

# A Study on Live Pig Pricing

## 活豬價格研究報告



消費者委員會  
CONSUMER COUNCIL

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## 報告撮要

|                     |      |
|---------------------|------|
| 引言 .....            | ii   |
| 香港豬肉市場 .....        | iii  |
| 資訊透明度 .....         | iii  |
| 競爭市場分析 .....        | iii  |
| 合謀壟斷行爲 .....        | iii  |
| 市場集中度 .....         | iv   |
| 串通投標的間接證據 .....     | iv   |
| 供應市場結構的改變 .....     | v    |
| 五豐行的市場力量 .....      | v    |
| 價格上調受供應不足影響輕微 ..... | vi   |
| 價格波動非因供應不足 .....    | vi   |
| 「進取」出價 .....        | vi   |
| 較高價會否令供應上昇 .....    | vii  |
| 結論 .....            | vii  |
| 建議 .....            | viii |

# 報告撮要

## 引言

1. 2007 年內地有關當局授權多兩家供應活豬的代理商，分別是廣南行有限公司（廣南行）和香港農業專區有限公司（農業專區），與當時授權的總代理五豐行有限公司（五豐行）一同供應活豬給香港市場。增加供應活豬代理數目提供了額外供港活豬渠道。
2. 2008 年 1 月 15 日，少量活豬的早上競投批發價，由前一天每擔平均價 1,400 元，飆升百分之七十至每擔 2,400 元。當日下午，五豐行與活豬買手商討後，決定採用分配制度，結果批發價回落到大概 1,600 元一擔。
3. 有買家聲稱批發價飆升是因香港活豬的供應減少。不過入口數字顯示在 2008 年 1 月上半月份供應穩定。1 月 14 日活豬的供應有 4,100 頭和當日估計在未來兩日（即 15 日和 16 日）供應會維持在每日 4,000 頭水平。
4. 次日（即 1 月 16 日）在上水屠場活豬的批發價由前一天的紀錄高位每擔 2,400 元大幅下跌至 1,800 元。而有些肉商則在 1 月 15 日將零售價由 1 月 14 日的 40 元一斤提高到 48 元一斤。更有零售肉商聲稱如果豬肉批發價不回落，零售價可能升至 56 元一斤。過去一年新鮮豬肉價格已升超過百分點之六十，至 2008 年 4 月零售價為 \$39 一斤。
5. 立法會關注事件，認為豬肉價格出現不尋常的波動和有議員擔心市場是否存在不健康情況。不同政黨的立法局議員都要求調查豬肉價格飆升事件，財政司司長就事件聯絡消費者委員會作進一步瞭解情況，及其他有關政府政策局和部門都會合作，就議員關心的問題密切注視事態發展。
6. 本報告就消費者委員會的有關調查結果，及分析由政府提供的數據和公開的資料，去審視新鮮豬肉市場的結構特點和觀察某些行為會否帶來反競爭影響。

## 香港豬肉市場

7. 絕大部分在香港食用的豬肉都是進口的。2007 年在香港的豬肉總食用量中有百分之四十五是新鮮屠宰豬肉，百分之四是冰鮮豬肉和百分之五十一是冷凍豬肉。過去 5 年豬肉消費數量下降了百分之十六，此外有趨勢顯示冰鮮豬肉和冷凍豬肉續漸取代入口活豬。香港豬肉供應正受著日漸全球化市場環境和不斷增長的內地食品市場影響。改變中的世界和內地食物消費模式和供應鏈的安排，會繼續影響本地市場的需求和供應的發展。
8. 所有香港的活豬都必須在指定的三間屠房(上水屠房，荃灣屠房和長洲屠房) 屠宰。上水屠房是政府資產交由五豐行經營而荃灣屠房則屬私人擁有，由一間五豐行投資持股量少於百分之三十之公司經營，第三間屠房經營規模很小，對其他兩間屠房業務影響輕微。上水屠房和荃灣屠房的市場比例大約是三比一。

## 資訊透明度

9. 現時看來，市場有足夠資訊透露和拍賣程序去確保屠宰場的活豬拍賣公平地進行。例如，成功競投得活豬的人士名字、投得豬隻數目和價錢都在競投後立刻公佈。面對業界的投訴，政府採取了措施改善市場資訊流通和保持穩定的供應，新措施包括尋求國家商務部協助維持有足夠和穩定的活豬供應在一個可持續水平，和每天通知香港政府翌日供應活豬的數目。香港政府將有關資訊向公眾發放，而香港魚農自然護理處會將多個主要代理商和入口商所提供各種新鮮農產品(包括活豬)的市場供應數目和參考批發價格資料上載其網頁內，提供有用資料給公眾和業界使用。這些措施皆有助提高活豬競投市場運作的透明度。

## 競爭市場分析

### 合謀壟斷行爲

10. 在外國負責審理競爭法的法庭，曾發現有案例顯示投標市場

的某些環境因素，會影響買賣雙方之間的競爭，例如買手競投只在價格方面競爭、公開公佈投標的結果和中標人士或公司的身份、買手的成本結構相近、買手之間不單是競爭對手也可以是對方的顧客、商會舉行的聯誼或專業活動成爲競爭對手之間的交流機會。香港活豬拍賣市場也有這些環境因素存在。雖然如此，這不表示要取締這等環境因素，因爲或多或少它們都可能是促進市場效率中不可避免的因素。

11. 外國競爭監管機構面對同樣的問題。通常揭露合謀壟斷行爲會透過直接證據如證人供詞和書面文件證據指證合謀壟斷行爲確曾發生。許多時，合謀壟斷（卡特爾 **Cartel**）被發現不是因爲競爭監管當局的調查，而是一些卡特爾的成員利用寬免安排的先行優勢告知競爭監管機構有關合謀壟斷的活動，目的想尋求豁免其法律責任（或減低處罰）。消委會並不是調查機構，不像執法的競爭監管機構有授權可以強制要求證據。香港政府表示會草擬競爭法防止反競爭行爲包括合謀定價協議和圍標等行爲。將來負責執法的競爭監管機構可利用寬免安排和調查權搜集有關直接合謀壟斷行爲的證據。

## 市場集中度

12. 市場集中是指減少市場上的競爭者，營造助長反競爭合謀壟斷行爲的環境，然而，根據消委會所得資料顯示，由於加入成爲豬肉買手沒有太大的入行障礙，故此並未構成前述的市場集中情況。

## 串通投標的間接證據

13. 另一方法去了解活豬拍賣價格大幅波動，以及豬肉零售價上升的原因，就是利用一些公開資訊，及由食物及環境衛生署提供有關拍賣價格的數據，去查看批發/拍賣市場上，有否不正當的行爲出現，例如串通投標。
14. 一般來說，串通投標的行爲，要有下述兩種情況：-

（一）參與合謀的買手，在整體市場上明顯地佔有相對高的比例，足以對競爭環境造成重大的經濟影響。

(二) 買手要作出串通投標的行為，必須先降低其買入價（降低成本），或擴大買手與下手買家兩者之間的價格差距，透過合謀壟斷，從中獲取多的利潤。

15. 從拍賣價格數據表面上看來，價格大幅波動會增加買手於拍賣時的成本，繼而導致零售價格上升。要證明此假設是否成立，視乎買手曾否合謀以低價競投，藉此而謀取更多的利潤。

爲了要證明這一點，便需審視有關的數據，去証實競投的高價是人爲的，企圖去瞞騙其他競投者，令他們作出相應的高價競投，達致提高價格的目的，而最後那些合謀的買手卻能以比其他買手較低的價格買入。

16. 在正常運作的拍賣市場中，供求的資訊會影響市場的運作。在競投過程中，買手會因供求的情況而作出相應的投價，假若一些買手所投得活豬的價格，有跡可尋地持續傾向於低價投得，便會引起對拍賣市場中競爭行為的關注，爲了証實是否有買手串通投標的情況，本會搜集農曆年前，即 2008 年 1 月至 2 月期間，市場五名最活躍買手在上水屠房的競投模式，並與其他買手的競投模式作出比較和分析。
17. 在此期間，五名最活躍買手的競投模式，與其他競投者模式相類似，故此本會並沒有發現任何不尋常的競投情況，去証實上述的假設。

## 供應市場結構的改變

18. 自 2008 年年初開始，兩個新的供應商中，廣南行增加了市場佔有率，而農業專區的市場地位亦漸穩定下來。政府放寬對供應市場的政策，透過增加批發市場上供應商的數目，爲市場注入新的競爭力，亦對五豐行以往的市場支配地位帶來具競爭力的挑戰。

## 五豐行的市場力量

19. 消委會發現自廣南行加入市場及就其供應的流程安排作出調整後，對整體供應的安排起了重大的改變。以往由於牲口欄位數目不足，當活豬抵達屠房後，廣南行往往須即時拍賣其豬隻。故此在 08 年 3 月中至 7 月中，所有入口的豬隻抵步後須即時拍賣，導致每天上午 6 時半在上水屠房及荃灣屠房所進行的拍賣中，往往沒有活豬可再供拍賣。

然而政府其後改善了欄位的供應，現時業界已妥善分配欄位，供應商能保留活豬至翌日拍賣，由於改善了欄位的供應，新供應商可藉此改善其供應安排，五豐行亦不再被視為可透過操控欄位的情況而獲得任何競爭優勢。

## 價格上調受供應不足影響輕微

20. 供過於求會令市場價格下調，而價格上升可吸引供應因而填補市場上的短缺。因此，預計入口香港的豬隻數目及從價格數據顯示的每日日內平均價之間的相互關係，值得探討。
21. 由於新鮮屠宰的豬肉並非作貯存用，豬肉買手都會根據即時供應和需求情況出價，因此有關當日實際供應情況的資料，比預計未來供應的資料來得重要。本會從數據發現每日可供在早上六時半拍賣的豬隻數目這資料會影響當日的拍賣價；拍賣時的供應量愈高，平均價格愈低。

## 價格波動非因供應不足

22. 有部份買手指早上六時半的拍賣時段提供了入貨緩衝的機會，不單令市場穩定，而是減少拍賣價的波動。但本會取得的價格數據並不支持這說法，反之，在該時段可供售賣的豬隻數量對當日內價格的波動並無影響。

## 「進取」出價

23. 在批發和零售層面的誤導性價格資料，可以扭曲供求的運作過程，影響分配上的效率。因此，當市場波動時，利用價格偏高和與供應有關的誤導性資料去圖利的誘因及機會會提高。本會取得的數據顯示有兩個只佔小量市場份額的買手，在某一個時間作出很「進取」的出價，此外，其中一個買手出價的方式相較偏離一般買手所採用的模式。
24. 沒有足夠證據證實該不尋常地「進取」的出價方式是為扭曲市場資訊而出現，但本會不能排除背後有圖利的動機和其他合理解釋<sup>1</sup>。而他們所作的「進取」出價，有可能令市場最高價遠遠偏離當時市場上的平均價。

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<sup>1</sup> 見英文版內文第 4.36 段

## 較高價會否令供應上昇

25. 事件過後，有人指稱三個內地入口商操控供應。經濟理論相信當市場價格高企或出現短缺時，供應商會增加供應，同樣道理，當需求低（可見於價格低）時供應量會減少。換句話說，要證明供應者間有合謀供應行動，必須找出供應被扭曲及相應價格影響的證據。
26. 在取得的價格數據中，沒有證據顯示入口商會因應拍賣價及在拍賣時出售豬隻的數目而入貨。入口商似乎都維持與口岸單位事先安排從內地付運到香港的豬隻數量，而不能因應付任何突然的需求上昇而控制供應。由於這限制，批發價會因少量的供應或需求變化而出現波動。
27. 重要的是，本會取得的數據顯示影響少量剩餘本地農場豬隻供應的，是上一日的平均日內價格，而非在早上六時三十分時段內可供售賣的豬隻數目，而平均價格愈高，隨後一日的本地供應量就似乎愈高。

## 結論

28. 報告發現找不到活豬拍賣過程和屠房辦事手法中有干預或限制競爭的直接證據。然而，要獲得有否合謀壟斷行爲的明顯證據，需具有執行競爭法的相關機構的權力，相信本港不久將來會有相關法例，賦予執法機構權力進行調查及搜證。
29. 基於權力所限，本會只可就已公開的資料及研究期間所搜集到有關鮮肉供應鏈的情況，有限度找出問題所在。
30. 本會留意到過往由於拍賣前的「欄位」供應不足所引起的競爭問題，隨著廣南行改善物流的安排，及政府向新活豬代理商提供欄位的措施，問題已獲解決。這情況也反映了開放市場予新入口商，可以帶來的新安排及政府積極回應市場競爭的措施，這些都有助提升活豬供應流程的效率，及引入更多彈性去解決將能出現的市場樽頸情況。
31. 就拍賣供應及價格，找不到有買手合謀壟斷行爲以操縱拍賣價去提高利潤的證據，但報告指出部份買手在拍賣中的「進取」出價，會導致最高拍賣價在某時段中偏離市場的平均拍

賣價，而明顯地內地的每日供應活豬量亦不受此等暫時性短缺及拍賣價影響。

32. 本地豬場的活豬供應，可緩衝市場活豬短缺或供應過多的情況，減少因供應波動而導致的價格壓力，而資料數據亦顯示本地豬場會就豬隻價格上升而增加供應，不過，由於愈來愈多市民對公眾健康及環保問題的關注，導致本地豬場數目下降，因而令到本地豬隻供應起不到明顯的緩衝作用，除非行業能找到更有效利用市場資訊，當價格上升可即時令市場有更多供應，否則，即使市場出現小規模短缺，也可能導致大幅的價格波動。

## 建議

33. 有關限制供應和圍標的指控，是屬「非常嚴重」的反競爭行為，如果有關指控再出現，消委會相信現時政府建議的跨行業競爭法和競爭委員會會協助調查，競爭委員會根據相關法例和程序作出比這份報告更有足夠證據的調查。不過政府可以主動鼓勵業界成立一個正式處理投訴機制或在新的經營服務協議合約條款中，規定上水屠房持牌人士設立一個處理投訴機制，有關細則可以參考消委會的良好企業社會責任指引的成立處理投訴機制的建議。
34. 研究發現有些主要市場買手並沒有參與荃灣屠房買賣，會導至有人懷疑排外性反競爭行為，因荃灣屠房服務只佔市場百分之二十五，對批發市場影響不會太大。不過五豐行在屠房服務市場有優勢，同時亦參與新鮮豬肉市場供應鍊上的各種商業活動。業界認為五豐行會濫用市場優勢，利用反競爭行為令其他縱合的業務受惠的想法，或會繼續在市場出現。
35. 外國競爭監管機構用「防火牆」措施去防止縱合企業使用或透過市場力量獲得到比競爭對手更多的競爭優勢。如果市場優勢者可以利用必要服務或控制審核程序令其縱合業務的連繫公司得益，競爭對手受損的情況下，有必要設立制定「防火牆」措施。
36. 香港也有設立「防火牆」經驗，電視廣播有限公司(無線)和無線附屬下的銀河衛星廣播有限公司(銀河)的牌照中都有

一系列「防火牆」的條文，以保持無線及銀河分開管理，目的是維持市場在公平原則下自由競爭，例如條款要求無線不能在未經廣播事務管理局批准的公開投標程序下，以排外性合約提供銀河任何電視節目或電視頻道。

37. 再者，當政府考慮機場管理局私有化時，也提議在相關法例內有關使用土地和業務範圍上，要設立「防火牆」防止經營機場的新公司作出反競爭行爲或濫用市場優勢行爲。
38. 雖然消委會沒有發現任何現存問題，不過，市場不斷改變和競爭壓力增加情況下，例如入口商競奪更多五豐行的市場佔有率，情況可能會改變。視乎五豐行擁有屠房服務市場優勢會否引致的競爭問題，政府可考慮一些「防火牆」措施是否適合，例如「平等使用與屠房服務有關的必要服務」或「批出外判服務，例如停車場管理或清潔服務，必須要以公開競投進行」等。

## Table of Contents

|   |    |
|---|----|
| <b>EXECUTIVE SUMMARY</b> .....  | 3  |
| Introduction .....  | 3  |
| Hong Kong Pork Market.....  | 4  |
| Information Transparency .....  | 4  |
| Competition Analysis.....   | 5  |
| Collusive Conduct.....  | 5  |
| Market Concentration Levels.....  | 5  |
| Circumstantial Evidence on Bid Rigging.....                             | 5  |
| Change in Supplier Market Structure .....                               | 6  |
| Market Power of NFH .....   | 7  |
| Price Increases Mildly Caused by Insufficient Supply.....               | 7  |
| Price Fluctuations (Volatility) Not Caused by Insufficient Supply ..... | 7  |
| Instances of Aggressive Bidding .....                                   | 7  |
| Will Higher Prices Lead to More Supply .....                            | 8  |
| Conclusion .....  | 8  |
| Recommendations .....   | 9  |
| <br>  |    |
| <b>CHAPTER ONE: INTRODUCTION</b> .....                                  | 12 |
| Background.....   | 12 |
| Objective and Scope of the Study .....                                  | 14 |
| The Approach of the Study.....  | 15 |
| <br>  |    |
| <b>CHAPTER TWO: MARKET ENVIRONMENT</b> .....                            | 18 |
| World Food Environment .....  | 18 |
| Demand Factors .....  | 18 |
| World Food Supply Developments.....                                     | 20 |
| Mainland Pork Market .....  | 21 |
| Trade Pattern.....  | 22 |
| Recent Market Trends.....   | 24 |
| Hong Kong Pork Market.....  | 25 |
| <br>  |    |
| <b>CHAPTER THREE: SUPPLY CHAIN FOR LIVE PIG</b> .....                   | 28 |
| Import Arrangements .....   | 28 |
| Mainland Live Pig Supplies .....  | 29 |
| Hong Kong and Mainland Import/Export Regulations.....                   | 29 |
| Slaughterhouse Practices .....  | 30 |
| Regulating Slaughterhouse Services .....                                | 30 |

|   |           |
|---|-----------|
| Food Safety Inspection .....  | 32        |
| 'Laan' Services in Slaughterhouses .....                                | 33        |
| Auction Bidding Practices .....   | 34        |
| Information Transparency .....  | 35        |
| Retail Sector .....   | 36        |
| <b>CHAPTER FOUR: COMPETITION ANALYSIS .....</b>                         | <b>39</b> |
| Safeguarding a Competitive Environment .....                            | 40        |
| Features of Auction Markets that can Facilitate Collusion .....         | 41        |
| Collusive Bidding of Buyers .....                                       | 43        |
| Change in Supplier Market Structure .....                               | 46        |
| Market Power of NFH .....   | 48        |
| Causes of Price Increase and Intra-day Price Fluctuations .....         | 49        |
| Price Increase Mildly Caused by Insufficient Supply .....               | 49        |
| Price Fluctuations (Volatility) Not Caused by Insufficient Supply ..... | 50        |
| Instances of Aggressive Bidding .....                                   | 51        |
| Will Higher Prices Lead to More Supply .....                            | 53        |
| Conclusion .....  | 54        |
| Recommendations .....   | 55        |

