

# Of Sugar and of Bullet: Tracing the consequences of 1740 Batavia Massacre

Xintong Cai

May 13, 2024

## **Abstract**

The 1740 Batavia Massacre, which took place in what is now Jakarta, Indonesia, resulted in the extermination of the local Chinese community. While various interpretations exist regarding the motivations behind this massacre, the Dutch authorities described the event as a spontaneous incident officially. However, it has been widely proposed that the Dutch orchestrated this event to maximize the trade profit for the VOC (Dutch East India Company). As a key player in the Euro-Asia trade, VOC gained substantial profit from transporting commodities from Asia to Europe, including those are closely related to the Chinese group, such as pepper. By employing difference-in-differences to study the price of pepper and white pepper, commodities generally handled by Chinese worker, we observe that the massacre led to both short-term and long-term price increases in profits for VOC. We further investigated historical accounts, which verified our findings in the commodity price using quantitative methods. Our paper suggests that the massacre was most likely not an accident, instead being a result of corporate profiteering.

# 1 Introduction: 1740 Batavia Massacre

The 1740 Batavia Massacre is a major violence event that happened in the colonial era in Batavia, Indonesia, which is now known as Jakarta. This massacre was against the Chinese group in the city and lasted for nearly two weeks. Despite the controversies over this event, there have been some attempts to trace the roots of this tragedy. While Dutch authority insisted that this massacre was intended to curb a potential revolt led by the Chinese leader (Kapitan), the generally-acknowledged causes for this massacre include xenophobia, an economic recession, the poor financial and administrative state of Dutch East India Company (hereafter VOC) and the corruption among Chinese and Dutch officials. (Kemasang,1982; Kimberly, 2019) Those factors combined and with other implicit forces led to the 1740 Batavia Massacre as an act of genocide against Chinese. The real roots have been argued for decades and yet not clearly known for lack of detailed documentation. Yet there's certainty that this chaotic event has caused explicit results in both political and economics level. Especially, this shock will influence the commodity markets since Chinese traders and merchants are the significant players were key intermediaries in the the trade between East and West in South East Asia.

My research question is to study the economic consequences of this massacre as well as how this incident affected Western and Eastern trade in the long run with regard to Chinese involvement. The economic consequences are quantified as the change in commodity price of Chinese related commodities like pepper. As Jakarta was an important trade center in Asia, it is specifically the epitome of the early stage of trade between the West and the East. Commodity price characterizes the trade and the market at certain periods in East-Western interactions.

## 2 Literature Review

The 1740 Batavia Massacre has received limited attention from academia, possibly due to the southeast history has never been a heated topic in history and economics study. Moreover, this topic maintains certain sensitivity. However, this event is undoubtedly important as a major historical event with political and economic aspects. Some historians trying to trace the roots of this violence

event using data from original historical archive and then re-analyze the context of this massacre. To begin with, the local Chinese was a vulnerable group with high socioeconomic mobility. They were diligent workers and sophisticated merchants, but they weren't allowed to pursue political rights. Chinese have to pay taxes to be freed from military service, and the tax also serves as a precautionary measure to keep the Chinese unarmed. (Blussé, 1981) Xenophobia from the locals naturally had its influence but shouldn't be such severe as the local had even favored Chinese over Dutch colonizers at least in mid 17 century. For example, Governor-General Brouwer stated in 1633 that the Chinese citizens were in all respects superior to the Dutch and 'they cannot trust them at all.'<sup>1</sup> Excluding the colonial Dutch claims that this massacre was intended to control the prospective rebellion made by Chinese in the city, historians and economists have both been seeking for better explanation for the cause of this massacre event. One constantly-repeated argument is that the period experienced a recession, during which the spice trade of VOC was challenged because of the saturation in European markets. First, some historians put forward that Chinese group weren't controlling the sugar manufacturing industry since the sugar industry was only significant under the direct rule of the VOC (Dutch East India Company), and only the Dutch were capable of setting the sugar price. (Kemasang ,1982) Other historians propose that the 1740 massacre was an anomaly instead of the general pattern of colonial violence. Kimberly used the VOC records to show that this event was driven by particular reasons like the influx of poor Chinese labor, an economic recession and the corruption among Chinese and Dutch officials. (Kimberly, 2019) Also, some scholars have inspected the transition of the functions Batavia from economic center to political center to explain this tragic event. Before the 18th century, Batavia was founded as the headquarters to the VOC and served as the center for maritime trading. However, the company gradually transformed itself from a business to a territorial power with political ego. And it is closely related to the fall of Chinese community in 1740, or from early 17th century. (Blusse, 1981) However, despite the controversies, there is no exact conclusions to be drawn for lack of detailed documentation. The consequences of the massacre have been the subject of intense research. For example, Kemasang mentioned that one direct consequence of the massacre is that there was a lot of fallow land waiting to be planted.

---

<sup>1</sup>Algemeen Rijksarchief, V.O.C. 316, "Brief 13-9-1635".

