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DISCUSSION PAPER**

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

by

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Abstract

While most economic analysis of the effects of market power has 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 buying cartels. In the United States there have been antitrust cases involving monopsony and buyer's cartels at least as far back as 1925, and there is continuing interest in the potential for monopsony power in the retail and health care sectors. This paper examines one of the earliest known antitrust or competition policy cases for possible lessons concerning antitrust treatment of monopsony power in the present day. In 388 B.C., grain regulators in Athens, Greece, were attempting to respond to a sharp increase in grain prices. They encouraged grain importers to form a buyers' cartel with the purpose of decreasing the price of imported grain. However, this action resulted in an overall increase in price and the grain merchants soon found themselves on trial for their lives. In this paper the information presented at that trial is used to evaluate the grain merchants' actions and the impact of monopsony on prices and consumption more generally.

I. Introduction.

While most economic analysis of the effects of market power has 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 buying cartels. This interest has traditionally been confined to three different 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 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 large-scale commercial levels of output. In recent years, there has also been growing concern about the potential for monopsony power among large scale purchasers of health care services.

However, there have been several antitrust cases related to monopsony or monopsony power. These have included 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.¹ Indeed, antitrust cases involving collusion among buyers goes back to at least 1924.² This paper examines what is likely to be one of the earliest recorded antitrust cases, a case that involved a buyer’s cartel. In this case, it was a cartel of grain importers in ancient Athens, who at the urging of a regulator, colluded to lower the price of imported grain. Like nearly all attempts to establish non-market prices, this attempt generated serious negative unintended consequences for the Athenians and, in all likelihood, for the grain importers as well.

Much like the United States’s dependence on imported petroleum in the late part of the 20th century and the early part of the 21st century, Athens in the 4th century B.C. was also dependent on imports to provide a key commodity it consumed. Because of Athens’s relatively large population and the poor soil conditions for growing grain in Attica in the region of Greece in which it is located, Athens was heavily dependent on imported grain to feed its inhabitants.

It is unclear today exactly what happened in 388 B.C.. 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 joined Sparta’s side against Athens in the Corinthian war. However, the effects are clear. There was a shock adversely affecting the ability of exporters to supply Athens with grain, resulting in higher grain prices in Athens

These 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

¹Blair, Roger D., Harrison, Jeffrey L., Monopsony: Antitrust Law and Economics, Princeton, N.J.: Princeton University Press, 1993. pp. 4 - 11.

²Blair and Harrison (1993). This case involved 178 poultry buyers in New York who appointed a committee of seven individuals who would determine, or “stabilize,” each day’s market price for Poultry.

dealers³) 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 Athens council, the grain merchants soon found themselves on trial for their lives for hoarding grain and collusion. The trial that followed is in all likelihood one of the earliest, if not the earliest, recorded instance of an antitrust trial.⁴

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 written by a Greek orator named Lysias.⁵ He had written a speech, which was to serve as opening arguments in the trial, for an unnamed member of the Athens council. The council member was serving as prosecutor after having successfully convinced the Athens council to not summarily execute the grain merchants, but to instead allow them a trial.⁶ The speech was designed to serve two purposes. The first, which I will not discuss in detail, was to justify the speaker's opposition to summary execution of the grain merchants by the Athens council. This explanation was necessary because that opposition led many citizens to suspect that Lysias was in league with the grain merchants.⁷ The second purpose was to describe the evidence against the grain merchants and arguments for why they should be convicted and executed. I will focus on this aspect of the speech to examine the likelihood that the grain merchants are indeed guilty.

One of the most interesting aspects of Lysias's speech is that the rhetoric employed is not very different from what might be observed in a civil trial today.⁸ Lysias begins by outlining the important facts and law that should cause the jury to find the accused guilty. He then outlines the grain

³Most of the older translations translate this as corn dealers. However, these translations are by English scholars where, in this time period, corn was sometimes used as a generic term for grain. I will use the term grain in order to avoid confusion with what is commonly referred to as corn in North America.

⁴Kotsiris, "An Antitrust case in Ancient Greek Law," The International Lawyer, Summer 1988 Volume 22. p. 451.

⁵All quotations from Lysias' speech that I cite come from the translation found in Lamb (1930). A somewhat different translation can be found in Laistner (1923). I will note in the text when these two translations differ in a substantive way.

⁶Because the name of the speaker is unknown, in order to avoid confusion, I will hereafter simply refer to the speaker as Lysias.

