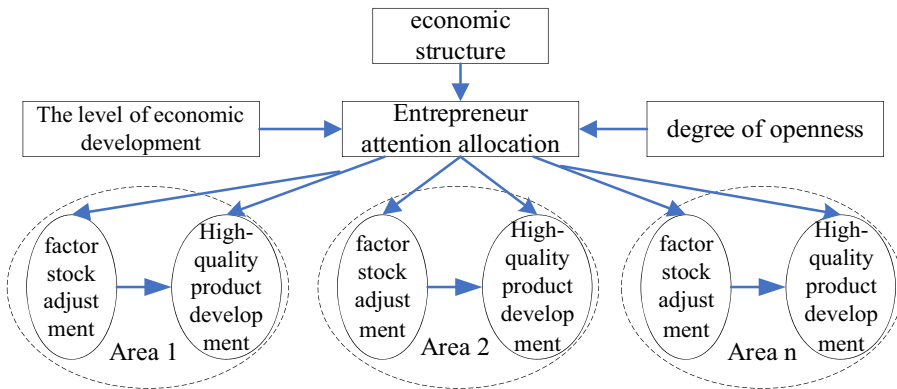
Due to varying levels of economic development, economic structures, and degrees of openness, there are obvious differences between regions (Miao & Feng, 2020), which lead to different amounts of attention being allocated by entrepreneurs. The



Source: Author’s elaboration.

Figure 1. Industry heterogeneity of attention allocation affecting high-quality product development.

Source: Author’s elaboration.



Source: Author’s elaboration.

Figure 2. Regional heterogeneity of attention allocation affecting product quality development.

Source: Author’s elaboration.

distribution of entrepreneurs’ attention to different regions leads to regional differences in high-quality product development. Thus, Hypothesis 4 is obtained.

Hypothesis 4: The influence of attention allocation on high-quality product development exhibits regional heterogeneity.

The mechanism of action is presented in Figure 2.

Empirical analysis

Variable description

Explained variable

In this study, the explained variable refers to the high-quality development of enterprise products.³ High-quality economic development is a state in which the economy shifts from a high-speed growth stage to a high-quality development stage (Jin, 2018).

Similarly, this study defines high-quality development of enterprise products as a new state of enterprise product development. The new development that is in line with the development concept of ‘innovation, coordination, green, openness, and sharing’ is fundamentally different from the high quality of products. Product quality is the degree to which a product meets the requirements of technical parameters. Products that meet the requirements of the technical parameters are qualified products. The more products that exceed the requirements of the technical parameters, the higher the quality.

Based on existing literature (Li et al., 2021; Mlachila et al., 2017; Yang et al., 2021; Zhang, 2020) and the availability of data, four indicators are selected to measure the high-quality development of products: ‘growth rate,’ ‘enterprise profit,’ ‘unit energy consumption output,’ and ‘export performance’. The growth rate is measured by the ‘growth rate of sales output value’ of manufacturing enterprises, which can ensure the stable growth of sales output value, which indicates that it can meet people’s needs for a better life and is the embodiment of the concept of innovation and development; the enterprise profit is measured by the ‘main business income profit rate’ of manufacturing enterprises, which can ensure the stable growth of sales output value, indicating that it can meet people’s needs for a better life and is the embodiment of the concept of innovation and development. The unit energy consumption output is measured by ‘sales output value/energy consumption,’ which reflects the green development concept; the export performance is measured by ‘export delivery value/enterprise main business income,’ which reflects not only the concept of open development, but also the concept of shared development. Apart from the ‘energy consumption’ data, which are taken from the National Bureau of Statistics’ website, the other measurement data are taken from the micro database of Chinese industrial enterprises (from 2011 to 2014). Since the energy consumption data are only industry data, the unit energy consumption output is calculated by adding up the sales output value data according to the binary industry; to obtain the total sales output value of the industry, the total sales output value of the industry is then divided by the energy consumption of the industry. The relevant indicators are all actual values after deflation based on data from 1998.

Given that the measurement units of each index are not uniform, it is necessary to standardize each index first and then use the principal component analysis method to determine the weight, perform a weighted synthesis, and finally obtain the overall indicators of high-quality development of enterprise products.

Core explanatory variables

The core explanatory variable in this study is attention allocation. Akarsu and Süer (2022) use the Google search index to measure investors’ attention to test the impact of investors’ limited attention on stock returns. Inspired by Akarsu and Süer (2022) attention quantification idea, combined with Chinese Internet users’ Internet search habits, this study selects the Baidu Index as a proxy variable for attention allocation. The frequency of Baidu search keywords can reflect people’s attention to objects, and search engine users trust their search results. Therefore, the Baidu Index can be used to indicate the attention allocation. According to the classification of the national

economy industry (GB/T 4754-2011) and the Baidu Index, 300 keywords related to product production are searched by industry, and the daily frequency results are combined with the annual result as a proxy variable for the manufacturer's attention allocation indicator.⁴ Owing to the large number of Internet users using the Baidu search engine, the Baidu Index obtained by selecting appropriate search keywords can more accurately reflect the changes in the attention of Internet users. By counting the daily frequency search data of netizens, the weighted sum of each keyword in the Baidu webpage is calculated to obtain the Baidu Index. The Baidu Index is divided into the PC Baidu Index and mobile Baidu Index. In this study, the Baidu Index in the benchmark regression is the total index, which is the sum of the PC Baidu Index and mobile Baidu Index. At the same time, the PC Baidu Index and mobile Baidu Index are used to test for robustness.