Since most Chinese were either killed or fled to other nations for shelter, both their land and wealth were perished. The abundance of free land without skilled workers marked the restart of plantation business. There are also studies to investigate the effect effects of other massacres in history. For instance, researchers have studied the economic effects of the 1921 race massacre that happened in Tulsa. The Tulsa massacre was against the black community, and the researchers have found that massacre led to declines in home ownership both inside and outside Tulsa, which was considered as a reaction of black individuals towards the warning signals of threats. (Albright,Alex,2021) Regarding the massacre against Chinese, there are research revolving around the 1871 massacre in Los Angeles, where a savage mob of Anglos and Latinos ransack Chinatown and indiscriminately killed eighteen Chinese men and boys. Xenophobia and the desire to plunder were widely alleged to be the cause of this riot. Scholars have discussed that the secret organizations in the Chinatown and how Chinese' apathy towards the white community triggered anti-china emotions, which shared great similarity with the 1740 Batavia Massacre. Other scholars show that Chinese workers were isolated because they were too hardworking and efficient that may crowd out the opportunities for American and European workers. (Scott,2008) Those narratives have also been employed to account for the cause 1740 Batavia massacre to be the diligence of Chinese workers, and worth further investigation. Researchers have also been examining the globalization extent by the price of different commodities. For example, Zwart has examined price convergence in the Dutch-Asiatic trade, during which the author found that power struggles and colonialism go a long way towards explaining the lack of market integration in some markets in the seventeenth and eighteenth centuries. It also finds that price convergence in the nineteenth century was limited to areas "brought within colonial and imperial trading structures. (Zwart, 2016)

### **3 Significance of Study**

#### **3.1 Overview**

There is limited literature centered around the 1740 Batavia Massacre in the English world compared with other historical events. On the other hand, it is a topic only restricted to history

disciplinary discussion, and few interdisciplinary attempts have been made to investigate more in this event and related topics. Historians mainly rely on the factual evidence like letters and eye witness accounts to study this event. For example, all the previous historical research used VOC letters and eyewitness accounts or other historical archive, they are not adopting the quantitative approach but using the narrative to study the consequence of the event. Our study analyzes how this event started and ended in a quantitative way to present solid empirical data analysis using trade data recorded in the VOC archive.

Our approach helps set up a model to understand the underlying mechanism of the massacre and how it has influenced the commodity prices, as well as the global market. Even though it might not be a major event, the massacre itself still should have some influence over the commodity market. The quantitative methodology can serve as a significant supplement to the current economics of history study. Since most prior work has been qualitative, our quantitative analysis offers a unique perspective of the 1740 Batavia Massacre by introducing raw trade data of the VOC. Barely had previous literature examined how deep the pepper market integrated with Chinese from quantitative evidence, yet it's important to provide both the argument and the evidence.

### **3.2 Data Source**

My dataset is based on the research in the VOC archive. VOC (Dutch East India Company, Vereenigde Nederlandsche Geoctroyeerde Oostindische Compagnie in Dutch) is the largest trading company by far active in the Euro-Asian trade between 1600 and 1800 made routine accounts of the price fluctuations and trade details. 49 percent of all ships sailing to Asia in the seventeenth and eighteenth centuries were Dutch. Sales prices were collected from the VOC archive and revised by Posthumus in 1943.

The main data source is the Dutch National Archives, and these ledgers give for each year the total quantity and total value of all commodities sold at auctions of the VOC Chamber Amsterdam. Half of the total turnover of the VOC was sold in Amsterdam. The other half was sold in the other VOC chambers (Delft, Enkhuizen, Hoorn, Middelburg, and Rotterdam). On the basis of comparison with the sales by the other chambers, Glamann (1981, p. 14) notes that in terms of

the relative quantities, the Amsterdam figures are representative. Due to language barriers and inaccessibility, we didn't collect first-hand data, but used the dataset compiled by the previous researchers who have summarized and recorded the trade data in VOC archive. This dataset has been made public thanks to Professor Zwart and his research team, and it has already been used in other research, including Zwart's article: Globalization in the Early Modern Era: New Evidence from the Dutch-Asiatic Trade.

The dataset mainly covers the trade details of VOC from 1642 to 1790, which encompasses the time 1740. We are using this dataset to examine how the price fluctuates before and after the massacre at happened at 1740. The whole datasets include prices and trade details for 16 products, which accounts for more than 90 percent of the total sales in Amsterdam during the entire period under discussion. According to some historians studying the colonial era of Indonesia about the indirect trade between Dutch and Asia, there are certain commodities that have special emphasis attached with the Chinese group, especially sugarcane and pepper. Through which a Chinese group commodity price index should be able to denote the changing pattern of how the Chinese involve in the plantation. The names and the classification of the commodities are listed in Table1.

Figure1. shows the pepper price trend from 1700 to 1780, and the red point denotes the sudden rise of pepper price in the 1740, the year which massacre happened. The price jumped to 0.605fl.per unit, but suffers from the decline around the rest 40 years. Many major events can happen in two hundred years, including inflation, the increasing competition of sailing, the wars between Dutch and England and the advancement of technology. To rule out the influence of other major breakthroughs or big events, we can narrow down our research period to the period from 1700 to 1780 covering 80 years, with a focus of 1725 to 1755. This time period is centered around 1740, and the intervals are fixed. Our research includes both pepper and white pepper as the representative group that is mainly controlled by Chinese. Figure2. shows the price of pepper and white pepper fluctuations, and we can see from the picture that those two commodities' trends are mainly aligned.

