

Price Competition Reduction Strategies in Chinese B2C E-Commerce Markets: A Case Study

by

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ABSTRACT

The internet has transformed the way people search for products and significantly reduced search costs. This paper reviews past literature in price competition theory, and examines the competitive landscape of major B2C firms in China's e-commerce industry, where online retail markets have seen exponential growth over the last two decades. It shows that firms in Chinese online retail markets are facing heightened price competition due to reduced search costs for consumers and minimal differentiation in product offerings. Evidence shows that firms around the world are practicing price fixing and price obfuscation to reduce price competition for higher profits. This paper cites several examples from Tmall and JD to argue that both the platforms and the individual retailers selling on the platforms attempt to implement innovative methods to practice price obfuscation with the goal of limiting customers' ability to compare and also of reducing price competition. Some of these anti-competitive practices are commonly seen both in China and in other parts of the world, while some are more unique to Chinese online marketplace. Finally, the paper proposes several approaches that regulators could consider to prevent increased prices and to protect consumer welfare.

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Table of Contents

1. Introduction and Literature Review.....	5
2. Heightened Competition in the Industry: A Brief History.....	7
3. Practices to Reduce Price Competition in the Industry.....	12
3.1 Price Fixing.....	12
3.2 Price Obfuscation.....	14
3.3 Price Obfuscation: Product Proliferation.....	15
3.4 Price Obfuscation: Limiting Comparability among Marketplaces.....	16
4. Thoughts on Policy Considerations.....	23
5. Conclusions	25

Chapter 1. Introduction and Literature Review

When Alibaba entered the e-commerce industry, many arguments were presented to increase the adoption of e-commerce services, but one of the strongest was that their marketplace platform would reduce friction and make the shopping experience much less time-consuming for consumers. Indeed, internet technology has transformed how people search and shop for desired goods, and Chinese consumers are quick to adopt such services. China's online retail sales of physical goods reached \$1.58 trillion in 2021, accounting for 24.5 percent of total retail sales of consumer goods¹. With the development of the digital economy, internet retail markets have demonstrated its potential to make it easier for consumers to find the exact product they want and compare prices among different retailers for virtually no cost. For instance, consumers can now search for desired goods and get price information by simply typing the item on a search engine or an e-commerce platform, rather than having to physically visit a store. However, the benefit of easy price search on the internet creates highly intense price competition among retailers and online marketplaces, strongly incentivizing firms to explore methods of escaping such competition. As a result, the benefit of reduction in search cost has been greatly reduced in recent years in China, as retailers and marketplace platforms in the e-commerce industry are making great efforts, especially with the help of promotional events, to increase search costs and reduce customers' ability to fully understand the price. For example, Alibaba's "choose one of the two" policy, charged by regulators as being anti-competitive conduct, is one of the demonstrations that firms attempt to limit comparability among marketplaces.

Much of the past literature has extensively studied the competitive characteristics in internet markets. Litan and Rivlin (2001) argue that internet technology, with buyers and sellers comprehensively informed, has the potential to enhance competition and bring markets closer to perfect competition. Bakos (1997) showed how lower search costs caused by internet technology can result in intense price competition among firms. On the other hand, some studies could not verify the hypothesis that the digital economy could lead to lower prices because of lower search costs in the internet market. Bailey (1998), in his empirical study, concluded that price levels of products in the online markets are even higher than the identical goods sold in traditional markets. Bailey also proposed high search costs as a possible explanation for his finding. Researchers have also described the behavior of increasing barriers for consumers to obtain information and limiting consumers' ability to compare prices as price obfuscation. Ellison and Ellison (2009) show that price obfuscation practices can result in higher equilibrium profits by increasing search frictions. Past literature has also studied many aspects of the success of the Chinese e-commerce industry. Wu (2020) investigated the elements that drove the success of Alibaba's Singles Day and concluded that Alibaba achieved cost leadership by creating a synergistic IT platform to connect different parties. However, few have addressed the attempts by firms in the Chinese e-commerce markets to increase search costs for consumers.

¹http://www.stats.gov.cn/tjsj/zxfb/202201/t20220117_1826591.html#:~:text=12%E6%9C%88%E4%BB%BD%EF%BC%8C%E5%9F%8E%E9%95%87%E6%B6%88%E8%B4%B9%E5%93%81%E9%9B%B6%E5%94%AE,%E4%BA%BF%E5%85%83%EF%BC%8C%E5%A2%9E%E9%95%BF18.6%25%E3%80%82

The paper begins with a brief discussion of the history of the Chinese e-commerce industry. In the following section, it provides a review of price competition theories, describes the competitive landscape of Chinese B2C e-commerce, and discusses in what ways firms are attempting to reduce price competition at the expense of consumer benefits. In some aspects, the paper also compares the characteristics and practices of the market with other major e-commerce markets like the US. Finally, we propose several approaches that can be considered by regulators to protect consumers from increased prices caused by practices described in the paper. Overall, this paper attempts to formulate arguments to answer the following questions: Is there evidence of firms pursuing anti-competitive practices in the Chinese e-commerce industry? If there is, in what forms do they most commonly arise, and what are the underlying reasons for such behavior? And, are there any innovative methods are being taken by the firms, compared to their counterparts in the US?

Chapter 2. Heightened Competition in the Industry: A Brief History

In 2021, China's online retail sales of physical goods reached 1.58 trillion U.S. dollars, and is growing at a rate of 12 percent and accounting for 24.5 percent of the total retail sales of consumers goods in China. According to eMarketer, China's e-commerce attracted more than 710 million digital buyers. Transactions reached \$2.29 trillion in 2020 and is forecast to reach \$3.56 trillion by 2024.² The following is a brief history of the Chinese online retail market, which have experienced different stages of development.

