Cold Case Files: The Athenian Grain Merchants, 386 B.C.

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Food price increases have always been politically sensitive. Price spikes like those that have occurred recently create the demand for action on the part of government to alleviate the problem. Yet, government intervention can often do more harm than good. This article examines one such example of a counterproductive response that occurred in 388 B.C. in Athens, Greece. In response to a negative supply shock to the grain market, regulators encouraged grain importers to form a buyers' cartel (monopsony), hoping that it would reduce retail prices by first lowering wholesale grain prices. In reality, the decrease in wholesale prices resulted in a *decrease* in the willingness of producers in other regions to supply grain to Athens, and retail grain prices increased substantially. Grain importers soon found themselves on trial for their lives in what is probably the earliest recorded antitrust trial. This article uses the information presented at that trial and other contemporary sources to evaluate the grain merchants' actions. More generally, it analyses the impact of a buyer's cartel or monopsony on prices and consumption.

While most economic analysis of the effects of market power have focused on monopoly power (a single seller of a good) or cartels among sellers, there has always remained some degree of interest in monopsony power (a single buyer) or collusion among several buyers. This interest has traditionally been confined to three different

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areas: "company towns" where a single employer is the sole employer of labor; large retailers, such as A&P in the first half of the 20th century, where the retailer's purchases represent a sufficiently large share of the overall market that it allegedly has some power to dictate wholesale prices; and middlemen or wholesalers in agricultural markets, such as grain elevator operators, where geography or transportation costs limit the number of potential customers interested in purchasing large-scale commercial levels of output. In recent years, there has also been growing concern, whether legitimate or not, about the potential for monopsony power among large-scale purchasers of health care services.

There have been several U.S. antitrust cases related to monopsony or monopsony power. Blair and Harrison (1993: 4–11) discuss cases related to bid rigging at auctions, merchant collusion in negotiating bank card fees with credit card companies, collusion among colleges regarding financial aid, and collusion in baseball's free agent market. They note that U.S. antitrust cases involving collusion among buyers go back to at least 1924, when 178 poultry buyers in New York appointed a committee of seven individuals who would determine—or "stabilize"—each day's market price for poultry.

In this article, I examine what is likely to be one of the earliest recorded antitrust cases, a case that involves collusion among grain buyers in ancient Athens. At the urging of a regulator, grain importers formed a cartel and colluded to lower the price paid to those who were exporting grain to Athens. Like nearly all attempts to establish non-market prices, this attempt generated serious negative unintended consequences for the Athenians.

Much like present-day U.S. dependence on imported petroleum, the Athenians were dependent on grain imports in the fourth century B.C. Athens's relatively large population and the small area of land available for growing grain in Attica meant Athens had to depend heavily on imported grain. Disruptions in the flow of grain imports could cause grain prices to spike.

The cause of the disruption in grain markets in 388 B.C. is unclear. It could have been a bad harvest in some regions that were net exporters of grain or simply a blockade or invasion of the city-states supplying Athens with grain that occurred when Persia switched to Sparta's side (and against Athens) in the Corinthian War. However, the effects of the disruption are clear. There was a supply shock adversely affecting the amount of grain being supplied to Athens, resulting in higher grain prices.

Those higher prices were deeply unpopular and at least one of the Athenian officials who was charged with regulating the sales of grain (the *sitophylakes*) developed an "innovative" policy for reducing grain prices. He would allow the grain merchants (the *sitopolai*, also translated as corn dealers[1]) to collude when negotiating with the importers (the *emporoi*, the masters of the ships delivering grain to Athens) to purchase grain. The plan went seriously awry and after narrowly avoiding summary execution by a decree of the Athenian council, the grain merchants soon found themselves on trial for their lives for hoarding grain and "profiteering"—essentially selling grain for more than the allowed mark-up. Kotsiris (1988: 451) suggests that the trial that followed is in all likelihood one of the earliest, if not the earliest, recorded instance of an antitrust trial.

Although there is some independent information related to the legal and regulatory environment with respect to grain in Athens, the only source of knowledge for this particular set of events is a contemporaneous speech that Lysias, a Greek orator, wrote for an unnamed prosecutor who presented opening arguments in the trial.[2] The prosecutor successfully convinced the Athenian council not to summarily execute the grain merchants but to allow a trial.[3]

The speech was designed to serve two purposes. The first was to justify the speaker's opposition to summary execution of the grain merchants. This explanation was necessary because his opposition to summary execution led many citizens to suspect that he was in league with the grain merchants. The second purpose was to describe the evidence against the grain merchants and arguments for why they should be convicted and executed. In examining the likelihood that the grain merchants were guilty, I will focus on this aspect of the speech. As a prosecutor of what appears to be a segment of ancient Athenian society

[1]Most of the older translations translate this as corn dealers. However, these translations are by English scholars where corn was used as a generic term for grain (primarily wheat and barley). I will use the term grain in order to avoid confusion with what is commonly referred to as corn (maize) in North America.