## 4 Time Series Analysis

There are 18 commodities in record in total in the dataset of digital VOC archive. The commodities include: Armozijn, Calico, Cinnamon, Cloves, Coffee, Copper, Cotton, Indigo, Mace, Nutmeg, Pepper, White Pepper, Procelain, Saltpetre, Sugar, Tin, Tea, Silk. Among the 18 commodities, some have incomplete records in price, quantity and values. For example, Copper's price and quantity information have been missing since 1742 for some reasons unknown. Moreover, Coffee's price is missing from 1668 to 1684. Though not all data are available, data regarding spice is relatively complete. We restrict our analysis to the range of spices and tins, and there includes only Calico, Cinnamon, Cloves, Coffee, Cotton, Indigo, Mace, Nutmeg, Pepper, White Pepper, Porcelain, Saltpetre, Sugar, Tin, Tea and Silk.

The dataset covers price range from 1650 to 1790. However, we will only study the time range from 1700 to 1780 since 150 years are a great time span that countless great historical events can happen. We first get a holistic visualization of the commodity price change across the 80 years to explore different commodities' characteristics and stability. And secondly, we will conduct a more detailed and focused analysis of the time period between 1725 to 1755 since we plan to study only the effects of massacre that happened in 1740 and compare the commodity price change, and 1740 being the middle of the interval. We will divide the 16 commodities into three groups. The first is spice group, the second is stimulant group that includes coffee, sugar and tea, three addictive commodity. The third group is mineral(dye) group, includes porcelain, indigo and tin.

### 4.1 General Visualization: 1700 - 1780

The 80 years from 1700 to 1780 is a wide time span that can reflect the rise and decline of VOC by truthfully recording commodity price, quantity and total values changes every year with occasional data loss. There are generally three types of commodity price trends. The first is a stable fluctuation, and pepper is the example of this kind of commodity, which can be reflected in Figure1. Pepper fluctuates from 0.4 to 1.1 without a permanent rise or drop. Moreover, white pepper and pepper are of the same species only with different features, which explains the identical trend

change in price change of pepper and white pepper. In Figure2, though the white pepper has a higher price on average, the pepper and white pepper generally have similar price trends, rising and falling simultaneously.

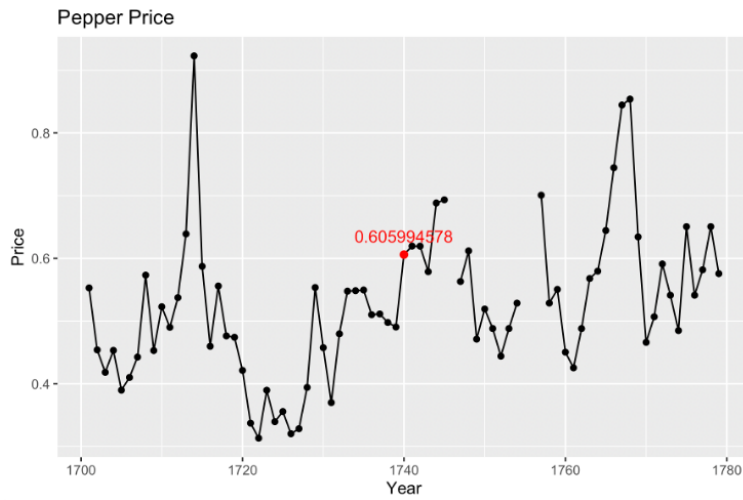


Figure 1: The pepper price from 1700 to 1780

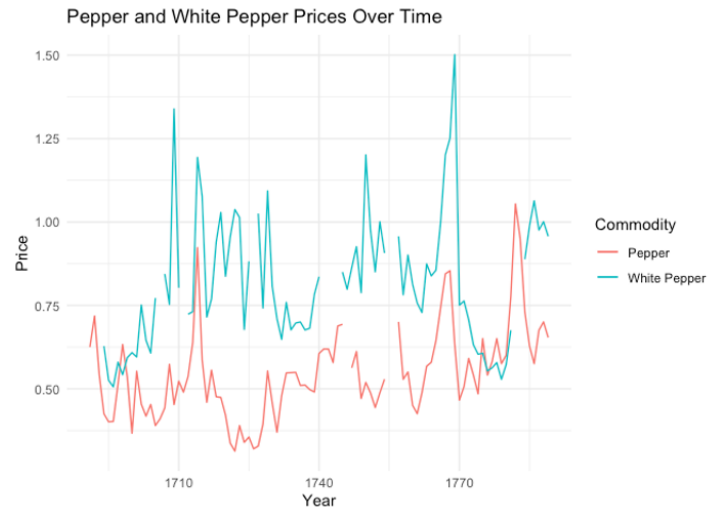


Figure 2: The Pepper and White Pepper Prices from 1700 to 1780

The second pattern is that the price of this commodity has a drop around 1700 from 4.2 to 3.6

per unit, but has its trends quite stable in the 80 years range. For example, the nutmeg follows this pattern. As is shown in Figure 4, there is little variation in the price of Nutmeg on the 150-year basis in general. Especially after 1731, the price of Nutmeg is always near 3.68, and the price is basically the same until we calculated within third decimals (from 3.681-3.687). But its fluctuations are feeble.

The third pattern is that the price has a sudden rise in a certain time, showing there is an external shock that influenced either the demand or the supply of the commodity. For example, the price of the cinnamon has a sudden increase in 1760s, which lasted until 1780s. According to the historical accounts, the leap of cinnamon price is intrinsic to this particular commodity and is possibly related to the functions of cinnamon. Its potential of resale value has increased the demands for cinnamon, which led to the sudden soar of the cinnamon price. Another proposal is that the Dutch intentionally destroy the crops to keep the high prices of commodities around 1780-1784.

