

# Financial Analysis of Livestock and Poultry Breeding Enterprises under the Harvard Analysis Framework- Take Wens Co., Ltd as an example

Yunfei Cui

School of Economics, Northeast Agricultural University, Harbin, China

fuxin@ldy.edu.rs

**Abstract.** With the increasing population, China's livestock and poultry industry has developed rapidly. Wens has always been one of the leading enterprises in China's livestock and poultry industry and is considered to have a pivotal influence on the development of the industry. However, in recent years, the development of China's livestock and poultry industry is not smooth, and the overall fluctuation of the industry has a greater impact on enterprises. Based on the financial data of Wens from 2018 to 2022 and the Harvard framework analysis, this paper analyzes the four aspects of strategy, accounting, finance and prospect of Wens. The enterprise has strong innovation ability and good short-term solvency, but the net profit growth rate is insufficient, and the asset-liability ratio is high. The gross profit of the enterprise continues to decline in recent years, which may bring about the lack of development momentum of the industry. The enterprise should actively reduce costs and develop diversified industries. This paper provides corresponding reference for other similar livestock and poultry breeding enterprises.

**Keywords:** Wens Co. Ltd, Harvard analysis framework, financial analysis, poultry breeding enterprises.

## 1. Introduction

In recent years, China's overall economic level has been developed dramatic. As Chinese people have put forward higher requirements for diet, various livestock and poultry breeding enterprises in China have also entered the fast track of development. Meanwhile, with the continuous change of the world situation, the Chinese government has paid more attention to the livestock and poultry industry. A number of plans and requirements, including the construction of a "2+4" modern livestock and poultry industry industrial system and the basic modernization of the industry by 2025, present opportunities for growth as well as some challenges for China's livestock and poultry enterprises.

Wens Food Group Co. LTD (Hereinafter referred to as "Wens") besides being a significant platform for scientific study, it is one of the major national leading enterprises in China's agricultural industrialization, alongside the Ministry of Agriculture's key laboratory and the National Enterprise Technology Center. Wens have been steadily changing over the past few years, going from being a production company to a food and service company with the main industry at its center. However, Wens' current revenue and development level are still just average, according to its financial report, and this will undoubtedly make the company's change more difficult. In order to accomplish the goal of leading enterprises driving small and medium-sized enterprises and contributing to the development of China's livestock and poultry industry, the PEST and SWOT models as well as a specific analysis of the enterprise's financial status can better assist the enterprise in transforming and clarifying the problems existing in the transformation process.

At present, there are many analyses of Chinese livestock and poultry enterprises. Li and Wu used factor analysis, the functioning status of enterprises was examined based on the financial data of listed companies in China's livestock and poultry industry in 2012 [1]. Wang and Chen from the perspective of the financial crisis, businesses that satisfy the sample requirements are chosen to build the financial crisis early warning index system via the significance test [2]. Shen et al. This study illustrates the connection between vertical integration and enterprise performance, outlining both the advantages and disadvantages of vertical integration for performance [3].

The financial analysis of specific livestock and poultry businesses is absent from the aforementioned research, which covers a broad spectrum of the industry. This study will analyze Wens in-depth using the Harvard analytic framework as a guide for pertinent practitioners in the livestock and poultry sectors. Wens is an individual enterprise.

This paper's research idea is primarily based on the Harvard analysis framework. Using Wens as a sample, it first introduces the framework's composition. Next, it conducts strategic, accounting, financial, and prospect analyses after gathering financial data from pertinent enterprises over time and examining the relationship between them. Lastly, the enterprise financial prognosis and pertinent investment and development recommendations are provided based on the analysis results.

## **2. Harvard Analysis framework**

### **2.1. Strategy analysis**

Harvard's framework analysis is based on strategic analysis. In order to produce more comprehensible analytical results, this study uses the PEST and SWOT models of strategic analysis.

### **2.2. Accounting analysis**

Accounting analysis is a quantitative analysis technique that can guarantee the correctness and integrity of financial data. In order to deliver accurate and trustworthy analysis results, accounting analysis mostly starts with financial data and then determines whether the data provided by businesses is truthful and reliable.