Between 2000 and 2009, China's e-commerce industry went through intense competition which resulted in industry consolidation. The burst of the internet bubble globally in 2000 lead to the collapse of many early players in the industry in China. The real industry boom did not start until Taobao was established by Alibaba in 2003. At its launch, Taobao was a Consumer-to-Consumer (C2C) marketplace platform that connects individual sellers with buyers. After beating out eBay in the C2C market, Taobao became the default platform in China for adopters of the concept of online shopping. During this stage, C2C became the dominant business model of the industry in China. The industry grew quickly as more people in China gained access to the internet. By 2005, the number of internet users in China surpassed 100 million. In 2008, e-commerce transactions exceeded \$470 billion, and the number of online shoppers exceeded 100 million in the following year.

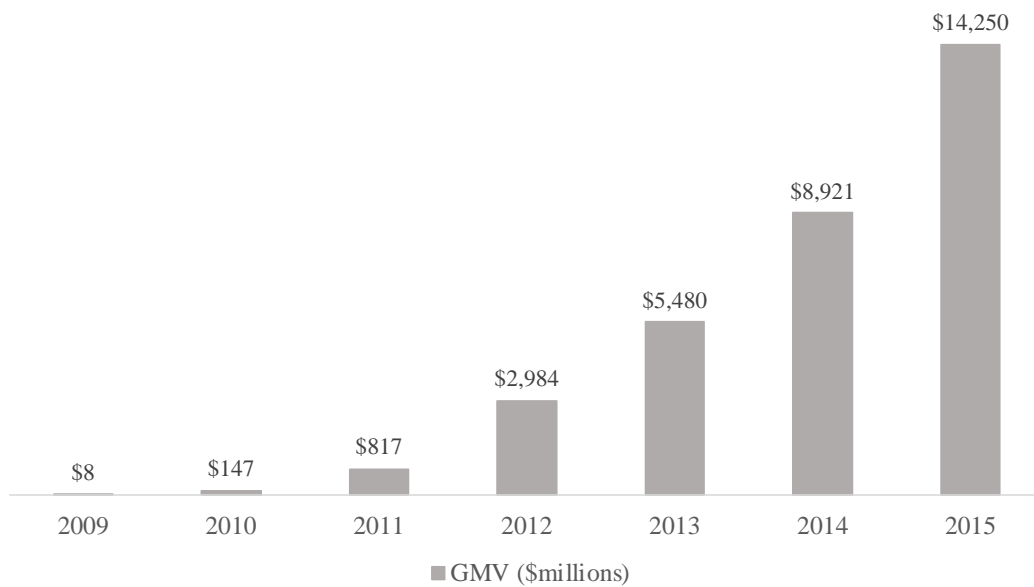
In order to gain easier access to the massive consumer base, larger consumer goods corporations who also wanted to sell online started to join Taobao. However, the quality of product and services offered on the C2C channel on Taobao was highly inconsistent among sellers. Alibaba created Tmall in 2008 to address this issue. Different from the original Taobao business, which was created to serve individual sellers, Tmall was added as a Business-to-Consumer (B2C) channel on Taobao to serve those larger consumer corporation retailers exclusively. This B2C channel demanded much higher standards from retailers in order to guarantee more consistent service quality across different firms. In 2011, in an effort to enhance its brand recognition and better differentiate its B2C retailers from those smaller C2C merchants on Taobao, Tmall was spun off from Taobao to become a standalone business. Since then, Tmall's B2C business has become the dominant driving force for the growth of Alibaba e-commerce empire.

The other major player in China's e-commerce industry, JD Mall (later known as JD), was initially created in 2003 as a B2C e-commerce company with a strong focus on consumer electronics and book retailing. The company has now become the largest competitor to Tmall. Similar to Amazon in the US, the flagship e-commerce service offered by JD was "operated and fulfilled by JD"; that is, the products and services were fulfilled by JD itself instead of third-party retailers. While JD also has individual sellers on its marketplace platform, it heavily favors its B2C business.

² <https://www.emarketer.com/content/global-historic-first-e-commerce-china-will-account-more-than-50-of-retail-sales>

Between 2010 and 2015, the industry in China saw accelerated growth fueled by expanded internet access and deeper smartphone penetration. By the end of 2014, the number of 3G mobile phone users in China grew ten-fold, from 47 million in 2010 to 485 million in 2015. In 2010, Taobao celebrated its second annual promotional event, “Singles Day Shopping Festival”, with GMV surging more than ten-fold from \$8 million in the previous year to \$147 million. The historic shopping event attracted 21 million users and 711 retailers, compared to just 27 sellers participating in its first year. The continued success of Singles Day for Tmall even attracted other players in the industry to participate and launch their own marketing campaigns on this day, making the shopping event on November 11 the Chinese equivalent of Black Friday in the US. Figure 1 shows that between 2010 and 2015, e-commerce transactions continued to grow rapidly, accounting for a significant increase in the proportion of total retail sales of social goods. By the end of 2014, China's e-commerce industry had fully surpassed the economies of the EU and Japan.

Figure 1 - Total GMV generated during the Singles Day Shopping Festival at Alibaba between 2009 and 2015, in USD millions.³



During this period, competition among ecommerce firms remained intense. The other major B2C e-commerce player, JD, launched its own annual promotional events on June 18, 2010. During the ‘618 shopping festival’ in 2013, in an email communication with *China Daily*⁴, JD indicated that it was offering the most favorable discounts in a decade on most of their products. *China Daily*, in the same news report, described the shopping carnival which was joined by all major market players such as Tmall, Suning and Tencent as a price war.