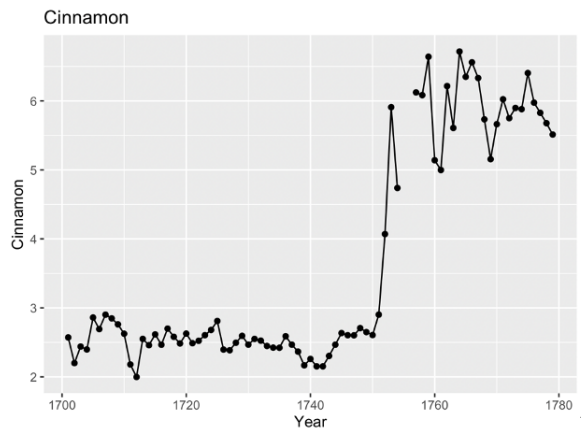


Figure 3: The Cinnamon Price from 1700 to 1780

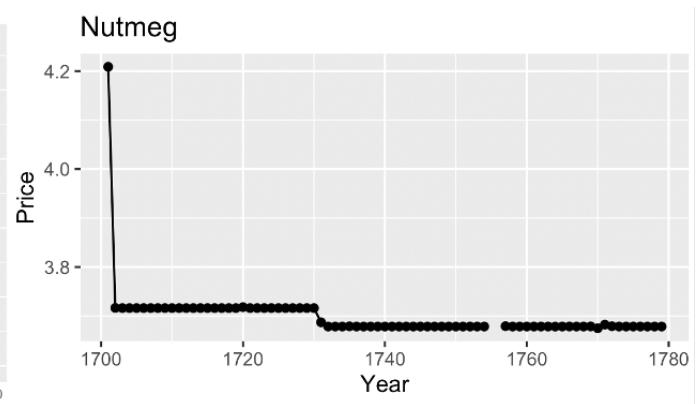


Figure 4: The Nutmeg Price from 1700 to 1780

## 4.2 The Massacre Period Focus: 1730 - 1750

After the exploration of the general whole commodity price from 1700 to 1780, we take a deeper and more careful look at the special period to trace the fluctuations of the price of commodity

around the massacre. We divide the 15 commodities into 3 groups. The first group is the spice group, including 6 main spice commodities, that are cinnamon, cloves, mace, nutmeg, pepper and white pepper. We can see that there is fluctuations and variations of the spice price from Figure5.

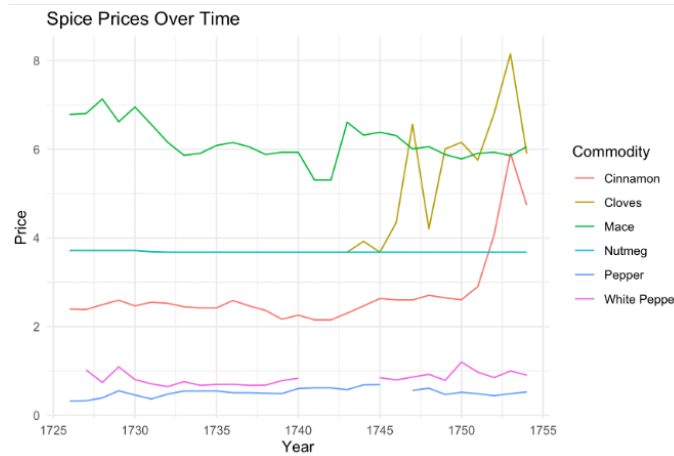


Figure 5: The Spice group’s price over time

We propose the second group as the stimulant group. As the 18th century dawned, there is already a decline in the spice trade, which is the result of the decreased demand and the market saturation. As a commodity, spices were increasingly replaced by the ‘three new stimulant drinks: coffee, tea and chocolate.’<sup>2</sup> According to the historical accounts, we found that those three commodities were relatively new and prevailing at that time. They were also commodities with similarity in causing addiction. Therefore, we study coffee, tea and sugar together, as sugar is often the companion of those two trendy drinks by that time. We can see that the price of sugar has been stable and increasing, and the price of tea and coffee is fluctuating.

<sup>2</sup>C.R. Boxer, *The Dutch Seaborne Empire 1600-1800*, London 1973: 223: "The 18th century saw the phenomenal growth of the tea and coffee trades, these stimulants becoming [economically] more important..., while the relative value of pepper and spices declined still further." See also 198; J.S. Furnivall, *Netherlands India, a Study of Plural Economy*, Cambridge 1944: esp. 42; Glamann 1958: 13, 14-5, 183; Fernand Braudel, *Capitalism and Material Life 1400-1800* (trans. Miriam Kochan), London 1977: 178, 180; Malcolm Caldwell, *The Wealth of Some Nations*, London 1977: 62.)