## EXECUTIVE SUMMARY

### Introduction

1. In 2007 the Mainland authorities authorised two more companies - Guangnan Hong Limited (GNH) and Hong Kong Agriculture Special Zone Limited (ASZ) to supply live pigs to Hong Kong, in addition to the existing authorised supplier of live pigs, Ng Fung Hong Limited (NFH). The increase in the number of pig agents provided additional channels through which live pigs could be supplied to Hong Kong.
2. On 15<sup>th</sup> January 2008, the wholesale price of live pigs surged 70 percent from the previous day's auction trading price of HK\$1,400 per 100 catties to a record high of HK\$2,400 in the first few bids in the morning session of the auction. By mid-afternoon of 15<sup>th</sup> January, NFH and buyers decided to adopt an allocation system with the result that the wholesale price went down to about HK\$1,600 per 100 catties.
3. Some buyers alleged that the price hike was due to a drop in the number of live pigs transported to Hong Kong. However, import figures indicated that the supply was in fact stable in the first half of January 2008. The supply of live pigs on 14<sup>th</sup> January was about 4,100 and it was expected that the supply would be maintained at the level of about 4,000 head per day for the next two days.
4. On the next day, 16 January 2008, wholesale price of live pigs at the Sheung Shui slaughterhouse dropped to HK\$1,800 per 100 catties, sharply down from 15<sup>th</sup> January's record high of HK\$2,400. Some meat shops raised fresh pork price to HK\$48 a catty on the 15<sup>th</sup> January when it was only HK\$40 on the 14<sup>th</sup> January. In addition, some meat retailers claimed that the price could rise to HK\$56 a catty if the wholesale price did not drop. The retail price of fresh pork had almost increased more than 60% in a year at around \$39 per catty in April 2008.
5. Concerns were raised in the Legislative Council that the recent pork price fluctuations were "unusual" and a concern was expressed that market conditions might be "unhealthy". Many LegCo members from various parties pressed for an investigation into the price surge, and the Financial Secretary noted that the Consumer Council (CC) would look into the matter and the relevant Government Bureau and Department would also cooperate to monitor developments in responding to the LegCo members' concerns.
6. This report represents the results of inquiries the CC has made, and its analysis of data provided by the Government and publicly available information, in order to ascertain what features might exist in the structure of the marketplace for fresh pork, and what conduct can be observed that might indicate some forms of anticompetitive conduct.

## **Hong Kong Pork Market**

7. Almost all the pork consumed in Hong Kong is imported. In 2007, of the total amount of pork consumed, Hong Kong people consumed about 45% of fresh pork, 4% of chilled pork and 51% of frozen pork. Total consumption has decreased by 16% over 5 years, and there has also been a trend of substituting chilled and frozen pork for fresh pork. The import of pork into Hong Kong is affected by the increasingly global market environment, and the expanding food market in Mainland. These changes in food consumption patterns and supply chain arrangements in the world and in Mainland will continue to shape demand and supply in the local market.
8. All live pigs for the Hong Kong market are slaughtered at three slaughterhouses; at Sheung Shui Slaughterhouse (SSSH) Tsuen Wan Slaughterhouse (TWSH) and the Cheung Chau Slaughterhouse. The SSSH is publicly-owned and operated by NFH while the TWSH is privately owned and operated by a company that NFH invested with voting control of 30%. The third slaughterhouse is very small in scale of operations and has negligible effect on the operations of the other two slaughterhouses. The market share of SSSH to that of TWSH is around 3:1.

## **Information Transparency**

9. It appears that there is sufficient information disclosure, and auction procedures, to ensure a fair auction at the existing slaughterhouses. For instance, names of the successful bidders and the price of each lot of live pigs are made known immediately after the bidding. In the face of industry complaints, the Government has also taken some measures to improve the flow of market information and to secure a stable supply. The new measures have included seeking Mainland Ministry of Commerce assistance in maintaining a sufficient and stable supply of pigs to Hong Kong at a suitable level, and notifying the Hong Kong Government, on a daily basis, of the quantity of live pigs to be supplied to Hong Kong on the following day. The Government makes this information known to the public, and in addition, the Hong Kong Agriculture, Fisheries and Conservation Department uploads information onto its website, provided by various major importers or wholesalers, regarding supply figures and reference wholesale prices of a variety of fresh food produce (including that of the live pigs) so as to provide useful data for both the trade and the public. All these measures enhance transparency in the operation of the live pig auction market.

## Competition Analysis

### *Collusive Conduct*

10. There are some features in auction markets that might influence the competitive interaction between buyers and sellers that have been observed in competition law court cases in other jurisdictions; for example, buyers only competing on price, the public announcement of bids and the identity of the bidders, buyers facing similar cost structures, buyers being customers of one and other, social or professional activities of trade associations providing a pretext for meeting of competitors. These features are currently observable in the Hong Kong live pig auction market. However, their mere presence does not mean that action should be taken to remove them, because by and large they may be necessary or unavoidable features in the efficient operation of the trade.
11. Competition authorities in other jurisdictions face the same issues. The typical means by which collusive conduct is uncovered is through explicit evidence in the form of testimony and written documentation that the collusive conduct has occurred. Often, the existence of cartels is not disclosed through the investigative endeavours of a competition authority, but by some cartel members themselves who make use of leniency programs whereby cartel members can obtain first mover advantage and seek immunity from legal action (or reduced penalty) by informing the competition authority of the cartel arrangements. The CC is not an investigative body and does not have the coercive power to obtain evidence similar to that available to authorities that administer competition laws. The Hong Kong Government has indicated that it will introduce a general competition law that will prohibit anti-competitive conduct including collusive price agreements and bid rigging. In these circumstances, the future competition authority that administers the law will be in a position to use leniency programs and its information gathering powers to collect evidence on explicit collusive conduct.

### *Market Concentration Levels*

12. Market concentration, in terms of reduced number of competitors can also lead to an environment that facilitates anticompetitive collusion. However, the information obtained by the CC indicates that market concentration levels are not a concern with regard to pig buyers due to the low barriers to entry.

### *Circumstantial Evidence on Bid Rigging*

13. Another method of understanding the reasons behind the extreme auction price fluctuations and increases in the retail price for pork meat is to examine publicly available information and auction price data provided by Food and Environmental Hygiene Department (FEHD) to detect any irregularity, such as bid rigging, in the wholesale auction market.

14. There are two criteria for typically successful bid rigging behaviour:
  - Y First, the total market share of the participating buyers involved in the alleged collusion should be sufficiently high to have a significant economic effect on the competitive environment.
  - Y Second, bid rigging amongst buyers must have the result of lowering their purchase prices (to lower costs) or increase the margin between costs paid by buyers and the income received or price paid by downstream purchasers, thereby resulting in 'cartel' profits.
15. The auction price data that has been observed indicates extreme price fluctuations that on the face of it have increased costs for buyers at auction, which in turn resulted in increased retail prices. The hypothesis that needs to be tested in these circumstances is whether collusive activity has occurred in bidding down prices, with the intention of increasing profits for cartel members. In order to do this, an approach has been taken where available data is examined in a way to ascertain whether the extreme high bidding prices may have been artificially placed to disguise other bidding prices, thereby inducing others who are not in collusion into responding in a similar manner and fulfilling their orders at higher prices, whereby those in collusion can subsequently secure their purchases at lower prices when compared to other buyers.
16. In a normally functioning auction market, information affects the market symmetrically insofar as demand and supply are concerned, and it can be expected that competitive buyers will respond with similar symmetrical bids. It follows that if there is systematic bias toward lower prices in the winning bids by some buyers, there are competition concerns in the auction market. In order to detect any evidence of bid rigging from the buyers, the bidding pattern of the market top five active buyers in SSSH in the period January and February 2008, before the Chinese New Year, was plotted and compared with the bidding pattern of other buyers.
17. The pattern of the bids of the top five active buyers was observed to be similar to that of others over the period. The CC does not therefore observe any irregularity in the bidding pattern that supports the above hypothesis.

#### *Change in Supplier Market Structure*

18. Since the beginning of 2008, it is noted that of the two new suppliers, GNH has gained market share and ASZ has gradually settled into a stable market position. The Government liberalization policy that has taken place through an increase in the number of suppliers to the wholesale market has therefore brought competition in the market; and a competitive challenge to the previous dominance of NFH.

### *Market Power of NFH*

19. The CC has observed that an important change in supply arrangements has occurred subsequent to the entry of GNH. GNH previously auctioned its stock immediately when they arrived in the slaughterhouse, because of the shortage of “laans” (holding yards). Consequently, as at mid-March 2008 to mid-July, all imports were auctioned immediately upon arrival and there were no left over stocks for the auction session at 6:30am at both SSSH and TWSH. However, subsequent to Government action to improve the availability of “laans”, it is now understood that the trade has reverted to utilising “laans”, and that suppliers now operate on the basis where they can maintain stocks left over for auction in the next morning. Because of the improved laan availability, the new suppliers are able to utilise the “laans” to better organise their supply arrangements and NFH are no longer considered able to leverage control over “laans” to obtain any competitive advantages.

### *Price Increases Mildly Caused by Insufficient Supply*

20. Increased supply in relation to demand brings about lower prices in the market, and higher market prices can stimulate supply and eliminate any shortages in the market. It follows that the relationship between the estimated number of pigs imported into Hong Kong, and the average intra-day prices from the price data, should be examined.
21. Freshly slaughtered pork is not for storage, and buyers therefore trade on spot supply and spot demand. Therefore, information regarding the actual supply situation on the day is more relevant information than that of the estimated future supply. In this regard, it was noted from the data that the number of pigs available for trade at the 6:30am auction session for each day affects the spot market prices for the day. The more the supply in the auction at that time, the lower the average prices.

### *Price Fluctuations (Volatility) Not Caused by Insufficient Supply*

22. Some buyers argued that the 6:30am auction session provides a stock buffer in not only stabilizing the market but reducing volatility in bidding prices. However, the price data obtained does not support this claim. It appears that the amount of stock available for trade at the 6:30am session has no effect on price volatility throughout the day.

### *Instances of Aggressive Bidding*

23. Misleading price information at both the wholesale and retail levels can distort the supply and demand process, and affect allocative efficiency. It follows that the incentive and opportunity for profiteering from misleading information on supply or price is higher when the market is volatile. From available data, it is noted that two buyers (who do not have substantial market share) submitted very aggressive bids at one particular time. Moreover, in comparison with other buyers, the bidding pattern of one of the buyers was not similar to the pattern of the average buyers.

24. There is insufficient evidence to substantiate that the phenomenon of unusual patterns of aggressive bidding was intended to distort market information. However, the CC cannot rule out the possibility of profit motive behind or other reasonable explanations<sup>1</sup>. However, the particular buyers' aggressive bids could have caused the maximum price to substantially deviate from the average price in the market at that time.

*Will Higher Prices Lead to More Supply*

25. There have been anecdotal claims that the three Mainland importers manipulate the supply. Economic theory holds that suppliers will supply more when the market price is high, or there is an indication of a shortage in the market. By the same token, if the demand is low (as indicated by lower prices) then supply will be similarly curtailed. Evidence of collusive practices by suppliers on supply would therefore need to indicate some distortions to supply and a symmetrical effect on price.
26. From the price data available, there is little evidence that in the normal course of events, the importers respond to auction market prices and the amount of stock that is purchased at auction. It appears that importers act more in line with the amount arranged with regional trade enterprises for delivery from the Mainland to Hong Kong and have no control over the supply to meet any sudden demand increase. Given the constraints, the wholesale price could vary in response to any small discrepancy of supply or small change in demand.
27. Importantly, data obtained by the CC indicates that the previous day's average intra-day price, but not the number of pigs available for trade at 6:30am auction sessions, significantly affects the supply of pigs from the small residual number local Hong Kong pig farms. It seems that the higher the average prices, the higher local supply on the following day.

**Conclusion**

28. In this study, the CC has not found any direct evidence of restrictive practices that hinder the competitive environment, in terms of the auction process for live pigs and the practices in the slaughterhouse. Clear evidence as to collusive practices can only be obtained through the type of powers available to government authorities that administer competition laws. There is every likelihood that Hong Kong will have such a law in the future. The relevant competition authority will therefore be in a position to use powers to obtain that clear evidence - if it in fact exists.

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<sup>1</sup> Please refer to Paragraph 4.36.

29. The CC's ability to examine the issues has therefore been limited to identifying issues that arise from publicly available information on practices that have taken place, and currently take place in the supply chain for fresh pork meat to Hong Kong consumers.
30. The CC notes that there was previously a competition problem with regard to limited supply of "laans" prior to auction. However, this has been resolved through first, GNH's subsequent revised logistical arrangements for selling their stock which negated the use of "laans" for overnight stocking, and the current apparent use of "laans", following the Government's initiatives in making "laans" available to the new entrants for overnight stocking purposes. This situation reflects the fact that opening up the market to new importers who have introduced new arrangements, and the Government's competition policy initiatives, have brought about some efficiency gains in the supply process and could bring about more flexibility to resolve future supply bottlenecks in the market.
31. With regard to information on auction supply and prices, no patterns of behaviour have been identified that indicate collusive conduct by some buyers to manipulate high bidding prices for the purposes of increasing their profit margin. However, it appears that there was aggressive bidding by some buyers that could have caused the maximum price to substantially deviate from the average price in the market at a particular time, it is apparent that Mainland daily supply does not respond to temporary shortage of supply or auction prices.
32. The supply of pigs by local farms could act as a buffer to smoothen out shortages or excess supply in the market and lessen pressure on prices in the light of fluctuations in supply of imported pigs. The data obtained has indicated that the residual number of local pig farms have reacted to increase supply in response to price increases. However, increasing public concern about public health and environmental problems associated with pig farming has led to a reduction in the number of pig farms in Hong Kong. Local supply is therefore has a lesser effect in smoothing out discrepancies that might arise in the market. As a result, unless the trade finds a way to increase or to use market information efficiently i.e. where price increases lead to more supply, large price fluctuations could arise when there are even small shortages in the market.

## **Recommendations**

33. Since the allegations regarding restriction of supply and bid rigging are "hard core" anti-competitive conducts, the CC believes the current proposed cross-sector competition law and the Competition Commission will assist in the future examination of similar complaints if they appear again. The various laws and processes that will be available to the Competition Commission will provide a more robust foundation upon which investigation can take place, than is currently

the case. Nevertheless, the Government could take the initiative, at this stage, to encourage the trade to set up a formal complaints handling scheme, or to make a complaints handling scheme an obligation by the licensee of the SSSH under the new "Operation Services Agreement" (OSA). Appropriate mechanisms for inclusion in such a complaints handling scheme can be found in the relevant recommendations that have been made in the CC's Good Corporate Citizen Guide.

34. It has been observed that some major market buyers are not participating in the TWSH auctions, and as a result this raises the issue of exclusivity. Since the market share of TWSH in overall slaughterhouse services is only around 25%, the effect of exclusivity in TWSH on the wholesale market would not be significant. However, NFH has a dominant position in slaughterhouse services and due to its involvement in various businesses along the supply chain for the supply of freshly slaughtered pork, including buyer services. Perceptions in the trade regarding abuse of market power, and the possibility that NFH could engage in anticompetitive practices to favour its various vertically integrated operations will continue to linger.
35. Overseas competition authorities use 'firewall' measures to prevent a vertically integrated company from accessing and using its market power to have significant competitive advantage over its competitors. The need for firewalls typically arises in circumstances where essential services or approval processes are controlled, or can be used, to benefit an arm of the integrated firm, to the detriment of its competitors.
36. There are examples of such firewalls in Hong Kong. The licences of TVB and Galaxy Satellite Broadcasting Limited (Galaxy), which is a subsidiary of TVB, contain a number of special conditions as a safeguard to ensure an effective "firewall" between the operation of Galaxy and TVB so as to maintain fair competition in the market. One of the special conditions provides that the TVB Group shall not supply to the Galaxy Group any television programme or television channel on an exclusive basis without conducting an open bidding process as approved by the Broadcasting Authority.
37. In addition, in considering privatization of the airport authority, the Government has proposed that statutory provisions be made to prohibit the new company operating the airport from engaging in anti-competitive activities and abuse of its dominant position in relation to its land use and scope of business.
38. The CC has not been able to identify any current problems in this regard. However, as the market evolves and competitive pressures mount, for example due to new suppliers taking more market share away from NFH, there is the possibility that this could change. The Government might need to consider whether firewall measures such

as “equal access to essential services related to slaughterhouse services” or “open tender process for the selection of service providers for outsourcing services such as parking facilities management and cleaning services” are applicable for fresh pork market, depends on the competition concerns, if any, arise from the fact that NFH has a dominant position in slaughterhouse services market.

## CHAPTER ONE: INTRODUCTION

### Background

- 1.1 In July and October 2007, the Government announced that two more companies - Guangnan Hong Company Limited (GNH) and Hong Kong Agriculture Special Zone Limited (ASZ) - had been authorised by the Mainland Ministry of Commerce (MOC) to supply live pigs to Hong Kong, in addition to the existing authorised supplier Ng Fung Hong Limited (NFH). The increase in the number of pig agents provided additional channels through which live pigs could be supplied to Hong Kong. However, some live pig buyers voiced the opinion that live pig supplies were still low which prompted aggressive bidding on imported live pigs in the auction market.
- 1.2 On 15 January 2008, the wholesale price of live pigs surged 70 percent from the previous day's auction trading price of HK\$1,400 per 100 catties to a record high of HK\$2,400 in the first few bids in the morning session of the auction at the Sheung Shui Slaughterhouse (SSSH). By mid-afternoon of 15<sup>th</sup> January, NFH and buyers decided to adopt an allocation system with the result that the wholesale price went down to about HK\$1,600 per 100 catties.
- 1.3 Some buyers alleged that the price hike was due to a drop in the number of live pigs transported to Hong Kong. However, import figures indicated that the supply was in fact stable in the first half of January 2008. The supply of live pigs on 14<sup>th</sup> January was about 4,100 and it was expected that the supply would be maintained at the level of about 4,000 head per day for the next two days.
- 1.4 On the next day, 16 January 2008, wholesale prices of live pigs dropped to HK\$1,800 per 100 catties, sharply down from 15<sup>th</sup> January's record high of HK\$2,400. Some meat shops raised fresh pork price to HK\$48 a catty on the 15<sup>th</sup> January when it was only HK\$40 on the 14<sup>th</sup> January. In addition, some meat retailers claimed that the price could rise to HK\$56 a catty if the wholesale price did not drop. The retail price of fresh pork had almost increased more than 60% in a year at around \$39 per catty in April 2008. (See Fig 1.1) whereas overall food prices increase around 20% during the same period (See Figure 1.2).

