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Directorate for Financial and Enterprise Affairs  
**COMPETITION COMMITTEE**

## Annual Report on Competition Policy Developments in Chinese Taipei

-- 2023 --

This report is submitted by Chinese Taipei to the Competition Committee FOR INFORMATION.

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## Chinese Taipei

### Executive Summary

1. This report covers the activities of the Fair Trade Commission (FTC) of Chinese Taipei from January 1 to December 31, 2023.
2. Regarding enforcement, the FTC processed 2,605 cases, including 2,387 cases received in 2023 and 218 cases carried over from 2022. By the end of 2023, 2,364 cases had been closed and 241 cases were pending.
3. The FTC reviewed 57 merger cases in 2023, which included 15 carried over from 2022 and 42 that were received in 2023. By the end of 2023, the FTC had completed the reviewing of 46 cases, none of which was prohibited, and 11 were pending.
4. In 2023, the FTC participated in various consultation meetings with other government agencies related to competition issues and organized 83 seminars for students, consumers, business communities, and local governments to explain the FTA.

### 1. Changes to competition laws and policies, proposed or adopted

#### 1.1. Summary of revised legal provisions of competition law and related legislation

5. The latest amendment to the FTA came into effect on June 14, 2017. The FTA has not been amended since then.

#### 1.2. Other relevant measures, including new guidelines

6. In 2023, the FTC issued, amended and abolished 10 guidelines to provide more transparent and standardized regulations in order to guide trading order and efficiently cope with complicated economic affairs as follows:

##### 1.2.1. Issued:

- “Coordination Conclusions between the Fair Trade Commission and the Ministry of the Interior in Handling Real Estate Speculation”

##### 1.2.2. Revised:

- “Fair Trade Commission Guidelines on Online Advertisements”;
- “Regulations for the Establishment and Administration of the Multi-level Marketing Enterprises and Participants Protection Institute”;
- “Types of Merger not applicable to Paragraph 1 of Article 11 of the Fair Trade Act”
- “Merger Notification Form attached to the Directions for Enterprises Filing for Merger”;
- “Fair Trade Commission Guidelines on Handling Merger Filings”;
- “Rules for Multi-level Marketing Enterprises to Report and Change the Report”;
- “Fair Trade Commission Guidelines on Cases of Real Estate in Advertising”; and

- “Fair Trade Commission Guidelines on the Definitions of the Relevant Markets”

### 1.2.3. Abolished:

- “Fair Trade Commission Guidelines on Extraterritorial Mergers”

## 1.3. Government proposals for new legislation

7. There was no government proposal for new legislation in 2023.

## 2. Enforcement of competition laws and policies

### 2.1. Action against anti-competitive practices, including agreements and abuses of dominant market positions

#### 2.1.1. Summary of activities of the FTC

8. The FTA is not against the existence of monopolies as long as they do not abuse their market power. Concerted actions are strictly forbidden by the FTA. However, while some exceptions are allowed for, these do require the FTC’s prior approval and its decision is based on the public interest. The FTA bans resale price maintenance in principle, but allows exceptions with justifiable reasons. For other types of vertical restraints, the FTA requires the FTC to apply the rule-of-reason standard.

9. In 2023, the FTC processed 2,805 cases, including 2,570 cases received or self-initiated in 2023 and 235 cases carried over from the preceding year. By the end of 2023, 2,549 cases had been closed, and 256 cases were pending. A total of 190 cases applicable to the FTA were concluded in 2023 and, of these, 13 concerned anti-competitive practices.

10. Decision rulings on complaints and the FTC ex officio investigations were undertaken in relation to 94 cases in 2023, and 13 of these fell into the category of anti-competitive practices.