An important aspect of supply-side structural reform is to improve the adaptability and flexibility of the supply structure to demand changes and better meet the needs of the people. To produce high-quality products, manufacturers need to pay attention to changes in Internet users' attention. It is reasonable to use the Baidu Index that is calculated from Internet users' daily frequency search data as a proxy variable for manufacturers' attention allocation.

Mediating variable

The mediating variable in this study is the factor stock adjustment. The stock adjustment of production factors is the reorganization or reallocation of production factors, and it is an adaptive and routine stock adjustment. Since the marginal productivity of production factors in different enterprises is often unequal, this will promote the flow of factors of production to the enterprise sector with high productivity or high productivity growth, thereby promoting improvement in the production efficiency of a single manufacturing enterprise and the overall manufacturing industry, and accelerating economic growth. In other words, the adjustment of the stock of factors will promote economic development to a higher quality. This study divides the adjustment of factor stock into two major categories: capital stock adjustment and labor stock adjustment,⁵ which are measured by changes in capital and labor within the enterprise, respectively.

Referring to the capital stock adjustment model of Li and Tang (2003), the calculation of the capital stock adjustment and labor stock adjustment in this study is shown in Table 1. This means the closer the labor-capital ratio in the enterprise is to the optimal labor-capital ratio of the enterprise, the higher the quality of the products produced by the enterprise.

Control variable

To avoid missing variables, and based on the literature, enterprise efficiency, enterprise average wages, enterprise age, enterprise cash flow, enterprise interest expenditure, paid-in capital change rate, and enterprise ownership characteristics are selected as controls variable. Expected corporate efficiency, average corporate wages, corporate cash flow, corporate interest expenses, and the rate of change in paid-in capital are positively correlated with high-quality product development, while corporate age and

Table 1. Variable definition.

	variable	symbol	index description
explained variable	product high-quality development	<i>Qual</i>	Calculated according to the above
core explanatory variables	attention allocation	<i>Atte</i>	Baidu Search Index
mediating variable	capital stock adjustment	<i>Capi</i>	1/abs (current year's labor stock ◆average capital stock of the industry in that year / average labor stock of the industry in that year - current year's capital stock)
	labor stock adjustment	<i>Empl</i>	1/abs (current year's capital stock ◆average labor stock of the industry in that year / average capital stock of the industry in that year - current year's labor stock)
control variable	enterprise efficiency	<i>Effi</i>	industrial output / number of employees
	enterprise average wages	<i>Wage</i>	total wages payable by the enterprise / number of employees
	enterprise age	<i>Age</i>	current year - year of business opening + 1
	enterprise cash flow	<i>Cash</i>	enterprise net profit + depreciation this year
	enterprise interest expenditure	<i>Loan</i>	interest expense
	paid-in capital change rate	<i>Paid</i>	paid-in capital for the year - paid-in capital of the previous year / total assets
	enterprise ownership characteristics	<i>Owne</i>	the ratio of national capital to paid-in capital is greater than 0.5 and the value is 1; otherwise, the value is 0

Source: Author's elaboration.

ownership characteristics are negatively correlated with high-quality product development.

The definitions of the variables in this paper are shown in Table 1.

Econometric model construction and data sources

Econometric model construction

To verify the hypotheses proposed in this study, the following multiple mediating effect model was established:

$$\ln Qual_{it} = \alpha_0 + \alpha_1 \ln Atte_{it} + \alpha_2 \ln Control_{1it} + \varepsilon_{1it} \quad (18)$$

$$\ln Capi_{it} = \beta_0 + \beta_1 \ln Atte_{it} + \beta_2 \ln Control_{2it} + \varepsilon_{2it} \quad (19)$$

$$\ln Empl_{it} = \gamma_0 + \gamma_1 \ln Atte_{it} + \gamma_2 \ln Control_{3it} + \varepsilon_{3it} \quad (20)$$

$$\ln Qual_{it} = \delta_0 + \delta_1 \ln Atte_{it} + \delta_2 \ln Capi_{it} + \delta_3 \ln Empl_{it} + \delta_4 \ln Control_{1it} + \varepsilon_{4it} \quad (21)$$

where i represents an individual; t represents time; *Control* represents control variables; α, β, γ and δ are regression coefficients; and ε represents random error terms. Equations (18) and (21) take high-quality product development as the explained

variable and enterprise efficiency, enterprise average wages, enterprise age, enterprise cash flow, paid-in capital change rate, and enterprise ownership characteristics as control variables; in Equation (19), capital stock adjustment is taken as the explained variable, and enterprise efficiency, enterprise average wages, enterprise cash flow, enterprise interest expenditure, paid-in capital change rate, and enterprise ownership characteristics are selected as control variables; in Equation (20), with the adjustment of labor stock as the explanatory variable, enterprise efficiency, enterprise average wage, enterprise age, and enterprise ownership characteristics are selected as the control variables.

