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Competing with Exclusion: An Empirical Analysis of Alibaba's Three-Year Rectification
Outcomes

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ABSTRACT

This thesis examines the effectiveness of Alibaba's rectification from 2021 to 2024. As China's largest e-commerce platform, Alibaba was fined 2.53 billion USD by the State Administration for Market Regulation in 2021, marking the largest fine in China's regulatory history. The penalty targeted Alibaba's practice of restricting merchants using its platform to selling exclusively on Alibaba's own e-commerce platforms—a practice known as “exclusive dealing” or the “pick one of two” requirement (as opposed to competing e-commerce platforms).

Exclusive trading restricts merchants from selling on different platforms, enabling market-dominant firms to weaken competition and stifle innovation. This paper employs a difference-in-differences framework to compare Alibaba's gross profit margin with JD.com(the second largest e-commerce platform in China) and with Pinduoduo(the third largest e-commerce platform in China) between 2016 and 2024, while also analyzing cross-platform registration patterns at the merchant level during the rectification period.

These findings suggest that, at the platform level, the rectification has harmed Alibaba's revenue, though the significance of this effect requires further study. At the merchant level, the regulatory measures successfully encouraged merchants to register across multiple platforms. Overall, the findings support the view that the rectification restored fair competition among platforms. This study contributes to understanding how prohibitions on exclusive transactions affect platform behavior, merchant behavior, and market outcomes, and provides empirical insights into the regulatory effectiveness of China's 2021 “Guidelines on Antitrust in the Platform Economy” within the platform economy.

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Chapter 1

Introduction

“Pick one from two” refers to a situation where an e-commerce platform requires merchants to operate exclusively on its platform, thereby restricting competition among platforms and stifling innovation. As the market leader in China’s e-commerce platform sector, Alibaba has long competed with its primary rival, JD.com, through a “pick one from two” strategy. JD.com, as the victim, has long been in the role of the aggrieved party, even though it has itself been informally accused of engaging in “pick one from two” practices. Between 2017 and 2020, Alibaba employed this strategy against JD.com on multiple occasions.

On April 10, 2021, the State Administration for Market Regulation fined Alibaba USD 2.62 billion—the largest antitrust penalty in China’s history. Alibaba simultaneously announced a three-year rectification period to cease such “pick one from two” conduct. Right after Alibaba’s fine, the State Council Anti-Monopoly Commission’s 2021 Guidelines on Anti-Monopoly in the Platform Economy Sector explicitly identified “pick one of two” as prohibited. However, the effectiveness of this new policy remained untested. On August 30, 2024, the State Administration for Market Regulation announced the completion of Alibaba’s rectification. The rectification period is defined here as August 30, 2021, to August 30, 2024.

This thesis analyzes the effectiveness of the State Administration for Market Regulation’s prohibition of Alibaba’s “pick one from two” practices. First, I employ a difference-in-differences (DID) model to compare Alibaba’s gross profit margin with JD.COM and with Pinduoduo(PDD). Second, using a sample of selected merchants, I track cross-platform registration during the

rectification period. I then use a regression model to estimate the revenue performance of cross-platform merchants. If the regulatory measures were effective, the results would show a decline in Alibaba's gross profit margin after 2021. Merchants who previously sold products on Alibaba's e-commerce platforms began registering as sellers on other platforms (such as JD.com and Pinduoduo). The empirical findings in this thesis confirm that these regulatory measures were effective.

The rest of the paper is organized as follows. Section 2 will introduce theoretical and empirical research on price search in e-commerce platforms, with the aim of providing insight into how these platforms operate. It will then delve into studies on platform exclusivity, antitrust enforcement and market regulation, merchant multi-homing, and competition outcomes. This study will fill a gap in empirical research regarding the effectiveness of regulatory policies in China's platform economy. Section 3 will describe the data. Section 4 presents the empirical strategy. Section 5 states the expected result. Section 6 concludes.

Chapter 2

Literature Review

2.1 Platform Searching

Understanding how platforms price their search results can help understand their business models. Generally, e-commerce platforms generate revenue from transaction fees, advertising and marketing fees (such as search rankings and featured placements), merchant service fees (onboarding fees and annual fees), and fees for value-added services (data analysis and store design).

Ellison's article provides an excellent explanation of how e-commerce platforms obscure prices to their own advantage. Historically, both platforms and merchants have benefited from the obfuscation of price searches. One common strategy is the loss-leader strategy, in which merchants advertise a low-quality product at a very low price to attract consumers and subsequently attempt to upsell them to higher-quality and more expensive products (Ellison & Ellison, 2009).

Empirical evidence suggests that this strategy effectively increases sales of higher-quality products. By estimating consumer demand elasticity, Ellison and Ellison (2009) show that moving from first to seventh place on the Pricewatch list for low-quality memory reduces sales of high-quality memory by 51%. This indicates that prominent placement of low-priced items can significantly influence consumer search behavior and redirect demand toward more profitable products. As a result, both merchants and platforms benefit through higher product markups and increased trading commissions.

