Price Game and Management Decision-Making in Enterprise Competition

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Abstract. This paper discusses the primary issue of price competition for the economic market of globalization era, especially prices in the decision-making process of enterprise management and the effects of price competition on decisions. As people know that as pricing is an important link in market competition, prices have a significant impact on the profits, market share of a enterprise, as well as consumers' behavior. The present article draws the theoretical schemes of the management, the industrial organization and the behavioural economy in order to analyse the ways in which enterprizes will be able to contribute to price competitions, what ought to do in order to attain his purposes and how enterprize managers should take rational choices in ultra-competitive scenario, in order to attain the economic growth. According to the research, under the intense competitive environment, the decision maker of enterprise will coordinate short-term price response and long-term strategy preparation. Enterprise managers can achieve profit maximization, improve non-price value and differentiation strategy through strengthening the production cost, so as to avoid the vicious price circle and forced exit from the market by the market. It contributes to the theoretical analysis of price competition and management decision-making and gives enterprise decision-makers an available reference for making sustainable development strategies in complicated and high competitive conditions.

Keywords: Price games, management decisions, enterprise competition.

1. Introduction

Price competition is one of the most universal phenomena in digital economy which with the trend of global development, affecting a company's profit rate, market position and long-term survival, and is of vital significance to establish status in the competition. Facing the acceleration of globalization, the complexity and dynamics of price competition have been greatly enhanced [1]. Prices are no longer decided by the balance between supply and demand and the cost constraints. Instead, they are now heavily impacted by consumers, digital platforms, and government. [2]. Against this background, firm pricing decisions and management strategies have been popular research issues under the economic and management environment.

Research shows that price is a company's most direct weapon in market competition and a significant foundation for its long-term survival. While a sound pricing strategy can rapidly alter the competitive landscape, unsuitable pricing can lead to industry-wide price wars and a vicious cycle, reducing profits for all companies within the industry in this market and even forcing some firms to declare bankruptcy. That's result in they have to exit the market for survival [3]. At the same time, differentiated pricing and tacit cooperation may help firms achieve sustainable development, gaining greater market share and earning more profits. It's worth noting that regulators and their policies also play a key role [4]. For example, antitrust laws targeting large monopolies can both curb price manipulation and disrupt the fragile equilibrium between companies [2].

From the perspective of traditional economic theory, perfect competition and monopoly models can fully explain the price formation mechanism. However, the actual market is more like an oligopoly. This dilemma makes inter-firm bargaining the core of price setting [5]. Game theory within the framework of management provides an important tool for understanding these tactics and strategies. For example, the prisoner's dilemma demonstrates how rational choices can lead to collective irrationality, while the Cournot model reveals the relationship between output and price. Repeated game theory explains how long-term cooperation can avoid vicious competition [6].

Furthermore, research has found that consumer behavior is not completely rational; price changes and perceptions of fairness can influence purchasing decisions, thereby influencing consumer behavior [7]. However, existing research has mostly focused on theoretical modeling and lacks a systematic analysis of price games and the overall management decision-making mechanism of enterprises [8]. For example, when faced with price wars, how do companies balance profits and market share? When forming price agreements, how do companies avoid policy risks? In differentiation games, how should corporate managers coordinate products and services

This article combines a literature review with theoretical analysis to review major theoretical models of price games in economics and management, including the Prisoner's Dilemma, the Cournot model, and the repeated game model, explaining the pricing logic of companies under different market structures. Secondly, this article summarizes several common price game models in corporate practice, including price wars, price agreements, differentiated pricing, and dynamic pricing, and analyzes them with classic case studies. Furthermore, this article deeply explores the multiple impacts of price games on corporate management decisions, revealing their mechanisms from pricing, cost control, product innovation, to the impact of decisions on market entry and exit.

2. Theoretical Basis and Model of Price Game

2.1. Prisoner’s Dilemma

The prisoner's dilemma reveals why companies often fall into a vicious cycle of "lowering prices, then lowering them again" in price competition. It's a prime example of why companies often find themselves in a dilemma. In an oligopoly market, if two companies (let's say A and B, competitors) simultaneously maintain high prices, they can both achieve higher profits and achieve a win-win situation. Imagine that, driven by competitive pressure and the allure of market share, Company A lowers its prices to attract more customers. To avoid being squeezed out and losing customers, Company B is forced to lower its prices as well. The result is a decline in profits for both parties, creating a "vicious cycle" [6]. This phenomenon is particularly pronounced in industries like aviation and retail. For example, airlines offer deep discounts during the off-season to fill empty seats, which ultimately leads to a decline in overall industry profits for that quarter.