Figure 1.1: Recent Trend of the Live Pig Price and Retail Fresh Pork Price in Hong Kong

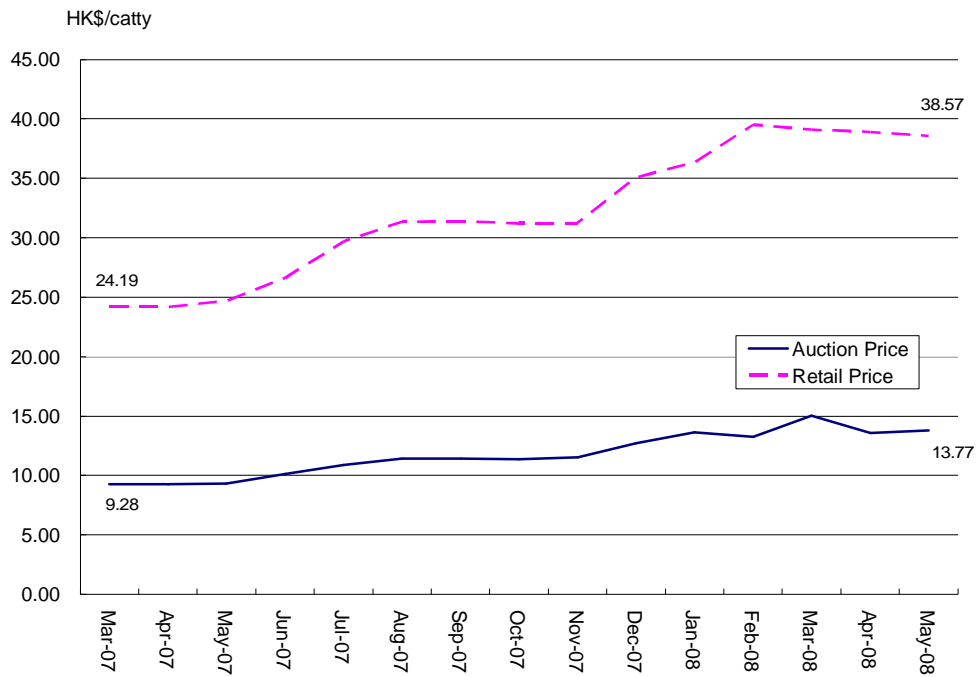
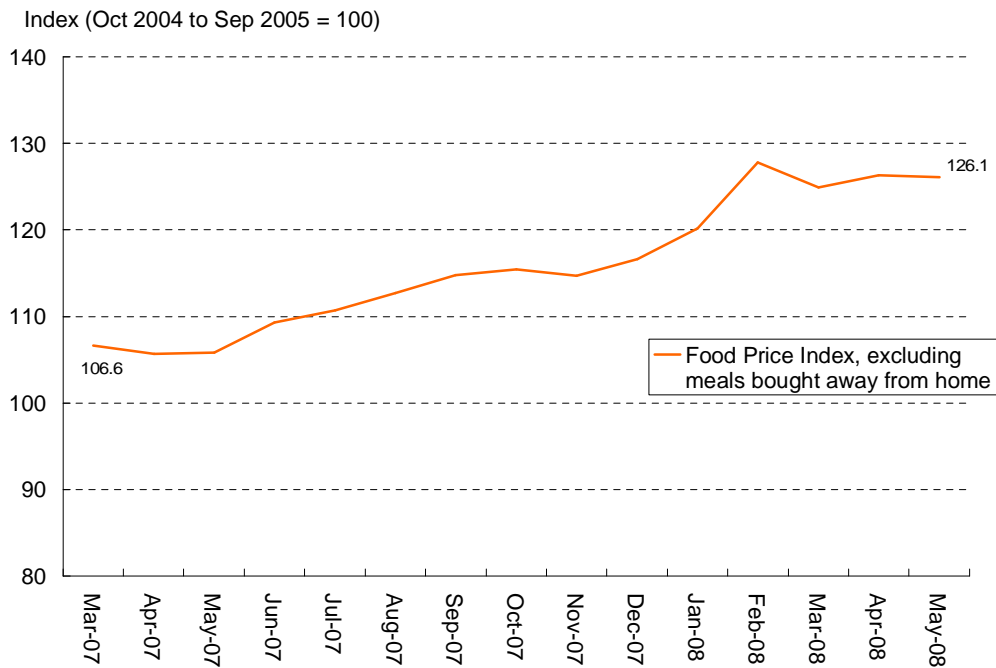


Figure 1.2: Recent Trend of Hong Kong Food Prices



- 1.5 On 16<sup>th</sup> January 2008, the Financial Secretary stated in the Legislative Council that the recent pork price fluctuations were “unusual” and expressed concern that market conditions might be “unhealthy”. Many LegCo members from various parties pressed for an investigation into the price surge on 15<sup>th</sup> January. The Financial Secretary mentioned that the Consumer Council (CC) would look into the matter and the relevant Government Bureau and Department would also cooperate to monitor developments in responding to the LegCo members’ enquiry.
- 1.6 In the same LegCo meeting, LegCo members also urged the Government to discuss with the Mainland authorities the abolition of the quota system for supplying livestock to Hong Kong and letting import volumes be freely determined by market supply and demand. They also asked the Government to provide additional support facilities, such as “laans” in slaughterhouses, etc, to facilitate the further opening up of Hong Kong’s livestock market.
- 1.7 Since then, the Government has adopted two measures to stabilize supply and increase market transparency, thereby stabilizing the prices. These measures are:
- (a) Suitable arrangements to be made by the Mainland Ministry of Commerce to maintain a sufficient and stable supply of pigs to Hong Kong at a level that can meet normal market demand; and
  - (b) the Government will be informed daily of the number of live pigs to be supplied to Hong Kong the next day. The Government will then make known to the public the estimated number of pigs supplied to Hong Kong, the number of pigs admitted to the slaughterhouses and the auction prices.

### **Objective and Scope of the Study**

- 1.8 This study seeks to inform the Government and interested persons on the possible causes of the price fluctuation that occurred in the market, and to examine the question as to whether wholesale buyers are able to influence bidding prices for more profit under current market arrangements. Accordingly, this study examines:
- (a) the food and pork business environment;
  - (b) the supply chain of the pork market in Hong Kong;
  - (c) trade practices that occur in the auction market at the wholesale level; and

- (d) makes recommendations for the Government and industry to consider.

## **The Approach of the Study**

- 1.9 In view of the events of 15 January 2008, and concerns as to the level of competition at the wholesale level in the fresh pork meat market, there are two possible inquiry approaches that can be undertaken.
- 1.10 The events of 15 January suggest that competitors might have colluded with each other on pricing in the relevant market or markets. In general, under a *per se* competition law, illegal price collusion is proven if competitors are found to have engaged in a 'contract, arrangement or understanding' with the purpose or effect of fixing or maintaining prices. Therefore, an inquiry by the relevant competition authority would merely have to prove that there had been communication on prices between competitors for the purpose, or with the effect of fixing or maintaining prices. Evidence that needs to be obtained is not concerned with the economic arguments as to whether competition has been lessened. It is assumed to have occurred as a result of the communication.
- 1.11 An inquiry under this approach therefore only has to prove that communication has taken place between competitors in relation to the fixing of prices. Interviews and statements from relevant persons or witnesses are the common pieces of evidence that are obtained. For reference as to how a competition authority conducts a 'forensic' inquiry of this type, examples of price fixing inquiries can be found in the records of competition authorities in Australia, UK and US Dept of Justice. The Hong Kong Office of the Telecommunication Authority also conducted a price fixing inquiry regarding the mobile phone sector, following allegations made in January 2000. Details of their approach to examining whether price fixing had occurred in that instance were made public.
- 1.12 An alternative commonly used approach by a competition authority regarding concerns as to anticompetitive pricing, is to examine whether competition is working to optimal levels, and for that purpose to conduct a general market study examining 'Structure, Conduct, and Performance' of the various functional levels of the industry. Examples of general market studies are the Petrol Study and Supermarket Study previously undertaken by CC.
- 1.13 Since the CC is not a law enforcement body and has no authority to conduct inquiries, a study along these lines cannot be a formal investigation. It is only possible for the CC to make contact with stakeholders in the market and seek information, but it will not be in a position to uncover any evidence of communications between buyers if they do not volunteer any such information or the information is not readily apparent by other means. Moreover, the amount of work

required for a 'forensic' inquiry into collusion on prices would be extensive and would most likely need to be intrusive. The primary focus of this general market study by the CC should therefore be aimed at finding the means to enhancing market transparency and fostering effective competition.

1.14 The main concern in terms of understanding the 'structure, conduct and performance' of the industry, is largely related to the following questions on:

(a) Trade practices in the wholesale market:

Y Are there any factors which facilitate collusion in the wholesale market that should be targeted for preventive measures?

Y Is there any evidence of bid rigging in the wholesale market that hinders competition?

(b) Conduct of the slaughterhouse operator:

Y Does the limited supply of slaughterhouse "laans" for temporary storage of imported pigs hinder competition or enhance price stability?

Y Does the running of slaughtering services by any of the stakeholders at the various functional levels of the market offer those stakeholders any competitive advantage over rivals?

(c) Market information efficiency

Y Do wholesale prices and retail prices move together?

Y Are there any irregularities in the wholesale market that hinder information efficiency?

Y Whether improvements, such as market information disclosure and market arrangements, in the wholesale auction market for live pigs to facilitate transparency would bring about more effective competition and price stability in the market;

1.15 The results of a study using this general market study approach could indicate what, if any, measures the Government and the slaughterhouse management need to take to improve market operation and market competition such as

Y whether government action with regard to further market liberalization is necessary;

Y whether the current provision of slaughterhouse services, and related services, hinders market competition; and

Y in making bidding price information public, how is this information to be used as a reference for retail price levels for consumers (for example, such as examining the relationship between crude oil, imported prices for petroleum and retail petroleum prices)?

1.16 The value of the final report to be made will lie in its importance as a future reference concerning the industry (for the stakeholders including the Government, the industry and CC) and its ability to inform the public in a comprehensive way what has been happening in the industry.

## CHAPTER TWO: MARKET ENVIRONMENT

- 2.1 Since almost all food is imported into Hong Kong, the Hong Kong food market is affected by the increasing global market environment and the expanding food market in Mainland China (Mainland). Changing food consumption patterns and changes in the supply chain arrangements in the world and in Mainland will continue to shape demand and supply in the local market in the long run.

### World Food Environment

#### *Demand Factors*

- 2.2 The world food situation is currently being rapidly redefined by new forces, which affect the pork market in Mainland and which subsequently affects Hong Kong. Income growth, climate change, high energy prices, globalization, and urbanization are transforming food consumption, production, and markets in every part of the world including, to a rapidly increasing extent, in Mainland.
- 2.3 Many parts of the developing world have experienced high economic growth in recent years. 'Developing Asia', especially Mainland and India, continued to show strong sustained growth at 9 percent per annum between 2004 and 2006. Global economic growth is projected to be 4.8 percent in 2008<sup>2</sup>. Beyond 2008, world growth is expected to remain in the 4 percent range while developing-country growth is expected to average 6 percent<sup>3</sup>. This growth is a central force of change on the demand side of the world food equation.
- 2.4 High income growth in low income countries readily translates into increased consumption of food. Another major force altering the food equation is the shift between rural and urban populations and the resulting impact on spending and consumer preferences. The world's urban population has grown more than the rural population. Within the next three decades, 61 percent of the world's populace is expected to live in urban areas<sup>4</sup>.
- 2.5 In Mainland, the urban population increases at 4% annually and household income in urban areas increased 14% annually over the last twenty years. This has resulted in food consumption growth at an average of 11% per year for the same period (Figure 2.1).

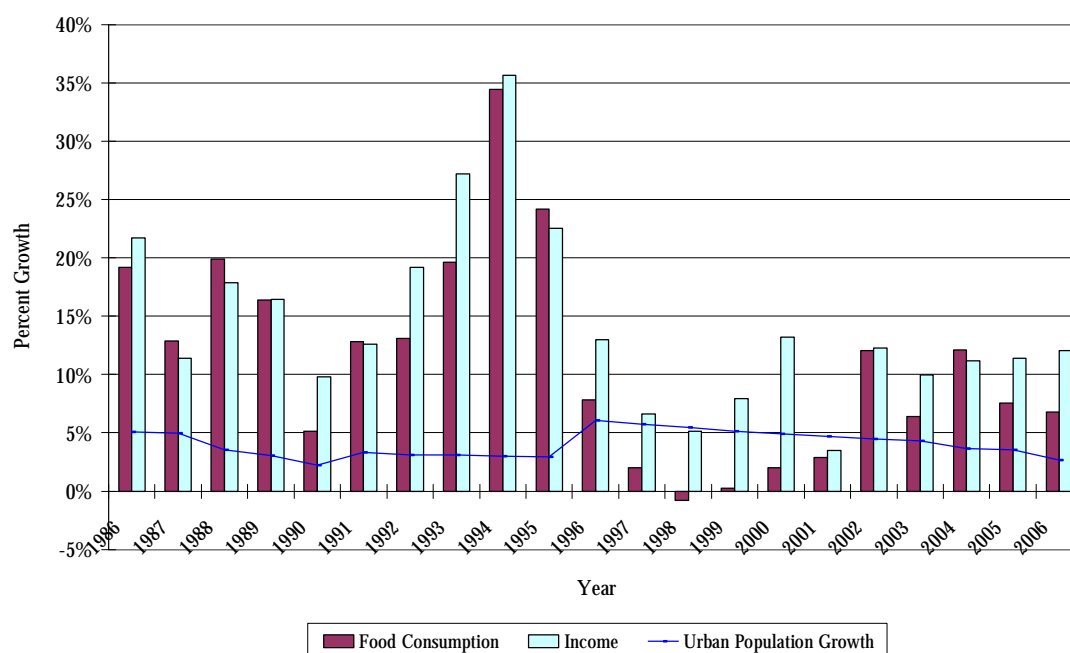
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<sup>2</sup> IMF (International Monetary Fund). World Economic Outlook Database. Washington, D.C. 2007. Available at: [www.imf.org/external/pubs/ft/weo/2007/02/weodata/index.aspx](http://www.imf.org/external/pubs/ft/weo/2007/02/weodata/index.aspx).

<sup>3</sup> Mussa, M. Global economic prospects 2007/2008: Moderately slower growth and greater uncertainty, 2007.

<sup>4</sup> Cohen, B. Urbanization in developing countries: Current trends, future projections, and key challenges for sustainability. *Technology in Society* 28: 63–80, 2006.

Figure 2.1: Food Consumption in Mainland



2.6 Higher incomes, urbanization, and changing preferences are raising domestic household demand for high-value products in developing countries. The composition of food budgets is shifting from the consumption of grains and other staple crops to vegetables, fruits, meat, dairy, and fish. Consumption of milk and vegetables is projected to increase by 70 percent and consumption of meat, eggs, and fish is projected to increase by 100 percent<sup>5</sup>.

2.7 In Mainland, there has been an increase in the consumption of meat in rural areas greater than in urban areas (Table 2.1), with the result that the increasing urban population has added even greater demand pressure on the pork, beef and mutton markets.

<sup>5</sup> Kumar P., Mruthyunjaya, and P.S. Birthal. Changing composition pattern in South Asia. In *Agricultural diversification and smallholders in South Asia*, ed. P.K. Joshi, A. Gulati, R. Cummings Jr. New Delhi: Academic Foundation, 2007.

Table 2.1: Per Capita Annual Household Food Consumption in Mainland

| Product                 | Urban        |              |                    | Rural        |              |                    |
|-------------------------|--------------|--------------|--------------------|--------------|--------------|--------------------|
|                         | 1990<br>(kg) | 2006<br>(kg) | 2006/1990<br>ratio | 1990<br>(kg) | 2006<br>(kg) | 2006/1990<br>ratio |
| Grain                   | 131          | 76           | 0.6                | 262          | 206          | 0.8                |
| Pork, beef & mutton     | 22           | 24           | 1.1                | 11           | 17           | 1.5                |
| Poultry                 | 3            | 8            | 2.4                | 1            | 4            | 2.8                |
| Milk                    | 5            | 1            | 4.0                | 1            | 3            | 2.9                |
| Fish & aquatic products | 8            | 13           | 1.7                | 2            | 5            | 2.4                |
| Fruits                  | 41           | 60           | 1.5                | 6            | 19           | 3.2                |

2.8 Increase in disposable income undoubtedly augments food purchases in low and middle income countries. Further, of these boosts in purchasing power, a higher proportion is spent on purchases of higher-value food products such as meat and dairy. Thus, macroeconomic stability and growth in low and some middle-income countries results in higher consumption of meat, providing new growth-market opportunities for domestic pork producers and world pork suppliers.

#### *World Food Supply Developments*

2.9 Climate-change risks will have adverse impacts on food production, compounding the challenge of meeting global food demand. Basic agricultural commodities such as vegetables and fruits are growing at a rate of 3% annually whereas higher-value agricultural production is growing at around 4% annually in developing countries<sup>6</sup>.

2.10 The influence of the private sector in the world food system, especially the leverage of food retailers, is also rapidly increasing. The growing power and leverage of international corporations are transforming the opportunities available to small agricultural producers in developing countries. While new prospects have arisen for some farmers, many others have not been able to take advantage of the new income-generating opportunities since the rigorous safety and quality standards of food processors and food retailers create high barriers to their market entry. Transactions along the corporate food chain have also increased in the past two years.