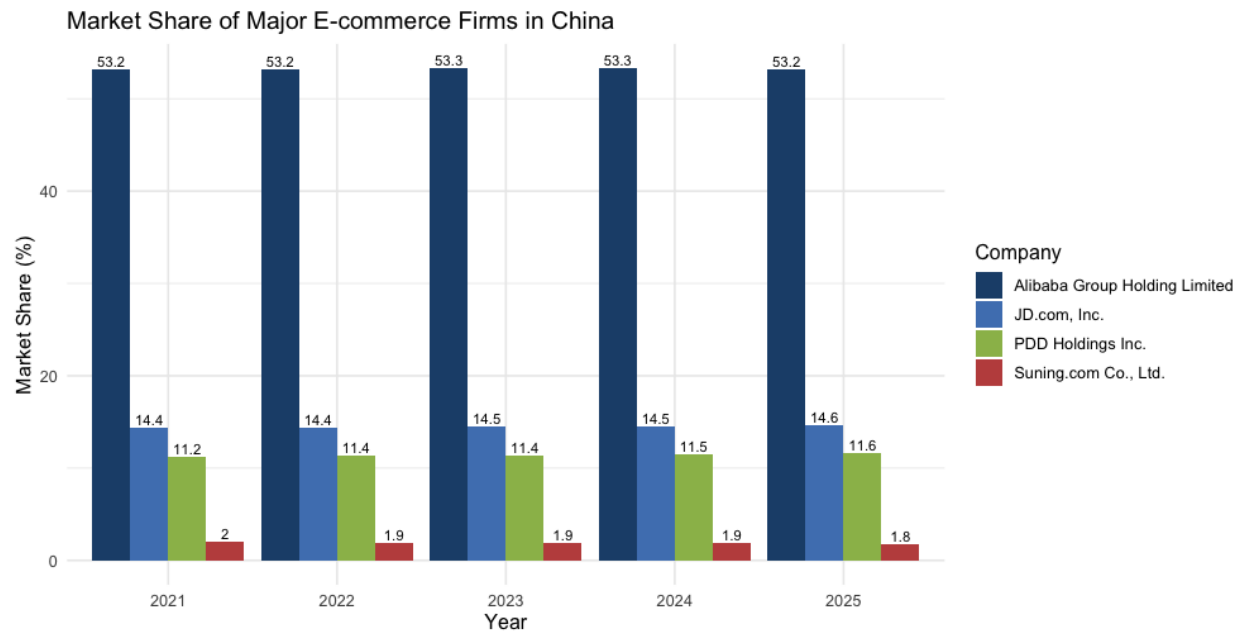
Cost data further demonstrate that such obfuscation strategies allow retailers to sustain markups beyond levels that would otherwise prevail in a fully transparent market. In addition to reducing demand elasticity for higher-quality products and increasing revenues, these dynamics also highlight the importance of product positioning within platform search results, which directly affects the profitability of both merchants and platforms.

In Alibaba's case, China's e-commerce retail has been the dominant source of Alibaba Group's revenue for over 2023-2025, accounting for over 40% of its total revenue (Yihan Ma, 2025). Its main carriers, Taobao and Tianmao, are e-commerce platforms, with primary sources of revenue: advertising, marketing, and transaction commissions. Both Taobao and Tmall offer price sorting options, such as "High to Low" and "Low to High." Prices listed here generally do not include shipping costs, and shipping methods and the logistics providers partnered with each store vary. For example, some stores partner with SF Express, while others partner with YTO Express, and so on. These are relevant pieces of evidence regarding obfuscation. However, there is currently little empirical research demonstrating a correlation between the obfuscated price search features on Chinese e-commerce platforms and the profitability of merchants and platforms, or data on consumer price elasticity.

2.2 Platform Exclusivity

Alibaba's platform exclusivity is based on its dominant market position. Figure 1 shows that Alibaba's revenue share has consistently accounted for more than half of total revenue among Chinese e-commerce platforms. Under China's Anti-Monopoly Law, Alibaba's e-commerce platforms can therefore be considered to hold a dominant market position.

Figure 1. Market share of leading e-commerce platforms in China based on 2021–2025



Notes: Percentages refer to the share of revenue. The author's own visualization.

Source: IBISWorld (2026), Industry Report 6220: Online Shopping in China. Retrieved via Penn State Libraries EZ-Access.

China's e-commerce platforms generate significant revenue from annual shopping festivals. Similar to “Black Friday,” Chinese e-commerce platforms host shopping festivals such as “Double 11” / “Singles Day” (November 11), “Double 12” (December 12), and “618” (June 18), among others. During these events, major brands offer discounts and numerous promotional activities. E-commerce platforms such as Taobao and Tmall (both owned by Alibaba), as well as JD.com and Pinduoduo, all participate in these events.