⁷"But I, thinking it monstrous that the council should get into the way of such a practice [executing the grain merchants without a trial], rose and said that in my opinion we ought to try the [grain merchants] in accordance with the law; for I thought if they had committed acts deserving of death you [the jury] would be no less able than [the Council] to come to a just decision, while if they were not guilty, they ought not perish without a trial. After the Council adopted this view, attempts were made to discredit me by saying that I hoped to save the [grain merchants]..." Lysias ¶¶2-3.

⁸Kotsiris, p. 454.

merchant's justifications for their actions, which in modern antitrust parlance would be called the efficiencies, and why the jury should disbelieve these 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 effects of the conspiracy long-lasting. Because the speech appears to fairly outline both the prosecutor's and the defendant's cases in some detail, it is possible on the basis of the speech alone to make an informed judgement of 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 Athen's 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 conclude that the grain merchants' actions were in the public interest, given the regulatory change, but that the change itself was not in the public interest. I conclude the paper with a short discussion of the trial's outcome.

II. The structure of the 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 portion of Greece. This was a relatively small territory of about forty square miles, with poor soil conditions for growing grain, and not a large or fertile enough area to support the nearly half a million people that consisted of the population of Attica.⁹ Athens was dependent on imports of grain from foreign sources such as Sicily, Rhodes, Cypress, Hellespoint and the Euxine lands if it were to feed its population. At least half of the foreign grain came from sources around the Black Sea.¹⁰ One estimate suggests that in this time period it would take 400 shiploads of grain annually to supply Athens' need for grain from outside Attica.¹¹ Furthermore, the events described below occurred in a period of increasing relative scarcity of grain. One author estimated that the price of grain in the fifth and fourth centuries BC increased by approximately forty to sixty percent, while the average wage stayed approximately the same.¹²

Given the importance of the grain trade to Athens, it should not be surprising that the trade was

⁹Kotsiris, p. 452.

¹⁰Kotsiris, p. 452. Footnote 10, (citing Demosthenes, Against Leptines XX 31-33.)

¹¹Figueira, T. "Sitopolai and Sitophylakes in Lysias' 'Against the Grain Dealers:' Governmental Intervention in the Athenian Economy," Summer 1986, *Phoenix*, Volume XL, pp 156 - 57.

¹²Laistner, M.L.W., Greek Economics: Introduction and Translation, New York, E.P. Dutton & Co., 1923. p. xxii.

subject to many legal proscriptions whose purpose was to increase the supply of grain to Athens. 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.¹³ Athenian residents could extend maritime loans only to ships bringing grain to Athens.¹⁴ Finally, except for olive oil, it was illegal to export any agricultural product from Attica in general, or Athens in particular.¹⁵

In addition to these general prohibitions, the day-to-day workings of the grain market were also heavily regulated. The issue of the food supply in general, and the grain trade in particular, was a mandatory discussion question at each meeting of the principal assembly.¹⁶ For all other commodities, Athens had appointed “market-clerks,” or *agoranomoi*, as regulators. The grain trade had special controllers that were selected by lot among citizens.¹⁷ The regulatory tasks were divided among two groups. The first were the “overseers of the import market” or *epimeletai*, whose responsibility was to ensure that all grain ships entering the port controlled by Athens, Piraeus, sold at least two-thirds of the grain they brought to Piraeus.¹⁸ The *emporoi* were also prohibited from storing more than one-third of their grain, presumably for later sale.¹⁹

The second and, because they authorized the grain dealers to form a buying cartel, more relevant group of regulators were the *sitophylakes*. These individuals “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.”²⁰ These regulators also

¹³Kotsiris, p. 452-53. Figueira, p. 150 (citing Demosthenes 34.37, 35.50 and Lycurgus 1.27.), Lamb, W.R.M., Lysias: Orations with English Translations by W.R.M. Lamb., p. xxv. (from the introduction). Laistner, p. xxii.

¹⁴Kotsiris, p. 452. Figueira, p. 150 (citing Demosthenes 35.51, 56.6 and 11). These two sources disagree about the exact nature of the prohibition. One believes that it only applies to maritime loans to ships moving grain and the other believes it applies to all ships.

¹⁵Kotsiris (citing Plutarch Solon 24), p. 452.

¹⁶Figueira, p. 150 (citing Aristotle’s Athenian Constitution AP 43:4).

¹⁷Lysias ¶16.