**Table 1. Decision Rulings by the FTC in 2023**

Unit: Number of cases

Year	Anti-competitive Practices	Abuse of Monopoly	Mergers	Concerted Actions	Resale Price Maintenance	Vertical Restraints
2023	13	-	-	10	1	2

*Note: The number of illegal actions may exceed the number of cases involving decision rulings because a case may involve more than one illegal action*

#### 2.1.2. Description of significant cases, including those with international implications

##### *Case 1: Civil Engineers Association set minimum prices for members*

11. The FTC received a copy of the minutes of the Council Meeting of the Chinese Union of Professional Civil Engineers Association (the CUPCA) held on May 2, 2018 and the official letter issued by the CUPCA on May 10, 2018 from an informant accusing the CUPCA of engaging in a concerted action by setting uniform appraisal fee standards.

12. The FTC found out, around 2017, that local civil engineers associations complained that the inconsistency of local associations' appraisal fees had given rise to disputes between civil engineers and proprietors. They launched an appeal that the CUPCA should take its coordinating responsibility to solve the problem. On May 2, 2018 when a Council Meeting of the CUPCA was held, the then chairperson of the provincial association proposed an extempore motion and requested that the CUPCA set uniform appraisal fee standards. The members attending the meeting approved the resolution to establish uniform minimum appraisal fee standards. As a result, the minimum current condition appraisal fee was increased from NT\$20,000 to NT\$25,000, the minimum damage appraisal fee from NT\$30,000 to NT\$40,000, and the minimum leakage appraisal fee was also raised to NT\$40,000.

13. The decision was then officially sent to every local association on May 10, 2018 and was scheduled to take effect on June 1, 2018. The official letter also carried the wording "Current inconsistencies on appraisal fees have given rise to a price war and affected the income of each association."

14. The CUPCA was one of the three major trade associations offering services in the relevant market. The council's resolution to set uniform appraisal fee standards was a concerted action with regard to price and the conduct lasted from 2018 until the FTC started the investigation. It was a mutual understanding achieved to jointly determine service prices and the conduct was able to affect the supply-demand function in the relevant market. On May 5, 2023, the FTC at its 1647<sup>th</sup> Commissioners' Meeting decided that the CUPCA was in violation of Article 15 of the FTA and imposed an administrative fine of NT\$500,000 on it.

#### *Case 2: Ready Mixed Concrete Enterprises Engaged in Concerted Actions*

15. In December 2019, the FTC launched an ex officio investigation into ready mixed concrete enterprises in the northern region of Chinese Taipei. During the investigation, the FTC received solid evidence from an informer proving that 15 local enterprises in Taoyuan City and three national enterprises (three big companies), namely, Goldsun Building Materials Co., Ltd. (Goldsun), Taiwan Cement Corporation (Taiwan Cement) and Ya Tung Ready Mixed Concrete Co., Ltd. (Ya Tung), or 18 ready mixed concrete businesses altogether, were engaging in a concerted action.

16. The FTC discovered that the 15 ready mixed concrete enterprises in Taoyuan city had started to meet regularly since November 2018 to discuss and coordinate their allocations on ready mixed concrete supply businesses. They paid fees and installed surveillance cameras to confirm supply quantities and supervise one another. Through their chat group, the 15 enterprises informed one another of meeting times and meeting locations, checked and confirmed schedules, reported supply quantities and even told competitors of their own price quotes or else asked competitors if they would consider giving price quotes and how much to quote, and so on, before giving the price quote. The purpose was clearly to prevent price reductions from becoming a way to compete for customers. Meanwhile, Goldsun, Taiwan Cement and Ya Tung, the three big companies, sold ready mixed concrete in Taoyuan City as well and had attended trade association meetings. The FTC also found concrete evidence showing that they had attended meetings to allocate supplies and coordinate price quotations.

17. Due to the high homogeneity of pre-mixed concrete products, pricing has become the primary means of competition among operators. The coordinated allocation of supply and avoidance of customer poaching among the 18 operators significantly affected the competition mechanism in the pre-mixed concrete market in Taoyuan City, and constituted an illegal form of collusion. Furthermore, the result of operators avoiding customer

poaching could lead to a gradual increase in pre-mixed concrete prices and indirectly raise construction project costs.