### **2.3. Financial analysis**

The accuracy and completeness of financial data may be ensured as long as accounting analysis is the foundation. In addition, the advantages and disadvantages of the analyzed enterprise are accurately and directly provided by horizontal and vertical comparison of a number of indicators, such as debt-paying ability, profitability, operating ability, and growth ability of each similar enterprise, based on the annual financial statements of each enterprise. This serves as a good reference for the analyzed enterprise.

### **2.4. Prospect analysis**

In addition to serving as a summary of the first three types of analysis, prospect analysis can also be used as a continuation of those types of analysis, predicting the trend of businesses operating under the current strategy. This allows businesses to make timely adjustments to their own strategies and also serves as a source of investment information for investors.

## **3. Specific analysis of Wens**

Wens' primary business is the breeding industry, and its primary product is pigs, which make up a sizable share of the company's industry (see fig.1 for information). The prefabricated foods market in China has grown significantly in recent years, and the gross profit margin of the pig and chicken markets has declined. As a result, businesses are actively growing the dairy products and food processing industries, which have a lot of room to grow.

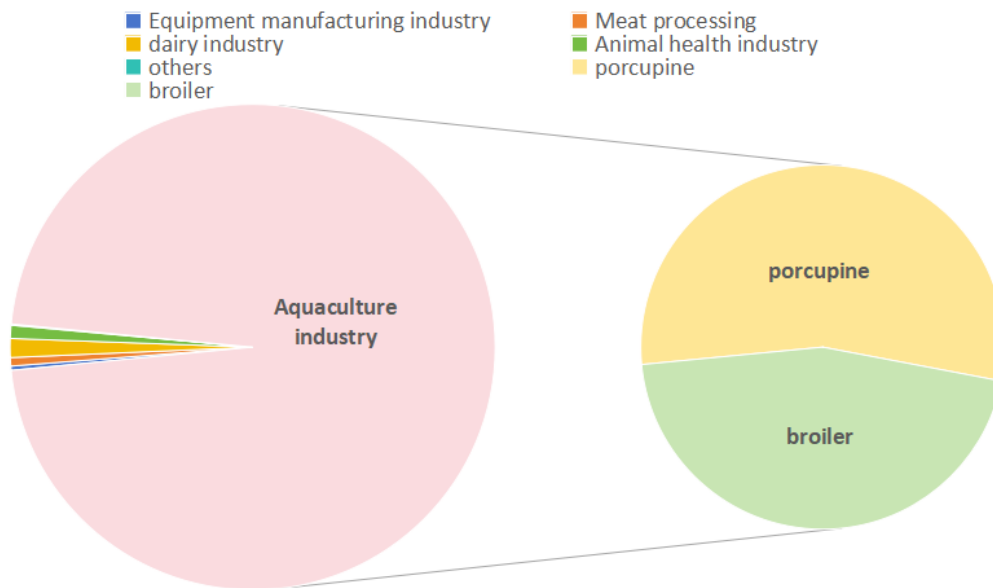


Figure 1. Stock asset structure chart of WENS Co., LTD

### 3.1. Enterprise Strategy Analysis

#### 3.1.1 Macro environment - PEST analysis

(1) Analysis of political environment (P). Modernization was identified as the livestock and poultry industry's development goal in both the Ministry of Agriculture and Rural Affairs' 2021 National Development Plan for the Livestock and Poultry and Veterinary Industry and the General Office of the State Council's 2020 Opinions on Promoting the High-quality Development of the Livestock and Poultry Industry. These policies [4], which are the main driving force behind Wens' modern industrial upgrading and the construction of high-quality EPC projects, also have an impact on the mass production of "pig chips" that Wens has developed. Additionally, the government has made industrial safety one of its top priorities, which will create opportunities for growth in the biopharmaceutical business of Wens. Nevertheless, the policies have two drawbacks for the livestock and poultry industry: while strengthening government oversight of veterinary drugs will increase the cost and duration of early research and development.

(2) Economic environment analysis (E). China's economic situation has not improved considerably since the outbreak because of deflation and the ongoing decline in global markets. Simultaneously, the yellow-feathered chicken and pig industries are experiencing a downturn, with their selling prices falling short of their breeding expenses. In particular, the pig industry's decline has hit a historical low of over 10 years, and the cycle's bottom is clearly visible [5]. Simultaneously, the decline in Chinese consumption poses a challenge to the increase in cattle and poultry product prices. The state of the economy today is not conducive to the growth of the cattle and poultry industries.