[2]All quotations from Lysias's speech that I cite come from the translation found in Lamb (1930). A somewhat different translation can be found in Laistner (1923). With regard to the issues discussed in this article, there do not appear to be important substantive differences between these translations.

[3] To avoid confusion, by adding yet another player, this prosecutor (who was a member of the Athenian council) will be referred to and treated as Lysias.

that is routinely villainized, Lysias is not likely to be an unbiased source of information. In a sense, this article attempts to determine how pervasive this bias was by at least examining the extent to which Lysias's claims are internally consistent and fit with a reasonable and plausible economic model.

Kotsiris (1988: 454) noted that one of the interesting aspects of Lysais's speech is that the rhetoric employed is not very different from what might be observed in a modern antitrust trial. Lysias began by outlining the important facts and law that should cause the jury to find the accused guilty. He then outlines the grain merchants' justifications for their actions, which in modern antitrust parlance would be called efficiencies, and why the jury should discount or disbelieve those claims. Finally, he closes with an appeal for the jury to find guilt. In this case, the appeal includes a suggestion that the lasting impact of the actions of the grain merchants has been to permanently reduce the willingness of the *emporoi* to ship grain to Athens, thereby making the adverse effects of the conspiracy long lasting. Because the speech appears to outline both the prosecutor's case and the defendant's rebuttal in some detail, it is possible to make informed speculations on the guilt of the defendants.

While there is much information on the relevant events found in Lysias's speech, information from other contemporary sources on the structure and regulation of the Athenian grain market is useful for understanding the legal context in which the grain merchants operated and in evaluating their guilt. In the following section, I use this information to discuss the structure of the Athenian grain market. In the third section, I discuss the supply shock that increased grain prices and how the regulators modified regulatory policy to allow grain merchants to monopsonistically collude. I then outline the prosecution's case against the grain merchants and the grain merchant's defense, or efficiency justification. In the fifth section, I evaluate the competing arguments in the light of economic theory and argue that, given the regulatory change, the grain merchants' actions were in the public interest but that the change itself was not in the public interest. I conclude the article with a short discussion of what the trial's outcome may have been.

The Structure of the Grain Market

The international grain trade was vital to the viability of Athens as a power in the ancient Greek world. Athens was located in the Attica peninsular region of Greece. According to Kyriazis and Zouboulakis (2004: 127), Attica was a relatively small territory of about 40 square miles with a comparative advantage in producing olive oil, figs, honey, and wine, but a comparative disadvantage in producing grain. Kotsiris (1988: 452) suggests that the area was not large or fertile enough to grow a sufficient amount of grain to feed the nearly half a million people living in Attica. Athens was dependent on imports of grain from foreign sources such as Sicily, Rhodes, Cypress, Hellespoint, and the Euxine lands. Kotsiris (1988: 452) further notes that at least half of the foreign grain came from sources around the Black Sea. Figueria (1986: 156–57) suggests that in this time period it would take 400 shiploads of grain annually to supply Athens's need for grain from outside Attica. Furthermore, the events described in this article occurred in a period of increasing relative scarcity of grain. Laistner (1923: xxii) estimated that the price of grain in the fifth and fourth centuries B.C. increased by approximately 40 to 60 percent, while the average wage stayed approximately the same.

Given the importance of the grain trade to the Athenians, it should not be surprising that Athens subjected the grain trade to many legal proscriptions whose intended purpose was to increase the supply of imported grain. Figueira (1986: 150) notes that it was a capital offense for any resident of Athens to ship grain to any harbor other than Piraeus, which was controlled by (and connected to) Athens via a long fortified wall designed to withstand sieges. Athenian residents could extend maritime loans only to ships bringing grain to Athens (Kotsiris 1988: 452; Figueira 1986: 150).[4] Finally, according to Kotsiris (1988: 452) it was illegal to export grain from Attica.

In addition to these general prohibitions, the day-to-day workings of the grain market were also heavily regulated. The issue of food supplies and the grain trade were mandatory discussion topics at each meeting of the principal assembly (Figueira 1986: 150, citing Aristotle's Athenian Constitution AP 43: 4). For all other commodities, Athens had appointed "market-clerks," or *agoranomoi*, as regulators. The grain trade had special controllers who were selected by lot among citizens (Lysias ¶16). Kotsiris (1988: 452) identified two groups that the regulatory tasks were divided between. The first

[4]These two sources disagree about the exact nature of the prohibition. Kotsiris believes that it applies only to maritime loans to ships moving grain; Figueira believes it applies to all ships.

were the "overseers of the import market" or *epimeletai* (henceforth, "overseers"), whose responsibility was to ensure that all grain ships entering Piraeus, the port Athens controlled, sold at least two-thirds of their grain to Athenians. The *emporoi* (the shipmasters delivering grain to Athens) were prohibited by Athenian law from retaining more than one-third of their grain, presumably for later sale or sale at a different port.