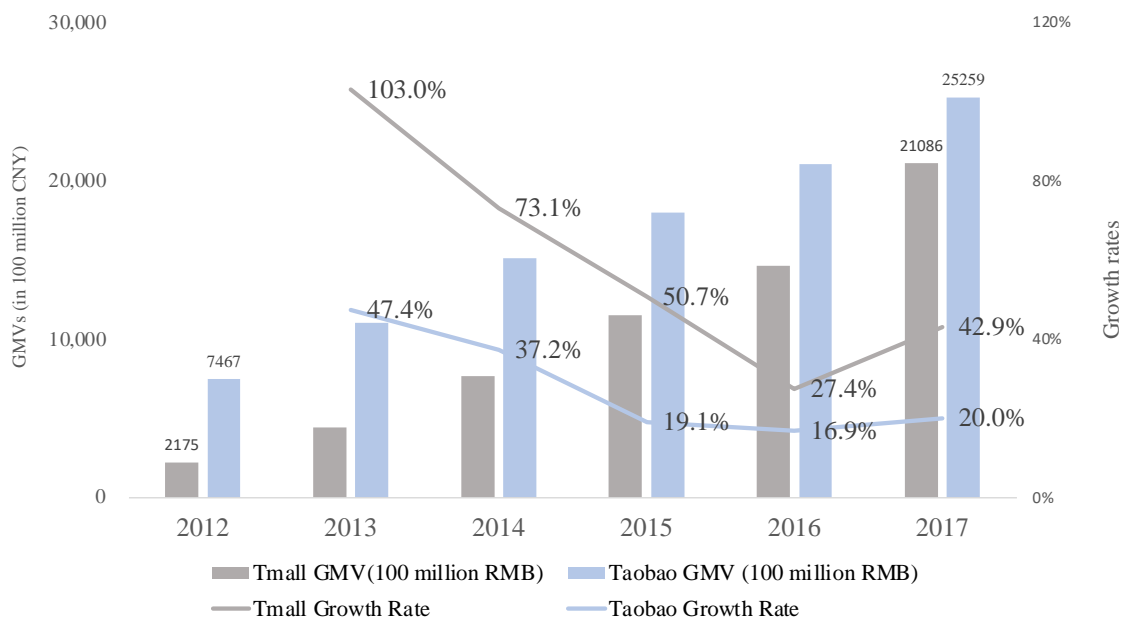
³ Data source: public data released by Alibaba

⁴ https://www.chinadaily.com.cn/china/2013-06/19/content_16635431.htm

During this stage of accelerated growth, the industry saw B2C business consistently outperform the C2C business in terms of growth rates. According to a research report from Sinolink Securities, GMV generated by Tmall grew at a compound annual rate of 57.5 percent between 2012 and 2017, significantly faster than Alibaba’s C2C arm Taobao, and its share in total Alibaba e-commerce GMV rose from 22.6 percent to 45.5 percent during the same five-year period, as shown in Figure 2.

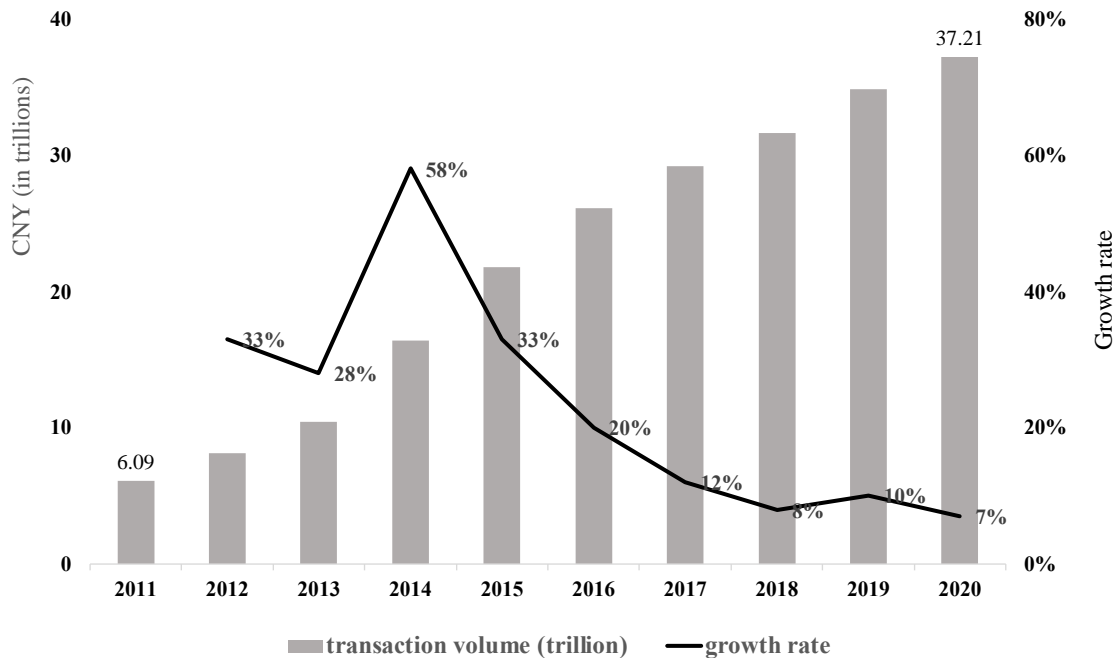
Between 2015 and 2018, the market saw moderated growth and increased competition. While many metrics of the industry such as the number of online shoppers and total e-commerce transactions continued to grow between 2015 and 2017, the e-commerce boom seemed to be losing some steam, and its growth rate slowed significantly compared with 2010-2014. As shown in Figure 3, the growth of total online transactions has slowed from 58 percent in 2014 to just 8 percent in 2018.

Figure 2 - A comparison of GMV and growth rates between Tmall (Alibaba’s B2C arm) and Taobao (Alibaba’s C2C business)⁵



⁵ Data Source: research report published by Sinolink Securities

Figure 3 - China’s total online markets transaction volume between 2011 and 2020, highlighting a tremendous market and decreasing growth rates⁶



Since 2018, the incumbents in Chinese online retail markets experienced challenges on many fronts. Just as many thought the dominating market share of Alibaba and JD was making survival impossible for any new entrant in the field, the rapid rise of Pinduoduo (PDD) disturbed this balance in 2018. By offering surprisingly low-priced products to the large base of low-income population in China, PDD was able to accumulate more than 300 million users and achieve more than 470 billion of GMV within two years of establishment. In 2019, PDD launched its own aggressive marketing campaign, “10 billion subsidies”, to directly compete with its rivals on price, kicking off another round of intense price competition in the industry.