¹⁸Kotsiris, p. 452. Figueira, p. 150 - 151 (citing Aristotle’s Athenian Constitution AP 51:4). The second source suggests that this requirement that two-thirds be sold referred to a requirement that two-thirds of the imports be sold in the city of Athens. However, this source is idiosyncratic in its interpretation of this requirement.

¹⁹Kotsiris, p. 452.

²⁰Figueira, p 151. Parentheticals containing original Greek terms omitted.

assessed the two percent tax imposed on imported grain.²¹

The two regulations most relevant to the case brought against the grain merchants were profit controls and purchase or inventory limitations imposed on the grain merchants.²² They 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* (the ship-masters importing the grain into Athens).²³ A Drachma was approximately what a stone-cutter or a carpenter would get paid for a day's labor.²⁴ A *medimnus* is approximately one and a half bushels.²⁵ The most controversial of the restrictions, in terms of modern translations, is unfortunately also one of the key regulations the grain merchants were accused of violating, and that was a prohibition on hoarding.

Lysias cites a law that prohibits anyone from buying more than 50 *phormai* of grain.²⁶ However, 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 than 50 *phormai* at a time (presumably this 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.²⁷ Perhaps if we had a clearer idea of amount of grain a *phormai* was equal to, this difference could be resolved. One classicist, Figueira, argues that the phrase should actually be translated to mean "to collaborate in buying,"²⁸ however, this translation appears to be idiosyncratic to Figueira. Another classicist, Seager, argues that Lysias may have deliberately used an unclear or ambiguous term that could mean any of these three things and as a method to help obscure the exact nature of the grain merchants' offense.²⁹

²¹Ibid.

²²In order to simplify the discussion below I will refer to the *sitophylakes* as regulators and the *epimeletai* as overseers.

²³Lysias ¶8.

²⁴Kotsiris, p. 453. footnote 17.

²⁵A second unit of volume is also discussed in Lysias's speech but no source has been able to identify what modern measurement unit it corresponds to. It is called a *phormai* and is usually translated as "baskets" or "measures." Many translators assume it to be equal to a *medimnus* but in reality no one knows exact how much grain corresponds to a *phormai*. See Todd, S.C., *The Shape of Athenian Law*, Oxford University Press, 1993. p. 318., Seager, Robin, "Lysias Against the Corndalers," *Historia*, Volume XV, November 1966. p. 175 (footnote 27). Figueira, p. 155-56., Lamb, p. 490.

²⁶Lysias ¶6.

²⁷Todd, p. 318.

²⁸Figueira, p. 152 - 155, 159.

²⁹Seager, p. 173, 175.

While technically the grain merchants were accused of simply hoarding, the harm from the grain dealers actions identified in Lysias's speech seem 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 acting against 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 they were violated quite often, and with terrible consequences for the violators. For example, in the summation of his speech Lysias asked the jury to "[c]onsider 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."³⁰ Clearly, the violation of the grain regulations happened on a relatively frequent basis. Indeed, there was a group of people labeled *sycophants* who would inform on the grain merchants 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.³¹ The grain regulators themselves were sometimes prosecuted for failing to properly regulate the grain merchants. In the speech Lysias 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?"³²

III. The Events Leading to the Prosecution of the Grain Merchants.

It is clear that collusion by the grain merchants against the *emporoi* was ultimately the result of a grain supply shock in the one or two years prior to the trial in 386 BC. There is no agreement among Classics scholars writing about this incident what the exact cause of the shock was. Two argue that it was caused by Sparta blockading one of Athen's grain sources, with one claiming that it was Sparta's blockade of grain ships sailing from one particular area.³³ Another argued that the supply shock was not the result of a blockade of any of Athen's grain sources, but rather the result of the rumor of such a blockade.³⁴ Another argued that the supply shock was the result of a bad harvest.³⁵ It is unclear whether this author was referring to a bad harvest in Attica, or in the Greek world more

³⁰Lysias ¶20.

³¹Kotsiris, p. 453.

³²Lysias ¶16.

³³Todd, p. 317., Seager, p. 172. The latter argued that the Spartans were blockading the grain supply port of Pontus.

³⁴Figueira, p. 150.

³⁵Laistner, p. xxvi.

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 noted above, the supply of grain, and by extension its price, was a key concern of citizens and residents of Athens. The price increase was probably deeply unpopular, resulting in great pressure on the regulators to reduce lower price. At least one of these regulators, believing that it would reduce retail prices, suggested to the grain merchants that they collude when buying grain from the *emporoi*. This action was described by Lysias.