The second and more relevant group of regulators was the *sitophylakes* (henceforth, "regulators"). These regulators were more relevant to the trial because they authorized the grain merchants to form the buying cartel that was the trial's focus. According to Figueira (1986: 151), these regulators "saw to it that unmilled grain was for sale fairly and that the millers and bread-sellers were selling barley groats [crushed barley] and bread in proportion to the value of unprocessed barley and wheat." They also assessed a 2 percent tax on imported grain.

As presented by Lysias (¶8), the two regulations most relevant to the case brought against the grain merchants were the profit controls and the purchase or inventory limitations (hoarding restrictions) imposed on the grain merchants. The grain merchants were prohibited from adding more than an obol (one-sixth of a drachma) per *medimnus* to the price of grain they had paid to the *emporoi*. Laistner (1923: xxii) estimates that in this time period grain typically cost three to five drachmas a *medimnus*. A drachma was approximately what a stonecutter or a carpenter would get paid for a day's labor (Kotsiris 1988: 453). A *medimnus* is approximately one and a half bushels. The more controversial of the restrictions, in terms of its meaning in modern translation, is unfortunately also one of the key regulations the grain merchants were accused of violating, and that was a prohibition on hoarding.

Lysias (¶6) cites a law that prohibits anyone from buying more than 50 *phormai* of grain.[5] However, as noted by Todd (1993: 318), there are as many translations of the original Greek phrase as there are translators. Most interpret the phrase to mean either that a particular grain merchant may not purchase more that 50 *phormai* at a time (an interpretation

[5] It is not known what quantity a *phormai* represents. It is usually translated as "baskets" or "measures." Many translators assume it to be equal to a *medimnus*, but no one knows exactly how much grain corresponds to a *phormai* (see Todd 1993: 318; Seager 1966: 175; Figueira 1986: 155–56; and Lamb 1930: 490).

consistent with Lysias [¶8], which suggests that this restriction refers to the amount that may be purchased from a single ship) or that a grain merchant may not keep more than 50 *phormai* in inventory at any time. Perhaps if we had a clearer idea of amount of grain a *phormai* was equal to, this difference could be resolved.

Figueira (1986: 152–55, 159) argues that the phrase should actually be translated to mean, "to collaborate in buying," however, this translation appears to be idiosyncratic to him. Seager (1966: 173, 175) argues that Lysias may have deliberately used an unclear or ambiguous term that could mean any of these three things as a method to help obscure the exact nature of the grain merchants' offense.

Technically, the grain merchants were accused of simply hoarding. However, the harm from the grain dealers' actions identified in Lysias's speech seems to come primarily from the grain merchants' actions as a buying cartel. Lysias's ambiguity may simply have been to associate the illegal, but possibly not terribly harmful, act of hoarding with the possibly not illegal but potentially harmful act of the grain merchants bargaining with the *emporoi* through a buying cartel. This type of verbal sleight of hand is not unknown in modern civil trials and, if only to avoid an esoteric debate about the exact translation of an ancient Greek phrase, I will assume that Lysias intended to have such an ambiguity in this speech.

While it is impossible to determine from contemporaneous economic statistics how constricting these regulations were, it does appear that there were accusations of violations quite often, and with terrible consequences for those accused. For example, in the summation of his speech, Lysias (¶20) asked the jury to "consider that great numbers in this business have been tried for their lives: so much profit do they make by it that they choose rather to risk death every day than to cease making illicit gain out of you."

Clearly, accusations of violations of the grain regulations appear to have happened on a relatively frequent basis. Indeed, Kotsiris (1988: 453) points to a group of people labeled *sycophants,* who would inform on the grain merchants (and others) in exchange for large payoffs in the event of a successful prosecution, or who would threaten to turn informant in order to be bought off by the grain merchants. It should be noted though that it is unclear whether the grain merchants regularly violated these possibly irrational regulations or they were being vilified for events beyond their control.

In addition, the grain regulators themselves were sometimes prosecuted for failing to properly regulate the grain merchants. In the speech Lysias (¶16) noted, "Often you have been known to inflict the extreme penalty on those officials, for having failed to defeat the villainy of these men [the grain merchants]. Now, what should be your treatment of the actual offenders, when you put to death even those who are unable to control them?"