2.11 Between 2004 and 2006, total global food spending grew by 16 percent, from US\$5.5 trillion to 6.4 trillion<sup>7</sup>. In the same period, the sales of food retailers increased by a disproportionately large amount

<sup>6</sup> FAO (Food and Agriculture Organization of the United Nations)). *Food Outlook 2007*.

<sup>7</sup> Planet Retail *Buoyant Year Forecast for Global Grocery Retail Sales, 2007*. Press Release May 4. at: [www.planetretail.net/Home/PressReleases/PressRelease.aspx?PressReleaseID=54980](http://www.planetretail.net/Home/PressReleases/PressRelease.aspx?PressReleaseID=54980) .

compared to the sales of food processors and of companies in the food input industry. The sales of the top food processors and traders grew by 13 percent, and the sales of the top 10 companies producing agricultural inputs (agrochemicals and seeds) increased by 8 percent. The sales of the top food retailers, however, soared by more than 40 percent. Supermarkets account for a large share of retail sales in most developed regions such as Hong Kong, and increasingly so in many developing countries, including Mainland<sup>8</sup>.

- 2.12 The process of horizontal consolidation in the agricultural-input industry continues on a global scale. The three leading agrochemical companies—Bayer Crop Science, Syngenta, and BASF—account for roughly half of the total market<sup>9</sup>. In addition, the top five retailers gradually capture share up to 13 percent in the global market. In Hong Kong, the top five retailers account for 80 percent of fast moving consumer goods sales<sup>10</sup>. Although vertical integration in the food supply chain increases the synergies between agricultural inputs, processing, and retail, it can be seen that overall competition within the world food chain has decreased.

### **Mainland Pork Market<sup>11</sup>**

- 2.13 Mainland has long been the largest live pig and pork producing country in the world; with 48-50% of the world's live pigs grown in Mainland. Pig is therefore a very important food commodity for domestic food supply in Mainland, and has demonstrated high productivity growth. In 1985, about 239 million pigs were slaughtered from a national population of 331 million pigs. This accounted for around 30% of the slaughtered pigs in the world. In 2006, Mainland had 494 million pigs on farms and slaughtered more than 681 million pigs; this accounted around 50% of the world slaughter. The data indicates that significant productivity growth in the pig farming industry has occurred in the last two decades. As a pork 'powerhouse', in a global market environment, Mainland will influence all aspects of the world pig industry such as labour, trading in feed ingredients, food processing, pork meat trading, live pig trading, equipment and technology transfer.

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<sup>8</sup> Euromonitor. *World Retail Data retail data and Statistics statistics 2006/2007*, 4th edition. London: Euromonitor International Plc, 2007.

<sup>9</sup> UNCTAD (United Nations Conference on Trade and Development) *Tracking the Trend Towards Market Concentration the Case of the Agricultural Input Industry*. *Tracking the trend towards market concentration the case of the agricultural input industry*. Geneva, 2006.

<sup>10</sup> Consumer Council. *Wet Market vs. Supermarkets: Competition in the Retailing Sector*. 2003.

<sup>11</sup> Some figures are obtained from Wang, J.X. *Pork Powerhouse of the World*. *Advance in Pork Production*, Vol. 17 pp33-46, 2006.

2.14 Mainland is divided into 4 key pig-producing regions<sup>12</sup>. These regions are:

- Yangzi River region (Sichuan, Chongqing city, Guizhou, Hunan, Jiangxi, Jiangsu, Zhejiang and Anhui provinces) with 43.8% of national pork production;
- Northern region (Hebei, Shandong and Henan provinces) with 21.6% of national pork production;
- North-eastern part region (Liaoning, Jinlin and Heilongjiang provinces) with 6.3% of national pork production; and
- South-eastern coast region (Fujian, Guangdong, Yunnan and Hainan) with 13.2% of national pork production.

2.15 The Yangzi River and Northern regions are the key pork producing and internal exporting zones in Mainland. In the last several years North-eastern part has become the significant supply region because of its cheaper feed ingredient supply and high cost of grain transportation. Concurrent with rapid economic development in Guangdong, pork consumption has increased faster than pork production, and the province has become a major internal pork import region competing for pork supply with Hong Kong.

2.16 Poultry, beef, and aquaculture production has increased to account for 20 to 35% of total animal meat production in Mainland. However, pork production and consumption is still in the number one position. Of all the pork produced in Mainland, 98% is consumed domestically. Pork production averaged 35-36 kg per capita in 2003, which means about 100 grams daily of potential pork consumption for every Chinese.

#### *Trade Pattern*<sup>13</sup>

2.17 Since 1949, live pigs and poultry have been transported to Hong Kong every day. Such export was not stopped even in 1960 and 1961 when Mainland only produced 2 kg of pork per capita. Live pigs and pork products were also shipped to neighbouring countries such as Korea, Mongolia and Russia. Before 2000, Mainland exported 3 million head of live pigs per year. After 2000, export was reduced below 2.5 million head per year. Decreased live animal exports happened for many reasons such as disease control and competition from other sources.

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<sup>12</sup> Information is obtained from Wang, J.X. *Development and Future of China Pig Industry*. Ministry of Agriculture Report, PRC, 2001.

<sup>13</sup> Wang, J.X., 2006.

- 2.18 Export of chilled and frozen pork remains in the range of 0.1 to 0.15 million tons per year. This accounts for 30% of total pork product exported by Mainland. The export of processed pork products was around 60,000 tons in the late 1990's, accounting for 20% of total exported pork products<sup>14</sup>. Processed pork product exports have only increased slightly in recent years.
- 2.19 As stated by Wang (2006)<sup>15</sup>,
- The turnover rate of pigs in China (slaughtered pigs as a percentage of total pigs on farms) is lower than the world average. Turnover percentage in China was only 46.6% in 1980; ... it increased to 122% in year 2000; and 128% in year 2004. ... much lower than developed countries (158-165%) ... In 2004, pig average carcass weight (CW) was 76.8 kg in China, which was lower than the world average (78.5 kg), US average (90.6 kg) and Brazil average (81 kg).*
- 2.20 Smaller carcass weight in Mainland is closely related to genetics and Chinese cooking style. Besides, feeding methods and management also contributes to the lower carcass weight. Since pig farming is a traditional family based farming practice, 75 to 80% of the pigs in Mainland are from rural backyards and others are supplied by intensive piggeries and specialized pig-farming households. Some argued that this situation causes many difficulties in disease control, genetic improvement, carcass quality, uniformity control, pork safety control, and establishment of marketing channels<sup>16</sup>.
- 2.21 Despite obstacles mentioned above, Mainland's pig production has benefited from efficiency gains due to improved breeds and feed. This is reflected by increased imports of breeding pigs. Assuming a reasonable increase of 10% in turnover percentage in the next 10 years (increase to 138%), the current stocking rate of 485 million pigs and a carcass weight of 80 kg, then Chinese pork production will increase by 3.88 million tons. This increase will equal twice the size of Canadian pork production of 1.9 million tons for 2005.
- 2.22 Increasing percentages of sow stocks compared to total inventory are expected to translate into continued strong pig production in 2005 and 2006. Investment in pig slaughter and pork meat processing has also risen. Increased foreign investment through joint ventures will continue to boost efficiency and production. This will help to make Mainland a significant international competitor in the pork export market.

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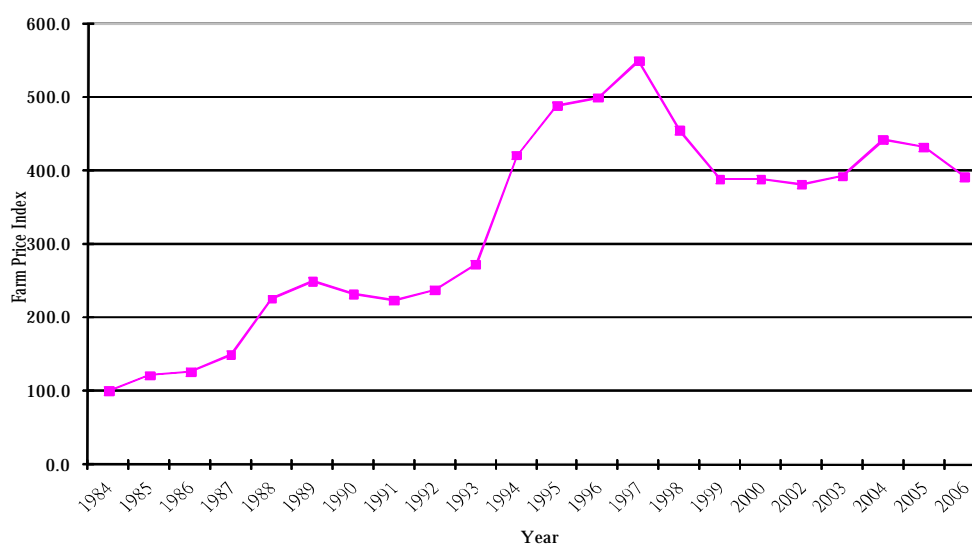
<sup>14</sup> Wang, J.X., 2006.

<sup>15</sup> Wang, J.X. *Pork Powerhouse of the World*. Advance in Pork Production, Vol. 17, 2006 p 45.

<sup>16</sup> Wang, J.X., 2006.

2.23 Amongst the agricultural products produced in Mainland, live pigs were competitively priced with the international market<sup>17</sup>. Live pig farm gate prices increased dramatically from 1992 to 1997 but came down to a stable level after 2000 to 2006. Recent increases in live pig and pork prices were the result of increases in feed price, caused by international grain price increases. Beside, tariff and quota reductions came into place with respect to WTO entry obligations and the increase in local pork prices has triggered an increase in pork and offal importation from Canada, Denmark and USA.

Figure 2.2: Farm Gate Pig Price in Mainland



#### Recent Market Trends

2.24 Consumer price index in Mainland rose to 3.4% in May 2007 and to 8.5% in April 2008. Food prices in Mainland account for nearly one-third of the consumer price index and soared 22.1 percent annual rate in April 2008, 0.7 percentage points higher than that in March 2008. Rising grain prices are also an important factor in this increase. Meat constitutes close to 7% of the CPI basket for Mainland; the price of which rose 47.9 percent annual rate - with pork surging 68.3 percent in the same period. Retail pork prices in Mainland have risen more than 50% last year, while wholesale prices increased as much as 95%.

2.25 High grain prices and the increase in pork price have the attention of the central government. It has ordered local governments to provide subsidies for pig production in the hope of alleviating the supply shortage. Important factors behind the recent increase in pork prices include a cyclical supply shortage, a severe disease outbreak among pigs in southern part in Mainland, high grain prices and a general upward trend in meat consumption.

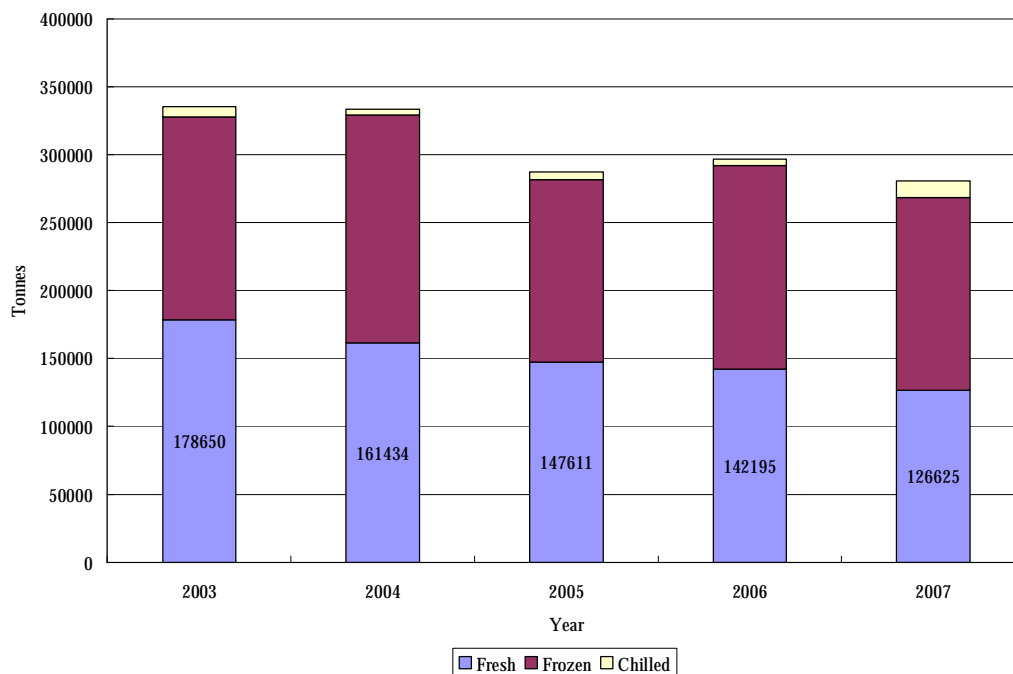
<sup>17</sup> Jacinto F. Fabiosa, Dinghuan Hu, and Cheng Fang *A Case Study of China's Commercial Pork Value Chain* MATRIC Research Paper 05-MRP 11 August 2005.

2.26 Given the scale of pork consumption in Mainland, the effect on retail pork prices, as consumers switch to alternate meats in response to high pork prices, would be limited. In addition, land constraints prevent the Chinese pork sector from expanding significantly. The reality of a growing urban population and increased per-capita demand for pork products will continuously drive up pork prices.

### Hong Kong Pork Market

2.27 Pork is one of the most popular kinds of meat for Hong Kong people. In 2006, Hong Kong people consumed about 5,430 pigs every day. There are three sources of pork supply to Hong Kong: the Mainland and local pig farms are the first two sources of fresh pork supply to Hong Kong whereas imported chilled/frozen pork is the third. In 2007, of the total amount of pork consumed, Hong Kong people consumed about 126,625 tonnes of fresh pork (45%), 125 tonnes of chilled pork (4%) and 142,106 tonnes of frozen pork (51%). Total consumption has decreased by 16% over the past years, as shown in Figure 2.3. There has also been a trend of substituting imported chilled and frozen pork for fresh pork. As such the share of freshly slaughtered pork has decreased by 8%, with the share of chilled pork increasing by 2% and the share of frozen pork increasing by 6%.

Figure 2.3: Fresh Pork, Chilled Pork and Frozen Pork Consumption



2.28 In 2000, there were 1,858,862 pigs imported to Hong Kong and 445,900 pigs supplied by local pig farmers. In 2006, there were 1,593,000 pigs imported to Hong Kong and 381,000 pigs supplied by local pig farmers. The ratio between imported pig and local pig supply was around 4:1 in 2006. Frozen pork mainly comes from the Mainland,

Belgium, Vietnam, Germany, Hungary and the Netherlands, and chilled pork mainly comes from the Mainland, Thailand and Australia. There are 659 meat importers importing chilled or frozen pork to Hong Kong from the Mainland and other countries.

- 2.29 Since the Government introduced a scheme in May 2006 to encourage pig farmers to voluntarily surrender their pig farming licences and to cease operation in Hong Kong on a permanent basis, more than 90% of pig farms submitted applications. The local daily supply was 1000 before the introduction of the voluntary surrender scheme and it dropped to around 300 in the first quarter of 2008.
- 2.30 Hong Kong began to import chilled pork from the Mainland in August 2006. Frozen pork and chilled pork have become increasingly popular in the local market. There is a marked preference by some household consumers to buy pork from freshly-slaughtered pigs, and this has given live pigs an edge over chilled and frozen pork. Nevertheless, consumers have the choice of turning to other sources for pork if the price of fresh pork from Mainland pigs becomes excessively high. In fact, other consumer groups including restaurants, Siu Mei shops, younger families and families with westernized habits have turned to use much more frozen or chilled pork in lieu of fresh pork in recent years.
- 2.31 The decrease in consumption of imported live pigs (or freshly slaughtered pork) is due to the changing eating pattern of Hong Kong people, with more and more Hong Kong people choosing to eat out. According to the Hong Kong Census and Statistics Department (CSD), the value of total receipts for the restaurants sector was \$18.8 billion in the fourth quarter of 2007, which was an increase of 49% from \$12.6 billion in the fourth quarter of 2003. The estimated share of dining out expense to total consumption expenditure increased from 16.39% in 2000 to 16.86% in 2005, as noted in the CSD report of Household Expenditure Survey.
- 2.32 In a survey commissioned by the Department of Health, it was found that of all respondents, 53% had eaten their breakfast outside of home in the past week, with 26.5% eating out 1 to 4 times and 26.5% 5 to 7 times. Of those eating out for breakfast in the past week 62% were most likely to have eaten in Chinese restaurants (including Hong Kong style tea restaurants) and 30.3% at fast food shops. Of all respondents, 71.7% had eaten their lunch outside of home in the past week, with 27.9% eating out 1 to 4 times and 43.8% 5 to 7 times. Of those eating out for lunch in the past week, 63.5% were most likely to have eaten in Chinese restaurants (including Hong Kong style tea restaurants) and 23.8% at fast food shops. Of all respondents, 52.5% had eaten their dinner outside of home in the past week, with 46.6% eating out 1 to 4 times and 5.9% 5 to 7 times. Of those eating out for dinner in the past week, 67.1% were most likely to have eaten in Chinese restaurants (including Hong Kong style tea restaurants) and

19.4% at non-Chinese restaurants. It is believed that restaurants often use frozen and chilled pork as ingredients instead of freshly slaughtered pork to save cost. This has also led the decline of total consumption on freshly-slaughtered pork.

2.33 With reference to Figure 2.4, it can be seen that wholesale prices for live pigs in Hong Kong have steadily increased from 2004 to 2006. This has not followed the farm gate pig price in Mainland (Figure 2.2) in the same period and demonstrates that the Mainland market price did not play a crucial role in determining the local Hong Kong market price.

2.34 Historically, the local fresh pork market has been well-organized and orderly, and can isolate itself from the effect of international prices and increasing demand in the Mainland because Hong Kong has a stable supply from the Mainland. However, the changes in pork consumption, the importation of chilled pork from Mainland and the reduction of local pig supply has changed the business environment that opts for more competition to suit the evolving market place.