By enforcing the exclusive “pick one from two” practice during major shopping festivals such as “Double Eleven,” Alibaba's behavior can be characterized in economic terms as dominant firm conduct, while the “pick one from two” arrangement represents a form of exclusive dealing,

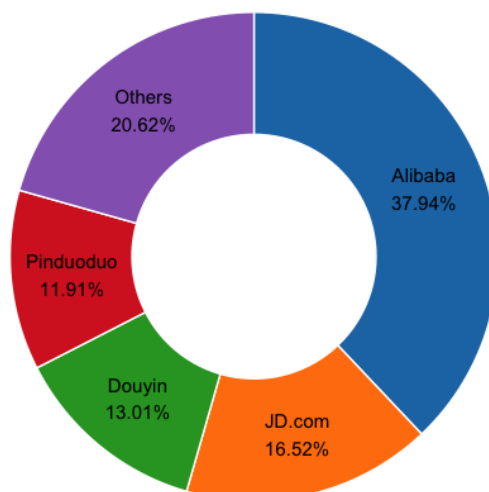
which is a common strategy employed by dominant firms to restrict competition. The following section examines the economic foundations of exclusive dealing.

Theoretical research shows that exclusive dealing can arise as an equilibrium outcome in platform competition (Bernheim & Whinston, 1998). According to Bernheim and Whinston, the platform that successfully secures exclusivity with merchants can gain access to a base of more inelastic consumers. Exclusive dealing prevents retailers from distributing similar products through competing manufacturers; in the context of e-commerce platforms, it restricts merchants from selling across multiple platforms simultaneously. An equilibrium emerges as competing platforms attempt to attract merchant participation, with the platform offering the highest expected payoff ultimately securing exclusivity.

Even though Alibaba has been dominant in market share in the Chinese e-commerce industry. However, during shopping festivals, where a vast volume of revenue is generated each year, Alibaba still faces severe competition. As shown in Figure 2.

Figure 2. Leading e-commerce platforms on Singles' Day in China 2024

Leading E-commerce Platforms on Singles' Day in China 2024



Notes: Percentages show share of sales. Author's own visualization. Data from Statista; original sources: China International Electron Commerce Center, Inspur, Economic View. Survey conducted by Economic View, Inspur, China International Electron Commerce Center. Published by Economic View. *2024 Singles' Day Consumption Insight Report*, November 2024.

By implementing a “pick one from two” policy, Alibaba has the opportunity to achieve the exclusive dealing equilibrium described by Bernheim & Whinston and attract more inelastic demand. During major shopping festivals such as “Double Eleven” and “618” in 2017, Alibaba required many merchants to operate exclusively on its platforms. As shown in Figure 2, Alibaba captured the largest share of sales during Singles' Day (“Double Eleven”). By providing merchants with access to a larger base of active buyers and higher potential revenues, Alibaba created strong incentives for merchants to remain on Tmall. This strategy increased demand inelasticity for participating merchants and reinforced Alibaba's dominance during major shopping festivals, leading to an equilibrium in which Alibaba had the largest share of merchant participation.

2.3 Antitrust Enforcement and Market Rectification in Platform Economies

Klein and Murphy's paper helps us understand why a complete ban on "exclusive dealing" can restore fair competition in the market.

From the platform's perspective, the platform is selecting the optimal merchants. The selected merchants earn higher profits, while those not selected are left with no options. According to Klein and Murphy (2008), supermarkets promote price competition within the same product category by limiting promotion to a single brand per category. For example, Coca-Cola and Pepsi compete against each other for the best shelf space in supermarkets. If Coca-Cola can offer the lowest wholesale price and sign exclusive contracts with major platforms, Pepsi will be left with no options. In this scenario, the contract Coca-Cola signs with the supermarket is similar to a "pick one from two" agreement.

With "pick one from two" banned, the supermarket can no longer be certain that Coca-Cola will sell well in its store. For example, if Coca-Cola is sold in two supermarkets simultaneously, and both supermarkets control the product category by carrying only the Coca-Cola brand, the supermarket with lower visitor volume will face pressure regarding its cola sales. Therefore, supermarkets and e-commerce platforms are compelled to sign contracts with more brands within the same category to ensure their sales volume. This not only gives more brands a chance to survive but also increases competition among platforms.

The 2021 Guidelines clarify standards for identifying exclusive dealing and related practices. Beyond contracts, incentives—such as subsidies, preferential traffic allocation, or exclusive discounts—may constitute restricted trading if they produce exclusionary effects. This reflects the regulatory focus on restoring fair competition.

Alibaba's case shaped this regulatory framework, contributing to clearer standards for assessing abuses of market dominance (Xinhua News Agency, 2025).