In addition to PDD, successful entertainment content platforms were also entering the ecommerce industry to monetize their traffic pool. Livestreaming became a very popular form of entertainment and also e-commerce in China, where influencers use live video broadcasts to market all kinds of consumer goods to their audiences. Different from traditional ecommerce platforms like Alibaba and JD, entertainment content platforms such as Douyin benefit from their massive numbers of daily active users and high level of engagement, and they do not need to obtain increased traffic through external advertising. Therefore, the greatest advantage for livestreaming e-commerce is its ability to sell to the massive population in all parts of China, especially in rural areas, even at times when people don’t intent to shop. Entertainment platforms considerably changed user behavior and user experience in the online shopping process. Traditional e-commerce platforms also followed suit. Incumbents such as Tmall also wanted their sellers to live stream in

⁶ Data Source: National Bureau of Statistics

order to attract more users. In addition to livestreaming, entertainment platforms pioneered video-driven e-commerce, using short videos to market their products and achieve higher conversion rates. Overall, the incumbents in the Chinese e-commerce industry such as Alibaba and JD, continue to be challenged by newer entrants on many fronts.

Chapter 3. Practices to Reduce Price Competition in the Industry

An important price competition model described by economists is the Bertrand model of competition. The Bertrand model of competition involves simultaneous price-setting choices among competitors. Competitors set their price based on estimating what their competitors will charge during a certain period. Under the framework of Bertrand model of competition, firms sell homogeneous products and compete on price. Firms would not be willing to charge a higher price because by doing so competitors could undercut their prices, and they would not be able to sell any product. As a result, firms find an equilibrium price at the marginal cost and split the market equally only if they offer the exact same price.

Researchers studied extensively the competitive characteristics of internet retail markets. The general view is that the development of e-commerce and online markets enabled ease of access of information for customers, resulting in greater competition among firms. Some studies went a step further and approximated the online markets competition closer to the Bertrand model of competition. Litan and Rivlin (2001) argued that with a large number of buyers and sellers bidding in a market with perfect information, the internet revolution has the potential to make the whole economic system more competitive by bringing markets closer to the economists' text book model of perfect competition. Bakos (1997) argued that the electronic marketplace reduces buyer search costs and the ability of sellers to extract monopolistic profits are reduced. He also concluded that if search costs are low enough, seller profits could be close to zero.

While the general view that internet and e-commerce have the potential to facilitate price competition among sellers have been accepted by many, evidence show that firms in the global e-commerce sector are also taking advantage of internet technology to reduce the intensity of competition. In June 2018, the Organization for Economic Co-operation and Development (OECD) held discussions to address recurrent competition problems in e-commerce markets. The US Federal Trade Commission (FTC) and antitrust division of the US Department of Justice (DOJ) reported to the OECD competition committee that e-commerce can both increase or decrease competition in retail markets.⁷ Economists had concluded that in order to avoid intense price competition, firms can either reduce capacity, become the cost leader, make an agreement on price with their competitor, differentiate products, or make it difficult for customers to learn prices. This paper argues that many firms in the industry are exploring methods to reduce price competition, mainly by price fixing and price obfuscation. While cases of price fixing seem to be more commonly found in the US, firms in Chinese e-commerce markets find more ways to price obfuscate.

3.1 Price Fixing

The OECD competition report submitted by the US showed that practices of price-fixing, while violating US antitrust laws, are not uncommon in the US e-commerce sector in

⁷ [https://one.oecd.org/document/DAF/COMP/WD\(2018\)48/en/pdf](https://one.oecd.org/document/DAF/COMP/WD(2018)48/en/pdf)

order to reduce intensity of price competition. In 2013, a federal district court found that the publishers joined with each other in a price-fixing conspiracy, and that Apple had violated section 1 of the Sherman Act by conspiring to eliminate retail price and raise the prices of e-books. In 2009, Amazon dominated the e-books industry in the US, with a market share of nearly 90 percent. Publishers were upset that Amazon.com set low prices on their new releases and bestselling e-books, and, in response, signed exclusive agreements with Apple for higher prices. The Justice Department said the agreement between publishers and Apple increased the price of e-books to \$12.99 or \$14.99 from the \$9.99 price previously charged. Ultimately, the court determined that Apple's illegal conduct deprived consumers of the benefits of competition on e-books and forced them to pay higher prices.

In another e-commerce case made by public by US Department of Justice⁸, two e-commerce companies Zaappaaz Inc., and Custom Wristbands Inc., and their top executives were charged with price-fixing conduct. Both companies pleaded guilty to the charges and agreed to pay criminal fines in the millions of dollars. Specifically, the two companies communicated via different channels to discuss and maintain agreements that fixed prices of products sold online to customers in the US between June 2014 and June 2016, with the goal of eliminating price competition.

Some of the many price-fixing cases brought by DOJ also evidenced how the internet-selling environment can facilitate price fixing. Two executives and an ecommerce retailer were charged by the DOJ in 2015 with conspiring to fix prices.⁹ According to the report and a public release from the DOJ, the conspirators adopted pricing algorithms to coordinate prices changes of their posters sold through Amazon Marketplace. Price is one of the most important factors in determining the rank order in which products are displayed in response to a customer query on Amazon Marketplace. Therefore, the retailer offering the lower price for the product typically appeared higher in rank in search results on Amazon. By cooperating to offer the lowest price, the conspirators can eliminate competition among themselves and get the best spot in search results, which can further lead to higher sales. In traditional retail markets, it would be more difficult for conspirators to sustain price-fixing agreements because enforcement of agreements is harder to be monitored and either party has the incentive to deviate for higher profit. However, in the online-selling environment, since the pricing software used in this case is largely self-executing, enforcement of price-fixing agreements can be more easily monitored and maintained.