Figure 2.4: Wholesale and Retail Prices of the Hong Kong Fresh Pork Market



## CHAPTER THREE: SUPPLY CHAIN FOR LIVE PIG

### Import Arrangements

- 3.1 Hong Kong has not set restrictions on the origins of live pig supply. Provided that Hong Kong's hygiene and quarantine requirements are met, the importation of live pigs is allowed into Hong Kong from any place. The same hygiene and quarantine requirements also apply to local live pigs. After the 1990's, live pigs were primarily imported from the Mainland. As of April 2008, Mainland supply accounted for over 94%.
- 3.2 Each year the MOC determines an annual quota for live pig exports into Hong Kong and appoints agents who are authorised to supply live pigs to Hong Kong. The agent system in respect of the export of livestock is part of the Mainland's economic and trade policy. In accordance with Mainland regulations adopted in the mid 1950s, the MOC determines the annual quota for live pig exports to Hong Kong through the release of a document entitled "Administration of the Import and Export of Goods and Administrative Measures on Quotas for Export Commodities"<sup>18</sup>. The export quota for large live pigs and middle size live pigs in 2007 was 1,610,000 and 100,000 respectively.
- 3.3 Prior to July 2007, NFH was the only agent appointed by the MOC to export live pigs to Hong Kong, and there were concerns that the sole agent status of NFH had resulted in dominance of the market for supply of fresh pork to Hong Kong. Subsequently, the MOC appointed the ASZ and GNH as additional export agents.
- 3.4 Whilst it could be expected that competition will be intensified, as the number of Mainland importer increases, it could also be argued that NFH and the other authorized live pig importers could face increased competition due to consumers and local restaurant operators substituting chilled pork and frozen pork for freshly-slaughtered pork.
- 3.5 With regard to supply arrangements from sources of live pigs in the Mainland, the MOC allocates quotas to suppliers of live pigs in different provinces/cities/autonomous regions. Designated regional trading enterprises are responsible for coordinating supplies from each region to meet the quota being allocated. Certified pig farms can choose to supply their pigs to the trading enterprises, either for export or to Mainland wholesale markets.
- 3.6 The agents appointed by the MOC approach the provinces/cities/autonomous regional trading enterprises and pig

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<sup>18</sup> Document can be downloaded from [http://www.fdi.gov.cn/pub/FDI\\_EN/Laws/ImportExport/ExportAdministration/P020061122294164218049.pdf](http://www.fdi.gov.cn/pub/FDI_EN/Laws/ImportExport/ExportAdministration/P020061122294164218049.pdf)

farms to arrange importation of live pigs to Hong Kong.

### **Mainland Live Pig Supplies**

- 3.7 In recent years, the Mainland agricultural products wholesale market has developed very rapidly, with over 70% of the total value of agricultural products supplied through 4300 wholesale markets<sup>19</sup>. Mainland pig farms no longer feel obliged to raise pigs for supply to Hong Kong in order to secure sales, and they respond to wholesale prices in nearby markets and the purchase price of the regional trading enterprise and pig agents to determine their production levels.
- 3.8 In 2006, the Mainland average pork price was RMB5.96/kg (RMB3.61/catty), i.e. just above RMB5.5/kg (RMB3.33/catty), which was the average break-even cost of production. This resulted in farms cutting production which led to shortages in 2007.
- 3.9 Due to the shortage in the supply of pigs, some provincial governments imposed restrictions on cross-regional trade, in order to secure supply for their local markets. For example, in January 2008, the Guangzhou Government ordered their local farms to only supply pigs to Guangzhou<sup>20</sup>.
- 3.10 Many Mainland retailers and wholesalers are very active in finding sources for their pig supplies and designated Hong Kong import agents therefore need to compete vigorously in order to secure supply. The terms and conditions of contracts between a regional trading enterprise and a designated agent are not subject to regulation. They are solely determined on a commercial basis. It is understood that the purchase volume and the stability of the purchase price determines whether a regional trading enterprise is able to secure supplies from a pig farm to Hong Kong. Currently, some of the designated Hong Kong import agents shift the risk in local demand fluctuations to Mainland regional trading enterprises that earn their commissions based on total turnover.

### **Hong Kong and Mainland Import/Export Regulations**

- 3.11 Importation of live pigs into Hong Kong is regulated under the Public Health (Animals and Birds) Regulations, Cap. 139 and the Rabies Ordinance, Cap. 421 administered by the Agriculture, Fisheries and Conservation Department (AFCD). Importers must apply for a permit well in advance before importation, and the importer must be a locally based person or a company incorporated in Hong Kong. Importers are required to take every precautionary measure to ensure that all

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<sup>19</sup> <http://www.china-labour.org.hk/chi/node/116211>

<sup>20</sup> <http://big5.chinabroadcast.cn/gate/big5/gb.cri.cn/18824/2008/01/29/1062@1928982.htm>

permit terms are fully complied with. Live pigs in Hong Kong must be transported, managed, and handled humanely at all times. Measures must be taken to prevent animals from suffering heat stress or contracting infectious diseases, and the crate used for transporting live pigs must be strongly built so as to prevent escape.

- 3.12 A Mainland registration system has been established for farms involved in the exportation of livestock to Hong Kong. The Centre for Food Safety under the Food and Environmental Hygiene Department (FEHD) is responsible for Mainland farm inspection to ensure the quality of livestock and farm visits are conducted throughout the year to ensure that the registered farms meet the criteria for sound herd health. This is carried out in liaison with the General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ) and local Entry-Exit Inspection and Quarantine Bureaux, with regard to inspection and certification of livestock for export to Hong Kong.

### **Slaughterhouse Practices**

- 3.13 In the past, there were three daily express trains to ensure the on schedule delivery of livestock to Hong Kong. At present, all live pigs are transported by trucks across the Hong Kong border at the Man Kam To immigration control checkpoint, which operates from 7:00 a.m. to 10:00 p.m. daily. At the checkpoint, the import permit and veterinary health certificate issued by the Mainland veterinary authority, at the collection points in Shenzhen, are checked.

#### *Regulating Slaughterhouse Services*

- 3.14 All live pigs are delivered to three licensed slaughterhouses in the New Territories. These are the Sheung Shui Slaughterhouse (SSSH), the Tsuen Wan Slaughterhouse (TWSH) and the Cheung Chau Slaughterhouse; with a total capacity of slaughtering 8500 pigs daily. The SSSH is publicly-owned and operated by NFH while the TWSH is privately owned and operated by a company that NFH invested with voting control of less than 30%. The third slaughterhouse, on Cheung Chau Island, is publicly-owned and operated by the Cheung Chau Meat Merchant Association. It is very small in scale of operations and has negligible effect on the operations of the other two slaughterhouses. The market share of SSSH to that of TWSH is around 3:1.
- 3.15 The operation of NFH is governed by the "Operation Services Agreement" (OSA) signed between NFH (licensee of SSSH) and the Government<sup>21</sup>. Under the OSA, the first year's slaughtering fees have to be stated and approved by the Government. However, for subsequent adjustments, there is no need to seek approval from the Government. Nevertheless, the licensee has to apply for approval for

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<sup>21</sup> Under the existing OSA, the licensee has to pay the Government a basic fee of \$4.125 million for every three months or 6.08% of gross income received in the preceding three months of the business, whichever is the greater.

other fees whenever there is revision at any time. Under the new contract, commencing 1.8.2009, the Government will add a clause in the OSA stating that any change to fees and charges proposed by the operator shall be subject to Government's prior approval.

- 3.16 The FEHD is responsible for monitoring slaughterhouses to ensure that their operations meet required hygiene and environmental standards, and that only meat fit for human consumption is released for sale into the market. Qualified health inspectors are stationed at slaughterhouses to inspect food animals before and after slaughtering.
- 3.17 Section 5 of the Slaughterhouses Regulation (Cap. 132 sub. leg. BU) stipulates that the slaughtering of food animals for human consumption should only be carried out in a licensed slaughterhouse. According to the Slaughterhouses Regulation, any person who intends to operate a slaughterhouse must obtain a slaughterhouse licence issued by the FEHD. To apply for a slaughterhouse licence, a person shall write and enclose three sets of detailed plans of the relating premises to the Director of Food and Environmental Hygiene seeking approval. Once a licence is issued, it shall be valid for a period of 12 months from the date of issue and may be renewed upon payment of the prescribed fee, according to the maximum number of animals permitted to be slaughtered in the premises.
- 3.18 The Slaughterhouses Regulations further stipulate that any person who requires slaughterhouse services or desires to use the facilities of a licensed slaughterhouse for the purpose of slaughtering shall write to the licensee, and except where there is insufficient accommodation available for food animals in the licensed slaughterhouse, the licensee is not allowed to refuse to provide slaughterhouse services or the use of facilities for slaughtering food animals<sup>22</sup>. The licensee is also not allowed to refuse admission of a food animal solely on account of its place of origin.
- 3.19 There are concerns with regard to environmental nuisances caused by the operation of the TWSH, which is close to a residential estate. The Government has all along worked closely with the operator, and took control measures to address these concerns and studied the feasibility of centralizing pig slaughtering in Hong Kong at the SSSH. According to the findings of the study, the capacity of the existing SSSH site enabled it to cater for the current daily throughput. However, TWSH was owned and operated by a private company and the lease did not provide for its early termination by the Government. Moreover, it was considered that a policy of having more than one slaughterhouse should be retained as a safeguard against unforeseen situations, for example where for epidemic or health reasons it might be necessary for a slaughterhouse to be closed. In addition, having more than one slaughterhouse was considered desirable to ensure

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<sup>22</sup> Currently the slaughtering price range is around HK\$90-HK\$134.

some level of slaughtering services competition in the supply of fresh meat. The Government has no plan to change the existing policy of using more than one slaughterhouse to supply fresh meat for Hong Kong.

- 3.20 However, there are some questions as to what the current level of competition is with regard to slaughterhouse services. In the past, NFH used to operate the abattoirs in Hong Kong, i.e. the Kennedy Town and was one of the beneficial owners of Tsuen Wan and Yuen Long slaughterhouses. The company later obtained the operation service contract of the slaughterhouse at Sheung Shui, which replaced the Kennedy Town and Yuen Long slaughterhouses, and one at Cheung Sha Wan. SSSH is one of the most modernized slaughterhouses in Southeast Asia and commenced operations in mid 1999. By operating SSSH, NFH obtains a dominant position of slaughterhouse services in the market.
- 3.21 In addition, NFH has vertically integrated its operation, through developing livestock raising farms in Jiangxi, Shanghai and Hebei to increase the supply of quality livestock to Hong Kong. It has a subsidiary company Shing Lee (Meat Supplies) Hong Limited (SLH) with market share of 5% that competes with other buyers at the wholesale level<sup>23</sup>.

#### *Food Safety Inspection*

- 3.22 Before food animals are slaughtered, they are kept in waiting lairages<sup>24</sup> for ante-mortem inspection by health inspectors. The Centre of Food Safety is responsible for the control on admission of food animals to slaughterhouses, and sampling and testing on agricultural chemical and veterinary drug residues. It enforces the Public Health (Animals and Birds) (Chemical Residues) Regulation (Cap. 139N) (the Regulation) to conduct monitoring and surveillance programmes for prevention of the entry of drug and chemical residues into the food chain.
- 3.23 Ante-mortem inspections aim to screen out animals with manifest lesions or disease conditions for isolation slaughter. This will prevent, as far as possible, the spread of diseases among the live animals awaiting slaughter and avoid the infections carried by the sick animals from getting into the meat production process to contaminate the slaughter hall, plant, equipment, personnel, animal carcasses and parts. About 535,000 different samples including urine, serum and other tissues from pigs were collected for laboratory examination in 2007.

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<sup>23</sup> NFH and the CRC supermarket chain, which is the third largest supermarket chain with 53 and 132 shops in Hong Kong and the Mainland, are associated companies under China Resource Enterprise Limited but NFH claimed that they operate separately. Source: <http://www.nfh.com.hk/eng/business/retail/html/retail.html>

<sup>24</sup> Sheds or enclosures for animals on their way to market or slaughter

3.24 Slaughtering takes place in the middle of the night and pork is distributed to meat shops and retail outlets in wet markets and supermarkets the next morning. When NFH was the single importer, arriving stocks were kept at the slaughterhouse overnight and auctioned before 7am the next morning. Apart from the ante-mortem inspection mentioned above, post-mortem inspections are also conducted by FEHD health inspectors at the slaughter halls, or isolation slaughter rooms, as soon as the animals are slaughtered and carcasses are dressed.

*'Laan' Services in Slaughterhouses*

3.25 Prior to placement in waiting lairages, live pigs imported into Hong Kong (without previous purchase arrangements) can be put into auction "laans" where they can be rested, made ready for auction and assessed by prospective buyers. Inside a slaughterhouse, a sale company is appointed by the import agent and is responsible for looking after the live pigs, arranging auctioning, and slaughtering and billing.

3.26 In the past, before local pig farm licenses were surrendered in 2006; "laans" were divided between local live pigs and imported live pigs, and rented to different sales companies. The laan arrangement is always part of associated services provided by the operator of the slaughterhouse, and there is no legislative requirement as to how the slaughterhouse operator allocates the "laans" in the slaughterhouse it operates. Nevertheless, slaughterhouse licensee is under the "universal services obligation" stipulated in the Slaughterhouses Regulation, noted above, to provide slaughtering services to anyone that requests them.

3.27 At present, only those live animals imported by NFH are auctioned at TWSH. Accordingly, NFH rent out all "laans" to its designated sales company, with a long term lease contract. ASZ complained in the past that all available "laans" were occupied by NFH, which it claimed restrained its import quantities and therefore undermined the competitive environment; notwithstanding the fact that competition had been introduced through additional authorised pig agents.

3.28 The Government talked with NFH (the SSSH operator) to address the complaints on the insufficient number of "laans" and make available those that were previously assigned for local live pigs, to provide "laans" to ASZ and GNH; thus resolving any competition concerns regarding the problem of access to "laans".

3.29 The reassigned "laans" can be used for transit and auction purposes yet they need to be renovated to meet environmental regulations before they could be used as lairages for keeping unsold stock overnight. There were insufficient "laans" available for the new importers at the beginning of market liberalization in the first quarter of

2008. GNH rearranged the logistics of supply by auctioning the herds immediately when they arrived in the slaughterhouse in addressing the problem of insufficient supply of “laans”. Once the food animals were sold, they were transferred to waiting lairages for ante-mortem screening inspection and slaughtering in the morning.

- 3.30 This new arrangement was gradually adopted by NFH and ASZ. All food animals that arrived during the day were auctioned immediately; with auctions starting after 10:30am and the last until 5pm.
- 3.31 The renovation works for the reassigned “laans” completed in mid-June 2008. Now both GNH and ASZ can keep the unsold stock at the “laans” overnight for the auction to be held in the early morning of the following day.

#### *Auction Bidding Practices*

- 3.32 In peak times, there are around 150 pork buyers in Hong Kong that are engaged in bidding for live pigs from the Mainland. There is no formal wholesaling of live pigs in Hong Kong as such, because some local pigs are also auctioned at the slaughterhouses<sup>25</sup>. In effect, the role of pig buyers in the slaughterhouse is, to a large extent, similar to that of a wholesaler. A pig buyer may be appointed by a number of retailers to purchase pigs on their behalf, or may himself procure pigs through auctions for his use.
- 3.33 There have been concerns that the collective market power by pig buyers has hindered open competition in the pork market and has inflated the price of fresh pork. In 2002 a report, ‘Competition in the Supply Chain of Pork’ was produced by the Competition Policy Advisory Group (COMPAG) where the actions of buyers boycotting purchases of pigs were investigated. It was acknowledged in the report that collective/collusive action taken by any group of traders to maintain the price of a commodity at a certain level, including the boycott action taken by the pig buyers, would be *prima facie* anti-competitive.
- 3.34 However, in COMPAG’s report, it was considered that the market for pork meat was not conducive to the sustained success of these kinds of anti-competitive actions as long as there were no barriers to entry in the market for supply of pigs to retailers. It was considered that, in principle, retailers were not bound by any rule to appoint a particular pig buyer. Moreover, there was no statutory restriction on who could become a pig buyer, as any person can offer services as a pig buyer to meat retailers and that the daily auctions at the slaughterhouses were open for all to attend.
- 3.35 Nevertheless, in spite of the absence of barriers to entry, over the

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<sup>25</sup> There are very small exceptions where some locally raised pigs might be sold directly to pig buyers or pork retailers

years, market concentration has increased. In sample data collected by FEHD on the bidding prices in SSSH and TWSH between January and April 2008, it was found that the top five active buyers shared 40% of total turnover in the market between mid-January and March 2008. In addition, only two of the top five buyers participated in both the SSSH auctions and TWSH auctions.

- 3.36 All three designated importers (i.e. NFH, ASZ and GNH) arrange for the auction sales of their pigs at different times on the same floor of the SSSH. If there are live animals left over, or arranged to be sold on the next day, the earliest an auction session can take place is at 6:30am at SSSH or 7am at TWSH; otherwise the next available auction is at 10:30 am at SSSH and 1pm at TWSH. The pigs are auctioned in batches, and each batch consists of 40 pigs grouped in a laan. Before any auction, the number of batches available for sale is put on a board with information about the location of the farm where the batch of food animal comes from. In order to trace an animal back to the farm that produced it, live pigs are tattooed after the auction, before slaughtering.
- 3.37 The auction is a closed bid auction, in that no buyer knows other bids until the result is announced. Buyers submit bids sequentially and can bid for 10, 20, 30 or 40 pigs. After they observe the number of bids being submitted they can revise their bids. Buyers are also allowed to talk about their bids during the auction. In SSSH, auctions of NFH pigs are conducted through a system linked with several wireless devices that buyers use to key in their bids. In other auctions buyers queue up and point in their prices on a hidden paper board.

#### *Information Transparency*

- 3.38 It appears that there is sufficient information disclosure to ensure a fair auction. For instance, names of the successful bidders and the price of each lot of live pigs are made known immediately after the bidding.
- 3.39 However, buyers have complained that unstable daily supply causes wholesale price fluctuations because of the uncertainty as to whether there will be adequate live pigs for their customers' needs. From mid-2007, some buyers accused NFH of not providing enough supply, resulting in inflated auction prices. The unfounded allegations continued even after the Hong Kong market was opened in late 2007 through the authorisation of two additional live pig agents by MOC.
- 3.40 The Hong Kong Government has subsequently taken some measures to improve the flow of market information and to secure a stable supply. The new measures have included seeking MOC assistance in maintaining a sufficient and stable supply of pigs to Hong Kong at a level that can meet the needs of the general public. For the purposes of enhancing market transparency, the MOC notifies the Hong Kong Government, on a daily basis, of the quantity of live pigs to be

supplied to Hong Kong the following day; and the Government makes the information known to the public. This enables market players, including buyers and retailers, to have more information about the supply of live pigs, which in turn can stabilise the 'wholesale' price of live pigs.