(3) Social environment analysis (S). The domestic cattle and poultry business is growing because of the rising dietary standards of Chinese youngsters and the overall increase in consumer demand for meat, eggs, and milk. But as the population ages and the share of the old population in China rises annually, the issue of population aging is getting worse, therefore it might be challenging to boost meat intake in the future.

(4) Technical environment analysis (T). The livestock and poultry industry in China continues to face a number of issues, including inadequate response measures to the risk of serious animal diseases, an inadequate support and security system, and an industry that is still less modernized than the major Western exporters of agricultural and animal husbandry [6]. Businesses that deal with livestock and poultry still have a lot of room to grow in this area.

### 3.1.2 The enterprise itself -SWOT model

(1) Strengths (S): Wens was established early, has a wealth of knowledge in raising livestock and poultry, and employs cutting-edge management techniques. In the meanwhile, Wens has a sizable and steady consumer base after attempting to amass. The company, which is a national key leading enterprise, possesses its own scientific research team, is the owner of several invention patents, is capable of scientific research and innovation, is able to improve and iterate its own products, and has breeding technology that is among the most sophisticated in China.

(2) Weaknesses (W): Wens embraces the "enterprise + farmer" model; the business is fragmented, centralized management is challenging, and there is a lot of financial strain. Farmers often become passive and lose their dominant strength when they lack the requisite supporting resources and risk-taking skills [7]. In addition, the company sector is comparatively homogeneous and is heavily influenced by regulations as well as unpredictable dangers.

(3) Opportunities (O): The market for cattle and poultry is anticipated to grow more as people's nutritional needs improve and as multi-child policies are supported. Simultaneously, the domestic prepared food market is in its infancy, and there is great potential for the growth of prepared meat processing.

(4) Threats (T): Wens faces significant challenges due to the market's extreme uniformity, although Muyuan businesses have grown quickly in recent years and gained a larger portion of the market. However, when looking at the market from the standpoint of products, there aren't many options available for raw meat, primarily in the form of live pigs and poultry, with significant product substitution.

## 3.2. Accounting analysis

### 3.2.1 inventory analysis

Inventory liquidity is inadequate. Table 1 suggests that Wens's shares have a great liquidity capacity and that the inventory takes up less enterprise resources than other shares because the inventory ratio of the company over the years is not high. The company also has a high inventory turnover rate and low turnover days, which suggest that it can quickly turn over capital, has the ability to pay off short-term debt, and is likely able to withstand unforeseen hazards. Additionally, the company has a large cash flow because Wens's shares are primarily exchanged in cash [7].

Table 1 shows that since 2020, inventories have been steady at a low level. According to this paper, the epidemic has severely reduced consumption, and as a result of the previous spike in pork prices brought on by African swine fever, many farmers have entered the market, driving down the price of pork and resulting in a decline in the gross profit margin for pork. Businesses have also been able to improve inventory turnover and reduce inventories, which has accelerated the return on investment and increased corporate profitability.

**Table 1.** Inventory analysis form of Wens Co., LTD

Year	2022	2021	2020	2019	2018
Inventory/billion	20.38	14.94	13.31	12.48	12.88
Inventory ratio/%	20.79%	15.44%	16.54%	19.04%	23.89%
Days sales in inventory/day	89.96	72.29	77.10	86.35	91.60
inventory turnover ratio/times	4.00	4.98	4.67	4.17	3.93

### 3.2.2 Analysis of fixed assets

Wens' fixed asset proportion in livestock and poultry industries is rather low, having remained steady at roughly 35 percent. Table 2 does, however, show that the enterprise's fixed asset percentage has almost quadrupled from 2018, going from 18% in 2018 to 35% in 2022. This demonstrates that as fixed assets increase quickly, the firm's total assets increase as well. This suggests that the enterprise clearly intends to expand and that its "enterprise + farmer" paradigm has been quickly put into practice. The business is expanding at a really respectable rate. However, if an organization's

growth is dependent on the input of fixed assets, the rate at which assets are turned over would unavoidably drop. To ensure that an organization can withstand risks and manage its debt ratio, it needs to have stronger revenue efficiency.