18. Between 2018 and 2021, the market share of the 18 businesses in the ready mixed concrete market in Taoyuan City was around 40% for each year. Among the 81 supply cases involved, the three major companies participated in the negotiations for the Formosarace Turnkey Project and the Taoyuan International Airport Third Terminal Civil Engineering Project which used over 400,000 cubic meters of ready mixed concrete. It was a huge volume. Therefore, the competition restraints created by the concerted action were able to have an effect on competition in the ready mixed concrete market in Taoyuan City.

19. After assessing the motives behind the unlawful act of the 18 businesses, the level of harm to trading order, and the business scales and sales of the offenders, the FTC cited the first section of Paragraph 1 of Article 41 of the FTA and ordered the 18 businesses to immediately cease the unlawful act. It also imposed on them administrative fines ranging from NT\$500,000 to NT\$50 million. The fines totaled NT\$213.10 million.

### *Case 3: Major Players in Mobile Broadband Services Market Jointly Stopped Promotional Benefits*

20. On September 6, 2023, the FTC resolved that Taiwan Mobile Co., Ltd. and Chunghwa Telecom Co., Ltd. jointly violated Article 15 of the FTA by discontinuing promotional benefits such as “free on-net voice calls” and “NT\$666 monthly call fee for the first six months” (referred to as call credit incentives) for their “4G Mobile Broadband No-Speed-Reduction Plan (699H or 699 model)” and “New Selected Device Plan (monthly payment of NT\$699),” which became effective in October 2018. As these two entities are primary players in the domestic mobile communications sector, their actions had significant market implications. Accordingly, Chunghwa Telecom was fined NT\$40 million, and Taiwan Mobile was fined NT\$36 million, resulting in a total fine of NT\$76 million.

21. The investigation conducted by the FTC revealed that, following the provision of call credit incentives for the 699 plan by Taiwan Mobile and Chunghwa Telecom during June and July 2018, there was a concentration of new subscribers to this plan, while subscriptions for higher tariff plans decreased. This discrepancy with their initial objectives of increasing revenue and subscriptions to higher tariff plans led them to consider discontinuing the call credit incentives for the aforementioned 699 plans, with the aim of encouraging subscribers to opt for higher tariff plans and mitigating the loss of voice call revenue.

22. The mobile broadband services market is characterized by oligopoly and a high degree of homogeneity of services, where pricing serves as a primary competitive strategy for operators. Therefore, the unilateral discontinuation of call credit incentives by a single operator poses risks of customer churn and market share erosion. The FTC’s investigation revealed that Taiwan Mobile and Chunghwa Telecom, through internal communications, had jointly agreed to cease offering call credit incentives starting in October 2018. This discontinuation prompted another major domestic telecom operator, Far EasTone Telecommunications Co., Ltd., to follow suit, effectively causing all three major domestic telecom operators to cease offering incentives. This behavior weakened price competition among them, significantly impacting market functionality.

## 2.2. Mergers and acquisitions

### 2.2.1. Statistics on the number, size and type of mergers notified and/or controlled under competition laws

23. Mergers involving parties reaching a certain turnover or a particular level of market share require the giving of notification to and obtaining no objection from the FTC. The FTC makes its decision based on whether the benefits to the economy as a whole will exceed the anti-competitive effects of the merger proposed.

**Table 1. Notifications for Mergers**

Unit: Number of cases

Year	Cases under Processing		Total	Results of Processing				Cases Pending at Year-end
	Carried over from 2022	Received in 2023		Mergers not Prohibited	Mergers Prohibited	Termination of Review	Combined into other Cases	
2023	15	42	57	31	-	15	-	11

**Table 2. Statistics on Enterprise Mergers**

Unit: Number of cases

Year	Cases not Prohibited	Type of Merger (Article 10, Paragraph 1 of the FTA)				
		Subparagraph 1	Subparagraph 2	Subparagraph 3	Subparagraph 4	Subparagraph 5
2023	31	3	26	-	13	26

*Note: More than one type of merger may be applicable in some cases. Therefore, the total number of cases under different types of mergers exceeds the total number of approved cases.*

### 2.2.2. Summary of significant cases

#### *Case 1: Merger of Uni-President and Carrefour Taiwan not Prohibited*

24. The highly anticipated merger between food manufacturer Uni-President Enterprises Corporation and large-scale retail hypermarket operator Carrefour Taiwan, which attracted significant attention from various sectors, was deliberated upon by the FTC on May 3, 2023. The competition authority resolved not to prohibit the merger but imposed additional obligations to ensure that the overall economic benefits of the merger outweighed any adverse effects on competition.