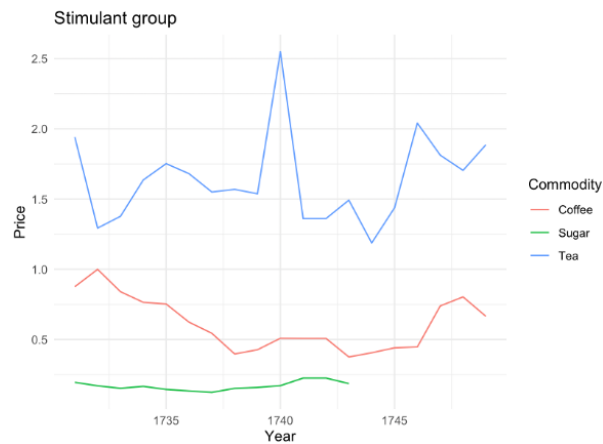


Figure 6: The Stimulant group commodity price over time

The third group is the dyed group, which includes indigo and tin. Indigo and tin are important commodities. However, it is not closely related to Indonesia as most indigo at that time were imported from India. According to the researcher Ghulam, the VOC procured indigo on the Coromandel Coast and its exports from Surat after 1618 were mainly consisted of the Bayana and Sarkhej varieties. By 1620, VOC is one the two most essential indigo buyers in India. This group commodity is not closely related to Batavia.

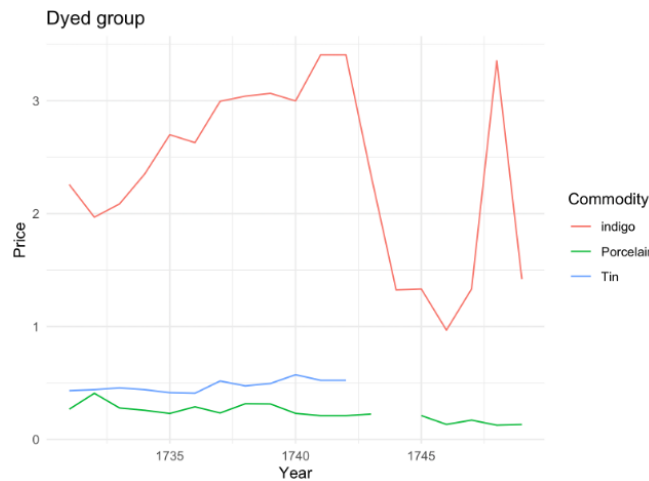


Figure 7: The dye group commodity price over time

To take a closer look at pepper, we visualize the time series trend of pepper quantity and price from 1725 to 1755. The pepper quantity has been decreasing from 1725 to 1730, and has been stabled before 1740. The quantity then exhibits several peaks and troughs. Notably, it is followed by sharp declines in 1744. The pepper price, in the meanwhile, shows variability but the trend is steadily increasing from 1740 to 1745. There is an especially sharp increase in 1740, and even reached to around 0.7 in 1745. We want to investigate whether the increase in the unit price of pepper is significant with the massacre happened in 1740, and it's our basic research question.



Figure 8: The pepper price and quantity from 1725 to 1755

*Notes:* The graph on the left is the pepper quantity trade visualization. The graph on the right is the pepper price visualization.

## 5 Methodology

This research employs the quantitative methods to depict the effects of the 1740 Batavia Massacre on the across continent trade, including time series analysis and difference in differences (DiD) methods. To trace the trade pattern, price of commodity is a good indicator, which clearly shows the import and export price as well as quantity in different time periods. My dataset is based on the research in the VOC archive. However, to better avoid the influence of other major historical events, only years between 1690 and 1790 will be employed to study the effects of the massacre.

A comparison will be made between the commodities that were closely integrated with Chinese

group and the control group that were mainly controlled by the locals or the Dutch. The price fluctuations will be examined to see how the massacre has effected the price of the two different groups of commodity. The first group, where Chinese play a big part in plantation and selling, is the Chinese plantation commodities, which are mostly pepper and white pepper. There had been regulations to ban Chinese from entering certain places including the Cape. However, there was certain leniency because people rely on Chinese to cultivate pepper. Historian Kemasang mentioned that there is an exception to the overall exclusion of Chinese from Priangan was the cultivation of pepper. (Kemasang,1982)Researchers have mentioned that until 1740, there was nobody else but Chinese to help meet the pepper demands and the natives were reluctant to take up the crop. And the second group will serve as a controlled group, where the plantation is mostly controlled by locals or the Dutch. I choose Coffee and Nutmeg as control groups because they have fewer relationship with the Chinese group. According to the historical accounts organized by historian Kemasang, coffee is highly labor-intensive and can only be cultivated by indigenous sector of the populace. Therefore, coffee has few relationships with Chinese group, therefore it can be served as a control group. I will check whether there is significant difference in how the price of different groups changes after the massacre.

Table 1: The Classification of Treatment and Control Group

	<b>COMMODITY</b>	
<b>CHINESE-CONTROLLED</b>	Pepper	White Pepper
<b>LOCAL OR DUTCH CONTROLLED</b>	Coffee	Nutmeg

Based on the background of this event as a shock, I thereby propose to use the difference in differences(DiD) method to study how the 1740 Batavia Massacre affect the commodity price as well as trade between Europe and Asia, denoted by the price change of the commodity. And this is how we set the model:

$$Price_{it} = \alpha_i + \lambda_i + \theta_t + \beta_i Mssacre_{it} * Pepper_t + \epsilon_{it} \quad (1)$$

The equation represents a statistical model commonly used to examine the relationship between the price variable  $Price_{it}$  and several explanatory variables.  $\alpha_i$  represents the intercept term.  $\lambda_i$  is the commodity-specific term as the commodity fixed effect, where the variable doesn't depend on time periods.  $\theta_t$  captures the year fixed effects which controls the variation in different years.  $\beta_i$  captures the impact of the variable  $massacre_{it}$  and the interaction of Pepper group on the price of commodities.  $massacre_{it}$  is a dummy variable to determine whether this price is recorded before or after the massacre, and the  $Pepper_t$  is also a dummy variable to determine whether this commodity is related to Pepper (for example, white pepper), known as an industry closely related with Chinese. And the  $\epsilon_{it}$  represents the error and the unexplained variation in the regression model.