- 3.41 In addition, starting from 30 January 2008, the AFCD began uploading information onto its website, provided by various major importers or wholesalers, regarding supply figures and reference wholesale prices of a variety of fresh food produce (including that of the live pigs) so as to provide useful data for both the trade and the public. All these measures enhance transparency in the operation of the live pig auction market.

### **Retail Sector**

- 3.42 Pork meat is sold through stalls in wet markets, fresh meat provision shops, and supermarkets. Selling fresh and chilled meat needs a fresh provision shop license under the Food Business Regulation made by the Director of Food and Environmental Hygiene under section 56 of Cap. 132. In 2001 there were a total of 14,844 stalls in wet markets and 2,972 fresh provision licensed shops (for selling meat, poultry or fish). By 2006, there were only 13,909 stalls and 2,738 fresh provision licensed shops<sup>26</sup>, which included 'counter-shops' in supermarkets.
- 3.43 Fresh provision licensed shops either employ buyers or themselves participate in auctions. Since the retail sector for fresh pork is considered to be very competitive, it is not expected that any trader or group of traders in the retail sector could leverage market power to influence the wholesale (auction) price in the market.
- 3.44 In COMPAG's 2002 report 'Competition in the Supply Chain of Pork', it was estimated that two supermarkets' pork market share at the time was about 5%. The report also noted that even though supermarkets competed aggressively by lowering their pork price in May 2002, their market share only increased to around 15%. It was therefore considered they could not attain a dominant share of the local pork market within a short span of time.
- 3.45 In the CC's 2003 report 'Competition in the Foodstuffs and Household Necessities Retailing Sector - Findings and Recommendations' presented a number of significant developments were observed in the industry. The CC observed that whilst wet markets currently have a significant share of the fresh food sector, there were indications of a gradual decline in consumer patronage due to a concern with the wet market shopping environment in terms of cleanliness and comfort. It

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<sup>26</sup> <http://www.fehd.gov.hk/statistics/index.html>

was considered that supermarkets offering similar products and services were increasing their market shares and would most likely continue to increase their shares into the future.

3.46 The CC's Report found that from 1993 to 2003, the two major supermarket chains had grown 29% by number of retail outlets (31% for Wellcome and 28% for Park n Shop respectively) and there was increasing consumer preference for 'one stop shopping', suggesting that this sector was a separate market in Hong Kong as distinct to other forms of retailing. Within the context of 'one stop shopping', and having regard to a number of variables, such as the number of outlets and share of brand names (turnover), it was considered that the two largest supermarkets could be at the threshold level of market concentration standards in guidelines issued by overseas competition authorities that might warrant further attention *should any mergers or acquisitions occur in the one stop shopping sector.*

3.47 In a LegCo paper on 13 May 2008 submitted by FEHD, entitled "Provision of Public Markets in Hong Kong", a concern was expressed at the decline of the non-supermarket retail sector. In the paper it was stated that

*"In recent years, fresh provision shops (FPS) and mega size supermarkets have changed some people's shopping habits and posed strong competition to public markets in terms of price and variety of products....,*

*.....the number of supermarkets in Hong Kong has increased substantially by about 40% from some 1,160 in 2001 to over 1,600 in 2007.*

*.....Due to demographic changes and new development/redevelopment projects, some public markets have also lost their traditional clientele resulting in high vacancy rates.*

*[of the]..... vacancy rates of the 79 public markets managed by the FEHD ... [A]bout one-third of these markets had a vacancy rate of 30% or above, of which five had a vacancy rate of 60% or above."*

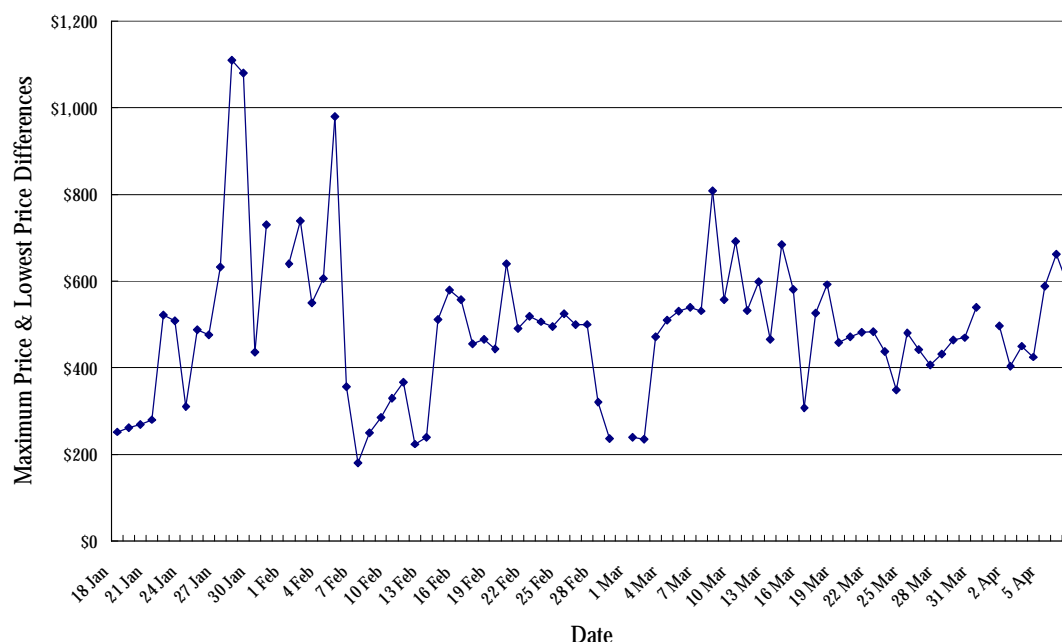
3.48 According to information provided to the CC by one major supermarket chain, more than 50% of its stores have freshly slaughtered pork on sale. However, they only account for a small market share of the total of freshly-slaughtered pork sold in Hong Kong. The chain currently has concession agreements with a small number of operators who sell pork through its supermarket stores. The supermarket sets all selling prices for the operator but the operator pays the market wholesale price for the pork supplied through the auction system at the authorized slaughterhouses and is responsible for the procurement, delivery and service to customers.

- 3.49 The other major supermarket chain currently has freshly slaughtered pork available at over 80% of its stores. It uses a single authorized buying company which arranges their licensed buyers to represent the chain to purchase live stock at the auction and to deliver slaughtered product to its meat processing plant for cutting, packaging and delivery to its stores. All the fresh pork counters of the chain are self-run and not by outside/concession operators. It is understood that there is uniform pricing for all fresh pork within the same chain except for minor differences at times of special promotions.

## CHAPTER FOUR: COMPETITION ANALYSIS

- 4.1 As noted in Chapter One, the origins of this matter began with concerns as to unusual fluctuations in the Hong Kong fresh pork auction price, and retail prices, notwithstanding a stable supply of live pigs into Hong Kong.
- 4.2 Figure 4.1 illustrates the time series of the difference between the maximum price and the average price for fresh pork auctions on the same day, collected by FEHD from the SSSH and TWSH slaughterhouses<sup>27</sup>. The data indicates that the intra-day price differences were substantial and varied considerably over time. The difference between the maximum auction prices from the minimum auction price was as large as \$1000, which was 70% of the average daily price (\$1421) in some days, over the sample period.

Figure 4.1: Range of Intra-day Price Fluctuation

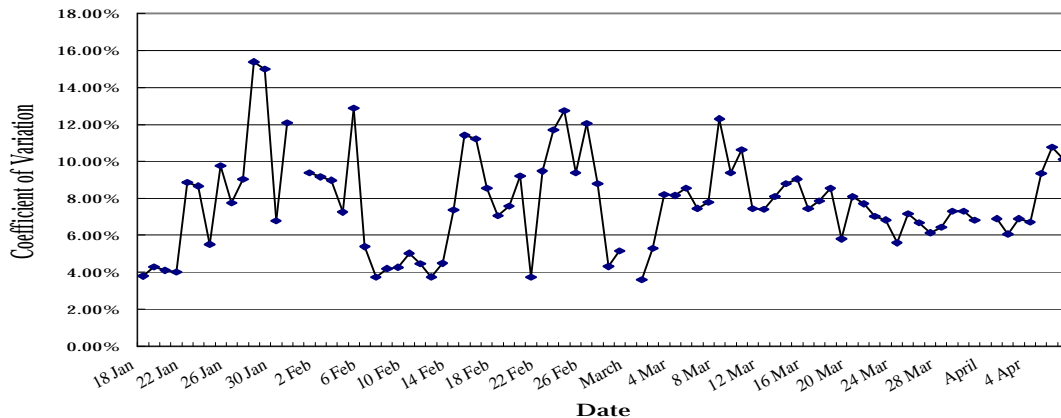


- 4.3 Food animals are auctioned in batches. There could be 100 batches a day, and in each day there could be more than 100 price observations. As noted in Chapter Three in the section 'Auction Bidding Practices', buyers submit bids sequentially for batches and some buyers bid for 10, 20 or 30 pigs out of 40 pigs in a batch. In order to identify the intra-day price volatility, the standard deviation to the average price<sup>28</sup> was identified. This is a useful statistical measurement for comparing intra-day price variation, through taking into account daily averages that could be drastically different from one day to other.

<sup>27</sup> Price data were collected between 18 January 2008 and 7 April 2008 by FEHD.

<sup>28</sup> This is also known as the 'coefficient of variation', i.e. the ratio of the standard deviation to the mean, which is a standard measure of the dispersion of data points in a data sample around the average.

Figure 4.2: Intra-day Price Variation Volatility



4.4 The data indicates that the intra day price variation volatility mirrors to a large extent the intra day price fluctuation, with only a few days having a noticeable difference, for example, the middle of February.

### Safeguarding a Competitive Environment

4.5 The primary concern of the Hong Kong Government, as noted in earlier chapters, is to ensure a stable supply of live pigs to Hong Kong to meet demand, and the efficient operation of livestock auction markets. The manner in which live pig importers sell their product into the marketplace is left to the industry. According to the current Government policy on competition, as outlined in its 'Competition Policy Statement',

*The Government considers competition is best nurtured and sustained by allowing the free play of market forces and keeping intervention to the minimum. ... not interfere with market forces simply on the basis of the number of operators, scale of operations, or normal commercial constraints faced by new entrants. ... take action only when market imperfections or distortions limit market accessibility or market contestability, and impair economic efficiency or free trade, to the detriment of the overall interest of Hong Kong.*

4.6 Therefore, as long as the market responds to the guaranteed supply of livestock into Hong Kong, and the established auction process in an efficient manner, without any anti-competitive practices or abuse of dominant position becoming apparent, it follows that there should not be any concerns over the fluctuation of the wholesale pork price, if those prices are determined in a competitive environment.

4.7 The approach of overseas jurisdictions to safeguarding competition has been to prohibit anti-competitive conduct that limits market accessibility and market contestability rather than to address market structure or monopoly power. Market power of itself is not considered illegal, as it could be the result of superior efficiency, or it could result through government actions that are designed to suit administrative

purposes<sup>29</sup>. It is only where market power is misused, or accrued through mergers or acquisitions, and competition is under threat, that competition authorities typically take action.

- 4.8 In a Government consultation paper entitled “Detailed Proposals for a Competition Law” published in May 2008, the Hong Kong Government’s position was further explained by noting that agreements involving “hard core” conduct, i.e. price-fixing, bid-rigging, output restriction and market allocation are presumed to have the purpose of substantially lessening competition, and are unacceptable under a competition regulatory regime that seeks to implement a policy of promoting economic efficiency.
- 4.9 The primary area for examination, in relation to the concerns with the past extreme price increases and price fluctuations for fresh pork, should therefore be in relation to what features might exist, and what conduct can be observed that indicates some form of anticompetitive collusion.

#### *Features of Auction Markets that can Facilitate Collusion*

4.10 There are some features in the auction markets in SSSH and TWSH that may influence the competitive interaction between buyers and sellers. Court cases involving competition law provisions in overseas jurisdictions that have been used to pursue allegations of collusive conduct can be instructive for examining the situation in Hong Kong. For example, authorities in the state of Ohio charged thirteen dairies with collusion and bid rigging in school milk auctions for the years 1980 through to 1990<sup>30</sup>. The court case illustrated a number of auction market characteristics that facilitate collusion, as follows:

- (a) Firms (Buyers) compete only on price in the auction;
- (b) Publicly announcing bids and the identity of the bidders allows collusion members to detect “cheating” from the collusive agreement. In these circumstances, undercutting and cheating on collusive arrangements would not go unnoticed, so a collusive arrangement is therefore more likely to be stable.
- (c) Regular auctions and high frequency of auctions also helps collusion because it allows for a timely punishment for deviating from the collusive agreement.
- (d) Firms (Buyers) face similar cost structures. The similarity of the cost of operations for potential buyers (or suppliers) makes it more likely that a group of firms can agree on joint behavior.

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<sup>29</sup> For example, the previous position of NFH as the only pig agent in Hong Kong.

<sup>30</sup> *Ohio v. Louis Trauth Dairy*, 856 F. Supp. 1229, 1237 (S.D. Ohio 1994)

- (e) One buyer can be a customer of another buyer. Some buyers purchase more than their daily demand and store them for resale to other buyers. This facilitates direct communication and allows a pretext for meetings between competitors.
- (f) The social or professional activities of trade associations provide a pretext for meeting of competitors. If the members meet on a regular basis to discuss issues of mutual interest, that on the face of it have no anticompetitive implications, tacit or explicit agreements can nevertheless be reached under the cover of innocuous trade association activities.

4.11 Some overseas competition authorities have also identified business practices such as

- (a) the exchange of disaggregate information on individual prices and outputs; and
- (b) co-ordination amongst buyers aimed at harmonizing business practices that increase price observability to one side of the trade,

as matters that should be prohibited in competitive auctions.

4.12 Market concentration, in terms of reduced number of competitors can also lead to an environment that facilitates anticompetitive collusion. Competition authorities that administer rules to prohibit anticompetitive mergers or acquisitions scrutinize these activities due to concerns with not only the potential to exercise unilateral market power by a merged entity, but also with what is termed "co-ordinated market power" or "collective dominant position". Co-ordinated or collective conduct does not necessarily involve explicit collusion but may simply involve signalling or conscious parallelism. Some of the characteristics that facilitate collusion, as noted above, are currently observable in the Hong Kong environment. For example, the public information on bidding prices, similar costs structure, buyers can communicate prices with each other at auction, and the social and professional activities of members in the trade provide them with opportunity to meet. However, their mere presence does not mean that action should be taken to remove them, because by and large some are necessary features of the efficient operation of the trade.

4.13 Competition authorities in other jurisdictions face the same issues and the typical means by which collusive conduct is uncovered is through explicit evidence in the form of testimony and written documentation that the collusive conduct has occurred. In fact, the existence of cartels is often not disclosed through the investigative endeavours of a competition authority, but by some cartel members themselves who make use of leniency programs whereby cartel members can obtain first mover advantage and seek immunity from legal action (or

reduced penalty) by informing the competition authority of the cartel arrangements.

- 4.14 The Hong Kong Government has indicated that it will introduce a general competition law that will prohibit anti-competitive conduct including collusive price agreements and bid rigging. In these circumstances, the future competition authority that administers the law will be in a position to use leniency programs and its information gathering powers to collect evidence on explicit collusive conduct.
- 4.15 As for market concentration concerns, the information noted in Chapter Three in the section 'Auction Bidding Practices' indicates that market concentration levels are not a concern with regard to pig buyers due to the low barriers to entry. Questions as to market concentration do arise with regard to the ownership or operation of slaughterhouses, and the business that NFH relates in the various markets involved with pork meat supply, from production, processing through to retail. However, NFH's favourable market position does not on the face of it have a direct bearing on the conduct that is the subject of this report, i.e. the extreme price fluctuations in the prices paid for live pigs.

#### *Collusive Bidding of Buyers*

- 4.16 As noted above, while there are some factors that might facilitate collusion, the mere existence of those factors do not establish that collusive practices are taking place. The CC does not have any power to demand that operators provide information, or other powers that are typically held by a competition authority, it can therefore only use publicly available information and the auction price data provided by FEHD to detect any irregularity in the wholesale auction market, as a way of understanding the reasons behind the extreme auction price fluctuations and increases in the retail price for fresh pork, and concerns as to whether 'bid rigging' has occurred.
- 4.17 There are two criteria for typically successful bid rigging behaviour:
- Y First, the total market share of the participating buyers involved in the alleged collusion should be sufficiently high to have a significant economic effect on the competitive environment.
  - Y Second, bid rigging amongst buyers must have the result of lowering the purchase price (to lower costs) or increase the margin between buyer costs paid by buyers and the income received from downstream purchasers, thereby resulting in 'cartel' profits.
- 4.18 The auction price data that has been observed indicates extreme price fluctuations that on the face of it have increased costs for buyers at auction which in turn resulted in increased retail prices. The hypothesis that needs to be tested in these circumstances is whether collusive activity has occurred in bidding down prices, with the

intention of increasing profits for cartel members. In order to do this, an approach has been taken where available data is examined in a way to ascertain whether extreme high bidding prices may have been artificially placed to disguise other bidding prices, thereby inducing others who are not in collusion into responding in a similar manner and fulfilling their orders at higher prices, whereby those in collusion can subsequently secure their purchases at lower prices when compared to other buyers.

- 4.19 In a normally functioning auction market, market information affects the market symmetrically insofar as demand and supply are concerned and it can be expected that competitive buyers will respond with similar symmetrical bids. It follows that if there is systematic bias towards lower prices in the winning bids by some buyers, there are competition concerns in the auction market.
- 4.20 For the purposes of analysis, the top five active buyers, named 1,2,3,4 and 5, in terms of their turnover, were identified. These buyers have 40% of the market share, and their shares of business to the three importers are illustrated in Table 4.1:

Table 4.1 Market Share of the Top Five Active Buyers in 2008

| Top 5 Active Buyers | SSSH         |              |             | TWSH        | % of the Market Turnovers | % of the Top 5 |
|---------------------|--------------|--------------|-------------|-------------|---------------------------|----------------|
|                     | NFH Share    | GNH Share    | ASZ Share   | NFH         |                           |                |
| 1                   | 47%          | 37%          | 16%         | -           | 10.1%                     |                |
| 2                   | 38%          | 38%          | 24%         | -           | 9.3%                      |                |
| 3                   | 0%           | 13%          | 5%          | 82%         | 8.5%                      |                |
| 4                   | 48%          | 30%          | 22%         | -           | 7.4%                      |                |
| 5                   | 47%          | -            | -           | 53%         | 5.1%                      |                |
| <b>Total</b>        | <b>14.2%</b> | <b>10.6%</b> | <b>5.9%</b> | <b>9.7%</b> |                           | <b>40.4%</b>   |

- 4.21 In order to detect any evidence of bid rigging from the buyers, the bidding pattern of the market top five active buyers in SSSH in the period January and February 2008, before the Chinese New Year when there were great uncertainties associated with the weather, was plotted in Figure 4.3 and compared with the bidding pattern of other buyers in Figure 4.4. During the period, the median winning bid was \$1529<sup>31</sup> and the maximum bid was \$2370.