**Table 2.** Statement of fixed assets of Wens Co., LTD

Year	2022	2021	2020	2019	2018
fixed assets/billion	35.07	35.40	28.51	22.73	18.25
Proportion of fixed assets to total assets /%	35.76%	36.58%	35.41%	34.67%	33.83%

### 3.2.3 Net profit analysis

It can be seen from Table 3 that the profit of the enterprise exceeded 14billion in 2019, reaching an extreme point, while the sudden loss in 2021 was 13billion, 329% lower than last year.

The ravages of African swine fever in 2018, the lack of live pigs available on the market, the effect of market lag, and the time-consuming nature of pig breeding—all of which contribute to the high price of live pigs in 2019—are the primary causes of the substantial increase in profits in 2019, according to this paper.

But two years later, as a result of the epidemic's effects as well as the market's lag and spontaneous adjustment, a significant number of live pigs entered the market, bringing down the price of pork and decreasing its gross margin. Additionally, the cost of labor and the price of raw materials for making feed are rising, which drives up the cost of producing pigs. Wen's stock experienced difficulties that same year, and its value fell precipitously. These elements working together caused the corporation to suffer significant losses in 2021.

**Table 3.** Profit analysis of Wens Co., LTD

Year	2022	2021	2020	2019	2018
total profit/billion	5.64	-13.55	7.48	14.45	4.26
basic earnings per share/Yuan	0.82	-2.11	1.18	2.22	0.75

### 3.3. Financial analysis

This paper chooses two representative enterprises in the livestock and poultry industry, DBN and Muyuan, to compare the financial data of Wens in a horizontal and vertical manner in order to intuitively and vividly reflect the solvency, profitability, operating ability, and growth ability of Wens.

#### 3.3.1 Repayment analysis

The examination of a company's solvency can accurately represent its capacity to service both short- and long-term debt. Table 4 shows that the quick ratio and current ratio of Wens have been largely stable over the previous five years. However, the 2019 current ratio spike may have been brought on by the market's scarcity of hogs due to the spread of African swine fever, as well as the rapid increase in capital holdings brought on by the massive liquidation of hen inventory. This enterprise's two ratios are kept at a high level in comparison to the other two. When paired with the previously mentioned analysis—which indicates that the company's inventory to total assets ratio is roughly 20%—it becomes evident that Wens' shares are more liquid than those of its competitors, have a stronger ability to pay down short-term debt, and are safer when handling unforeseen risks. However, Wens' fast ratio has consistently been less than one, meaning that in order to pay off short-term loans, the business needs sell off a portion of its inventory.

It is noteworthy, nonetheless, that Wens' shares' asset-to-liability ratio has increased recently. Table 4 shows that the 2021 value was more than twice as high as the 2019 value. The company's capacity to handle short-term debt concerns is high, but it is losing ground on long-term debt repayment. In addition to the economic environment analysis discussed above, the ongoing decline in the cattle market and a number of unforeseen circumstances cause businesses' income growth to continuously slowdown. The asset-liability ratio's steady rise is a sign that businesses are not using capital resources effectively, which affects their current ratio and quick ratio. In the future, businesses should focus on improving the efficiency with which they use resources, leverage their own resources

for finance, innovation, and scientific research, and actively look for new ways to improve the rate at which income is growing.

**Table 4.** Stock solvency analysis table of Wens Co., LTD

	Years	2022	2021	2020	2019	2018
liquidity ratio	WENS	1.47	1.81	1.37	1.88	1.64
	DBN	0.93	1.03	1.11	1.21	1.08
	MUYUAN	0.80	0.62	0.89	1.08	0.72
quick ratio/%	WENS	0.51	0.87	0.45	0.61	0.38
	DBN	0.54	0.66	0.62	0.77	0.66
	MUYUAN	0.28	0.16	0.34	0.60	0.21
asset-liability ratio/%	WENS	56.25%	64.10%	40.88%	28.90%	34.06%
	DBN	58.28%	52.76%	45.77%	39.36%	40.79%
	MUYUAN	54.36%	61.30%	46.09%	40.04%	54.07%