2.4 Merchant Multi-Homing and Competitive Outcomes

Ziss's paper explains that merchants' cross-platform choices are related to the type of competition they wish to engage in. According to Ziss (2025), he designed a three-stage experiment: In the first stage, manufacturers choose whether to sell their products through independent platforms or through co-listing (cross-platform registration). In the second stage, manufacturers set the terms of a two-part tariff contract offered to their platforms. In the final stage, participants engage in either price competition (Bertrand) or volume competition (Cournot). The experimental results indicate that when volume competition occurs, the market includes both cross-platform and non-cross-platform merchants. However, when price competition occurs, the market consists of either cross-platform registered merchants or non-cross-platform registered merchants.

Therefore, in this paper, understanding which product categories and which sizes of merchants chose cross-platform registration during the rectification period in the Alibaba case, as well as the proportion of cross-platform registered merchants within each category, helps us determine whether they were engaged in price competition or volume competition. This allows us to infer which type of competition in the e-commerce market was strengthened by this rectification. According to my data, the proportion of cross-platform registered merchants after this rectification was 23.6%. This evidence supports the conclusion that the Alibaba rectification was aimed at enhancing volume competition.

Chapter 3

Data

3.1 Data Source

This paper analyzes data at both the platform and merchant levels. I collect merchant-level cross-platform registration data (CRSV) from major Chinese e-commerce platforms, along with merchants' yearly sales volume on Alibaba. Using a multiproduct stratified random sampling method, the dataset ensures comprehensive representation across all e-commerce product categories. CRSV covers six product categories across platforms and includes 148 merchants of varying sizes, reconstructing an overview of more than one million stores on Taobao, Alibaba's e-commerce platform in China. The CRSV dataset is cross-sectional and includes each merchant's year of registration on Taobao, JD.com, and Pinduoduo, as well as their annual sales volume on Taobao. The dataset was constructed by the author.

Platform-level data consists of two domains. One is from gross profit margin data. It is obtained from publicly available annual reports of Alibaba and JD.com, as well as packaged annual data for Pinduoduo from iFinD. Given gross profit margin data are yearly, with 18 observations from 2016 to 2024 in a DiD regression. I also provide a quarterly common share price history data from the MacroTrends database for Alibaba, JD.com, Pinduoduo, and Amazon from 2018Q3 to 2026Q1. This provides a secondary source in analyzing if the rectification during 2021-2024 harmed Alibaba's profit (being effective) with more observations (62 observations for common share data in DiD regression). All variables are organized into a panel dataset and analyzed using Stata.

3.2 Data Construction

CRSV data are manually collected from Taobao, JD.com, and Pinduoduo. The random 148 online merchants are divided by 50 merchants for 3C product (Computer, Communication, Consumer electronic devices), 50 merchants for Clothes, shoes and bags, 20 merchants for foods, 10 merchants for Cosmetics and jewelry, 10 merchants for Books and audio-visual products, and 7 merchants for Maternity and children's products. The number of merchants selected for each industry category is based on the 2025 Chinese e-commerce industry revenue breakdown by major product and service categories, which account for 34.2%, 31.5%, 14.6%, 7.4%, 7.3%, and 5.0%, respectively (Millie Walker, 2025). The number of merchants to be included in each category was calculated by allocating the total of 148 merchants according to these proportions.

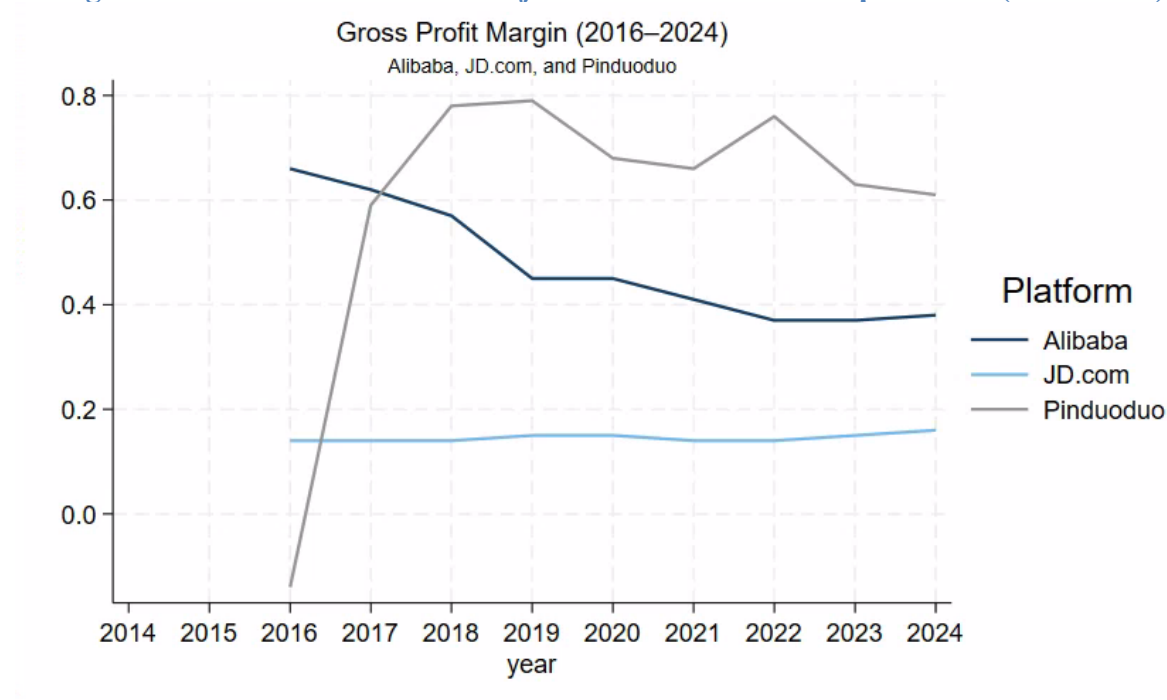
After selecting these 148 random merchants, I compiled the years when they opened stores on Alibaba (Taobao/Tmall), JD.com, and Pinduoduo, and used this information as the merchants' registration data. A specific way to identify the year date is shown in Appendix A. I also tracked whether they registered stores on either Pinduoduo or JD.com during Alibaba's rectification period (2021–2024). This is because registering a store means a merchant can sell products on a platform, regardless of whether they spend money on marketing, customers can find them by searching for the store name as long as they wish to make a purchase.