25. The FTC emphasized that, in considering the merger of Uni-President with Carrefour Taiwan, which has significant implications for consumer livelihood, suppliers, and other players in the distribution sector, it had initiated a thorough review process upon receiving the case. In addition to seeking input from stakeholders in the retail industry, the Commission convened discussions with relevant industry associations, academic experts, regulatory authorities, and consumer protection agencies to solicit diverse perspectives.

26. Concerns were expressed by suppliers, competitors in the retail sector, and various stakeholders regarding the merger. For instance, concerns were raised about the potential for the merged entity to dominate the retail landscape, the impact of Uni-President Enterprises Corporation's significant position in upstream food manufacturing on the operations of other downstream retail competitors, and whether smaller suppliers would be at a disadvantage when engaging in transactions.

27. Although the FTC decided not to prohibit the merger, in order to mitigate concerns about competition restrictions resulting from the merger and ensure that the overall economic benefits outweighed any disadvantages from restricting competition, it imposed obligations on the participating entities that included the following:

To prevent the merged entity from leveraging its advantageous position in distribution channels to unfairly promote its own brands or discriminate against suppliers without justifiable reasons, and to safeguard the rights of small and medium-sized suppliers:

- Carrefour Taiwan would not be able to provide Uni-President with significantly better commercial terms compared to suppliers of equivalent status, or engage in discriminatory practices without justifiable reasons.
- For a period of 3 years from the implementation of the merger, Carrefour Taiwan would need to maintain a special program for small and medium-sized suppliers with an average monthly purchase amount of less than NTD 1 million, to ensure that any modifications or replacements to this program would not further disadvantage these suppliers.
- For a period of 3 years from the implementation of the merger, Carrefour Taiwan would not be able to terminate or delist any small and medium-sized suppliers without justifiable reasons or adequate prior notice. In the event of termination or delisting, reasons would have to be provided, and the affected small and medium-sized suppliers would need to be allowed to request a review by Carrefour Taiwan.

To prevent the merged entity from rapidly integrating online and offline channels and adopting joint purchasing and marketing strategies or increasing its negotiating power over suppliers, or even restricting competition in downstream retail markets:

- For a period of 3 years from the implementation of the merger, Carrefour Taiwan and Uni-President Supermarket Co., Ltd. would not be able to negotiate “joint purchasing” agreements with individual suppliers. However, this restriction would not apply if such agreements were proposed by the suppliers themselves or implemented for reasons unrelated to Carrefour Taiwan or Uni-President Supermarket.
- For a period of 3 years from the implementation of the merger, Uni-President Supermarket would be eligible to hold or acquire a maximum of 30% of Carrefour Taiwan’s total shares. The number of board seats held by Uni-President Supermarket in Carrefour Taiwan would need to remain more than two-thirds of the total number of seats, and neither the directors nor the general manager of Uni-President Supermarket would be able to serve as directors or general managers of Carrefour Taiwan.
- For a period of 3 years from the implementation of the merger, Carrefour Taiwan would not be able to arbitrarily increase additional fees charged to individual suppliers. However, this restriction would not apply to additional fee items arising from new services, which suppliers would be freely able to choose to use, provided that they obtained prior consent from the suppliers.
- For a period of 3 years from the implementation of the merger, any changes to the annual supply and sales system by Carrefour Taiwan would not be able to be more disadvantageous to suppliers. However, this restriction would not apply to changes

made for legitimate business reasons, with the consent of the suppliers, or to promote consumer welfare.

Uni-President would need to submit to the FTC a report detailing the fulfillment of obligations and the benefits to the overall economy resulting from the merger for inspection by June 1st of each year for a period of three years following the implementation of the merger.