Events Leading to the Prosecution of the Grain Merchants

The alleged collusion by the grain merchants against the *emporoi* was the result of a chain of events that started with a grain supply shock in the one or two years prior to the trial in 386 B.C. There is no agreement among scholars writing about this incident what the exact cause of the shock was. Todd (1993: 317) and Seager (1966: 172) argue that it was caused by Sparta (or Persia) blockading one of Athens's grain sources, with Seager claiming that it was Sparta's blockade of grain ships sailing from Pontus specifically. Figueria (1986: 150) argued that the supply shock was not the result of a blockade of any of Athens's grain sources, but rather the result of the rumor of such a blockade. Laistner (1923: xxvi) argued that the supply shock was the result of a bad harvest. It is unclear whether he was referring to a bad harvest in Attica, or in the Greek world more generally. Whatever the cause, there is general agreement that it was a temporary shock that reduced the supply of grain and increased its price.

As previously noted, the supply of grain, and by extension its price, was a key concern of citizens and residents of Athens. The exact impact of this price increase on the real income of the residents of Athens is difficult to calculate. However, it appears clear from Lysias's speech that the price increase was deeply unpopular, resulting in great pressure on the regulators to reduce the price. At least one of these regulators suggested to the grain merchants that they collude when buying grain from the *emporoi*, because he believed collusion would help reduce retail prices. Lysias (¶8) described how this collusion came to be:

> For since these [grain merchants] have shifted blame on to [the regulators], [the Council] called the [regulators] before us and questioned them. Two of them denied any knowledge of the

> matter; but Anytus stated that in the previous winter, as [grain] was dear, and these men were outbidding each other and fighting amongst themselves, he had advised them to cease their competition, judging it to be beneficial to you, their customer, that they should purchase for as reasonable price as possible.

Figueira (1986: 161–62) suggests that it was unlikely that Anytus could have authorized the collusion among the grain merchants without the knowledge and agreement of his fellow regulators. Regardless of whether this is the case or not, this concession suggests that there was an attempt by the grain merchants to collude against the *emporoi* and that collusion was at least in part authorized by one of the regulators of the grain market.

Even though the possibility that there was no collusion at all and that the grain merchants were being persecuted for what was simply the effects of a supply shock cannot be ruled out on the basis of the available evidence, most scholars believe that there was some form of collusion. There are two basic forms that these scholars suggest that the collusion may have taken. Seager (1966: 174) suggests that the grain merchants simply agreed on a maximum price that they would pay the *emporoi*. This type of collusive agreement is difficult to maintain, and Figueira (1986: 162–63) believes that there was a more plausible mechanism for the collusion.

He argues that the grain merchants probably operated though a single buyer or possibly a single buyer per ship. In order to ensure that the *emporoi* could not play two grain merchants against each other, one grain merchant would set a price he was willing to pay and offer to buy all of the ship's cargo that the *emporoi* was willing to sell (by law at least two-thirds) at that price. This would explain why the buying cartel, and the regulator ordering it, had to allow the grain merchants to buy (or hold) more than the 50 *phormai* limit in violation of the hoarding laws, a violation the grain merchants admitted to doing (under orders from the regulators) and recounted in Lysias (¶5).

Allowing hoarding would enable a grain merchant to buy all of the grain from a single ship, make it easier to limit one buyer to a ship, and reduce competition among buyers. However, there are other explanations for why the regulators would have believed it was necessary to allow the grain merchants to exceed the hoarding limits in order to act as a buying cartel.

While it is difficult to resolve the issue of what mechanism the grain merchants used to collude and exactly what authorization they were given by Anytus, it appears that they did exercise at least some monopsony power against the *emporoi*.

Anytus's scheme backfired, resulting in greatly increased retail grain prices. Lysias never directly states that grain prices increased. But it is clear from the context of his speech that they did. In the introduction of the speech, Lysias (¶2) notes that as a result of the grain dealers actions "the anger felt against them was such that some of the orators said that they ought to be handed over without trial . . . for the penalty of death." Lysias (¶¶12–13) also noted that the grain dealers were making illegally large profits on the sales of grain. Lysias (¶15) further argues that, with regard to the actions of the grain merchants, "We are to be glad enough if we come away from [the grain merchants] with a purchase made at any price, however high." In conclusion, Lysias (¶22) observes, "If you convict them, you will both do justice and buy your [grain] at a fairer price: otherwise it will be dearer."