## 6 Event Study

To effectively apply the Difference-in-Differences (DiD) methodology, it's essential to first confirm adherence to the parallel-trends assumption—an assumption that the treatment and control groups would have followed similar paths in the absence of the treatment. In this context, the event study, focusing on the years surrounding 1740, serves as a preliminary check for this assumption. We've designated the year 1740 as our point of reference, setting it as the baseline against which we compare other years. We conduct two event studies, which aligns with our two specified models dealing with short-term and long-term effects respectively. The short-term time range is from 1725 to 1755, and the long-term time range is from 1700 to 1780. In the short term, the preceding 15 years indicate a relatively stable trend. Although the coefficients are increasing in the preceding years, but 0 has always been in the confidence interval before the year 1740 (noted as 0 on the axis). However, on 1740, the lowest line of the confidence interval of the coefficients is greater than 0 for the first time. Such a pronounced change at this juncture corroborates the historical accounts of the Chinese Massacre's occurrence and offers a tangible point to analyze its immediate impact. In the long-term regression, the results are more complicated. Observations from the preceding 40 years are not an assured stable trend, and there is turbulence around -30 and -28 year relative to 1740 (noted as 0). This may be because of the other historical events, like

the VOC's strategy adjustment with Euro-asia trade and the colonies' conflicts. That's why we mainly discuss the short-term regression model to capture only the massacre's effect, however, the long-term is also worth comparing. With the coefficients oscillating near zero, suggesting that any changes were minor and did not exhibit a discernible pattern. Notably, at approximately 1740—marked as year 0 on our timeline—there is a relative conspicuous spike in the coefficients. This deviation from the trend is visually represented by an ascent, suggesting a significant event that disrupted the established equilibrium in the long run. It could serve as the base for our our-term regression model as well, which also could point to the massacre's pivotal role in altering the economic landscape, particularly concerning the price dynamics of commodities closely associated with the Chinese community. Given that the primary commodities under consideration, such as pepper and white pepper, were heavily influenced by Chinese cultivation and trade practices, the sharp rise in coefficients post-massacre provides empirical evidence of the event's disruption.

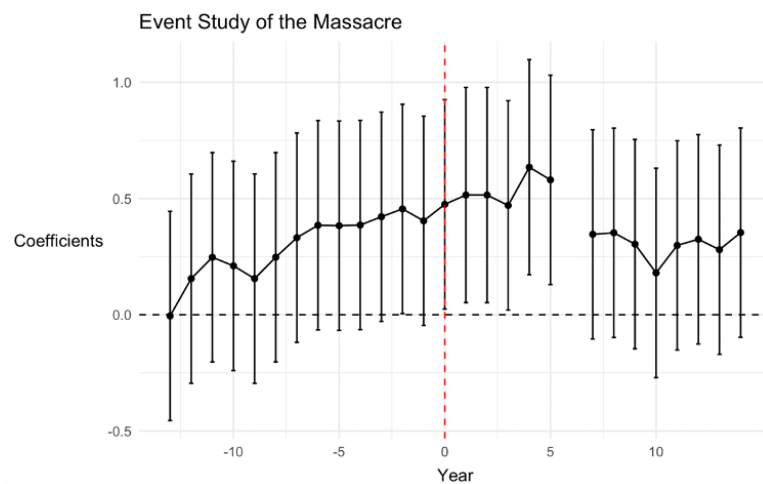


Figure 9: The event study of the massacre using short-term period(1725-1755)

*Notes:* 0 represents the Year 1740, and the x-axis refers to the relative year compared with 1740.

e.g:-40 is Year 1700.

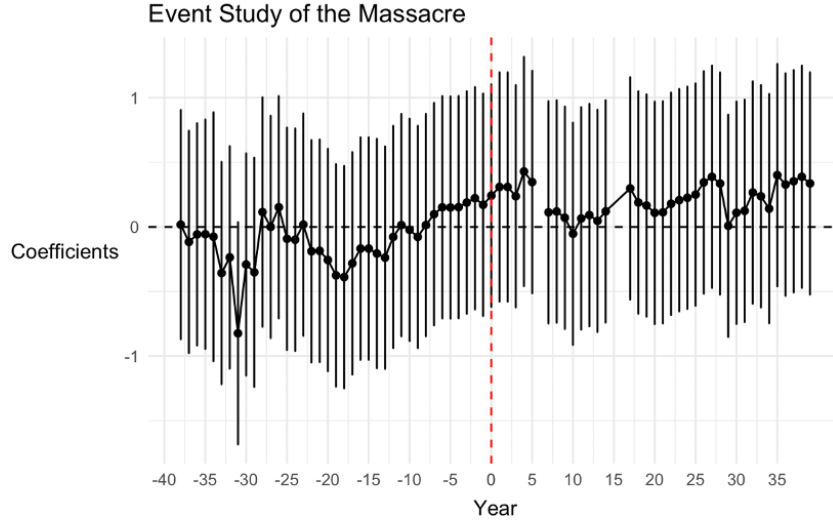


Figure 10: The event study of the massacre using long-term period (1700-1780)

Notes: 0 represents the Year 1740, and the x-axis refers to the relative year compared with 1740.  
e.g:-80 is Year 1700.