To evaluate the rectification result, the key indicator is the revenue of cross-registered merchants. If the rectification increased their profit? In CRSV, revenue is counted by the yearly number of sales at Taobao. In theory, the most effective method of verification would be to obtain historical sales data from multiple platforms. However, it is very difficult to obtain sales data from individual merchants. Even when contacted privately, most are unwilling to provide such data to college students for research purposes. Given the data limitations of historical revenue data on

each platform, the CRSV data is cross-sectional, which only includes one year of sales rather than historical sales data. CRSV data is later used for a merchant-level regression and a summary comparison analysis.

Platform-level gross profit margin and price of common share data are constructed as a panel. Gross profit margin is calculated as defined in Appendix A.1 and used in the DID analysis. The GPM is a ratio that ranges from 0 to 1. A larger ratio represents a large profit of a platform for a specific year. Figure 3 exhibits the historical trend of each platform's gross profit margin (GPM). Given that the 2016 to 2017 Pinduoduo's GPM experienced a big jump, I treat the 2016 observation as an outlier. Later in the DID regression, I provide both the results with 2016 data and without 2016 data.

Figure 3. Market indicators of major Chinese e-commerce platforms (2014–2024)



Source: Author's calculation based on Alibaba Group (2016–2024) and JD.com (2016–2024)'s annual reports; Pinduoduo's gross profit margin from iFinD (2025).

Figure 4 illustrates the historical trend of Alibaba, JD.com, Pinduoduo, and Amazon's common share price from 2018 to 2026. The original common share data are at a daily frequency. I use the close price each day and average them to the quarterly level in this study.

Figure 4. Average quarterly price of common shares (2018q3-2026q1)



Note: Author's own visualization. *Source:* MacroTrends common share price of BABA, JD, PDD, AMZN (2018–2026).

From Figure 3 and Figure 4, Pinduoduo is an increasingly formidable competitor. This is due to its business model, which focuses on high-volume, low-margin sales, as well as the improvement in product quality in recent years—as evidenced by its dramatic growth in gross profit margin (GPM). In terms of its common shares price performance, Pinduoduo closely resembles Amazon. This indicates that, unlike Alibaba and JD.com, it has clearly not been affected by the macroeconomic impact of sluggish post-pandemic consumption in China. This is attributed to Pinduoduo's successful strategy of expanding overseas through its Temu business line, leading

investors to view it as a company with significant potential. In contrast, JD.com's common shares price has remained sluggish following the consecutive replacements of its CEO and CFO in 2022.

Chapter 4

Method

This paper examines whether the 2021–2024 rectification increased merchant income and curtailed Alibaba’s exclusive dealing behavior. Merchant income is measured by the number of sales on Taobao, while changes in Alibaba’s exclusive dealing practices are proxied by trends in its gross profit margin and price of common shares.

I employ a regression for the yearly number of sales (number of transactions) on Taobao for cross-registered merchants. The regression setup is as follows:

$$\text{Yearly Number of Sales at Alibaba}_{it} = \alpha + \beta \cdot \text{Treat}_i + \epsilon_{it}$$

The “Treat” variable is a dummy representing 1 for merchants who registered a store on at least one other platform during Alibaba’s rectification period. “i” represents different merchants, and “t” represents different years.