### 3.3.2 Analysis of profitability

The income level and development status of enterprises can be directly reflected in the profitability analysis of those enterprises. Table 5 shows that Wens' return on equity has fluctuated over the last five years, peaking in the three years between 2020 and 2022. In general, according to Table 5, since 2020, the return on equity and net profit margin on sales of the whole industry have entered a downward path from the maximum point in recent years, and the decline is particularly obvious in 2021. This essay takes into account the following factors: 1. Since the outbreak in 2020, there has been a significant impact on market liquidity, and pertinent market expectations have decreased as well. 2. Since 2020, the running costs of businesses have increased, surpassing 60 billion yuan and increasing by 10 billion yuan annually. Businesses have a weak ability to control expenses. 3. The market is oversupplied with pigs and other livestock, which lowers corporate earnings, lengthens the time it takes for capital to confluence, and lowers an enterprise's return on equity. 4. The price of live pigs bottomed out and then rebounded in 2022. Based on the study of debt payment ability in Table 4 above, Wens actively lowered the asset-liability ratio in 2022, which had an impact on the enterprise's ability to recover its net assets income rate and net profit margin on sales.

**Table 5.** Profitability analysis of Wens Co., LTD

	Years	2022	2021	2020	2019	2018
net profit margin on sales/%	WENS	6.74%	-20.86%	9.99%	19.75%	7.44%
	DBN	0.97%	-2.99%	11.28%	3.75%	2.52%
	MUYUAN	11.96%	9.68%	53.97%	31.34%	3.94%
net assets income rate/%	WENS	14.55%	-34.18%	16.70%	35.69%	11.89%
	DBN	0.52%	-4.05%	18.70%	5.07%	4.97%
	MUYUAN	21.01%	12.91%	74.43%	35.28%	2.84%

### 3.3.3 Operating capacity analysis

The operation ability of a business is a reflection of its capital turnover efficiency and management caliber. Table 6 indicates that Wens' total asset turnover has been declining annually since 2018. Additionally, the current asset turnover has also been declining, falling from 3.05 in 2019 to 2.32 in 2022. This demonstrates how Wens's sales capacity has diminished, and the investment advantage has fallen short of the company's expectations due to the epidemic's dual support and the market interest rate decline. However, in contrast to the other two businesses, this one has maintained a high industry inventory turnover rate, demonstrating its superior effectiveness in running its primary company and its healthy profit margin. It is important to note, though, that Wens' receivables turnover rate exhibits a tendency of continuous reduction, suggesting that Wens' collection pace is still slowing down, and that enterprise management and capital return rates need to be raised.

**Table 6.** Stock operating capacity analysis of Wens Co., LTD

	Years	2022	2021	2020	2019	2018
total assets turnover/times	WENS	0.86	0.73	1.03	1.22	1.11
	DBN	1.12	1.23	1.06	0.90	1.03
	MUYUAN	0.67	0.53	0.64	0.49	0.50
current asset turnover/times	WENS	2.32	2.22	3.05	3.05	2.76
	DBN	2.80	3.12	2.77	2.40	2.41
	MUYUAN	2.24	1.80	1.92	1.38	1.45
inventory turnover ratio/times	WENS	4.00	4.98	4.67	4.17	3.93
	DBN	6.96	8.14	6.05	5.78	6.25
	MUYUAN	2.83	2.36	1.56	2.00	2.41
turnover of account receivable/times	WENS	176.28	172.17	230.63	304.97	331.61
	DBN	37.05	37.99	23.32	11.90	12.70
	MUYUAN	799.80	1018.31	3205.64	1286.37	-

### 3.3.4 Growth capacity analysis

Table 7 shows that over the previous five years, there was a significant variation in the growth rates of business revenue and net profit for livestock and poultry operations. Businesses often hit their peak operational revenue in 2019–2020, and a year later in 2021, corporate revenue and net profit have plummeted. The revenue and net profit of Wens have greatly recovered after suffering enormous losses in 2021, despite the enterprise's lackluster performance. This suggests that the company's ability to recover is relatively excellent in the industry.

**Table 7.** Growth ability analysis sheet of Wens Co., LTD

	Years	2022	2021	2020	2019	2018
increase rate of business revenue (on year-on-year basis)/%	WENS	28.87%	-13.31%	2.47%	27.75%	2.84%
	DBN	3.41%	37.32%	37.62%	-14.11%	2.99%
	MUYUAN	58.23%	40.18%	178.31%	51.04%	33.32%
net profit growth rate (on year-on-year basis)/%	WENS	139.46%	-280.51%	-46.83%	252.94%	-41.38%
	DBN	112.63%	-122.52%	281.02%	1.26%	-59.93%
	MUYUAN	92.16%	-74.85%	348.97%	1075.37%	-78.01%

In general, the industry needs to achieve two key goals in order to maximize net profit in 2019 and 2020: 1. The year 2019 saw a surge in African swine disease, a significant number of unreleased pigs dying, a significant vacancy created by market demand, rising pork prices, and an increase in gross profit margin. 2. The COVID-19 outbreak in 2020 significantly affected the market's initial supply arrangement. Amidst the pandemonium, the public's need for staple agricultural and ancillary goods surged, driving up the cost of live pigs and poultry and thus driving up the net interest rate of businesses.