To test the hypotheses proposed in this article, a multiple mediating effect model (Preacher & Hayes, 2008) is used. The first step is to regress Equation (18) – if α_1 is significantly positive, then Equations (19) and (20) are regressed; the second step is to regress Equations (19) and (20) at the same time, and if both β_1 and γ_1 are significant, this means attention allocation can significantly affect capital stock adjustment and labor stock adjustment; the third step is to regress Equation (21). If δ_2 and δ_3 are significant, but δ_1 is not, this means capital stock adjustment and labor stock adjustment have a mediating effect in the process of attention allocation, which affects the high-quality development of products. If $\delta_2, \delta_3,$ and δ_1 are significant and δ_1 is smaller than α_1 , this indicates that the adjustment of capital stock and labor stock has a partial mediating effect.

Data source and processing

The data used in this study are obtained from the database of Chinese industrial enterprises (data from 2011–2014). According to the national economic industry classification (GB/T4754-2011) standard, manufacturing enterprises with codes of 13–43 (excluding 38) are selected as the analysis samples, and the selected data are processed in more detail (Brandt et al., 2012; Yang, 2015). All indicators expressed in currency are deflated using 1998 as the base period, the total industrial output value index is deflated using the regional factory price index of industrial products, and the fixed capital stock is deflated using the fixed asset investment price index. The regional factory price index of industrial products and the fixed asset investment price index data are obtained from the statistical database of the China Economic Network.

The stock of fixed assets adopts the perpetual inventory method and is calculated according to the formula ‘investment in the current period = total fixed assets in the current period, total fixed assets in the previous period, and the depreciation of fixed assets in the current period’.

Attention allocation data are obtained from the daily frequency data of the Baidu Index. We sum up all daily frequency data by year to obtain the annual data, and then sum up the frequency of keywords in the industry according to the industry of keywords to obtain the Baidu Index of the industry.

All data in the article are then standardized.

Regression analysis

In this study, the fixed-effects model is used to estimate Equations (18) and (21). The disturbance terms of Equations (19) and (20) often have a synchrony correlation.

Table 2. Estimates of the multiple mediating effects model.

variables	step one Model 1ln <i>Qual</i>	step two		step three Model 4ln <i>Qual</i>
		Model 2ln <i>Capi</i>	Model 3ln <i>Empl</i>	
ln <i>Atte</i>	0.054*** (5.20)	0.009*** (6.06)	0.008*** (5.49)	0.004*** (5.69)
ln <i>Capi</i>				0.356*** (8.31)
ln <i>Empl</i>				0.440*** (7.65)
ln <i>Effic</i>	0.018*** (5.57)	0.019*** (9.08)		0.014*** (4.30)
ln <i>Wage</i>	0.017*** (6.33)	0.004** (2.25)	0.008*** (6.09)	0.014*** (5.41)
ln <i>Age</i>	-0.004* (-1.74)			-0.005 (-1.28)
ln <i>Cash</i>	0.060*** (4.59)	0.125*** (35.12)	0.327*** (102.68)	0.016*** (3.66)
ln <i>Loan</i>	0.078*** (9.56)	0.152*** (56.56)	0.106*** (26.53)	0.068*** (16.89)
ln <i>Paid</i>	0.006*** (3.04)	0.014 (0.82)	0.013*** (9.28)	0.008*** (4.24)
ln <i>Owne</i>	-0.019 (-1.18)	-0.022* (-1.95)	-0.035*** (-3.17)	-0.015 (-0.92)
constant terms	0.433*** (3.86)	0.105*** (73.16)	0.112*** (62.75)	0.413*** (14.07)
n	268375	268526	268526	268375
R ²	0.0018	0.6816	0.5018	0.0201
F	8151.10***	850.27***	2423.15***	270.56***
RMSE		0.5436	0.6387	
LM test		93836.196***[0.0000]		

*p < 0.1.

**p < 0.05.

***p < 0.01 and t-value in parentheses below the regression coefficient; p-value in square brackets.

Source: Author's elaboration.

Therefore, for Equations (19) and (20), the seemingly uncorrelated regression (SUR-i) is used for estimation.