Trial of the Grain Merchants

The legal tools the prosecutor could use against the grain merchants appear to have been limited. It does not appear that there was any law directly forbidding merchants from colluding. Furthermore, it does not appear that the grain merchants were re-exporting the grain that they had purchased from the *emporoi*. Doing so would have been a separate capital offense, clearly illegal, and an activity directly supervised by the overseers (the *epimeletai*). There would have been no need to charge the grain merchants with hoarding in order to inflict the ultimate punishment on them for their actions. Instead, the prosecutor focused the speech on three factors that were only incidental to the actions that caused the price increase.

First, in the event that the jury might believe that the instructions of Anytus to the grain dealers to not bid against each other when purchasing grain made the collusion legal, Lysias (¶9) claimed that the collusion had extended beyond the period authorized by Anytus. Unlike the other two charges, Lysias does not discuss the evidence supporting this charge. He merely asserts that it is true.

Second, Lysias (¶¶12–13) claimed that the grain merchants violated the stricture limiting profits to one obol per *medimnus* of grain. In support of this proposition, Lysias cites the daily variability of the retail price of grain in this time period, arguing that the only way that such variability in price could be observed without exceeding the profit limitation would be if the grain merchants "were buying by the medimnus."[6] Lysias left unsaid the implication that this was simply too small of a quantity for the grain merchants to profitably purchase from the *emporoi*.

Finally, Lysias accused the grain merchants of buying or hoarding more than 50 *phormai* of grain, a law the grain merchants admitted to violating, albeit at the direction of Anytus. Lysias also provided a response to this claim by the grain merchants. Lysias (¶8) argued that Anytus "did not order [the grain merchants] to buy up grain for holding in store, but only advised them not to bid against each other." In short, Anytus claimed that he had not told the grain merchants to violate the law on purchasing more than 50 *phormai* of grain when they bargained with the *emporoi*.

While there is no record of the defense the grain merchants made for their actions, like all good prosecutors, Lysias identifies what justifications the defense might offer from previous statements they had made and offers a rebuttal. The most important of these has already been discussed above. The grain merchants claimed that Anytus, one of the *sitophylakes* responsible for regulating grain, ordered them to buy grain in collusion and to violate the limit on buying or holding more than 50 *phormai* of grain. At this distance, it is simply impossible to determine what Anytus (or any of the other regulators) authorized the grain merchants to do, except for what was admitted to. However, if they were responsible for the grain merchants' actions, this would not be the last time a regulator attempted to fix a market and then left the private actors holding the bag when the attempted fix backfired.

Lysias (¶11) identified a second justification offered by grain merchants for their decision to store more than the legal limit of grain. He notes, "But in fact, gentlemen of the jury, I believe they . . . will repeat, perhaps, what they said before the Council that it was in kindness to the city that they bought up the [grain], so they might sell it to you at as reasonable price as possible." Even allowing for the

[6]Essentially, he is saying that the grain merchants were buying grain by the bushel (and a half). In other words, the daily retail price variability from unit to unit for each of the grain merchants was such that the only way this could occur and not violate the stricture on profits would have been if that grain merchants were buying the grain in single units and paying different prices for each of those units. This suggests that in addition to their other "sins," the grain merchants were engaging in price discrimination.

tendency of an attorney to parody the arguments of the other side in order to diminish their effectiveness, the context suggests that the grain merchants' claim was that they were holding some of the grain off the market in one period in order to sell in a future period when the price was expected to be higher. Arbitrage of this type would have had the effect of reducing the price in the future period and would be, in effect, a "kindness to the city."

Economic Analysis of the Case against the Grain Merchants

Even with the limited information available, an economic analysis of the actions of the grain merchants suggest that the price increase in grain and the violation of the profit restriction was an inevitable result of the decision of Anytus to allow the grain merchants to collude when purchasing grain from the *emporoi*. It was not the result of the decision of the grain merchants to "hoard" grain. In addition, there is sufficient evidence that there was a continuing reduction in supply. Therefore, the decision of the grain merchants to hold grain for future periods would have the effect ameliorating future price increases. Ironically, the cause in the reduction of supply may have been a fear among *emporoi* that the regulators may allow the grain merchants to combine against them yet again.

Because there is no detail in Lysias's speech about the mechanics of the grain merchant's collusion against the *emporoi* but, if the claims in Lysias's speech are correct, no doubt about their ability to effectively engage in some collusion, I will assume that they were able to collude perfectly, with the understanding that in reality the collusion was probably less than perfect. In order to simplify the analysis (and because there is absolutely no information on the structure of the rest of the market), I assume that the retail and wholesale markets are perfectly competitive with constant per unit marginal costs, assumed to be zero.