## 7 Results

We run three models to study the impact of massacre on the Chinese-related commodity price since there is a visible sharp increase since 1740 for the pepper price as shown in Figure8. We propose three models, the first is the base model of the short-term from 1725 to 1755 without the fixed effects. The second model is the short-term model with the fixed effects of different commodities as well as the year. The third model is the long-term model, which includes prices from 1700 to 1780, covering 80 years in total with the commodity and year fixed effects. The results have been shown in the Table2.

Table2 is the regression summary of the DiD models, and there are three models here. The coefficient of the base model is not significant, showing the variation of commodity and year is hard to be neglected. However, once including the fixed effects, the coefficients of the second and third models are significant.

The coefficient for the short-term massacre variable interacting with pepper prices  $massacre_{it}Pepper_t$

Table 2: The regression model output

	(1) Base Price	(2) Short-term Price	(3) Long-term Price
Observations	116	116	316
Coefficient	0.4409	0.22***	0.38**
Std.	(0.24)	(0.043)	(0.05)
Commodity FE	No	Yes	Yes
Year FE	No	Yes	Yes
Time Range	1725-1755	1725-1755	1700-1800

*Significance Level:* 0 '\*\*\*\*' 0.001 '\*\*\*' 0.01 '\*\*' 0.05 '\*' 0.1 ' ' 1

*Note:* Price in fl. per pond

is 0.22, and this is statistically significant as suggested by the standard error of 0.043. This means that the occurrence of the massacre is associated with an increase in the price of pepper by 0.22 units. If we widen our time scope and expand the time span to 80 years from 1700 to 1780, then the coefficient of the interactive term is 0.38, which can be interpreted as that the massacre leads to an average increase of 0.38 in the unit price of pepper after the massacre.

The results can be understood as the significant pepper price increase after the massacre, which is the increasing profit of VOC with its monopoly of the whole market. The rise of pepper price compared with other commodities greatly aligns with the VOC's interest. As 18th century dawned, there is already a decline in the spice trade, which is the result of the saturated market as well as the decreasingly spice demands. As a commodity, spices were increasingly replaced by the 'three new stimulant drinks: coffee, tea and chocolate.'<sup>3</sup> There are several interpretations for the positive coefficients respectively in the short and long term.

### Supply-demand Framework

The positive coefficient suggests that the massacre had a stimulus impact on the pepper market. With the massacre taking place, most Chinese in Batavia were neither killed nor fled. Even those

<sup>3</sup>C.R. Boxer, *The Dutch Seaborne Empire 1600-1800*, London 1973: 223: "The 18th century saw the phenomenal growth of the tea and coffee trades, these stimulants becoming [economically] more important..., while the relative value of pepper and spices declined still further." See also 198; J.S. Furnivall, *Netherlands India, a Study of Plural Economy*, Cambridge 1944: esp. 42; Glamann 1958: 13, 14-5, 183; Fernand Braudel, *Civilization and Material Life 1400-1800* (trans. Miriam Kochan), London 1977: 178, 180; Malcolm Caldwell, *The Wealth of Some Nations*, London 1977: 62.)

who survived have to do the marginal work. The Chinese who remained economically active after 1740 existed marginally on the fringes of the colony's distributive system. (Kamsung, 1982) And there were a lot of fallow land to be 'repossess' by the Dutch. According to researchers, after the murders, there was an outburst of propertied European citizens wanting to get out of Batavia and live in the more salubrious "up country." <sup>4</sup> Even more lands have been vacated in Batavia, which later will settle more non-Chinese colonists. However, the lands are still uncultivated in the gap period, which may lead to the sudden decrease in the production of pepper quantity. According to the supply-demand theory, the decreased supply may rise the temporary price of the commodity, which can be verified in Figure 8.

### **Loss of Skilled Labor**

Pepper plantation is known for its complexity, and Chinese labor was employed for their experience. According to the records, at the end of the "Grand Guignol" (massacre) inside Batavia, most sources agree, 10,000 city-Chinese lost their lives. The outskirts town of Batavia where 80,000 Chinese dwelled before the extermination now only has 3,000 Chinese survived <sup>5</sup>. The massacre undoubtedly results in the loss of laborers who were skilled in pepper cultivation and trade. The massacre not only directly kills many experienced workers, but also has the intimidating effects that lead many Chinese to flee to escape to other countries like Malacca. The sudden reduction in skilled workforce affects the supply side and potentially increases the prices due to decreased quantity of the pepper products brought to market. This can be further proved by the quantity of pepper in the trade.

### **Shift in Demand**

The massacre might have influenced consumer perceptions negatively, particularly if pepper was associated with the Chinese community. Dutch authority was said to be not satisfied with this massacre and its consequences, possibly from the economic scope. And the local Dutch captain was deposed. With the demands increasing, perhaps due to stigma or the impression, it could lead to short-term increase of the pepper price.

---

<sup>4</sup>J.S. Stavorinus. *voyage to the East Indies*, (trans. Wilcocke). London 1798 (facs. reprint 1969): 402-3.