28. The FTC also noted that Uni-President had voluntarily proposed measures to strengthen the protection of the rights of small and medium-sized suppliers during the merger application process. Furthermore, the company had pledged to adopt diverse importation methods for goods, support public welfare activities, and promote organic and eco-friendly agricultural products, which contribute to overall economic benefits. The FTC expects that this merger will bring about a win-win situation for businesses, consumers, and the general public.

*Case 2: Far EasTone Telecommunications' consolidation of Asia Pacific Telecom not Prohibited*

29. On July 19, 2023, the FTC approved Far EasTone Telecommunications' consolidation of Asia Pacific Telecom. The competition authority stated that the telecommunications industry is characterized by high technology and capital requirements. Companies can improve operational efficiency and enhance competitiveness through resource integration. However, the reduction in the number of telecommunications businesses due to mergers may raise concerns about market concentration and price increases, with significant implications for the industry and the general public.

30. Upon analysis, the FTC found that Far EasTone, as the surviving company, would enhance spectrum utilization efficiency, coverage, and network quality by integrating resources such as spectrum, networks, and manpower from Asia Pacific. This integration would also facilitate the development of 5G application services. Furthermore, core network integration could reduce the redundant construction of data centers and base stations, thereby achieving energy conservation and carbon reduction goals, and yielding overall economic benefits. However, concerns remained regarding the potential increase in market share, the market structure, and market concentration in the mobile broadband service market following the implementation of this merger.

31. In response to these concerns, Far EasTone voluntarily proposed several preferential tariff plans and commitments to safeguard the rights of Asia Pacific users. The company also pledged to enhance service and network quality, promote VoLTE services, and continue investing in communication software and hardware infrastructure to expand coverage, increase transmission speed, and enhance capacity.

32. To address concerns about restricting competition and ensure that the overall economic benefits would outweigh any disadvantages, the FTC decided not to prohibit the merger. However, the Commission imposed additional obligations on Far EasTone in terms of user rights protection, service and network quality enhancement, and promoting market competition:

Regarding tariff plans:

- Accept and honor existing user contracts of Asia Pacific, to ensure that users can continue to use the tariff, content, and conditions specified in the contract until December 31, 2025.

- Provide preferential tariff plans for at least five years for groups such as people with disabilities, low-income households, impoverished students, and individuals aged 65 and above.
- Additionally, offer preferential tariff plans for general users for at least one year.
- Far EasTone must submit an annual report on the implementation of these tariff plans to the FTC for the first 5 years after the merger.

Regarding service and network quality enhancement:

- Far EasTone Telecommunications must commit to improving service and network quality and investing in software and hardware infrastructure. The company must submit annual reports on the specific implementation results of measures such as mobile broadband network integration and optimization to improve network performance and service quality for the first 5 years after the merger. In addition, Far EasTone must provide reports on the outcomes beneficial to the overall economic benefit that it has committed itself to.

Regarding promoting market competition:

- Far EasTone must provide mobile voice and data services, roaming services, number portability services, and equal access services to other telecommunications businesses and its own users on equal terms.
- The company must not unreasonably refuse or terminate the provision of wholesale services, set unfair prices or transaction conditions, or offer wholesale services with differential prices or transaction conditions without justifiable reasons.
- Far EasTone must not condition transactions with other telecommunications businesses based on the requirement that they exclusively transact with Far EasTone.

### **3. The role of competition authorities in the formulation and implementation of other policies, e.g., regulatory reform, trade and industrial policies**

33. The amendment of the FTA in 1999 required that the law not be applied to acts performed in accordance with other laws if such other laws did not conflict with the legislative purpose of the FTA. This amendment thereby affirmed that the spirit and content of the FTA was the core of economic policy.

34. The FTC has constantly reviewed all relevant laws and regulations since 2001 to minimize potential conflicts among laws, advocate free and fair competition, and ensure the presence of a healthy operating environment in which all businesses are able to compete fairly. As a result, the FTC will continue to be aware of developments in various markets, perform reviews of other laws to determine whether they are in compliance with the FTA, and consult with relevant industry competent authorities to prevent related laws and regulations from impeding competition.