Normal Competition in the Athenian Grain Market

There is good reason to believe that the supply curve of grain to Athens was upward sloping. The alleged collusion of the grain merchants appears to have lowered the price of grain the *emporoi* received for grain in Piraeus without causing the quantity supplied to drop to zero.[7] In concluding his presentation Lysias (¶21) notes, "[W]hat do you think the *emporoi* feelings will be, when they learn that you have acquitted the retailers who confessed to overreaching the importers [*emporoi*]?" The grain merchants could not have overreached the importers if Athens were a price taker in the international grain market in the ancient Greek world.

Furthermore, because the ships supplying grain were required to sell only two-thirds of their grain in Piraeus, the short-term supply curve can also assumed to be upward sloping over at least part of its range.[8] This also suggests that in the short-run *emporoi* cannot reduce supply to less than two-thirds of the cargoes they planned on moving through Piraeus. Demand for imported grain in Athens is assumed to be downward sloping. The equilibrium in the imported grain market prior to Anytus instructing the grain merchants to collude is simply where the supply and demand curves intersect (Figure 1). In this equilibrium, the price of imported grain is given by P_c with the quantity of imported grain given by Q_c.

Monopsony Power in Imports Creates Monopoly Power in Downstream Markets

Apparently believing that this price of grain was too high and that retail grain prices would fall if the (wholesale) price paid by the grain merchants fell, Anytus allowed the grain merchants to collude in some manner and set the price at which they would purchase grain from the *emporoi*. This made the grain merchants collectively monopsonists. As is normal in the case with monopsonists, the grain merchants face an upward-sloping supply curve. This implies that the marginal cost to them of purchasing additional grain exceeds its price because the cost of acquiring an additional unit of grain requires that the merchant not only pay a higher price to get that unit but also must pay a higher price for each unit they would have otherwise purchased.

In addition, the structure of the grain market in Athens was such that monopsony power over grain purchases in Piraeus gave the grain merchants monopoly power over the retail price of grain in Athens.

[7]The only port through which grain could be delivered by sea to Athens was Piraeus. This means that controlling the purchase of grain at this port effectively controls the supply of grain imported into Attica.

[8]Presumably, ships from different areas would have different opportunities to sell any of the remaining one-third of their grain cargo at the differing ports on their return trip.

The port of Piraeus was a choke point for the supply of grain to Athens. All of the grain that originated from outside Attica had to be shipped to Athens through Piraeus.[9] Anything that reduces the quantity of grain arriving in Athens through Piraeus will increase the price of grain in Athens because there was no alternative port through which the *emporoi* could economically deliver grain to Athens.

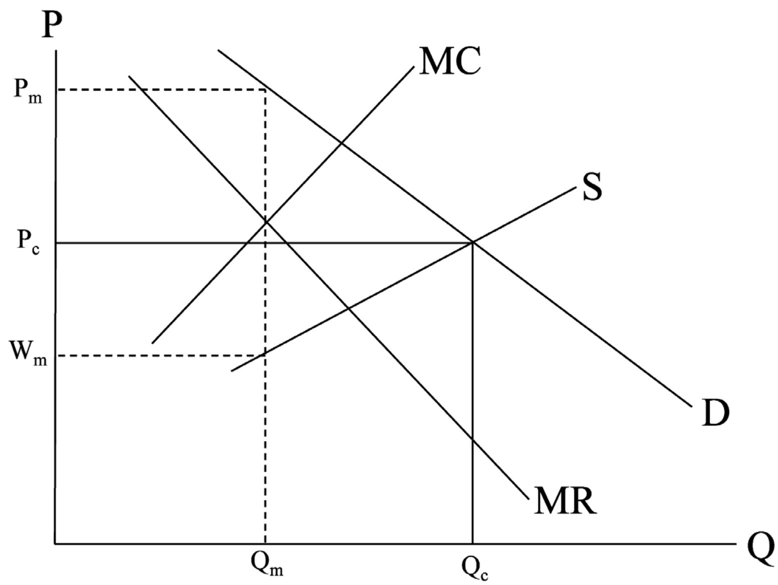
The price paid to *emporoi* by the grain merchants determines quantity supplied. This quantity in turn determines retail price. When choosing the profit-maximizing price to pay the *emporoi*, the grain merchants will take into account the increased profits both from the lowered prices they pay for grain *and* from the higher prices they receive from their customers as a result of the reduction in quantity supplied. This is in contrast to the typical case of a monopsony in which the buyer faces an upward sloping supply curve but sells in a competitive market.