The results obtained are shown in Table 2. Model 1 (step 1), which corresponds to Equation (18), is estimated by the fixed effect model; Models 2 and 3 (step 2) are estimated by seemingly uncorrelated regression; and Model 4 (step 3) is estimated by the fixed effect model.

The LM test in Table 2 shows that there is a contemporaneous correlation between the disturbance terms of Models 2 and 3 at a significance level of 1%. This shows that if a single equation is used to estimate Models 2 and 3, errors will occur.

The impact of attention allocation on the high-quality development of products

From the regression results of Model 1 in Table 2, it can be seen that the coefficient of the core explanatory variable attention allocation passed the significance test at the 1% level, indicating that the improvement of attention allocation has a significant role in promoting the high-quality development of products. This is because entrepreneurs focus on specific information that is conducive to the high-quality development of products and make accurate and rapid decisions based on the actual situation of the enterprise (Vergne & Depeyre, 2016), which promotes the high-quality development of products.

The influence of attention allocation on capital stock adjustment and labor stock adjustment

The estimated coefficients of the core explanatory variable, attention allocation, are significantly positive at the 1% significance level in both Models 2 and 3. This shows that the allocation of attention promotes the adjustment of capital stock and labor stock. This is because enterprise performance affects managers' attention allocation directions (Ocasio, 2011). According to the theory of corporate behavior, an enterprise's production decisions are made under the logic of pursuing results, which requires the enterprise to adjust its factor stock.

The mediating effect of capital stock adjustment and labor stock adjustment

As shown in Table 2, the estimated coefficients of capital stock adjustment and labor stock adjustment in Model 4 are both significantly positive, and the estimated coefficient of attention allocation is also significantly positive at the 1% significance level, but less than that in Model 1. Therefore, capital stock adjustment and labor stock adjustment have a partial mediating effect on the attention allocation process, thereby affecting the high-quality development of products. Although the adjustment of factor stock is crucial to achieve high-quality product development, entrepreneurs will allocate most of their attention to the adjustment of factor stock, and corporate social responsibility activities and stakeholders are also part of the entrepreneur's attention distribution, which cannot be ignored. Therefore, the adjustment of factor stock plays a partial mediating role in the attention allocation process, thereby affecting the high-quality development of products.

The multiple mediating effects in the estimation results in Table 3 can be represented as follows:

As shown in Figure 3, using the sequential test method, the mediating effects of the capital stock adjustment and labor stock adjustment are both significant.

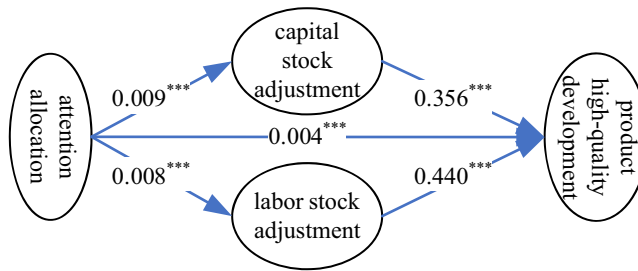
The results of calculating the absolute and relative contributions of the two types of mediation effects are presented in Table 3.

It can be seen from Table 3 that the mediating effect of attention allocation to promote the high-quality development of products through capital stock adjustment is 0.003, and the relative contribution is about 27.27%. Therefore, Hypothesis 1 is verified. The mediating effect of attention allocation in promoting high-quality product development through labor stock adjustment is 0.004, with a relative contribution of approximately 36.36%. Thus, Hypothesis 2 is verified. In the process of attention allocation to promote high-quality product development, 63.63% are achieved by optimizing the adjustment channel of the factor stock.

Table 3. The mediating effect of factor stock adjustment.

conduction mechanism	absolute contribution	relative contribution
capital stock adjustment	0.003	27.27%
labor stock adjustment	0.004	36.36%
total mediation effect	0.007	63.63%
direct effect	0.004	36.37%
total effect	0.011	100.00%

Source: Author's elaboration.



Source: Author's elaboration.

Figure 3. The multiple mediating effect of factor stock adjustment.

Source: Author's elaboration.

Endogenous problems

A two-way causality in the regression equation will cause serious endogeneity problems. The micro data of industrial enterprises from 2011 to 2014 are used to construct the explained variable product high-quality development index, and the relative macro Baidu Index is used as the proxy variable for the explanatory variable attention allocation. Logically, macro-level data have very little impact on micro-level data. Therefore, it is reasonable to believe that the two-way causality between attention allocation and high-quality product development is not obvious.

There may be a two-way causal relationship between the adjustment of factor stocks and the high-quality development of products (that is, the more high-quality production enterprises are, the more likely they are to adjust their factor stocks). For the sake of robustness, this study adopts the one-period lagging attention allocation as the instrumental variable of the current period's attention allocation, the one-period lagged capital stock adjustment as the instrumental variable of the current period's capital stock adjustment, and the one-period lagged labor stock adjustment as the instrumental variable of the current period's labor stock adjustment, which also tests the robustness of the study's conclusions. Table 4 presents the results of the instrumental variable regression model.⁶

It can be seen from Table 4 that the attention allocation coefficients in Models 5, 6, 7, and 8 are all significantly positive. The attention allocation coefficient in Model 8 is smaller than that of Model 5. Both the capital stock adjustment and labor stock adjustment coefficients are significantly positive. This finding is consistent with the results presented in Table 3, and shows that considering the endogeneity of the variables, the conclusions are robust.