2.2. Cournot Model

Besides the prisoner's dilemma model, the Cournot model has also been studied as a classic case study due to its emphasis on the linkage between output and price. When a small number of firms can influence market prices, how do they determine their own output based on the output of their competitors, and what price and quantity will ultimately emerge in the market? In an oligopoly market, each firm must predict its competitors' output when deciding its own output, as market price is determined by total output. As firms continuously adjust their output to maximize profits, market prices gradually converge to an equilibrium level [5]. This logic is particularly evident in commodity industries such as steel and cement. Firms' expansion not only changes their own output but also drives prices down through increased supply, thereby affecting the profit level of the entire industry. Although the Cournot model focuses on output, the ultimate outcome is price competition. The implication is that firms must not only pay attention to their own costs and output but also predict the behavior of their competitors; otherwise, they risk finding themselves in a disadvantageous price environment.

2.3. Repeated Game Theory

In a single price war, companies tend to pursue short-term profits. However, in long-term interactions, repeated game theory reveals another possibility. By establishing stable expectations through a tit-for-tat strategy, companies can form tacit agreements over multiple rounds of competition. For example, when one company maintains a high price, the other company chooses not to lower its price, thus achieving a mutually beneficial equilibrium. However, when one company

breaks the rules and lowers its price, its opponent retaliates in the same manner in subsequent rounds, creating a deterrent mechanism [6]. This pattern is particularly prominent in long-term competitive industries such as the oil and banking sectors. However, the stability of this tacit agreement mechanism is highly dependent on internal trust and information transparency within the industry and is also subject to external regulation. For example, if antitrust policies are stringent, price agreements between companies may be considered illegal and subject to regulatory penalties. Repeated games offer companies a possible path to avoid price wars and maintain stable profits [2].

3. Common Types of Price Games in Corporate Competition

3.1. Price War Game

Price wars are often triggered by new entrants into the market, inventory pressures, or competition for market share. In the e-commerce industry, large-scale promotional events such as China's "Double 11" (Singles' Day) and the UK's Black Friday often force platforms and merchants to collectively cut prices to stimulate consumption, hoping to gain short-term profits through increased sales [1]. Price wars are characterized by a core strategy of price reduction, sacrificing profits in exchange for short-term sales or market share. While this strategy can boost sales in the short term, it can lead to declining industry profits in the long term and even force some weaker companies to exit the market. For example, the previous "color TV price war" in China left most companies in a state of long-term low profits or even losses, highlighting the destructive nature of price wars. Another example is the current food delivery war, where platforms are offering a large number of discounts and other coupons, leaving many merchants unable to make ends meet and forcing them to close.

3.2. Price Tacit Understanding

Unlike the fiercely competitive nature of price wars, price tacit understandings reflect cooperative strategies between companies. As a cooperative strategy, these strategies can manifest themselves through undisclosed agreements or industry practices to maintain price stability. For example, Organization of the Petroleum Exporting Countries (OPEC)'s joint regulation of oil prices is essentially a form of oligopoly [2]. While price tacit understandings help companies maintain high profits, their stability relies on long-term partnerships and lax external regulations. If any company breaks the tacit understanding, the entire system will quickly collapse. Therefore, the sustainability of price tacit understandings depends solely on industry trust and compliance risk management.

3.3. Differentiated Pricing Game

Differentiated pricing reduces or avoids direct price competition by differentiating product features, brands, and services. Companies segment the market through differentiation based on details such as product performance, brand value, and service levels, thereby creating a multi-tiered pricing system. For example, in the smartphone market, high-end brands rely on innovation and brand premiums to maintain high prices, while mid- and low-end brands capture the mass market with low prices [4]. While differentiation can help reduce direct price competition, as competitors continue to imitate, competition can shift back to the price level, creating a cycle of "differentiation-then-price war." This phenomenon demonstrates that while differentiation can mitigate price competition, it is not a long-term moat.