The topic of price fixing practices has also been studied in China. Zhang and Round (2011) concluded that price collusion had occurred periodically in airline markets in China, especially at times of high demand. However, while a large number of price fixing cases are being reported in the US e-commerce market, similar judicial investigations in China are largely absent. In fact, Chinese regulators did not scrutinize the industry too

⁸ <https://www.justice.gov/opa/pr/e-commerce-company-and-top-executive-agree-plead-guilty-price-fixing-conspiracy-customized>

⁹ <https://www.justice.gov/opa/pr/former-e-commerce-executive-charged-price-fixing-antitrust-divisions-first-online-marketplace>

heavily until 2021. On December 25, 2020, State Administration for Market Regulation (SAMR), the antitrust regulator in China, published a report that listed top ten typical cases of antitrust enforcement in 2019¹⁰. Four of those ten cases involved the automobile industry, and the remainder spanned industries in construction materials, public utilities, chemicals, telecom, and biopharmaceuticals. Interestingly, none of those cases were from the e-commerce industry. It is also worth noting that only one of the ten cases involved a horizontal pricing agreement, and most of them were cases of market concentration and abuse of market power. This official report could be just enough to demonstrate which industries the regulatory body considers most susceptible to antitrust behavior, and what monopolistic practices are most carefully monitored by officials in China, at least prior to 2021. The first ever major case in the e-commerce industry was actually the case of Alibaba in late 2020, for which we will discuss later in this paper.

3.2 Price obfuscation

In order to move away from intense price competition (i.e. Bertrand competition), firms can also find ways to limit comparability of their products for customers. Customers have to bear search costs when obtaining information of prices and features about products. Economists believe that internet and online retail markets can lower search costs. Bakos (2001) argues that digital markets will make it easier for buyers to find low-cost sellers. On the other hand, researchers also found evidence in the online retail environment where retailers find ways to sustain search costs for customers. The behavior of seller trying to increase buyer's costs to search prices is described by economists as price obfuscation. Ellison and Ellison (2009) described obfuscation as actions that raise search costs, and studied empirical evidence of how firms like PriceWatch intentionally make the shopping process complicated and confusing in order to maximize profits. The underlying reasons for firms to implement price obfuscation have also been studied by researchers. Diamond (1971) studied the relationship between search costs and price levels, and concluded that even a small difference in search cost could significantly increase prices, undermine competition, and generate monopolistic outcomes.

Price obfuscation has always existed for offline retailers, especially for those items typically sold through a dealership system. For example, auto dealers could intentionally make it difficult to find out the real prices of listed cars, thus harder for customers to compare prices. In 1984, Detroit Automobile Dealers Association (DADA) agreed to keep their automobile showrooms closed all day Saturday and on three weekday evenings.¹¹ The Federal Trade Commission (FTC) alleged that the dealers violated federal antitrust laws by conspiring to limit competition. The FTC concluded later in 1995 that, by limiting store hours, the agreement reached by the dealers restricted customers' ability to compare prices.

The reduced friction for consumers to obtain information in the digital economy gives firms an incentive to obfuscate. The price information of almost all products in the online

¹⁰ https://www.samr.gov.cn/xw/zj/202012/t20201224_324675.html

¹¹ <https://www.ftc.gov/news-events/news/press-releases/1997/03/remaining-dealers-detroit-auto-dealers-case-agree-settle>

retail marketplace is directly displayed in the search result, making it necessary for firms to explore innovative ways if they wish to practice price obfuscation. This paper finds that many firms in the Chinese e-commerce market attempt to achieve price obfuscation by proliferating product varieties and adding complexity to promotional events.

3.3 Price Obfuscation: Product Proliferation

Product differentiation is a common practice for firms to provide differentiated products to customers with heterogeneous preferences and different levels of willingness to pay. Online retail markets, along with advances in internet technology, helped to eliminate the costs of traditional shelf space and significantly reduced the cost of holding inventory. As a result, retailers can significantly increase the variety of products and even offer customized products to customers. For instance, online-retailers selling laptops, such as Alienware, can now offer dozens of combinations of customized configurations, allowing retailers to satisfy the customer wishes in many dimensions of the product. We recall from our discussion of the Betrend model of competition, differentiating product offerings from competitors' offerings is one of the many options for firms to avoid a price war. Bakos (1997) argued that an increase in product differentiation may offset the increased competition caused by lower search costs and help increase profits for the sellers.

While retailers can find ways to differentiate their products from their competitors, product differentiation is not always feasible, as many products can hardly be differentiated in too many ways. At a time when e-commerce was not a common practice and people shopped only in brick-and-mortar stores, consumer household products like facial tissues or baby wipes often existed in only one form, without too many varieties. However, this changed with the adoption of online shopping. This paper finds that some retailers in Chinese e-commerce markets have abused the product differentiation strategy as another form of price obfuscation. Such behavior of product proliferation can increase search costs for customers and undermine their efforts to compare prices. Specifically, some retailers list a variety of products that share extremely similar packaging, and are differentiated only in terms of attributes that most customers don't care about. In addition, information on how each variety is differentiated from another is often inconspicuous on the product detail page, making it difficult for customers to fully understand the differences among varieties.

The retailer CottonAge sells cotton-made consumer products on Tmall. Figure 4 shows the respective product detail pages of three varieties of facial tissue offered by CottonAge on Tmall. Customers would find it difficult to identify any differences between the three varieties of facial tissues based on the three product detail pages. While being listed for very similar names yet different prices, all three varieties are advertised as made with pure cotton, having great softness, and being best for the skin. Indeed, after paying efforts to communicate with the customer service from the retailer on Tmall, it is confirmed that all three varieties are made with identical materials and have identical quality, yet different prices. When asked how a customer should choose among the three varieties,

the customer service representative indicated that they are only slightly differentiated in patterns and packaging.

Figure 4 - Three very similar varieties of facial tissue offered by CottonAge on Tmall



More evidence can be found on other household retailers as well. The popular retailer of baby wipe Soondoongi listed six varieties of their product packaged in six different colors without obvious product differentiation, making price comparison a more costly process for consumers. Such practices can be found in the US online retail markets as well. Ellison and Ellison (2018) noted that search results on Amazon for “ibuprofen” makes sorting on price meaningless, as all products have identical chemical ingredients but differ in too many unnecessary dimensions.

Researchers have studied the impact of product proliferation practices on consumers. Kalayci and Potters (2011) conducted an experiment to provide further evidence that product proliferation can increase prices at the expense of consumers. They carried out a lab experiment in which sellers decided on the number of attributes of their products and then set prices. The number of attributes does not add value but only adds complexity for buyers to understand the products. They concluded that buyers make more suboptimal choices and that prices are higher when the number of attributes of the goods is higher.