Robustness test

Hausmann test

To verify that the fixed-effects model used in this study is appropriate, the Hausmann test is performed using Equations (18) to (21). Through testing, it is found that the p-values of Equations (18) to (21) are all less than 0.01, which indicates that they are significant at the 1% significance level. Therefore, it is appropriate to use the fixed-effects model for the estimation, and the conclusions obtained are reliable.

Table 4. Instrumental variable regression.

variables	step one		step two		step three
	Model 5ln <i>Qual</i>		Model 6ln <i>Capi</i>	Model 7ln <i>Empl</i>	Model 8ln <i>Qual</i>
ln <i>Atte</i>	0.052*** (5.01)		0.009*** (6.20)	0.008*** (5.69)	0.018*** (2.99)
ln <i>Capi</i>					0.122*** (15.06)
ln <i>Empl</i>					0.427*** (79.43)
n	216617		216745	216745	89350
F	180.75		844.05	2419.09	1632.60

*p < 0.1.

**p < 0.05.

***p < 0.01 and t-value in parentheses below the regression coefficient.

Source: Author's elaboration.

Table 5. Multimedia effect model estimation of PC and mobile Baidu Index.

variables	PC Baidu Index				Mobile Baidu Index			
	step one ln <i>Qual</i>	step two		step three ln <i>Qual</i>	step one ln <i>Qual</i>	step two		step three ln <i>Qual</i>
		ln <i>Capi</i>	ln <i>Empl</i>			ln <i>Capi</i>	ln <i>Empl</i>	
ln <i>Atte</i>	0.042*** (13.35)	0.012*** (5.78)	0.017** (2.49)	0.032*** (14.06)	0.022*** (8.46)	0.007*** (5.32)	0.006*** (4.66)	0.005*** (8.97)
ln <i>Capi</i>				0.365*** (8.51)				0.356*** (8.33)
ln <i>Empl</i>				0.438*** (37.52)				0.439*** (37.66)
control variables	268375	268523	268523	268375	268375	268523	268523	268375
N	0.0062	0.6762	0.4873	0.0167	0.0109	0.6762	0.4875	0.0215
R ²	116.53	851.85	2082.96	248.34	207.20	851.11	2077.51	320.70
F	0.042*** (13.35)	0.012*** (5.78)	0.017** (7.49)	0.032*** (14.06)	0.022*** (8.46)	0.007*** (5.32)	0.006*** (4.66)	0.005*** (8.97)

*p < 0.1.

**p < 0.05.

***p < 0.01 and t-value in parentheses below the regression coefficient.

Source: Author's elaboration.

Change the variable measurement method

Using the PC Baidu Index and mobile Baidu Index as proxy variables for attention allocation, the multiple mediation effect model estimation is performed again on Equations (18) to (21), and the results are shown in Table 5.

Compared to the results in Table 2, the main variables are only slightly different in the size of the coefficients, and the signs and significance of the coefficients are almost the same as those in Table 2. According to the sequential test method of the mediation effect model, the mediation effect of the capital stock adjustment and labor stock adjustment is still significant, which shows that the results obtained from the empirical regression are robust.

Heterogeneity discussion

From the previous analysis, it can be seen that the impact of attention allocation on the high-quality development of products has heterogeneity across both industries and regions.

Industry heterogeneity

Manufacturing enterprises are divided into three categories according to their industries:⁷ capital-, labor-, and technology-intensive ones. Table 6 shows the estimation results of the multiple mediation effects models for each type of industry.

As shown in Table 6, capital stock adjustment and labor stock adjustment have a partial mediating effect in the process of attention allocation, thereby affecting the high-quality development of products in capital-intensive industries, which is consistent with the full sample. In technology-intensive industries, the impact of attention allocation on capital stock adjustment and labor stock adjustment is not significant, and the coefficient product method needs to be used to further test the mediation effect. Through the Sobel, Aroian, and Goodman tests, it is further judged that capital stock adjustment and labor stock adjustment in technology-intensive industries have no significant mediating effect on the process of attention allocation affecting the high-quality development of products. In labor-intensive industries, the mediating effect of capital stock adjustment in the process of attention allocation affecting the high-quality development of products is not significant, whereas the mediating effect of labor stock adjustment in the process of attention allocation affecting the high-quality development of products is significant. The reason for this phenomenon may be that in technology-intensive industries, entrepreneurs focus more on innovation and less on factor allocation, resulting in an insignificant mediating effect of factor