<sup>5</sup>Raffles 1830: ii/234-5; "Chronologische Geschiedenis van Batavia, Geschreven door een Chinees" TNI Batavia 1840: iii(2)/61; Van Hoeveli 1840: iii(1)/478; Meinsma 1872: i/132; J.J. de Hollander, *Hand- leiding bij de beoefening der Land- en Volkenkunde van Nederlandsch Oost- Indië & Breda* 1882: i/27; B. Hoetink, "Ni Hoekong; Kapitein der Chi- neezen te Batavia in 1740", BTLV The Hague 1918: lxxiv/459fn.3; De Haan 1922: i/500; Vleming 1926: 6; Cator 1936: 18; Vermeulen 1938: 64

## 8 Discussion

This research proves that the 1740 Batavia Massacre has directly brought profit for VOC, demonstrating that the massacre is likely to be driven by economic factors. And the fact that it was such a perfect fit with the Dutch interests that it can hardly be understood as an accident. With the massacre against certain ethnicity happening onwards, our research would also like to promote people's awareness of the historical massacre and contemporary violence. While in today's world, there are still regional wars and racial conflicts existing, hopefully this study will show the price of the massacre is an ever-lasting scar. Even though the pepper maintains the high price at one time, its downward trend is still inevitable as we widen the time scope. This paper also wants to reflect on the massacres and exterminations carried out to seek profits and serves the propose of criticizing the colonists' repression on both the indigenous group and the Chinese group.

There are also some potential questions regarding the methodology in this research that can be further polished or improved afterwards. First, Coffee and Nutmeg here serve as the control group to investigate the price change of pepper and white pepper. However, coffee also has some relationship with the Chinese group. According to the historical evidence, the Chinese planters in 1738 produced over half a million kilo- grams of coffee, nearly 29 percent of the total production of Priangan<sup>6</sup>. It shows that coffee industry is not completely controlled by VOC, and Chinese took a considerable portion in this industry too, which may shake our grounds on taking Coffee as the control group commodity to conduct DiD.

Moreover, while DiD method performs well at interpretability and establishing causal effects, it also has certain important drawbacks. Firstly, it lacks the predictive power. In our study, the Difference-in-Differences (DiD) methodology has been instrumental in analyzing the impact of the 1740 massacre on commodity prices. While this method is robust for causal inference under certain conditions, it relies on the critical assumption of parallel trends, which may not always hold.

---

<sup>6</sup>De Haan 1910: i/128,129; 1911: ii/477,478-9; 1912: iii/ 510, 512, 513, 517-8 9

Furthermore, it can be limited by the unavailability of adequate post-treatment data or potential confounders that are not accounted for within the study's design. These limitations underscore the necessity of incorporating additional analytical techniques that can enhance our understanding and estimation of the massacre's impact.

But machine learning may provide much more accurate predictions on the price of pepper industry after 1740 if there were no massacre. By leveraging predictive models, we can estimate the counterfactual scenario—what the price of pepper might have been had the massacre not occurred. Machine learning algorithms, trained on the pre-massacre data of various commodities, can predict the expected price trajectory without the interference of the massacre. These algorithms excel at uncovering complex patterns within large datasets and can adjust for numerous variables simultaneously, which is particularly useful when dealing with economic data that may be influenced by multifarious and interrelated factors.

This is the first phase of the research finding regarding the commodity price changes around the Batavia massacre, and this project is still ongoing. For the next phase, we aim to integrate also machine learning models to forecast the trend of pepper prices by using historical data of control commodities unaffected by the massacre then compare it with the real trend of the pepper. The approach can provide a nuanced prediction of the 'should-have-been' scenario against which we can benchmark the actual post-massacre price movements. By training a model specifically on the data from industries similar to the pepper industry, but not affected by the massacre, we can create a more tailored and possibly more accurate prediction of the price trajectory.

## 9 Reference

Blussé, Leonard. "Batavia, 1619–1740: the rise and fall of a Chinese Colonial town." *Journal of Southeast Asian Studies* 12.1 (1981): 159-178. Jew, V., 2010. *The Anti-Chinese Massacre of 1871 and Its Strange Career. A Companion to Los Angeles*, pp.110-128.

Kemasang, A. R. T. "The 1740 massacre of Chinese in Java: Curtain raiser for the Dutch plantation economy." *Bulletin of Concerned Asian Scholars* 14.1 (1982): 61-71.

Salmon, Claudine. "The massacre of 1740 as Reflected in a Contemporary Chinese narrative." *Archipel* 77.1 (2009): 149-154.

Steensgaard, N., CR Boxer: *The Dutch Seaborne Empire, 1600-1800. The History of Human Society*. Gen. ed. JH Plumb. London, Hutchinson & Co. Ltd., 1965. xxvi+ 326 s. Ill. og kort. 50 sh. Historisk Tidsskrift.

Zesch, Scott. "Chinese Los Angeles in 1870-1871: The makings of a massacre." *Southern California Quarterly* 90.2 (2008): 109-158.

### **Historical Sources**

Dutch National Archives (NA) The Hague; Archives of the Dutch East India Company (VOC) archive no. 1.04.02, inv. nos: 4584-4597: "Samenvattende Staten".

De Haan 1910 "i/ 263" Gimbriere 1928' 28; G. Gonggrijp, *Schets Ener Economische Geschiedenis van Nederlandsche-Indie*