35. In 2023, the FTC organized and participated in various consultation meetings related to competition issues with other government authorities, as summarized in the following:

- Attended the “International Maritime Transport Stability Working Group” meeting held by the Maritime Port Bureau of the Ministry of Transportation and

Communications to explain the FTC’s position and remind enterprises of the regulations in relation to cartels in the FTA.

- Attended the “Dialogue Platform on Book Discount Order Issues” working meeting held by the Ministry of Culture to explain the FTC’s position and remind enterprises of the regulations in relation to cartels in the FTA.
- Attended the seminar on “Regulations and Procedures for the Publishing Industry to Apply for Concerted Action Approval” held by the Ministry of Culture to elaborate on the relevant regulations, procedures and key points of review in the FTA.
- Held a seminar on “Regulations on Competition in Domestic Drug Markets” to understand the competition situation in the domestic drug market.

#### 4. Resources of competition authorities

##### 4.1. Resources overall (current numbers and change over previous year)

###### 4.1.1. Annual budget:

36. NT\$345.966 million in 2023 (approximately equivalent to US\$11.532 million in December 2023).

###### 4.1.2. Number of employees (person-years):

37. There were 201 employees at the end of the year 2023, including all staff in the operations and administrative departments and there were also 7 full-time Commissioners. The operations departments include the Department of Service Industry Competition, Department of Manufacturing Industry Competition, Department of Fair Competition, Department of Planning and Department of Legal Affairs, and the Information and Economic Analysis Office. Over 99% of employees have bachelor degrees with majors in different subjects at the university level.

38. In terms of the educational background percentages, 19%, 45%, 4% and 32% of the employees had majored in law and related fields, economics and related fields, both in law- and economics-related fields, and other fields (including information management, statistics, and public administration), respectively.

39. As a result, the structure of the human resources of the FTC is as follows:

**Table 3. Structure of FTC Human Resources**

Category	No. of employees
Lawyers	38
Economists	91
Lawyers & Economists	8
Other professionals & support staff	64
All staff combined	201

## 4.2. Human Resources (person-years) applied to:

### 4.2.1. Enforcement against anti-competitive practices and merger review

40. Apart from the Department of Fair Competition, which has 27 staff and is responsible for unfair competition practices, such as false and misleading advertisements, counterfeiting and multi-level sales cases, the Department of Service Industry Competition and Department of Manufacturing Industry Competition both handle anti-competitive practices, including the abuse of dominant market positions, merger reviews, cartels and various vertical restraints.

41. The Department of Service Industry Competition is responsible for cases related to the services and agricultural sectors, and the Department of Manufacturing Industry Competition is responsible for cases related to the manufacturing sector. There are 29 staff members in the Department of Service Industry Competition and 28 in the Department of Manufacturing Industry Competition.

42. There are 20 staff members in the Department of Legal Affairs, which is responsible for completing the competition law system, and mainly includes preparing and formulating the competition law and regulations and amendments thereof, handling administrative appeal cases, carrying out the execution of fines, handling the referral of criminal offenders for prosecution, and studying and researching legal issues related to competition law.

### 4.2.2. Advocacy efforts

43. In 2023, 9 of the 26 staff members in the Department of Planning of the FTC were primarily in charge of public outreach programs. In addition to that, since most of the outreach programs for competition advocacy were case-oriented, almost every department staff member played an active role in outreach activities.

44. The FTC participated in various consultation meetings with other government agencies related to competition issues and organized 83 seminars for students, customers, business communities, and local governments in order to explain the FTA, the leniency program and the prohibition against concerted actions.

## 4.3. Period covered by the above information:

45. January through December 2023.

## 5. Summaries of or references to new reports and studies on competition policy issues

46. The FTC commissioned and published studies on competition policy issues in 2023 with the following titles. All of them are available only in Chinese with English abstracts provided:

### 5.1. Study 1: Study on Issues related to “Metaverse” and Competition Law

47. Currently, no specific laws in mainstream countries regulate the metaverse. Given the robust connectivity between the metaverse and major digital platforms, this research, from a comparative legal perspective, not only explores the policies of mainstream countries towards metaverse regulations but also compares the regulatory frameworks of major digital platforms.