3.4 Practices of Price Obfuscation: Limiting Comparability among platforms

As discussed earlier in this paper, activities in the Chinese online retail markets have not become the focus of scrutiny for the regulators until 2021. Before 2021, there has been

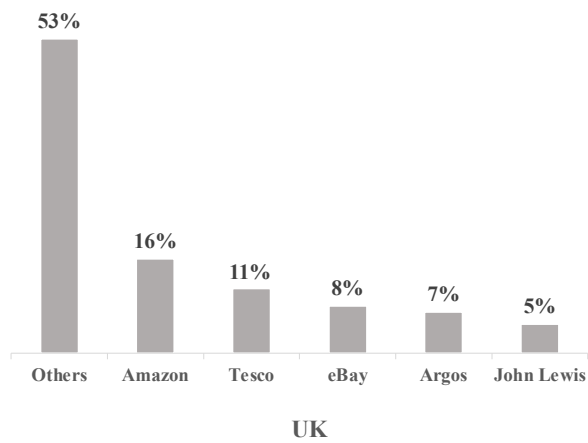
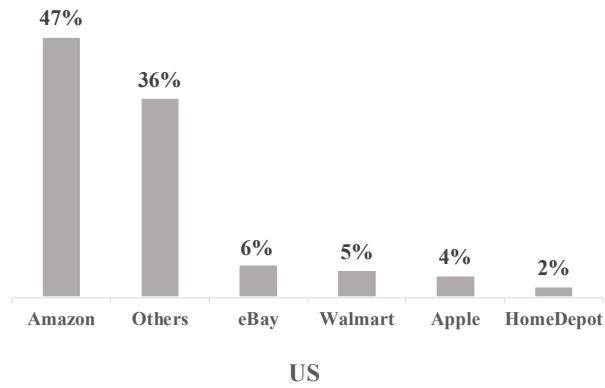
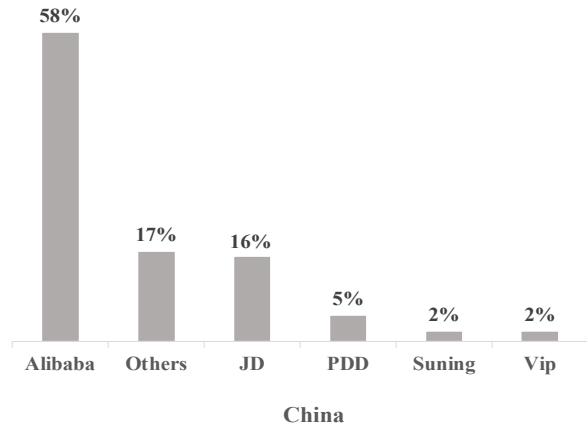
very few formal antitrust investigations conducted in the industry. The cases arising from 2021 showed differences in market characteristics between US and Chinese e-commerce markets. Different from the US where we saw many antitrust cases involving individual retailers, Chinese regulators mainly targeted the market power processed by those giant marketplace platforms, such as Alibaba, in almost all cases it investigated in 2021. The differences in the Chinese and US e-commerce market structures could partially explain that phenomenon. According to data presented by Kearny¹² as shown in Figure 5, as of 2018, the top two e-commerce firms in China account for 74 percent of the total market share, while figures for the US and UK are only 53 and 27 percent, respectively. The e-commerce landscape in Europe and the US is relatively fragmented, with a significant force being the official websites operated by brands and traditional retailers themselves. In the contrast, the Chinese e-commerce market is highly concentrated among the top two marketplace platforms; namely, Alibaba and JD. The product offerings on the two platforms span almost all segments of consumer goods, and both firms aim to maximize the number of retailers selling on their platforms. On the other hand, retailer-owned e-commerce was never a major force in the Chinese market. At present, very few retailers in China would choose to sell on their own websites in preference to joining any of the major e-commerce platforms.

In December 2020, the State Administration for Market Regulation (SAMR) launched an investigation into the e-commerce arm of Alibaba. In April 2021, the investigators concluded that the company abused its market power by implementing the so-called “choose one of the two” policy, which forced retailers to sell exclusively on its marketplace. Sandra (2022) pointed out that the policy was achieved with a carrot-and-stick scheme, where Alibaba rewarded retailers for selling exclusively on its platform and punished those sell on its rival marketplaces, such as JD. The punishments on retailers for selling on rival platforms could include being disqualified from participation in promotional events and discrimination in search results, both of which could significantly hurt seller’s revenue and profits. The SAMR concluded that Alibaba abused its dominant market position to restrict competition in the online retail markets, and that its “choose one of the two” policy was damaging to Alibaba’s competitors, sellers and consumers.

The above case demonstrates the strong desire of Chinese retail platforms to enhance their differentiation from their rivals. We recall our discussion in the first section. Since 2015, the Chinese e-commerce industry saw reduced growth rates, and the competition between Alibaba and JD intensified as the B2C business became the focus for both of the two retail platforms. At the same time, since Alibaba and JD share an extremely similar, if not identical, pool of sellers, the two firms could offer little differentiation among their product offerings. As a result, the competitive landscape of the Chinese online markets perhaps satisfies a key Bertrand model assumption: two firms selling homogenous products. Therefore, this paper argues that, in China, intense competition and minimal product differentiation among e-commerce marketplace platforms are driving firms, both the platforms and the individual retailers, to explore innovative methods to practice price obfuscation with the goal of reducing price competition and achieving higher profits.