<sup>31</sup> There is insignificant different between the average and the median.

Figure 4.3: Histogram of the Bids of the Top Five Active Buyers (Jan 08 –Apr 08)

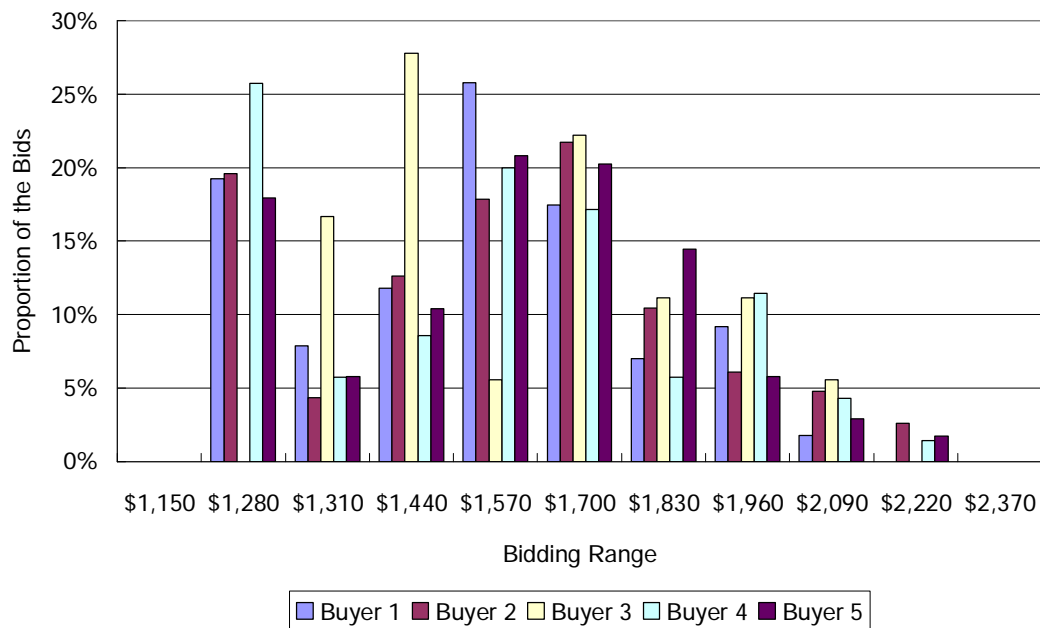
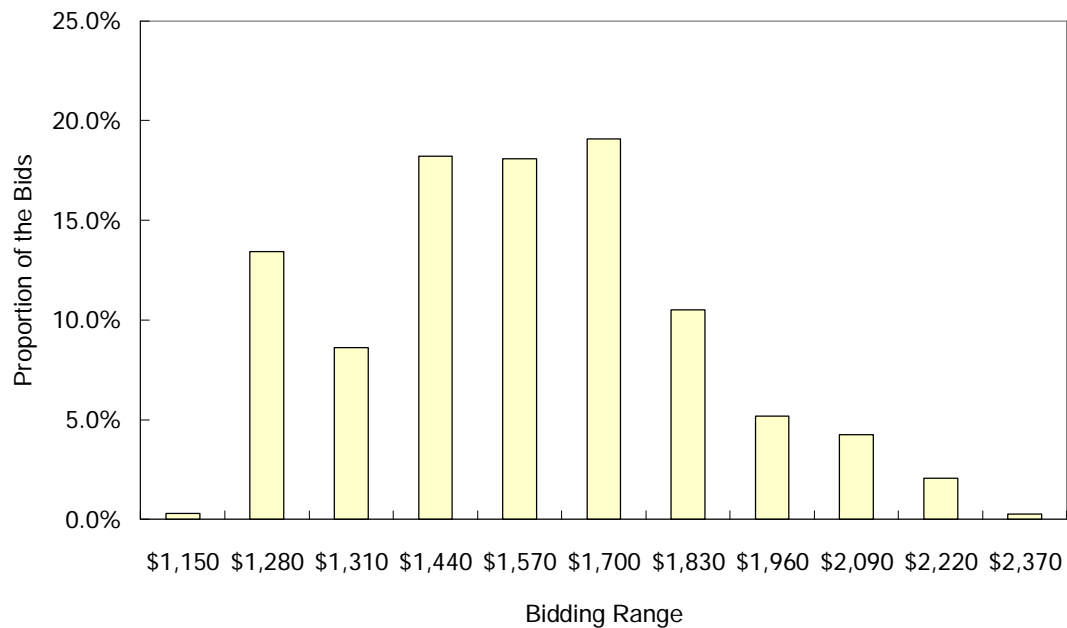


Figure 4.4: Histogram of the Bids of the Other Buyers (Jan 08 – Apr 08)



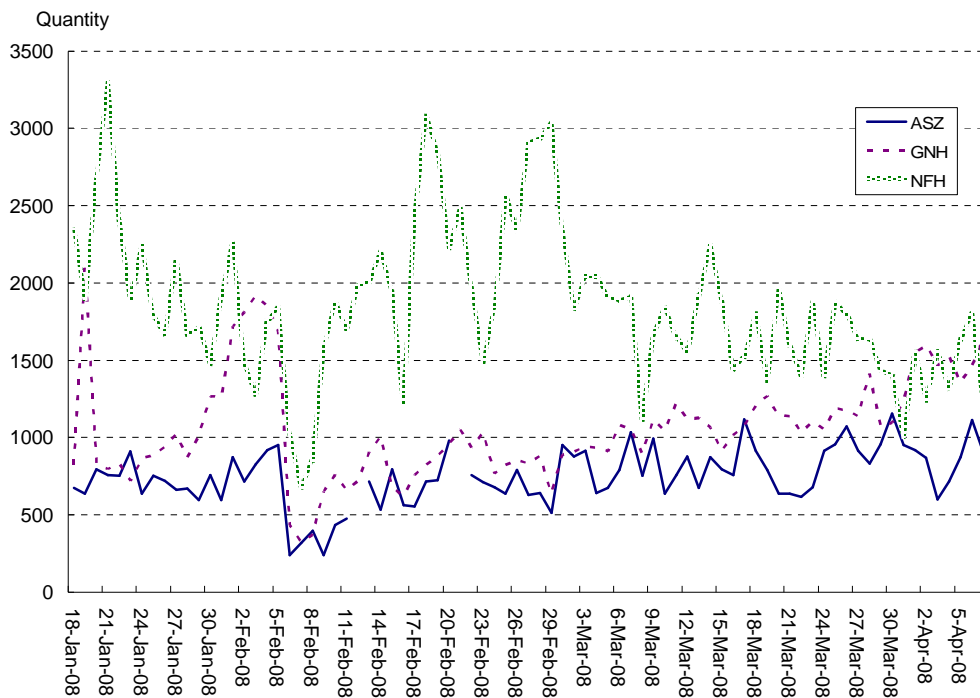
4.22 The pattern of the bids of the top five active buyers is similar to that of others over the period. The CC does not therefore observe any irregularity in the bidding pattern<sup>32</sup>.

<sup>32</sup> While both bidding pattern distributions are bimodal distribution, i.e., that exhibit two contrasting modes, these may possibly result from adding up two bidding patterns on different quality levels or kinds of pigs, imported from different provinces.

### Change in Supplier Market Structure

4.23 Since the beginning of 2008, it has been noted that of the two new suppliers, GNH has gained market share and ASZ has gradually settled its market position; shown in Figure 4.5. By the end of April, GNH and NFH each shared 37.5% of the market while ASZ was only able to reach 25% of market share.

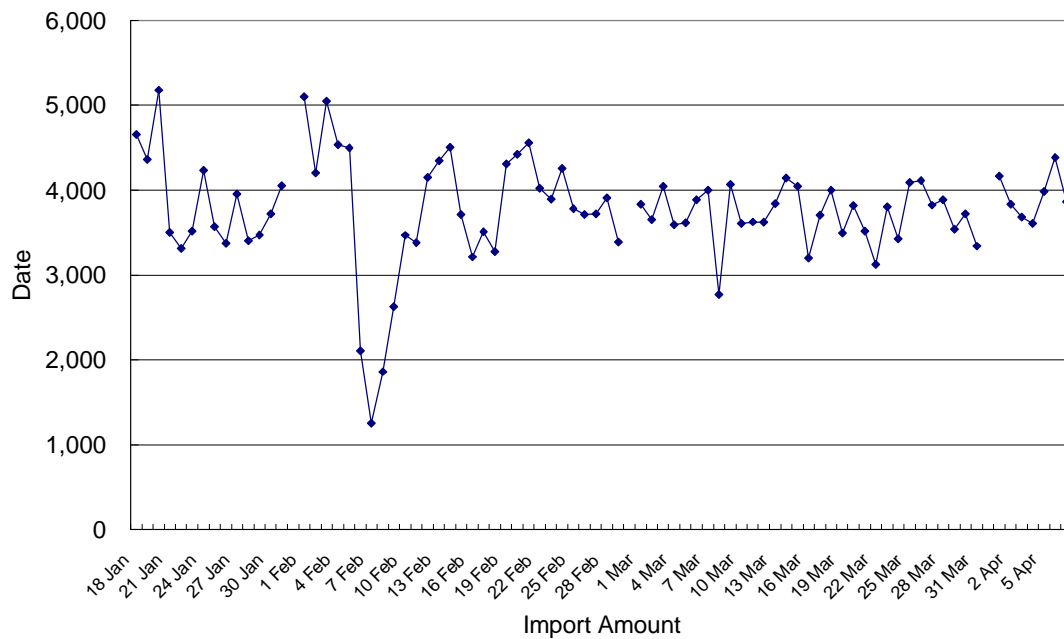
Figure 4.5: Numbers of Live Pigs Sold by Different Suppliers



4.24 The Government liberalization of the wholesale market has therefore successfully brought competition into the market and the new competition through different suppliers has changed the previous market dominance by NFH. Although the data shows large fluctuations in the number of imported pigs by different suppliers, sold in January and February 2008, the overall supply remained stable (shown in Figure 4.6)<sup>33</sup>.

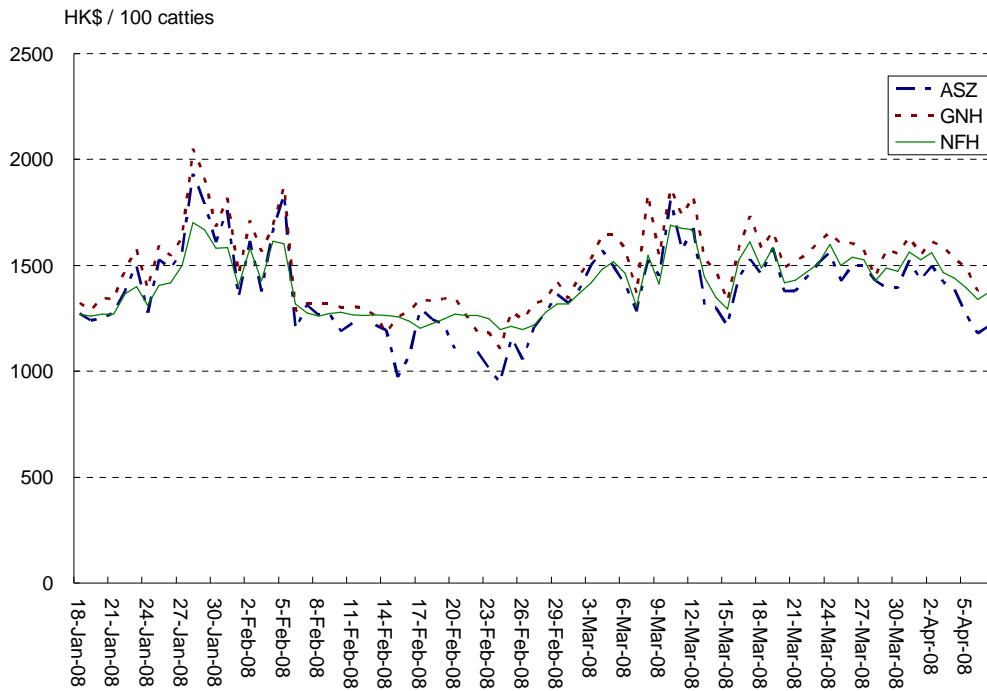
<sup>33</sup> The lower pig supply in early February was due to the lower demand of live pigs during the Chinese New Year holidays.

Figure 4.6: Total Numbers of Imported Live Pigs by Different Suppliers



4.25 Figure 4.7 indicates that the auction price system drives the price of goods from different suppliers to a similar level. There were also persistence price differences amongst suppliers after 15 March. Given that buyers not only pay prices to obtain stock to meet demand by retailers, but also pay prices depending on the attributes of stock such as their conditions, price variations could be interpreted as different suppliers also competing on the quality of live pigs. However, notwithstanding the periodic downward variation in auction price, the retail price increased from \$36.3 per catty in January 2008 to \$39.5 per catty in February and remained high at around \$39 per catty in March and April.

Figure 4.7: Daily Average Auction Prices of Different Suppliers



*Market Power of NFH*

4.26 NFH is the dominant supplier of slaughterhouse services. However, under the “universal services obligation”, as stipulated in the Slaughterhouses Regulation, there is a provision to require NFH to provide slaughtering services to anyone that requests them. Thus NFH’s market power is kept in check. However complaints were made on the ability of NFH to leverage other services, such as the allocation of the “laans” to restrain import quantities and thereby undermine the competitive environment.

4.27 The Government has addressed the complaints on the insufficient number of “laans” by making “laans” that were previously assigned for local live pigs, available to new importers; thus resolving the competition concerns regarding the problem of access to “laans”.

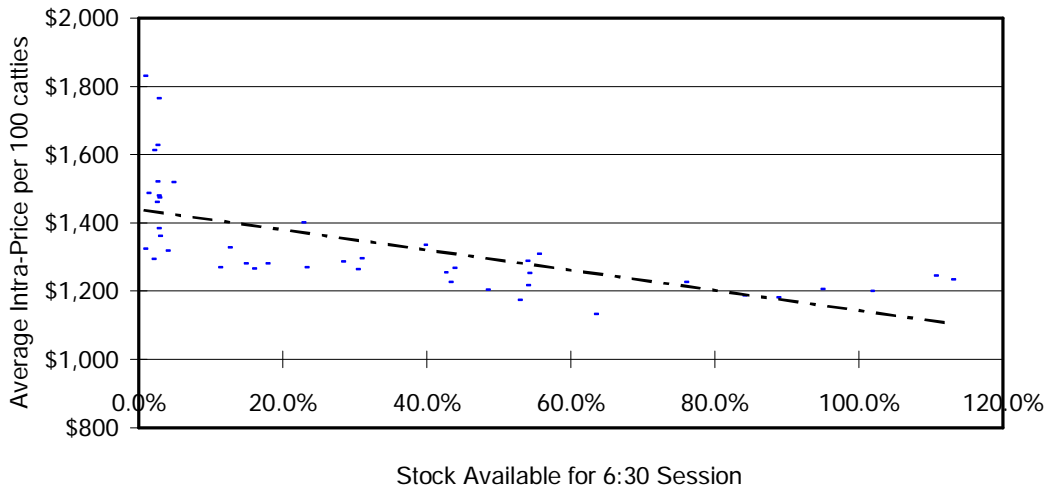
4.28 As noted in Chapter Three in the section “Laan Services in Slaughterhouses” GNH previously rearranged its logistics of supply, by auctioning stock immediately when they arrived in the slaughterhouse, because of the shortage of “laans”. From mid-March 2008 to mid-July, all imports were auctioned immediately upon arrival and there were no left over stocks for the auction session at 6:30am at both SSSH and TWSH. However, it is now understood that the trade has reverted to utilising “laans”, and that suppliers now operate on the basis where they can maintain stocks left over for auction in the next morning. Because of the improved “laans” availability, the new suppliers are able to utilise the “laans” to better organise their supply arrangements and NFH are no longer considered able to leverage control over “laans” to obtain any competitive advantages.

## Causes of Price Increase and Intra-day Price Fluctuations

### *Price Increase Mildly Caused by Insufficient Supply*

- 4.29 Insufficient supply that does not meet demand also causes prices to increase. Economic theory holds that increased supply in relation to demand brings about lower prices in the market, and higher market prices can stimulate supply and eliminate any shortages in the market. It follows that the relationship between the estimated number of pigs imported into Hong Kong, and the average intra-day prices from the price data, should be examined.
- 4.30 Freshly slaughtered pork is not for storage, and buyers therefore trade on spot supply and spot demand. Therefore, information of the actual supply situation on the day is more relevant information than that of the estimated future supply. Estimated near or long term supplies into Hong Kong have little effect on the stabilization of market prices.
- 4.31 In this regard, it is noted from Figure 4.8 that the number of pigs available for trade at the 6:30am auction session affects the spot market prices for the day. The more the supply in the auction at that time, the lower the prices.

