

# Analysis for Pork Market in China

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## ABSTRACT

This article focuses on the Chinese pork market from May 2019 to December 2021. 2019 saw a significant decline in pork production as a result of African swine fever, with pork production of 42.55 million tonnes, down 21.3% from the previous year. 2020-2021 will see a continuation of the tight supply trend in the domestic pork market due to the impact of the epidemic. However, driven by the market and policy, pig production continues to recover at an accelerated pace, with capacity rising rapidly and national pig production capacity recovering more effectively than expected. Focusing on the supply and demand side of the market, it provides insight into some of the internal and external reasons that are attempting to drive the Chinese pork market back to normal development. The paper further reveals that pig supply is sometimes abundant and sometimes scarce, that it is difficult to achieve a stable balance between pork supply and demand, and that both pig and pork prices are subject to significant cyclical fluctuations.

**Keywords:** *pork market in China, supply and demand, reaction, forecast*

## 1. INTRODUCTION & BACKGROUND

Following an upward trend in 2019, China's pork import market rose in the first half of 2020. Amid weak demand for pork, especially in the catering industry during the COVID-19 pandemic, China imported 2,074,128 tons of pork and 656,344 tons of offal between January and June this year, with total offal increasing by 153.3% and 33.2% year-on-year, respectively[8]. The decline in consumer demand for pork does not seem to have cast a shadow on China's pork import market, with imports in the first six months of this year already exceeding the level for the whole of 2019. This can be attributed to the impact of the ASF, the collapse of pork production in the first half of 2020 and the relatively low pork prices in overseas markets during the same period.

The competition among global pork exporters to China, essentially a game of chasing, intensified in the first half of 2020. The biggest winner is the United States, even as its pork industry struggles with COVID-19 internally and a trade war externally. In addition to retaining its top spot, the United States has regained market share from other exporters in the pork erosion sector, returning it to its long-lost No. 1 position. The sharp increase is primarily due to a growing number of U.S. pork producers being required to remove ractopamine since October to meet stricter Chinese regulations, which means that more plants have become eligible to export

pork to China since then. As a result of the COVID-19 outbreak in the US, more than 3,000 workers have been sick and dozens of meat processing plants have been closed, resulting in a reduction of at least 25 percent in U.S. pork and beef processing capacity [9]. In this case, farmers have had to euthanize millions of pigs since April to avoid overstocking or more economically speed up exports to China at more competitive prices than other countries.

China's pork supplies have steadily recovered following massive losses caused by the African Swine Fever epidemic in 2019. In addition, the world's largest pig producer fears that Chinese consumers have reached their "pork peak." Many researchers, however, believe that there has been a structural decline in pork demand as consumers turn to alternative proteins when prices are high. In recent years, China's pork supply has shown a trend of oversupply, with the pork sales rate rising to 112%. In this situation, China imports a large amount of pork from abroad, with total pork imports reaching 3.8938 million tons from January to November 2020, up 124.71 percent year on year. China imports pork from abroad with tariff preferences; in addition, with the arrival of winter at the end of 2021, China's meat market will enter the peak consumption period, and the import volume of meat products will increase.

## 2. MARKET SELECTION

The following report will concentrate on the mainland pork market in China. China's Ministry of Rural Agriculture provided all data, an organization tasked with disseminating agricultural and rural economic data, monitoring and analyzing the financial operation of China's pork market, and conducting pork price statistics and related research.

## 3. TIME PERIOD

The statistics data will be collected between May 2019 and December 2021.

## 4. MARKET ANALYSIS

### 4.1 Supply

Supply can be defined as the amount of product a supplier is willing and able to supply at a particular price (Hubbard et al. 2016, p. 64). According to the Ministry of Agriculture and Rural Affairs, newborn piglets on large-scale farms increased by 58.8%, from 161,000 to 180,000. The increasing popularity of intensive and large-scale pig farming shows how farmers can use technology to prevent effectively and control pig diseases and minimize mortality and how they can spread risks and reduce costs by centralizing pig farming [7]. Where there is representation in the market, the double effect of adequate supply and a certain price level can be produced.

Due to unforeseen temporary circumstances, pork prices have risen sharply in succession in the past two years. In 2019, due to the outbreak of African Swine Fever, many small and medium-sized farmers were driven out of the market, which seriously hurt the mentality of farmers in the whole market, leading to a rapid decrease in pork supply. The cost of soybean meal and corn, two important feed sources for the pig industry, surged in 2020, jumping as much as 50 percent in a year (Ministry of Agriculture and Rural Affairs, 2020). According to the National Bureau, the cost-cutting drive has pushed pork prices to new highs, with whole-year production of pigs, cattle, sheep, and poultry reaching 76.49 million tons in 2019, down 10.2 percent from the previous year, according to the National Bureau of Statistics. Among them, pork production was 42.55 million tons, accounting for the largest share of 56 percent, followed by poultry with 22.39 million tons, accounting for 29 percent. The rest accounted for less than 10 percent.