3.4. Dynamic Pricing and Promotional Game

Dynamic pricing, including limited-time discounts and membership pricing, aims to attract consumers and test competitors' reactions through price fluctuations, a key feature of the digital economy. This type of price manipulation is particularly prevalent in the e-commerce and food delivery industries. For example, when e-commerce platforms detect competitor promotions, they often quickly adapt to maintain competitiveness and avoid customer churn. However, frequent

promotions can lead consumers to develop a "wait for discounts" mentality, weakening a company's long-term profitability [9]. Therefore, this type of price manipulation is characterized by high frequency and short cycles, requiring companies to have quick responses and flexible pricing mechanisms. While dynamic price fluctuations and promotional manipulation can help companies increase market sensitivity, they can also make consumers more price-sensitive, leading to a decline in brand loyalty and increased customer loss.

4. How Price Gambling Influences Corporate Management Decisions

4.1. Direct Impact on Pricing Decisions

Price wars directly impact a company's pricing logic. In price wars, companies are forced to shift from "pursuing high profits" to "maintaining market share," shifting their pricing objectives from high profits to survival based on market share. In contrast, in differentiation wars, companies prioritize pricing that aligns with brand positioning and product features [10]. For example, the luxury goods industry maintains brand scarcity through high prices, while fast-moving consumer goods (FMCG) tend to dominate the market through low margins and high sales. Regardless of the scenario, companies must fully consider competitor reactions when making pricing decisions, incorporating potential competitor reactions into pricing decisions. This creates a decision-making cycle of "pricing – competitor reactions – profit fluctuations."

4.2. Impact on Cost Control Decisions

Intense price wars force companies to continuously optimize their supply chains and internal management to maintain competitive pricing and maximize room for price reductions. In this fiercely competitive market, companies that fail to reduce costs through supply chain integration, economies of scale, or technological advancements will struggle to survive in this rapidly changing market. For example, airlines reduce costs through route optimization and fuel efficiency improvements to maintain market competitiveness [3]. This shows that price wars not only affect pricing but also profoundly impact a company's cost structure and operational efficiency.

4.3. Impact on Product and Service Strategies

When price competition reaches a stalemate, companies often mitigate consumer price sensitivity by allocating resources to non-price competition, such as product innovation, differentiated design, and service upgrades [8]. For example, e-commerce platforms enhance consumer loyalty and price sensitivity through membership benefits and after-sales service, while high-end brands maintain their premium position through unique design and brand value. By enhancing non-price value, companies can enhance their market competitiveness while maintaining stable prices and profitability. Some luxury brands, such as Chanel and Louis Vuitton, have maintained their market position through this approach.

4.4. Impact on Market Entry and Exit Decisions

Price competition not only affects a company's pricing power but also determines its market entry and exit decisions. In highly competitive industries, new entrants may choose to delay entry or adopt differentiation strategies to avoid direct conflict. Protracted price wars squeeze profit margins, forcing weaker companies to exit and creating an oligopoly or outright monopoly. For example, small and medium-sized smartphone brands are gradually eliminated in the face of frequent price wars, leaving only leading companies to maintain their advantages through scale and differentiation [1]. These market trends and outcomes suggest that price competition significantly shapes barriers to entry and exit.

5. Conclusion

This paper systematically analyzes the theoretical foundations of corporate price competition and reveals the interactive relationship between price competition and management decision-making. By introducing and analyzing theoretical models such as the prisoner's dilemma, the Cournot model, and repeated games, the paper explains the logic and pitfalls of price competition. Drawing on numerous real-world cases, the paper summarizes four common types of price competition: price wars, price tacit understanding, differentiated pricing, and dynamic price adjustments. Furthermore, the paper reveals the profound impact of price competition on corporate pricing, cost control, product and service offerings, and market entry and exit in the global digital economy. For companies, relying solely on price competition often leads to vicious price cycles and long-term profit declines. Only by incorporating differentiation strategies into price competition, strengthening non-price value, and leveraging technology to enhance management efficiency and brand value can companies achieve long-term sustainable development and gain a firm foothold in the fiercely competitive market. This study suggests that companies in competitive markets must balance short-term price competition with long-term strategic goals. They must effectively respond to competitive pressures and maintain competitiveness while also prioritizing innovation and differentiated development to avoid market elimination. This research provides valuable insights for companies formulating rational and sustainable pricing strategies in complex market environments.

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