This control over the amount of grain imported through Piraeus effectively gave the grain merchants the same power to affect the retail prices as if they were monopoly sellers of imported grain. The grain merchants also no longer took the retail price as given. Acting collectively, they faced a downward sloping demand curve for imported grain, implying that marginal revenue is less than price. In colluding on the price paid to the *emporoi*, the grain merchants would consider the impact of their actions had on both the price paid to the *emporoi* and on the *retail* price of grain. This combination of monopsony power and what is effectively monopoly power would, contrary to the intent of Anytus, result in a significant increase in the retail price of grain. This equilibrium is illustrated in Figure 1.

In Figure 1, the profit-maximizing quantity (Q_m) for the grain merchants to purchase can be found at the intersection of the marginal cost (MC) and marginal revenue (MR) curves. Once the profit-maximizing quantity is known, the wholesale and retail prices that support that quantity can be found. For the market to clear with a quantity of Q_m, implies a wholesale price of W_m and a retail price of P_m. At those prices the quantity supplied and the quantity demanded of imported wheat equals Q_m. By ordering the grain merchants to collude on setting the price paid to the *emporoi*, Anytus gave the

[9]Meijer and van Nijf (1992: 182) note that it was possible to smuggle goods into Athens. However, this does not appear to have defeated the market power of the grain merchants and was likely to be a fringe source of supply.

FIGURE 1
PRE- AND POST-COLLUSION MARKET FOR GRAIN



grain merchants the power to determine the quantity of imported grain and the retail price for grain in the Athenian market.

Indeed in a market such as this, the ability of the monopsonist/monopolist to control any one of the following; retail price, the price paid to the *emporoi*, or quantity purchased, determines the other two. By colluding on the price paid to the *emporoi* (W_m), the grain merchants' actions fully determine the quantity supplied, and ultimately, the retail price of grain. Graphically the optimal price to pay the *emporoi* is given by W_m. This leads to Q_m being the quantity supplied and price of P_m clearing the retail market.

The results are the same as if the grain merchants were given the right to act collectively in selling imported grain to Athens. Given that power, the profit-maximizing output would still be found at the intersections of the marginal cost and marginal revenue curves. They would choose a retail price of P_m, with Q_m being the quantity demanded and the *emporoi* receiving price of W_m for the grain they sell to Athens.

Similarly, it can be shown that giving the grain merchants the power to determine the amount of grain imported would lead to an amount of Q_m grain being imported, a retail price of P_m, and price paid to the *emporoi* of W_m. This occurs because selecting any one of these values, determines in equilibrium the other two values, implying the exact same optimization problem with the intersection of marginal cost (MC) and marginal revenue (MR) determining the profit-maximizing level of imports. There is no economic difference between a grant of monopoly or monopsony power in this situation.

A monopsonist and/or monopoly cartel could coordinate on any one of these three factors, fiercely compete with regard to the other two factors, and achieve the same profit-maximizing results as if they colluded on all three. In this case, the grain merchants were given the opportunity to coordinate on the price paid to the *emporoi*, and the other two factors were determined as a result of that initial choice regardless of whether they actively colluded on those factors. Other monopoly/monopsonists would presumably coordinate on that factor that was most effective in helping to maintain the collusive outcome in their markets.[10]

Regardless of what factor they coordinate on to implement their collusion, the welfare effects would be the same. Total grain consumption would fall from the competitive level of Q_c to the cartel level of Q_m. The price consumers pay for grain would increase from P_c to P_m. The price the *emporoi* receive for their grain would fall from P_c to W_m. The wholesalers would increase their profits by the difference in the retail and wholesale prices times the number of units sold $(P_m - W_m) \times Q_m$.

Efficiencies or Justifications Offered by the Grain Merchants

The grain merchants offered two justifications for their actions. For the collusion they offered the simple justification that they were instructed to collude by the regulators. They offered a more traditional efficiency justification for the hoarding charge. In particular, they suggested that they did this for the benefit of their customers.

[10]It has been suggested that we might view the instructions from Anytus as allowing the grain merchants to act as monopsonists (i.e., taking the supply curve as given), but not as monopolists and take retail price as given. Perhaps this was the purpose of the one obol profit control. If these profit controls were implemented for this purpose it would be further evidence that the grain regulators realized that the ability of the grain merchants to determine the wholesale price implied some impact on the retail price.

As noted, this can only be interpreted as the merchants holding the grain for a future period in which its price is higher. Lysias (¶15) describes this type of speculation in colorful terms: "For just when you find yourselves worse off for [grain], these persons snap it up and refuse to sell it, in order to prevent our disputing the price. We are to be glad enough if we come away from them with a purchase made at any price, however high."

This type of "hoarding" of grain would increase the supply of grain in the future, reducing the future price at the expense of a higher current price. If the expectation of a future reduction in supply was reasonable and the grain merchants had a comparative advantage in the long-term storage of grain, then this type of speculation would tend to increase consumer welfare by shifting grain from where its supply is greater to where its supply is less and be, in the words of the grain merchants, "a kindness to the city." The only question is whether this expectation was reasonable.