I employ two difference-in-differences (DID) regressions to evaluate the platform-level results. One is regressing the gross profit margin (Alibaba, JD.com, and Pinduoduo), and the other is regressing the price of the common share (Alibaba, JD.com, Pinduoduo, and Amazon) before and after the rectification. For both regressions, I use Alibaba as the treated group and JD.com as the comparison group. I then changed the comparison group to Pinduoduo (Pinduoduo and Amazon in the common share price regression) for the robustness check of the results. The regressions setup are as follow(Appendix A.2):

Gross profit margin regression:

$$GPM_{it} = \beta_0 + \beta_1 \cdot \text{Alibaba}_i + \beta_2 \cdot \text{Post}_t + \beta_3 \cdot (\text{Alibaba}_i \cdot \text{Post}_t) + \epsilon_{it}$$

Here, “i” represents different e-commerce platforms, and “t” represents different years.

Price of common share regression:

$$Price\ of\ Common\ Share_{it} = \beta_0 + \beta_1 \cdot Alibaba_i + \beta_2 \cdot Post_t + \beta_3 \cdot DiD + \epsilon_{it}$$

Here, “i” represents different e-commerce platforms, and “t” represents different quarters.

For both GPM and Price of Common Share regression:

- $Alibaba_i$: dummy equals 1 for the Alibaba platform, 0 otherwise.
- $Post_t$: 1 if year falls within the rectification period (2021–2024), 0 otherwise.
- $Alibaba_i \cdot Post_t$ & DiD : interaction term, which equals Alibaba dummy times Post dummy.

Chapter 5

Result and Economic Interpretation

5.1 Merchant-level Result

Table 1 Merchant-level DID result: yearly number of sales vs. cross-registration

Source	SS	df	MS	Number of obs	=	133
Model	2.9450e+14	1	2.9450e+14	F(1, 131)	=	9.54
Residual	4.0446e+15	131	3.0875e+13	Prob > F	=	0.0025
				R-squared	=	0.0679
				Adj R-squared	=	0.0608
Total	4.3391e+15	132	3.2872e+13	Root MSE	=	5.6e+06

alibaba_txn	Coefficient	Std. err.	t	P> t	[95% conf. interval]	
Treatdummy	3379264	1094162	3.09	0.002	1214751	5543778
_cons	728478.6	561293.2	1.30	0.197	-381893.4	1838850

Since some merchants lack a registration date on Taobao, the sample size ended up with 131 observations. The result shows a statistically significant influence of merchants' cross-registration activity(Treatdummy) on yearly sales on Taobao(alibaba_txn). The coefficient of Treatdummy is positive, meaning that merchants who registered on additional platforms during the rectification period recorded, on average, approximately 337,926 more annual sales on Taobao than merchants who did not cross-register. This result supports that merchants with cross-platform registrations often demonstrate higher overall sales capabilities.

It provides evidence to support the assumption that the rectification eliminates “pick one from two”, encourages merchants to register on other platforms. With cross-registration, merchants can sell more in volume than before.

Since most merchants who cross-register are large brands with at least 10,000 shop fans on Taobao. This selection likely contributes to the positive coefficient on the Treat dummy, as larger merchants naturally have higher sales volumes. For instance, the clothing and shoes category has no small-sized merchants cross-registering during Alibaba's rectification.

Even as major brands register across multiple platforms and see sales figures rise, the very act of opening stores on different platforms intensifies market competition. Despite increased sales volumes, net profits may even decline. For example, the Hewlett-Packard China Official Flagship Store is a merchant that registered across platforms during the rectification period. Its 2024 financial report shows that Consumer Personal Systems net revenue decreased 2.4%, driven by a 2.5% decrease in average selling prices (ASPs) and a 0.3% decrease in units, due to demand softness, especially in China. The decrease in ASPs was driven by competitive pricing and unfavorable mix shifts, partially offset by favorable foreign currency impacts (UNITED STATES SECURITIES AND EXCHANGE COMMISSION, 2024).

It is also worth noting that the R-squared of this regression is quite low, which means the cross-registration behavior only accounts for a small portion of explaining the positive impact on the yearly number of sales on Taobao. Other factors may also contribute to this result.

Overall, these results suggest that cross-platform registration is associated with larger merchant scale, but they do not imply that Taobao-specific sales necessarily increased. This is consistent with the purpose of Alibaba's rectification, which aimed to reduce exclusive-dealing restrictions and allow merchants to diversify across platforms.

5.2 Platform-level Result

Table 2: The platform-level Gross Profit Margin DID

Source	SS	df	MS	Number of obs	=	18
Model	.552424444	3	.184141481	F(3, 14)	=	66.32
Residual	.03887	14	.002776429	Prob > F	=	0.0000
				R-squared	=	0.9343
				Adj R-squared	=	0.9202
Total	.591294444	17	.034782026	Root MSE	=	.05269

gpm	Coefficient	Std. err.	t	P> t	[95% conf. interval]	
Alibaba	.406	.0333252	12.18	0.000	.3345245	.4774755
Post	.0035	.0353468	0.10	0.923	-.0723112	.0793112
Alibaba_post	-.171	.0499879	-3.42	0.004	-.2782133	-.0637867
_cons	.144	.0235645	6.11	0.000	.0934592	.1945408

This regression regresses Alibaba and JD.com's GPM from 2016 to 2024. Dropping Pinduoduo's GPM data, I end up with 18 observations. Using JD.com as the comparison group, since its data has little variation in it, as shown in the previous Figure 3, the R-squared is quite high. The difference in difference coefficient shows a statistically significant difference. It means that compared to JD.com, which was not affected by the rectification, Alibaba experienced a

decline of 17.1% in gross profit margin after the rectification began. The same decline in Alibaba's gross profit margin after rectification is also confirmed in the robustness check, when changing the comparison group to Pinduoduo, although it becomes less significant(Appendix A. 3).