¹² <https://www. Kearny.cn/article/?/a/-20->

Figure 5 - The different market share structures of e-commerce industry in China, US, and UK as of 2018 ¹³



¹³ <https://www.kenney.cn/article/?a/-20->

Online retail platforms in China have explored innovative methods to raise the costs of comparing prices at their rival sites, and the high-profile promotional events have been demonstrated as a tool for platforms to achieve that goal. In the recent years, several major changes were made for the annual singles day shopping events, which were first created in 2009 by Tmall. The changes all added complexity to the event. For example, the total time duration of the event was extended substantially from one day to as many as three weeks. The event now starts as early as October 21 instead of the traditional November 11. While the whole event lasts for three weeks, customers can get discounted prices only on certain dates. The earlier start date for the event allowed the platform to create a preparation period spanning several days, during which customers have to engage with the app more actively in order to collect a variety of discount coupons to be used during the actual order placement period. Another major change is that the structure of price discounts is designed to be more complicated. During the event, the discounted price is typically shown on the front page of the product. However, that price comes with a caveat. Tmall, the marketplace platform, created a stacked promotions scheme which allowed multiple discount coupons to be applied to the same product. In many cases, in order to get the lowest price, customers would need to collect a variety of coupons at different places. There are multiple types of promotions exist during the event. First, on products sold by retailers registered with the event, the platform offers universal discounts such as “40 off every 300”. Second, customers can earn extra credits by playing casual games on the Tmall app. Third, individual retailers on Tmall set up a variety of discount coupons that can be redeemed only in accordance with varying conditions. At the same time, terms of the vouchers are almost always vague, and it is difficult for customers to figure out which product can be checked out with which set of coupons in order to get the advertised price. It is not rare for customers to find that the actual paid price does not match the advertised price, because some coupons do not apply unless they buy in larger quantities, or they are just not qualified to redeem some of the coupons. This phenomenon is rather unique to China. Promotional activity in the US almost always exist in the form of direct discount or percentage discounts, so that customers can usually get discounted prices without paying too much effort during these promotions. For instance, customers can get discounted prices online at BestBuy during Black Friday just by clicking “add to cart”. Similarly, on Amazon’s prime day, discounts apply directly to the product, and the deals do not require customers to spend an inordinate amount of time collecting any form of coupons in order to enjoy these promotions event.

In addition to the online retail platforms, there is evidence that retailers themselves also attempt to limit comparison among different marketplaces. One such demonstration is to make price search a tedious process for customers. Piccone and Spiegle (2012) proposed that firms can earn higher profits when customers’ ability to make price comparisons are limited in an environment that is otherwise close to Bertrand’s model. In their model, firms can choose a ‘format’ in which to present their price, and occasionally consumers are unable to compare prices across different formats. As a result, they would just simply choose to purchase from their default firm instead of continue searching. In Chinese e-markets, some retailers attempt to add complexity to the format in presenting their prices. Specifically, some retailers, especially those that sell consumer household goods, intentionally package their identical products in slightly different quantities across

different marketplace platforms, so that calculating unit prices at different stores become a costly process for customers. The first image of Figure 6 is the product detail page customers found if they searched for Kleenex wet wipes on Tmall on March 16, 2022. The second image of Figure 6 is the product detail page they found if they searched for the exact same product on JD on the same date. Table 1 aggregates the unit price information for product offerings shown in Figure 6. While consumer product brands commonly offer variants of identical product to different retailers, it is still surprising to find that there are 13 different package sizes being listed on Tmall and JD for the exact same product. Among the 13 product offerings, only four were listed on both of the two sites; the other nine are listed exclusively on either one of the marketplace platforms. For instance, the configuration of 40 units per pack in a bundle of five packs is exclusive to the Tmall store, while the configuration of 40 units per pack in a bundle of five packs is an exclusive listing for JD. Apparently, it is a costly process for consumers to search many sellers and to calculate the unit prices in this case. The incremental increase in cost of obtaining information could deter consumers from continuing to search because the potential benefits for doing so can be outweighed by increased search costs. This can be further evidenced by high variation in unit prices for the identical products listed on both marketplace platforms. In a frictionless market, we should expect that a price that is too high or too low should not exist, because a retailer would not generate any sales if they continue to sell at the high price. Table 1 shows this was definitely not the case for the above Kleenex items. We can find that the unit prices listed on Tmall at that moment were double the unit prices listed on JD in most cases, even for products that are in the same sizes. This could demonstrate that the firms have achieved higher prices by successfully increasing friction in the market and limiting consumers' ability to search for lower-priced sellers and products.

The retailer's incentive to limit comparison among platforms is less obvious than that for the marketplace platforms themselves. One potential explanation is that while both stores on Tmall and JD are official flagship stores owned by the retailer, they are usually managed by different teams and have to compete with each other. Thus, by making it more difficult for consumers to compare prices, the retailer would be able to implement different promotion strategies on the two platforms of their own choice, without having to worry that customers would pivot to the other platform that is offering the lower price at the moment.¹⁴

¹⁴ In the recent years, online marketplaces in China in the recent years tend to launch marketing campaigns very frequently. Therefore, by making it harder for customers to compare prices, retailers are able to implement different marketing strategies at different marketplaces.

Figure 6 - The different package sizes of wet wipes offered by Kleenex on Tmall (left) and JD (right)



Table 1 - An aggregation of product offerings for Kleenex wet wipes on Tmall and JD

Variety	# Units per Pack	# Packs	Price (CNY ¹⁵)		Unit Price (CNY)	
			Tmall	JD	Tmall	JD
1	7	6	–	8.52	–	0.20
2	10	10	–	18.80	–	0.19
3	40	1	21.9	9.50	0.55	0.24
4	40	5	–	24.16	–	0.12
5	40	6	59.9	–	0.25	–
6	40	9	74.9	–	0.21	–
7	40	10	139.0	55.45	0.35	0.14
8	40	20	154.9	–	0.19	–
9	40	40	–	234.00	–	0.15
10	80	1	–	23.20	–	0.29
11	80	2	34.9	–	0.22	–
12	80	3	49.9	27.66	0.21	0.12
13	80	6	84.9	58.00	0.18	0.12

¹⁵ 1 CNY is equivalent to 0.15 USD as of May 5, 2022

Chapter 4. Thoughts on Policy Considerations

Practices of price obfuscation benefit sellers at the expense of the consumers. As discussed in the previous sections, researchers have extensively studied the relationship between search costs and price levels. Diamond (1971) concluded that even a small difference in search cost could significantly increase prices, undermine competition and generate monopolistic outcomes. Ellison and Wolitzky (2012) provide another model in which firms rationally engage in obfuscation. In their model, search costs are unobservable and they affect consumers by reducing the likelihood of future search. They concluded that obfuscation hurts consumers in two ways: consumers incur higher search costs and also pay higher prices. Kalayci and Potters (2011) also argued that price obfuscation practices such as product proliferation can make customers make inferior choices and increase prices.