Table 6. The estimation results of the multiple intermediary effects model per industry.

industry	variables	step one	step two		step three
		ln Qual	ln Capi	ln Empl	ln Qual
capital-intensive industries	ln Atte	0.019* (1.82)	0.051*** (13.76)	0.047* (1.74)	0.015** (2.35)
	ln Capi				0.329*** (9.39)
	ln Empl				0.472*** (13.10)
	N	115446	115500	115500	115446
	control variables	yes	yes	yes	yes
	fixed effect	yes	yes	yes	yes
technology-intensive industries	ln Atte	0.092*** (4.62)	0.005 (1.37)	0.014 (1.29)	0.021*** (3.47)
	ln Capi				0.058 (1.09)
	ln Empl				0.699* (1.72)
	N	84927	84982	84982	84927
	control variables	yes	yes	yes	yes
	fixed effect	yes	yes	yes	yes
labor-intensive industries	ln Atte	0.044*** (10.15)	0.032 (0.53)	0.089* (1.86)	0.027*** (15.23)
	ln Capi				0.151 (0.50)
	ln Empl				0.607*** (160.65)
	N	68002	68041	68041	68002
	control variables	yes	yes	yes	yes
	fixed effect	yes	yes	yes	yes

*p < 0.1.

**p < 0.05.

***p < 0.01 and t-value in parentheses below the regression coefficient.

Source: Author's elaboration.

Table 7. The mediating effect of factor stock adjustment.

	capital-intensive		technology-intensive		labor-intensive	
	absolute contribution	relative contribution	absolute contribution	relative contribution	absolute contribution	relative contribution
capital stock adjustment	0.017	31.48%	0.0003	1.28%	0.0048	5.59%
labor stock adjustment	0.022	40.74%	0.0098	41.88%	0.0540	62.94%
total mediation effect	0.039	72.22%	0.0024	43.16%	0.0588	68.53%
direct effect	0.015	27.78%	0.0210	56.84%	0.0270	31.47%
total effect	0.054	100.00%	0.0234	100.00%	0.0858	100.00%

Source: Author's elaboration.

stock adjustment; labor-intensive industries rely more on the use of labor and are less dependent on capital, therefore resulting in an insignificant mediation effect of capital stock adjustment.

The absolute and relative contributions of capital stock adjustment and labor stock adjustment on the high-quality development of products in different types of industries are calculated. The results are presented in Table 7.

As can be seen from Table 7, when allocating attention to promote high-quality product development in capital-intensive industries, 31.48% of the processes are realized by optimizing the adjustment of capital stock, while 40.74% are realized by optimizing the adjustment of labor stock. That is, a total of 72.22% is realized by optimizing the adjustment channel of the factor stock. The mediating effect of factor stock adjustment in technology-intensive industries is not significant. In labor-intensive industries, the mediating effect of the capital stock adjustment is not significant, and the relative contribution of the labor stock adjustment is 62.94%. That is, when allocating attention to promoting high-quality product development in labor-intensive industries, 62.94% is achieved by optimizing the adjustment channels of factor stock. Thus, Hypothesis 3 is verified .

Regional differences

Based on the full sample, the 31 provinces are divided into three regions: east, middle, and west.⁸ This section discusses the heterogeneity of the factor stock adjustment in the process of attention allocation affecting the high-quality development of products per region. The estimated results of the multiple mediation effects of enterprises in the three regions are presented in Table 8.

It can be seen from the results in Table 8 that capital stock adjustment and labor stock adjustment have a partial mediating effect on the process of attention allocation affecting the high-quality development of products in the eastern region; The Sobel, Aroian, and Goodman tests are further applied to the capital stock adjustment and labor stock adjustment in the central and western regions, revealing that the mediating effect of the capital stock adjustment and labor stock adjustment in the central and western regions is not significant. There may be two reasons for this phenomenon. First, as the frontier of reform and opening up, the eastern region has gathered a large number of high-productivity and high-quality enterprises. Entrepreneurs have paid sufficient attention to the allocation of factors of enterprises in the eastern region, but have paid less attention to the allocation of factors of enterprises in the central and western regions. Therefore, the effect of attention allocation on the

Table 8. Estimates of multiple intermediary effects by region.

region	variables	step one	step two		step three
		ln <i>Qual</i>	ln <i>Capi</i>	ln <i>Empl</i>	ln <i>Qual</i>
eastern region	ln <i>Atte</i>	0.057*** (7.48)	0.014*** (8.38)	0.015*** (5.75)	0.017*** (8.20)
	ln <i>Capi</i>				0.361*** (6.28)
	ln <i>Empl</i>				0.253*** (41.37)
	N	238642	238768	238768	238642
	control variables	yes	yes	yes	yes
	fixed effect	yes	yes	yes	yes
central region	ln <i>Atte</i>	0.039*** (4.63)	0.008 (0.59)	0.0199 (0.28)	0.013*** (2.84)
	ln <i>Capi</i>				0.030*** (2.66)
	ln <i>Empl</i>				0.032 (1.45)
	N	25180	25194	25194	25180
	control variables	yes	yes	yes	yes
	fixed effect	yes	yes	yes	yes
western region	ln <i>Atte</i>	0.086** (2.15)	0.024 (0.83)	0.020*** (3.08)	0.021*** (2.78)
	ln <i>Capi</i>				0.016 (1.44)
	ln <i>Empl</i>				0.006 (0.68)
	N	4553	4560	4560	4553
	control variables	yes	yes	yes	yes
	fixed effect	yes	yes	yes	yes

*p < 0.1.