In general, this gross profit margin DiD result provides evidence that the antitrust policy prohibiting “pick one from two” is effective in terms of cutting down Alibaba's profit.

Table 3: The platform-level Price of Common Share DID

Source	SS	df	MS	Number of obs	=	62
Model	192650.437	3	64216.8125	F(3, 58)	=	54.07
Residual	68886.0001	58	1187.68966	Prob > F	=	0.0000
				R-squared	=	0.7366
				Adj R-squared	=	0.7230
Total	261536.438	61	4287.48258	Root MSE	=	34.463

price	Coefficient	Std. err.	t	P> t	[95% conf. interval]	
Alibaba	154.429	15.41227	10.02	0.000	123.578	185.28
post	6.675333	13.24106	0.50	0.616	-19.82952	33.18019
DiD	-79.82376	18.72568	-4.26	0.000	-117.3073	-42.34023
_cons	37.608	10.89812	3.45	0.001	15.79305	59.42295

Start in 2018 Q3, end in 2026 Q1, there are 31 observations from both Alibaba and JD.com used in the above regression. The result showed a significant decline in Alibaba's common share price after rectification began compared to JD.com. It is reasonable because JD.com also experiences domestic sluggishness in consumption, while having no impact on the rectification. The rectification dropped the price of Alibaba's common share significantly by \$80 comparing with JD.com. Changing the comparison group to Pinduoduo, as well as Amazon, did not change the significance and the direction of the rectification impact on Alibaba. The

Difference in Difference of the common share price provides further support for the effectiveness of rectification.

5.3 Limitations

The merchant-level regression is based on cross-sectional data. Ideally, panel data on merchants' historical revenues across platforms would allow for a more precise analysis of changes over time. However, such data are difficult to obtain. As a result, this study focuses on the relationship between merchants' cross-platform registration behavior and changes in their number of sales, rather than directly observing revenue dynamics across platforms.

There are also limitations in identifying merchants across platforms. On the JD platform, searching for a merchant by name does not always allow direct filtering to locate the corresponding store. In some cases, the search results only display related products rather than the store itself. In addition, JD's search system automatically incorporates the delivery address, which may prioritize nearby stores in the results. These features make it difficult to reliably identify potentially identical merchants across platforms and may introduce search bias into the dataset.

Data limitations also exist for the Pinduoduo platform. Merchants with annual sales below 100,000 yuan are not required to register as individual business entities, making it impossible to determine their exact year of establishment. Furthermore, some large merchants register brand stores on Pinduoduo without displaying their store opening dates. In these cases, this study uses the start date listed on the business license uploaded by the store as a proxy for

the platform entry date. For stores whose licenses indicate “long-term,” the specific year of entry cannot be determined, which may introduce measurement error into the sample.

Finally, the platform-level gross profit margin regression could be more accurate if there were more publicly available sources. The revenue on the annual report reflects a broad range of sources. If possible, using Gross Merchandise Volume(GMV) would be a better estimate for revenue, especially during major shopping festivals.

Chapter 6

Conclusion

This paper contributes to the literature on platform antitrust by examining the economic outcomes associated with Alibaba's rectification. The merchant-level analysis suggests that cross-platform registration is associated with larger merchant scale. However, because the data capture only Taobao transactions and are cross-sectional, it is not possible to determine whether the rectification shifted sales away from Taobao toward competing platforms. It is consistent with the view that the policy improves merchant incomes. After allowing merchants to cross-register freely on each platform, the diverse decisions made by merchants reflect that this policy encourages a more intense volume (Cournot) competition.

The platform-level results provide evidence regarding the decline in Alibaba's profit after the rectification. The estimated effects on gross profit margins (GPM) vary depending on the choice of control group, indicating that the difference-in-differences specification may not fully satisfy the parallel trends assumption. As a result, the platform-level GPM findings should be interpreted with caution. The estimated effects on the price of common shares provide stronger support for the decrease in Alibaba's market value. Both DiD regression contribute to a supportive view that rectification is effective. Prohibiting "pick one from two" undercut Alibaba's monopoly power in the Chinese e-commerce industry.

More broadly, competition among digital platforms may involve dynamic strategic responses, including pricing adjustments, changes in platform policies, or tacit coordination among firms. Future research could examine longer-term outcomes and incorporate richer panel

data to better identify how antitrust interventions influence platform competition and merchant welfare over time.