However, it must acknowledge that the dynamics driving up pork prices are unsustainable. Once they are reduced or gone, the supply of hog production capacity will quickly return to normal, causing pork prices to rise in the other direction. While the price of corn has contin-

ued to climb since 2021, the soybean meal price has declined, suggesting that the collective forces driving up pork prices are not enough and that soybean meal and corn are strong alternatives. Therefore, from a domestic supply point of view, there is no comprehensive cost factor for example feeding costs for higher pork prices in the future.

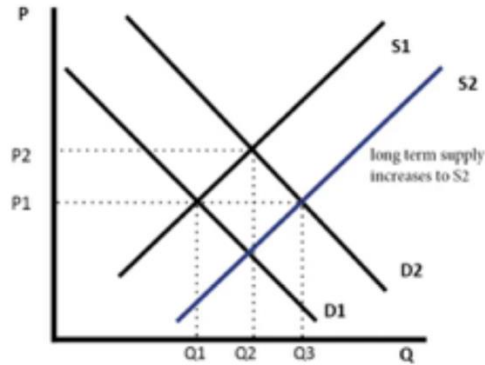


Figure 1. Long-term supply in the Chinese pork market

### 4.2 Demand

Demand can be defined as the amount of a product that a customer is willing and able to buy at a specific price (Hubbard et al., 2016, p. 58). Pork has long been a popular ingredient in Chinese cuisine, but consumption trends are improving as the country's economy improves. First, the Engel coefficient of Chinese residents was 30.2 percent in 2020, down about 10 percent from a decade ago (CGTN, 2021). The drop in Engel's coefficient is due to a decline in food spending in overall consumption, including pork. Furthermore, more urbanites' consumption priorities have shifted to improving their quality of life. Light food consumption is becoming increasingly popular, with many people showing significant youthful characteristics. Therefore, the consumption trend has become to "eat less pork". The clearest evidence of the impact of demand switching forces is that in April, fish, chicken, and beef prices jumped 26.4%, 9.4%, and 4.1%, respectively, despite a 21.4% year-on-year decline in pork prices (Ministry of Agriculture and Rural Affairs, 2020).

Pork is no longer a necessity for many people, as seen in the transition to light consumption and the opposite direction of meat prices. If pig prices rise again in the future, there will be more possibilities for people to buy substitutes, and in the context of light food consumption, the substitutes will become stronger and spread more widely and faster. According to the data, Pork, which accounts for about 60 percent of meat consumption in urban and rural areas, has declined by about 1 percent annually over the past 20 years [6]. Under the action of sub-

stitution consciousness, the proportion of pork consumption will continue to decline, bringing pressure to the expansion of pork price space.

The rise of pork price is closely related to the tight supply of the pork market in China. In addition, at the end of the year, the production of bologna sausages in the southern region is at its peak. Coupled with the impact of cooling across the country, market consumption continues to increase, and pig prices rise. As the peak period of sausage production in the southern region gradually ends, market demand will decline, and the pig price may be adjusted.

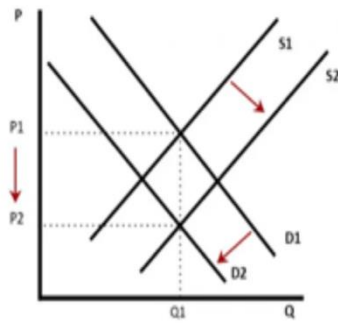


Figure 2. Long-term demand in the Chinese pork market

### 4.3 Elasticity

Both the absolute income of pork demand and the price elasticity of demand is less than one. According to the national per capita pork consumption and per capita disposable income, it is predicted that the income elasticity of pork demand in China's household consumption in 2019 will be 0.28, which is significantly less than 1. The income elasticity of pork demand of rural residents is slightly larger, which is 0.51, while that of urban residents is only 0.12. (2019 Special Report from Dongxing Securities) As shown in Figure 3, the low elasticity of pork demand and high elasticity of supply means that the range of price fluctuations is expanding. However, farmers will influence production decisions according to their actual production expectations, and policy mechanisms will also regulate to ensure that price changes will not increase.

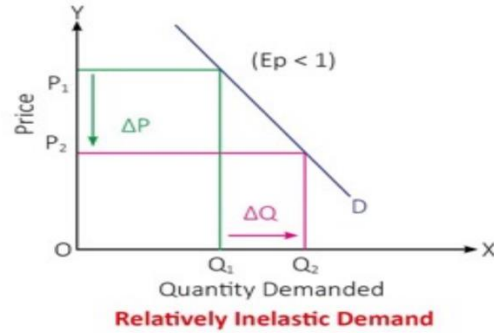


Figure 3. Relatively inelastic demand in the Chinese pork market

## 5. MARKET REACTION

Pork is widely used in Chinese dishes such as dumplings and braised pork, and even if you don't eat pork, you can't escape the price increase. Rising pork prices have led many to turn to chicken, beef or lamb, pushing up meat prices overall.