**p < 0.05.

***p < 0.01 and t-value in parentheses below the regression coefficient.

Source: Author's elaboration.

adjustment of factor stocks in the central and western regions is not significant. Second, most industries in the central and western regions are traditional industries. In addition, infrastructure construction is backward, and the adjustment of capital stock and labor stock is not large. Consequently, the impact of capital stock adjustment and labor stock adjustment on the high-quality development of products is not significant. Thus, Hypothesis 4 is verified.

Further analysis shows that when allocating attention to promote the high-quality development of products in the eastern region, 19.23% is achieved by optimizing the adjustment of capital stock, and 15.38% is achieved by optimizing the adjustment of labor stock. Therefore, a total of 34.61% is realized by optimizing the adjustment channel of the factor stock.

Conclusion and policy implications

This study examines the mediating effect of factor stock adjustment in the process of attention allocation to promote high-quality product development. The empirical results show that across the whole sample, the adjustment of capital stock and labor stock have a partial mediating effect on the influence of attention allocation on the high-quality development of products. From the results for different industries, capital

stock adjustment and labor stock adjustment have a partial mediating effect on the impact of attention allocation on the high-quality development of products in capital-intensive industries; labor stock adjustment in labor-intensive industries has a partial mediating effect. From a regional sample perspective, the adjustment of capital stock and labor stock in the eastern region has a partial mediating effect on the impact of attention allocation in terms of the high-quality development of products.

This study's findings have several policy implications. Based on their own advantages, government departments can formulate relevant policies to guide the flow of capital and labor in a timely manner, reduce barriers to the flow of production factors, and promote high-quality product development.

Due to data limitations, we could not continue to refine the high-quality development indicators of the products. In future research, more refined indicators can be used to conduct a more in-depth and detailed analysis.

Disclosure statement

No potential conflict of interest was reported by the authors.

Notes

1. High-quality development is an expression that was first put forward at the 19th National Congress of the Communist Party of China in 2017. It indicated the Chinese economy's shift from a stage of high-speed growth to a stage of high-quality development.
2. In fact, this value can be any other constant. In this paper, to simplify the problem, it is assumed to be 1.
3. Restricted by the micro-data indicators of industrial enterprises, the indicators cannot be further refined.
4. Specific keywords can be obtained from the author.
5. The capital in this article includes financial capital and physical capital, and labor includes ordinary labor and human capital. Knowledge and technology combined with people are to human capital; knowledge and technology combined with things are classified as physical capital.
6. To save space, the estimated results of the control variables and constant items in Tables 5, 6, 7, and Table 8 are not provided here.
7. See literature (Tao & Xu, 2020).
8. See literature (Tao & Xu, 2020).

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References

Akarsu, S., & Süer, Ö. (2022). How investor attention affects stock returns? Some international evidence. *Borsa Istanbul Review*, 22(3), 616–626. <https://doi.org/10.1016/j.bir.2021.09.001>