48. When defining the metaverse industry market using competition law, traditional demand substitution methods cannot be used alone because digital economies’ focal points and profit models differ from traditional markets. For a correct market definition, one must observe the industry’s business model, profit methods, and the effects on consumers in the market to find suitable criteria.

49. When assessing market power, factors include the enterprise’s market share, market influence, and consumer substitutability. Especially in the digital industry and the metaverse emphasizing connectivity and feedback, the focus should be on the diffusion of network effects, consumer habits, and user density in related services to accurately assess whether an enterprise has achieved a dominant market position.

50. The development of the metaverse market has yet to mature, and many in the industry assess that it will take years for the metaverse to have a more complete form and more mature technical applications. Therefore, only then might we get a full view of the metaverse market. As for the competition law issues that have already emerged, the competent authorities could attempt to use existing competition and business management laws. Should certain behaviors not quite fit the current regulations, the authorities could supplement that part by making partial amendments to specific provisions or by slightly expanding the scope of administrative regulations through administrative interpretations.

### 5.2. Study 2: Study on Fertilizer Industry Policies and Competition Regulations

51. The study recognizes that Chinese Taipei’s regulatory policies for the fertilizer industry are based on the importance of fertilizers to agricultural production and the need to have a stable supply of fertilizer for food security.

52. Under the Structure-Conduct-Performance analytical framework, the fertilizer industry in Chinese Taipei exhibits an oligopolistic market structure in the upper and middle segments. The top 5 firms, in terms of market share by revenue or production volume, account for 80-90% of all 199 registered firms. The domestic fertilizer industry is dominated by a few large enterprises.

53. Chinese Taipei’s fertilizer industry has a history spanning more than a century, being initially characterized by private competition, then a gradual move towards complete state control, followed by market liberalization and the transition from state to private ownership. Although the policies implemented in relation to this regulated industry may be justified by other laws, care should be taken to avoid violating competition laws in their execution.

54. Faced with the risk of rising international fertilizer raw material prices, the regulatory authorities in Taiwan should closely communicate with competition law authorities when formulating temporary measures to stabilize fertilizer prices, in order to prevent anticompetitive situations.

### **5.3. Study 3: Study on the Empirical Analysis of Collusive Behaviors in Pricing Strategies in the Digital Economy**

55. This study delves into the emerging field of algorithmic pricing and its impact on collusion, addressing both academic and practical issues. By focusing on the digital retail market, the goal is to understand the relationship between the decision-making of online e-commerce to adopt algorithmic pricing and the potential for collusive behavior.

56. The study integrates the theoretical and empirical literature on algorithmic pricing, incorporates the results of simulations, and uses web scraping to obtain machine learning data. The integration of these elements has led to the development of preliminary screening tools targeting businesses involved in algorithmic collusion, particularly online retailers. In addition to a literature review, and by using real market data and deep Q-learning, the study simulates price trends under algorithmic pricing within market structures, providing valuable insights into the relationship between algorithmic pricing and collaborative behavior and providing practical recommendations to competition law authorities.

57. This study provides the following policy recommendations:

- For e-commerce platforms suspected of collusion, competition authorities can gradually collect relevant cost information and use public price data to analyze the pricing competition landscape.
- Given that the same algorithm may produce different results under different circumstances, the regulation of algorithmic pricing should be handled on a case-by-case basis. In particular, algorithmic pricing, as an auxiliary tool for tacit collusion, cannot directly detect whether the pricing process is dominated by human agents.
- If price fluctuations exhibit Edgeworth cycles, particularly when the duration of the trough is short, they may be related to algorithmic price resets. In such cases, caution should be exercised as price increases resulting from the Edgeworth cycle may harm consumer benefits and economic efficiency.
- The rapid development of algorithms may impact the results of simulations. The current simulation scenarios are relatively simple, and future research may discover more diversified outcomes of algorithmic pricing in more complex market situations. Relevant authorities should continue to explore these issues to gain a deeper understanding of competition issues and develop appropriate policy instruments.