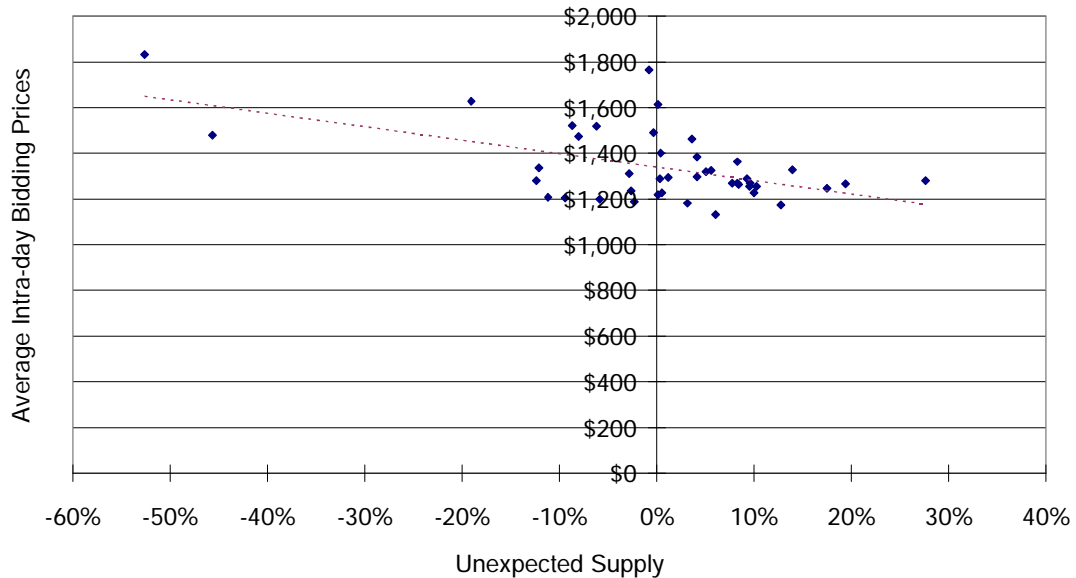
Figure 4.8: Prices versus Stock Available (% of the Intra-day Total Supply)  
(Jan 08- Apr 08)



- 4.32 In Figure 4.9 it can be observed that with unexpected supply conditions, i.e. either extra supply or less supply, this forecasting discrepancy only has a mild effect on market prices. For example, price changes in the range of only \$200-\$300 per 100 cattles have been observed even where there is a 50% shortage in respect to average supply levels. Unexpected supply conditions are therefore unlikely to generate the level of intra-day price volatility that has been

observed.

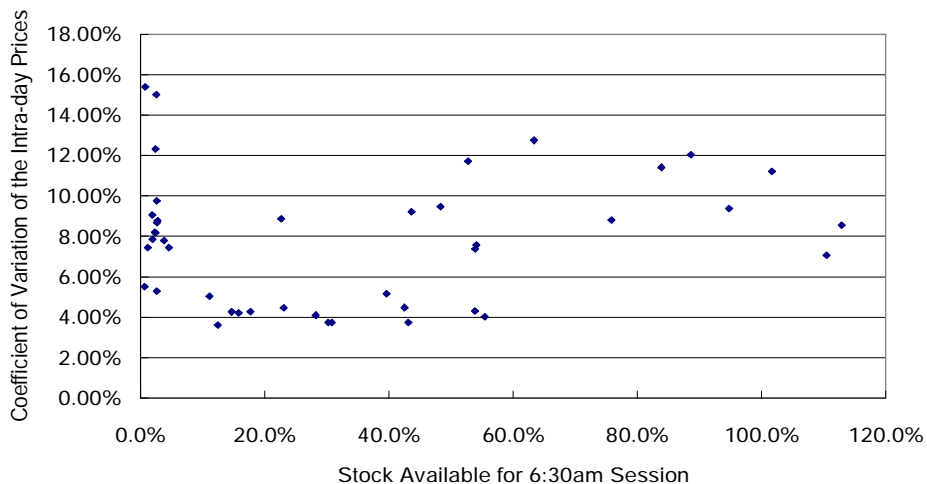
Figure 4.9: Prices versus Unexpected Extra Supply (% of the Intra-day Total Supply) - (Jan 08- Apr 08)



*Price Fluctuations (Volatility) Not Caused by Insufficient Supply*

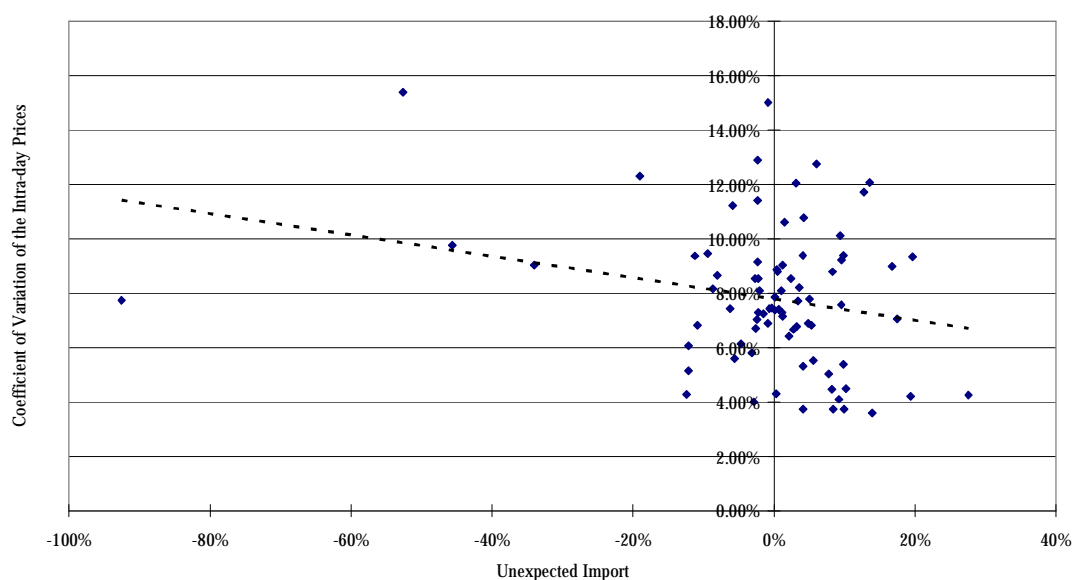
4.33 Some buyers argue that the 6:30am auction session not only provides a stock buffer in stabilizing the market but also prevents volatility. However, the price data set shown in Figure 4.10, representing daily auction data over a period of time does not support this claim. The amount of stock (pigs) available for trade at the 6:30am session has no effect on the intra-day price volatility.

Figure 4.10: Price Volatility and Stock Available (% of the Intra-day Total Supply) - (Jan 08- Apr 08)



4.34 Market price is an important signal that guides supply and demand, thereby lessening the possibility of shortages in the market. Misleading price information at both the supply and retail levels can distort the supply and demand process, and affect allocative efficiency. Rumours about insufficient supply could be proliferated and exaggerated in times when there were unexpected supply shortages in the early hours of trading. This could also lead to large intra-day price fluctuations. In Figure 4.11, it is demonstrated that high intra-day price fluctuations may occur when there is high unexpected supply shortages.

Figure 4.11: Unexpected Supply Shortages and Intra-day Price Fluctuations (Jan 08- Apr 08)

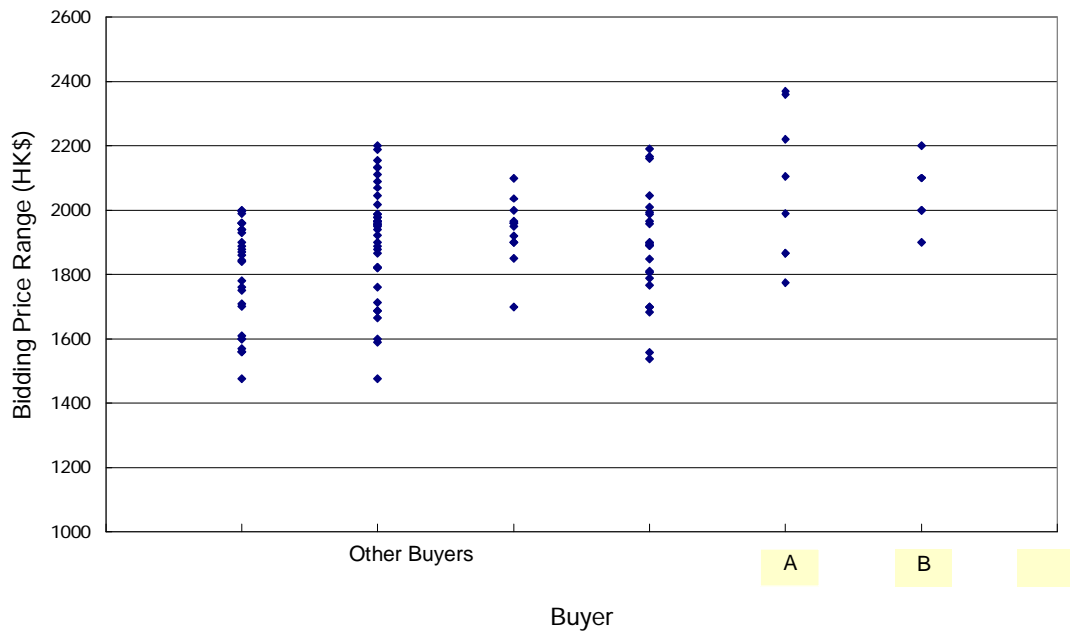


*Instances of Aggressive Bidding*

4.35 It follows that the incentive and opportunity for profiteering from misleading information on supply or price is higher when the market is volatile. With reference to Figure 4.12, in the three most volatile days<sup>34</sup> it is noted that there were two buyers (represented as Buyer A and Buyer B) who submitted very “interesting” bids. Buyer A and Buyer B do not have substantial market share. Their bids could be characterized as aggressive.

<sup>34</sup> These three days have the highest coefficient of variation indicating that auction prices varied greatly.

Figure 4.12: Selected Buyers' Winning Bids on the Most Volatile Days (28 Jan, 29 Jan and 5 Feb) in SSSH



4.36 For example, Buyer B not only won the bid at higher prices, he raised his bid \$100 which is the amount of 5% (average price = \$1894) of the average price. Securing a winning bid cost him \$5000 extra for a batch of 40 pigs (each pig weighs 125 catties on average). Moreover, in comparison with other buyers, the bidding pattern of Buyer B is not similar to the pattern of the average buyers (Figure 4.13). CC was informed that the different bidding pattern can be explained by underlying different quality of live pigs been purchased or panic reaction to the confused environment in the market place induced by unsubstantiated news about shortage supply in late January and early February in 2008.

Figure 4.13: Winning Bid Patterns of Buyer B and Average Buyer (18 Jan 2008 – 6 Feb 2008)

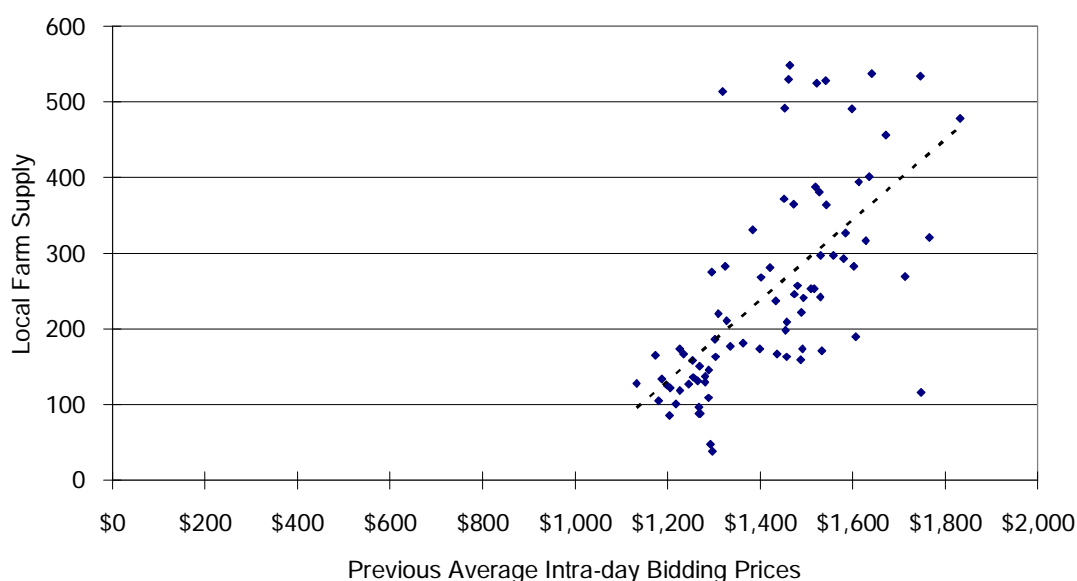


4.37 Due to a lack of coercive investigation power, the CC has not been able to verify the reason behind their aggressive bidding behaviour on the day of high price volatility. Since the auction market does not have a rule against aggressive bidding, this aggressive bidding cannot be regarded as non-normal market behaviour. However, the buyers' aggressive bids could have caused the maximum price to substantially deviate from the average price in the market.

*Will Higher Prices Lead to More Supply*

4.38 Figure 4.14 illustrates data indicating that the previous day's average intra-day price, but not the number of pigs available for trade at the 6:30am auction session, significantly affects the supply of pigs from the small residual number local Hong Kong pig farms. It seems that the higher the price, the higher the local supply will occur in the market on the same day.

Figure 4.14: Price Effect on local Farm Supply  
(Jan 08 – Apr 08)



4.39 There have been anecdotal claims that the three Mainland importers manipulate the supply. Economic theory holds that suppliers will supply more when the market price is high, or there is an indication of a shortage in the market. By the same token, if the demand is low (as indicated by lower prices) then supply will be similarly curtailed. Evidence of collusive practices by suppliers would therefore need to indicate some distortions to supply and a symmetrical effect on price.

4.40 From the price data available, the previous day average intra-day price and the number of pigs available for trade at a 6:30am auction session does not significantly affect the unexpected supply (forecasting discrepancy) of pigs. There is little evidence therefore that in the normal course of events, the importers respond to auction market prices and the amount of stock that is purchased at auction. It appears that the Mainland importers act more in line with the amount arranged with regional trade enterprises for supplying live pigs to Hong Kong and have no control over the supply to meet any sudden demand increase. Given the constraints, the wholesale price could vary substantially in response to any small discrepancy of supply or small change in demand.

## Conclusion

4.41 In this study, the CC has not found any direct evidence of restrictive practices that hinder the competitive environment, in terms of the auction process for live pigs and the practices in the slaughterhouse. There was previously a competition problem with regard to limited supply of “laans”. However, this has been resolved through first, GNH’s subsequent revised logistical arrangements for selling their

stock which negated the use of “laans” for overnight stocking, and the current apparent use of “laans”, following the Government’s initiatives in making “laans” available to the new entrants for overnight stocking purposes. This situation reflects the fact that opening up the market to new importers who have introduced new arrangements, and the Government’s competition policy initiatives, have brought about some efficiency gains in the supply process and could bring about more flexibility to resolve future supply bottlenecks in the market.

- 4.42 Although there was some evidence that aggressive bidding behaviour of some buyers could have caused the maximum price to have substantially deviated from the average price in the market, it seems that Mainland daily supply does not respond to temporary shortage of supply or auction prices. The effect of similar extreme bidding price fluctuations in the future would therefore not, of itself, seem to have any long term effect on the supply of live pigs.
- 4.43 The supply of pigs by local farms could act as a buffer to smoothen out shortages or excess supply in the market and lessen pressure on prices in the light of fluctuations in supply of imported pigs. However, increasing public concern about public health and environmental problems associated with pig farming, and the recent outbreak of Japanese encephalitis, has led a reduction in the number of pig farms in Hong Kong. Local supply therefore has a lesser effect in smoothing out any discrepancies that might arise in the market. As a result, unless the trade finds a way to increase market information or use market information efficiently i.e. where price increases lead to more supply, large price fluctuations could arise when there even small shortages in the market.

## **Recommendations**

- 4.44 Since the allegations regarding restriction of supply and bid rigging, as discussed in the study are “hard core” anti-competitive conducts, the CC believes the current proposed cross-sector competition law and the Competition Commission will assist in the future examination of similar complaints, if they appear again. The various laws and processes that will be available to the Competition Commission will provide a more robust foundation upon which investigation can take place, than is currently the case.
- 4.45 It is understood that the slaughterhouse management in SSSH meets the trade regularly with FEHD staff in attendance to give advice and listen to complaints from the trade. Nevertheless, the Government could make a complaints handling scheme an obligation by the licensee of the SSSH under the new “Operation Services Agreement” (OSA). Appropriate mechanisms for inclusion in such a complaints handling scheme can be found in the relevant recommendations that have been made in the CC’s Good Corporate Citizen Guide.

- 4.46 It has been observed that some major market buyers are not participating in the TWSH auctions, and as a result this raises the issue of exclusivity. Since the market share of TWSH in overall slaughterhouse services is only around 25%, the effect of exclusivity in TWSH on the wholesale market would not be significant.
- 4.47 However, NFH has dominated slaughterhouse services market and due to its involvement in various businesses along the supply chain for the supply of freshly slaughtered pork, including buyer services. Perceptions in the trade regarding abuse of market power, and the possibility that NFH could engage in anticompetitive practices to favour its various vertically integrated operations will continue to linger; particularly should NFH expand its operations to compete with other buyers to supply retail outlets other than its own.
- 4.48 Overseas competition authorities use 'firewall' measures to prevent a vertically integrated company from accessing and using its market power to have significant competitive advantage over its competitors. The need for firewalls typically arises in circumstances where essential services or approval processes are controlled, or can be used, to benefit an arm of the integrated firm, to the detriment of its competitors.
- 4.49 There are examples of such firewalls in Hong Kong. The licences of TVB and Galaxy Satellite Broadcasting Limited (Galaxy), which is a subsidiary of TVB, contain a number of special conditions as a safeguard to ensure an effective "firewall" between the operation of Galaxy and TVB so as to maintain fair competition in the market. One of the special conditions provides that the TVB Group shall not supply to the Galaxy Group any television programme or television channel on an exclusive basis without conducting an open bidding process as approved by the Broadcasting Authority.
- 4.50 In addition, in considering privatization of the airport authority, the Government has proposed that statutory provisions be made to prohibit the new company operating the airport from engaging in anti-competitive activities and abuse of its dominant position in relation to its land use and scope of business.
- 4.51 The CC has not been able to identify any current problems in this regard. However, as the market evolves and competitive pressures mount, for example due to new suppliers taking more market share away from NFH, there is the possibility that this could change. The Government might need to consider whether firewall measures such as "equal access to essential services related to slaughterhouse services" or "open tender process for the selection of service providers for outsourcing services" are applicable.
- 4.52 The extent to which firewall measures, such as equal access related services in slaughterhouse or open tender for outsourcing services

such as parking facilities management and cleaning services, are appropriate in the market for supply of fresh pork, depends on the competition concerns, if any, arise from the fact that NFH is dominant in slaughterhouse services market.

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