According to the Financial Times, Chinese Vice Premier Hu Chunhua has said that the rise in pork prices caused by African swine fever could undermine economic stability and the country's upcoming 70th-anniversary celebrations, making increasing pork production a "major political task" [3]. Amid such concerns, the Chinese government has attempted to curb the rise in the pork process through policies, with several provinces introducing various forms of pork subsidies. The city of Putian, in Fujian province, has even set a limit of 2 kilograms of pork for each person holding an ID card at a discount store in its district.

The Chinese government has also turned its attention abroad. According to a research report by China's Citic Securities, in the first seven months of this year, China's pork imports surged 36 percent from a year earlier. According to Chinese customs data, China imported 182,000 tons of pork in July, up 13.56 percent from the previous month and 106.69 percent from the same month last year, or 94,000 tons more pork from a year earlier [2]. Although it seems to have ramped up, in reality, the import of pork is still a drop in the bucket in front of China's huge consumer market. According to the data, China imported nearly 1 million tons of pork in the first seven months, compared with 54 million tons produced last year.

Moreover, China accounts for more than half of the world's pig and pork production, meaning that even if China were able to import pork from the global market at full capacity, it would likely struggle to meet its huge domestic demand. In addition to these measures, China's official media have begun urging people to eat less pork. LifeTimes recently published a front-page article entitled "Pork is better eaten sparingly", stating that pork is high

in fat and cholesterol and that overeating of it "tends to make you fat and poses a risk of hardening of the blood vessels" [6].

## **6. CHINA PORK MARKET FORECAST (2022-2023)**

According to the National Bureau of Statistics, China produced 39.17 million tons of pork in the first three quarters, up 38 percent year-on-year. It is expected that this year's meat and milk output is likely to hit a new high, ensuring a reasonable production basis for the New Year's Day and Spring Festival market supply. At the same time, the substantial increase in pork sales and engagement in pig slaughtering, transportation, and sales terminal links to bring higher prosperity. According to relevant industry analysts who have benefited from this wave of price increases, the latest pig-grain ratio data shows that by 2023, farmers will have turned a loss (¥-131) into a profit with an average future profit of ¥238 per head of pig farming.

As for the future trend of pork prices, some experts believe that due to the impact of the weather this year, the peak season of pork consumption may be concentrated in November and early December, and the end of the peak season in late December may lead to a high decline in pork prices. Xin Guochang said, "The number of piglets born in August and September is still high, and according to the production cycle of 6 months of fattening out, the two and three months after the Spring Festival may form a certain pressure on pig prices, which does not rule out the price falling below the coastline again." [1].

Li Guoxiang believes that the market may be in a relatively balanced state of supply and demand in the first half of next year. To avoid excessive price fluctuations in the second half of next year, pork production capacity should be further adjusted down. "If we are going to match the entire capacity with demand, it probably won't be until the first half of next year [4]. During this period of time, we do not propose to increase production capacity. We need to consciously adjust backward production capacity and inefficient production capacity through market forces and government guidance."

## **7. CONCLUSION**

Official and agency data show that June and July were the peak months for breeding sows. According to the growth cycle of pigs, the number of pigs sold will reach a peak in April to May next year, and pork prices are expected to reach a low point around May next year. In addition, it can also be seen from the trend of pig futures that although the wholesale price of pork is still in the process of recovery, the main contract of DCE pig futures soared to 17,670 yuan/ton on October 28, and then began to turn downward. As of the afternoon close

on the 29th, the main hog futures contract fell 4% to close at RMB16,080 per tonne [5].

This article examines how the equilibrium price of pork is controlled by pork demand and supply of live pigs, as well as the movement of the equilibrium point, and investigates the reasons and price trends of pork prices over the last three years, using the supply and demand theorem and graphs. Pork will also have a range of implications on people's daily life and consumption, as well as economic development. As a result, how to balance the professional needs of breeders with price stability is crucial.

It is recommended that China's hog industry give full play to its huge domestic demand advantage, improve the international competition level of the hog industry and achieve high-quality development of the hog industry. Further improve the innovation capacity of China's hog breeding industry to ensure the supply of good breeding pigs; improve the technical and economic efficiency of hog production and enhance the level of organization, standardization and scale of hog farms; stabilise the supply of feed for hog production, and establish a risk prevention mechanism for the hog industry.

## **AUTHORS' CONTRIBUTIONS**

Mengwei Liu confirms full responsibility for the following, which includes the conception and design of the study, data collection, analysis and interpretation of the results, and the manuscript preparation.

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