Since late 2020, antitrust regulatory bodies in China have started to pay attention to practices in the e-commerce market. The investigation into Alibaba's policy of "choose one of the two" demonstrates authorities' interests in punishing anticompetitive behavior and protecting consumer benefits. While Chinese authorities have considered 'choose one of the two' scheme as abuse of market power processed by the major marketplace platforms, many other practices can source market power as well, and there is more that can be done to regulate price competition. For instance, Scitovsky's (1950) argues that buyer confusion can also be a source of market power. While there is no easy solution to the issues, this paper attempts to provide several approaches that can be considered by regulators to protect consumers from increased prices caused by price obfuscation practices.

We recall our discussions in previous sections. Both platforms and retailers have shown behavior of price obfuscation. The platforms attempt to limit customers' ability to compare prices among platforms mainly by adding complexity to promotional events. On the other hand, individual retailers aim to limit comparability by proliferating product varieties and by selling identical products at different sizes. The above findings can help guide our potential approaches to regulation.

- Regulate marketing campaigns: First, regulators should create universal rules to regulate how retailers post discounted prices in online marketplaces. For instance, authorities can mandate that the publicly marketed price shown at the prime position on the product page must be achievable for all customers, and that special prices applicable to only a segment of customers should not be listed at the prime position. At present, the discounted price information during marketing campaigns is almost always listed at the prime spot of the product information page. However, since those discounted prices shown apply only when certain conditions are met, they are not always achievable for all customers. Second, it is certainly necessary to prevent and punish the fraudulent practices of "raise price then discount", especially during promotional events. Regulators can require all retailers to post average 365-day prices at a prime location of search results for all products, so that price transparency can be ensured. It is worth noting that the platforms themselves, not the regulators,

should bear the responsibility to monitor and punish such fraudulent practices as they are the ones who have direct access to real-time price information.

- Create universal standards to disclose prices: Regulators can standardize the format in which retailers present their prices and products. In traditional markets, we have seen the implementation of standardized display of information in China in order to facilitate comparisons. For example, all home appliances are required to display the ‘China Energy Label’ sticker to indicate the energy efficiency level and other performance indicators, allowing consumers to make easier comparisons among products and therefore make better informed purchasing decisions. Regulators can create a similar standardized display in online markets to achieve standard reporting of prices and product features. For instance, the display should include both total price and unit price, and also information on how this product is differentiated with other similar products.
- Mobile price search engine: Regulators can create policy so that mobile price search engines remain as neutral third-party intermediaries, and do not favor any one platform over another. Ellison and Ellison (2009) conducted empirical analysis and confirmed that price search technologies can dramatically reduce search frictions. The Chinese ecommerce market has very deep mobile penetration. According to an article from ‘East Asia Forum’, over 90 percent of e-commerce sales in China are generated through mobile devices, while the figure for the US is just 43 percent. While customers in the US can easily search and compare prices using services like Google on a laptop, making price comparisons on mobile devices is much more time-consuming for Chinese consumers. At present, some mobile apps, such as the shopping guide app smdzm.com, let customers to search prices among different marketplaces. Such shopping guide services play an important role in obtaining transparent prices and reducing search costs for customers. Thus, in order to enhance the consumer’s ability to compare prices, it is important to regulate the mobile price-search engines in China. Due to its core business being search engine and its strong financial independence, Google has little incentive to favor any retailers in its search results. The same cannot hold true for price search apps in China, since they have limited financial resources and likely need outside revenue sources. Therefore, it is crucial to ensure that such services do not favor any party; otherwise, they would just become a tool for marketplace platforms to attract traffic, providing few benefits for the consumers.

Chapter 5. Conclusions

This paper makes several arguments. First, intense competition and minimal product differentiation among Chinese e-commerce platforms are driving firms, both the marketplace platforms and the individual retailers, to explore innovative methods to practice price obfuscation with the goal of limiting customers' ability to compare prices. This significantly restricted price competition in the industry. Second, firms can avoid price competition mainly by price fixing and price obfuscation. While a large number of price fixing cases have been reported in the US online retail markets, few could be found in the Chinese markets. Instead, Chinese firms seem to find more ways to price obfuscate. Third, price obfuscation practices can arise in many forms. Some are commonly seen in both US and Chinese markets, such as product proliferation. The others are more common in China. For instance, promotional events are becoming the most powerful tool for firms to make it more difficult for consumers to learn the actual price and sometimes the actual product differentiation. Lastly, the paper proposes that regulators can protect consumers from rising search costs mainly in three aspects: (i) creating universal rules for promotional events to increase price transparency; (ii) standardizing the format in which retailers present their prices and products; (iii) implementing policy to prevent mobile price search engines from favoring any one e-commerce platform over another. While there is no easy solution in addressing this problem, I believe that the above proposal could help to protect consumers from higher search costs and increased prices, and maintain a more competitive environment for the e-commerce industry.

Finally, since price obfuscation practices can not only increase prices for consumers but also hurt the shopping experience, this paper concludes the following actionable items (Table 2) for consumers, marketplace platforms, and regulators, so that consumer benefits can be better protected from price obfuscation.

Table 2 – Action items for consumers, marketplace platforms and regulators

	Actionable Items
Consumers	<p>not to shop with your default retailer at all times simply because of higher search costs; try to compare prices among trustworthy retailers and across marketplace platforms whenever possible</p> <p>communicate with customer service representatives actively to fully understand differentiation among varieties of products</p>
Marketplace Platforms	<p>monitor actively and punish heavily on retailers’ practice of “raise price then discount”</p>
Regulators	<p>create compulsory and universal standards to display prices and products in online marketplaces</p> <p>require all platforms to display 1-year average of actual prices at prime location of search results for all products.</p> <p>create policy so that mobile price search engines can maintain as neutral third-party intermediaries, and do not favor any platform more than the others</p>

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