Appendix A

Variable Definitions and Regression Specifications

A.1 Variable Definitions

- Gross Profit Margin: $(\text{revenue} - \text{cost of revenue}) / (\text{total China retail revenue})$.
- $Alibaba_i$ dummies: 1 for the Alibaba platform, 0 otherwise.
- $Post_t$: 1 if year falls within the rectification period (2021–2024), 0 otherwise.
- $Alibaba_i \cdot Post_t / DiD_i$: interaction term equals $Alibaba_i$ times $Post_t$.
- $Treat_i$: 1 if merchant i cross-registered on at least one additional e-commerce platform during the rectification period (2021–2024), and 0 otherwise.
- Merchant registration indicator: Merchant registration is identified using platform-specific indicators. On Tianmao, shop establishment length is inferred from labels such as “10-year veteran shop” or “7-year veteran shop” displayed on shop homepages. JD.com provides exact shop establishment dates in year, month, and day, while Pinduoduo displays “3-year veteran shop” badges.

A.2 Platform-Level Regression

Gross profit margin regression:

$$GPM_{it} = \beta_0 + \beta_1 \cdot Alibaba_i + \beta_2 \cdot Post_t + \beta_3 \cdot (Alibaba_i \cdot Post_t) + \epsilon_{it}$$

Price of common share regression:

$$Price\ of\ Common\ Share_{it} = \beta_0 + \beta_1 \cdot Alibaba_i + \beta_2 \cdot Post_t + \beta_3 \cdot DiD + \epsilon_{it}$$

A.3 Robustness Checks

Platform-level Gross Profit Margin DiD regression, Pinduoduo as the comparison group, drop the outlier (2016 observation)

Source	SS	df	MS	Number of obs	=	17
Model	.256648529	3	.08554951	F(3, 13)	=	14.19
Residual	.078375	13	.006028846	Prob > F	=	0.0002
				R-squared	=	0.7661
				Adj R-squared	=	0.7121
Total	.335023529	16	.020938971	Root MSE	=	.07765

gpm	Coefficient	Std. err.	t	P> t	[95% conf. interval]	
Alibaba	-.16	.0520863	-3.07	0.009	-.2725256	-.0474744
Post	-.045	.0549038	-0.82	0.427	-.1636124	.0736124
Alibaba_post	-.1225	.0756796	-1.62	0.130	-.2859959	.0409959
_cons	.71	.0388228	18.29	0.000	.6261284	.7938716

Platform-level Gross Profit Margin DiD regression, Pinduoduo as the comparison group

Source	SS	df	MS	Number of obs	=	18
Model	.161869444	3	.053956481	F(3, 14)	=	1.15
Residual	.656375	14	.046883929	Prob > F	=	0.3631
				R-squared	=	0.1978
				Adj R-squared	=	0.0259
Total	.818244444	17	.048132026	Root MSE	=	.21653

gpm	Coefficient	Std. err.	t	P> t	[95% conf. interval]	
Alibaba	.01	.1369437	0.07	0.943	-.283715	.303715
Post	.125	.1452507	0.86	0.404	-.1865318	.4365318
Alibaba_post	-.2925	.2054155	-1.42	0.176	-.7330725	.1480725
_cons	.54	.0968338	5.58	0.000	.3323121	.7476879

Platform-level Price of Common Share DiD regression, Pinduoduo as the comparison group

Source	SS	df	MS	Number of obs	=	62
Model	111040.469	3	37013.4895	F(3, 58)	=	24.06
Residual	89237.2376	58	1538.57306	Prob > F	=	0.0000
				R-squared	=	0.5544
				Adj R-squared	=	0.5314
Total	200277.706	61	3283.24109	Root MSE	=	39.225

price	Coefficient	Std. err.	t	P> t	[95% conf. interval]	
Alibaba	146.323	17.5418	8.34	0.000	111.2093	181.4367
post	56.22124	15.07059	3.73	0.000	26.05417	86.3883
DiD	-129.3697	21.31303	-6.07	0.000	-172.0323	-86.707
_cons	45.714	12.40392	3.69	0.001	20.88485	70.54315

Platform-level Price of Common Share DiD regression, Amazon as the comparison group

Source	SS	df	MS	Number of obs	=	62
Model	60072.8478	3	20024.2826	F(3, 58)	=	11.54
Residual	100675.246	58	1735.7801	Prob > F	=	0.0000
				R-squared	=	0.3737
				Adj R-squared	=	0.3413
Total	160748.094	61	2635.21465	Root MSE	=	41.663

price	Coefficient	Std. err.	t	P> t	[95% conf. interval]	
Alibaba	84.896	18.63212	4.56	0.000	47.59975	122.1922
post	58.90376	16.00732	3.68	0.001	26.86164	90.94589
DiD	-132.0522	22.63777	-5.83	0.000	-177.3666	-86.73778
_cons	107.141	13.1749	8.13	0.000	80.76857	133.5134

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