- Barnett, M. L. (2008). An attention-based view of real options reasoning. *Academy of Management Review*, 33(3), 606–628. <https://doi.org/10.5465/amr.2008.32465698>
- Brandt, L., Biesebroeck, J. V., & Zhang, Y. (2012). Creative accounting or creative destruction? Firm-level productivity growth in Chinese manufacturing. *Journal of Development Economics*, 97(2), 339–351. <https://doi.org/10.1016/j.jdeveco.2011.02.002>
- Gifford, S. (1992). Allocation of entrepreneurial attention. *Journal of Economic Behavior & Organization*, 19(3), 265–284. [https://doi.org/10.1016/0167-2681\(92\)90038-D](https://doi.org/10.1016/0167-2681(92)90038-D)
- Helfat, C. E., & Peteraf, M. A. (2015). Managerial cognitive capabilities and the micro foundations of dynamic capabilities. *Strategic Management Journal*, 36(6), 831–850. <https://doi.org/10.1002/smj.2247>
- Jin, B. (2018). 关于“高质量发展”的经济学研究 [Study on the “high-quality development” economics]. *China Industrial Economics*, 04, 5–18.
- Khandelwal, A. K., Schott, P. K., & Wei, S. J. (2013). Trade liberalization and embedded institutional reform: Evidence from Chinese exporters. *American Economic Review*, 103(6), 2169–2195. <https://doi.org/10.1257/aer.103.6.2169>
- Lai, M., Peng, S., & Bao, Q. (2006). Technology spillovers, absorptive capacity and economic growth. *China Economic Review*, 17(3), 300–320. <https://doi.org/10.1016/j.chieco.2006.04.005>
- Li, X., Lu, Y., & Huang, R. (2021). Whether foreign direct investment can promote high-quality economic development under environmental regulation: Evidence from the Yangtze River Economic Belt, China. *Environmental Science and Pollution Research International*, 28(17), 21674–21683. <https://doi.org/10.1007/s11356-020-12032-z>
- Li, Z. G., & Tang, G. X. (2003). 资本形成路径与资本存量调整模型——基于中国转型时期的分析 [The capital formation and the capital adjustment model during the China's transition]. *Economic Research Journal*, 02, 34–42 + 92.
- Miao, J. W., & Feng, H. (2020). 区域高质量发展评价体系的构建与测度 [Construction and measurement of regional high-quality development evaluation system]. *On Economic Problems*, 11, 111–118.
- Mlachila, M., Tapsoba, R., & Tapsoba, S. J. A. (2017). A quality of growth index for developing countries: A proposal. *Social Indicators Research*, 134(2), 675–710. <https://doi.org/10.1007/s11205-016-1439-6>
- Ocasio, W. (1997). Towards an attention-based view of the firm. *Strategic Management Journal*, 18(S1), 187–206. [https://doi.org/10.1002/\(SICI\)1097-0266\(199707\)18:1+<187::AID-SMJ936>3.0.CO;2-K](https://doi.org/10.1002/(SICI)1097-0266(199707)18:1+<187::AID-SMJ936>3.0.CO;2-K)
- Ocasio, W. (2011). Attention to attention. *Organization Science*, 22(5), 1286–1296. <https://doi.org/10.1287/orsc.1100.0602>
- Ocasio, W., Rhee, L., & Milner, D. (2020). Attention, knowledge, and organizational learning. *The Oxford handbook of group and organizational learning*, 81–94.
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, 40(3), 879–891. <https://doi.org/10.3758/brm.40.3.879>
- Ren, C. R., & Guo, C. (2011). Middle managers' strategic role in the corporate entrepreneurial process: Attention-based effects. *Journal of Management*, 37(6), 1586–1610. <https://doi.org/10.1177/0149206310397769>
- Rivera-Batiz, L. A., & Romer, P. M. (1991). Economic integration and endogenous growth. *The Quarterly Journal of Economics*, 106(2), 531–555. <https://doi.org/10.2307/2937946>
- Shi, B. Z., & Jin, X. Y. (2019). 注意力配置, 互联网搜索与国际贸易 [Attention allocation, Internet search and international trade]. *Economic Research Journal*, 54(11), 71–86.
- Simon, H. A. (1947). *Administrative behavior: A study of decision-making processes in administrative organization*. The Macmillan Company.
- Simon, H. A. (1955). A behavioral model of rational choice. *The Quarterly Journal of Economics*, 69(1), 99–118. <https://doi.org/10.2307/1884852>
- Srivastava, S., Sahaym, A., & Allison, T. H. (2021). Alert and Awake: Role of alertness and attention on rate of new product introductions. *Journal of Business Venturing*, 36(4), 106023. <https://doi.org/10.1016/j.jbusvent.2020.106023>

- Sullivan, B. N. (2010). Competition and beyond: Problems and attention allocation in the organizational rulemaking process. *Organization Science*, 21(2), 432–450. <https://doi.org/10.1287/orsc.1090.0436>
- Tao, C. Q., & Xu, D. M. (2020). 非金融企业杠杆偏离对企业效率的影响 [Impact of leverage deviation of non-financial corporates on enterprise efficiency]. *Contemporary Finance and Economics*, 10, 111–123.
- Vergne, J. P., & Depeyre, C. (2016). How do firms adapt? A fuzzy-set analysis of the role of cognition and capabilities in US. defense firms' responses to 9/11. *Academy of Management Journal*, 59(5), 1653–1680. <https://doi.org/10.5465/amj.2013.1222>
- Yang, R. D. (2015). 中国制造业企业全要素生产率研究 [Study on the total factor productivity of Chinese manufacturing enterprise]. *Economic Research Journal*, 2, 61–74.
- Yang, Y., Su, X., & Yao, S. (2021). Nexus between green finance, fintech, and high-quality economic development: Empirical evidence from China. *Resources Policy*, 74, 102445. <https://doi.org/10.1016/j.resourpol.2021.102445>.
- Zhang, T. (2020). 高质量发展的理论阐释及测度方法研究 [Theoretical interpretation and measurement methods of high-quality development in China]. *Journal of Quantitative and Technical Economics*, 37(05), 23–43.