There are several reasons to believe that not only was this expectation reasonable but it was also a direct result of Anytus's scheme to reduce grain prices. Lysias (¶17) notes, "If you reject the charge, when they admit that they are combining . . . , you will be aiming a blow at the importers [*emporoi*]." The actions of the grain merchants imposed a cost on the *emporoi* that was large enough to be considered a blow, suggesting that the profitability of shipping grain to Athens had significantly declined as a result of the actions of Anytus and the grain merchants. Lysias (¶21) went on to suggest that if the city endorses the behavior of the grain merchants, *emporoi* will be less likely to ship grain to Athens in the future:

> Nay, more, not even if they implore and beseech you, would you be justified in taking pity on them: far rather ought you pity those of our citizens who perished by their villainy, and the *emporoi* against whom they have combined. These you will gratify and render more zealous by punishing the accused. Otherwise, what do you think the *emporoi* feelings will be, when they learn that you have acquitted the retailers who confessed to overreaching the importers [*emporoi*]?

In short, after being subject to arguably officially sanctioned monopsonistic exploitation the *emporoi* believed that the risk of shipping grain to Athens has greatly increased because of the possibility of collusion among the grain merchants facilitated, or at least allowed, by the regulators. Probably more so than Anytus, the grain merchants understood that this was the unavoidable impact of Anytus's order to collude when bidding on grain from the *emporoi*. Realizing the impact of their actions on future grain supply, the grain merchants stored some grain for future periods when the grain supply was likely to be constricted and price significantly higher. While this certainly was an action that was in the private interests of the grain merchants, it was also a benefit to the consumers of Athens or what in modern antitrust parlance would be called an efficiency.

Conclusion

In this article, I examine the impact of the efforts of regulators in ancient Athens to reduce the retail price of grain by reducing its wholesale price. Unlike the standard example of a wholesale price control, the regulator in Athens did not establish a direct price control on the wholesale price but rather allowed the grain merchants to collude when purchasing grain from *emporoi*. The effect was the same as a direct wholesale price control. The reduction in wholesale price led to a reduction in the quantity supplied and a higher, not lower, retail price clearing the market. It can also be argued that this collusion also changed the expectation of *emporoi* about both the prices they would receive in Athens and the nature of the risks they faced in shipping grain to Athens. Consequently, it was highly likely that they would reduce the amount of grain they shipped to Athens.

Rather than blaming the regulators for these actions, the Athenians prosecuted the grain merchants for hoarding. Based on the speech of the prosecutor, I argue the adverse effects of the collusion of the merchants were not the result of actions they took independent of the regulators' directions. Rather, these adverse effects were an unavoidable result of the regulators' instructions to the grain merchants. The defense offered by the grain merchants for the hoarding charge was that these actions benefitted the city by shifting grain from a time period with a greater supply to a future time period with a lesser supply were essentially correct.

The historical record does not show the verdict of the trial. However, Lysias (¶5) makes a special point that the grain merchants admitted to being "resident aliens" and subject to the laws of Athens.

Being both middlemen and "aliens," these grain merchants were especially good political targets (and scapegoats) for prosecutions. Lysias (¶¶14–15) played to these potential resentments by emphasizing that the grain merchants were "resident aliens" in Athens, middlemen, and speculators—and by baldly comparing their actions to a military siege:

> For their interests are the opposite of other men's: they make most profit when, on some bad news reaching the city, they sell their [grain] at a high price. And they are so delighted to see your disasters that they get news of them in advance of anyone else, or fabricate the rumor themselves; now it is the loss of your ships in the Black Sea, now the capture of vessels on their outward voyage by the Lacedaemonians, now the blockade of your trading ports, or the impending rupture of the truce; and they have carried their enmity to such lengths that they choose the same critical moments as your foes to overreach you. For just when you find yourselves worse off for [grain], these persons snap it up and refuse to sell it, in order to prevent our disputing the price: we are to be glad enough if we come away from them with a purchase made at any price, however high. And thus at times, although there is peace, we are besieged by these men.

More important, Lysias also pointed out the impact the grain merchants actions had on the willingness of the *emporoi* to ship grain to Athens. Lysias (¶22) ends the speech by arguing, "If you convict [the grain merchants], you will both do justice and buy your [grain] at a fairer price: otherwise, it will be dearer." I will leave it to the reader to decide whether a jury in a city heavily dependent on grain imports, and facing a diminished supply because a greater perceived market risk due to the actions of a regulator in that city and the grain merchants he regulates, would have imposed the ultimate penalty on the grain merchants.

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