Three factors primarily account for the 2021 industry net profit decline: costs, a sharp increase in early capacity, and excess supply in the market. Among them, Wen's stock incurred significant breeding costs as a result of the high cost of purchasing pig seedlings from outside sources, and because capital is scarce, the industry's net profit decrease is especially severe. Wens invested more in capacity growth because of the high profit margin in the previous pig market, which made it difficult for the business to quickly recover funds when the price of pork fell in 2021. Additionally,

the company's asset-liability ratio remained high, which ultimately resulted in significant losses in 2021.

The cost of breeding is the primary indicator of the relationship between a company's income and net profit. As previously mentioned, it is challenging to lower the breeding costs of Wen's stock because of the rising cost of feed, the need to buy pig seedlings, and other factors. Additionally, feed costs are heavily influenced by external factors and have a low elasticity coefficient, which helps to explain why Wen's stock income levels are low and industry net profits fluctuate sharply at low levels during the same period [7].

### 3.4. Prospect analysis

Wen's primary activity, which generates a significant amount of company revenue, is the breeding and supply of pigs and chickens through its "enterprise + farmer" business model. The outlook for breeding livestock and poultry and the supply of raw meat is not promising, nevertheless, given the state of the market in recent years and the current state in which the market is still struggling to understand the "pig cycle" conundrum [8]. Furthermore, there is a severe homogenization phenomenon in the raw meat supply market, a single product type, and a significant amount—more than 90% [9]—that comes from the livestock and poultry breeding operations of Muyuan, Wens, Yisheng, Xiantan, and other enterprises. There is also intense competition amongst the currently operating enterprises. But the number of pigs emerging from China's top ten listed pig breeding enterprises is still growing, and the industry's concentration is steadily rising [10]. As of right now, Wens have been aggressively pursuing enterprise transformation as part of their own development route. The company currently operates in the dairy, animal insurance, meat processing, and equipment manufacturing industries. Businesses have been actively developing the "Internet of Things +" form mode in recent years, leading the industry in digitization and intelligence. Wen's Stock, a nationally recognized creative organization, has developed an efficient breeding "cloud" detecting software called "Zhiyang +" by combining its distinctive "company + farmer" mode with digital tools. This software enhances industry efficiency and increases the degree of informatization [11].

## 4. Conclusion

In this paper, the Harvard framework is applied to the analysis of Wen's Food Group Co., LTD. Strategically, the company is well-positioned to innovate and conduct scientific research, has a sizable and steady client base, and is essential to China's livestock and poultry breeding sector. However, social economics and political power have a significant impact on business income. Additionally, the industry is single and management effectiveness is low. Businesses should adjust to the recent changes in the country's livestock and poultry development landscape, aggressively expand their product offerings, encourage product diversity, and raise the caliber of their own management by learning from the mistakes of others.

Businesses have excellent short-term solvency and low inventory levels at the accounting and financial levels. To ensure that its asset-liability ratio stays within a reasonable range, the company must increase the efficiency of capital use, optimize long-term investment projects, and improve revenue generation. In recent years, however, the rapid increase in fixed assets of businesses has indicated that the company clearly intends to expand. In addition, there is a significant amount of market transaction risk, a low profit rate, and significant fluctuations in the net profit of businesses. Businesses can also use cattle and poultry breeding to expand their enterprise track and create unique, diversified products.

The livestock and poultry breeding industries are highly competitive at the prospect level, with high levels of product overlap, high levels of marketization, and a relatively dispersed market. However, businesses should monitor real-time changes in national policies and tax laws and take precautions against negative news stories in order to manage common risks in the industry.

Enterprises should actively grow their product lines based on their unique advantages and establish different tracks in order to deal with the high homogeneity of products.

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