“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...”³⁶

One modern source suggests that it was unlikely that Anytus could have authorized the collusion amongst the grain merchants without the knowledge and agreement of his fellow regulators.³⁷ Regardless of whether this is the case or not, by the mere existence of the case against the grain merchants, it is clear that they did collude against the *emporoi* and that collusion was at least in part authorized by one of the regulators of the grain market.

There is some disagreement as to the form this collusion took. There have been two suggestions. The first is that the grain merchants simply agreed on a maximum price that they would pay to the *emporoi*.³⁸ I think this underestimates the difficulty in maintaining this type of collusive agreement. The second is that the grain merchants operated through a single buyer,³⁹ 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 that particular *emporoi* was willing to sell (by law at least 2/3’s) at that price.⁴⁰ 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 fifty *phormai* limit in violation of the hoarding laws, a violation admitted by the grain merchants.

³⁶ Lysias ¶8. One source suggests that the Anytus mentioned in this passage may also have been the accuser of Socrates in an ancient Greek trial much more famous than this one. Figueira, p. 150.

³⁷Figueira, p. 161-162.

³⁸Seager, p. 174.

³⁹Figueira, p. 162-163.

⁴⁰Presumably at least some *emporoi* would change their selling plans in response to the lower prices offered by the Athenian grain merchants and chose to sell some grain elsewhere.

Speaker: “[D]o you acknowledge that you bought [grain] in excess of fifty [*phormai*], which the law sets as the limit?”

[Grain merchant]: “I bought it up on an order from the [regulators].”⁴¹

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, there can be little doubt that they did exercise at least some monopsony power against the *emporoi*.

Anytus’s scheme to reduce grain prices backfired, resulting in greatly increased grain prices. Lysias never directly states that grain prices increased, but it is clear in the context of the speech that that was indeed, what happened. In the introduction of the speech, Lysias 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.”⁴² Lysias also noted that the grain dealers were making illegally large profits on the sales of grain.⁴³ He 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.”⁴⁴ In conclusion, Lysias notes that “..if you convict them, you will both do justice and buy your [grain] at a fairer price: otherwise it will be dearer.”⁴⁵

IV. The Trial of the Grain Merchants.

The legal tools the prosecutor could use against the grain merchants was limited. It does not appear that there was any law directly forbidding merchants from colluding.⁴⁶ 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 offense, clearly illegal, and in a market directly controlled by the overseers (the *epimeletai*). Instead, the prosecutor focused on actions that were 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 claimed that the collusion had extended beyond the period authorized by Anytus.⁴⁷

⁴¹Lysias ¶5.

⁴²Lysias, ¶2.

⁴³Lysias, ¶¶12-13.

⁴⁴Lysias, ¶15.

⁴⁵Lysias, ¶22.

⁴⁶Perhaps this is why some individuals wanted to simply execute them without a trial. They believed that it would be difficult to prove the grain merchants did anything illegal.

⁴⁷Lysias, ¶9. Unlike the other two charges, Lysias does not discuss the evidence supporting this charge and merely asserts that it is true.

Second, Lysias 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*.”⁴⁸ 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, as noted above, that 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 noted 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.”⁴⁹ In short, Anytus claims that he did not tell the grain merchants to violate the law on purchasing more than 50 *phormai* of grain when they were bargaining with the *emporoi*.⁵⁰

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 leaving the private actors holding the bag when the attempted fix backfired.

Lysias identified a second justification offered by grain merchants for their decision to store more than the legal limit of grain. Lysias states

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.⁵¹

⁴⁸ Essentially by the bushel (and a half). Lysias ¶¶12-13. In other words, the daily 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 merchant was buying the grain in single units and paying different prices for these units. This suggests that in addition to their other sins, the grain merchants were engaging in price discrimination.

⁴⁹Lysias ¶8.

⁵⁰This suggests that the restriction outlined in the previous section was at least in part a restriction on the grain merchants preventing them from purchasing or possibly storing more than 50 *phormai* of grain.

⁵¹Lysias ¶11.

Even allowing for the 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 in when the price was expected to be higher. Arbitration 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.”

V. 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*, rather than a 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 that 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 again allow the grain merchants to combine against them.

Because there is no detail in Lysias’s speech about the mechanics of the grain merchant’s collusion against the *emporoi* but no doubt about their ability to effectively engage in some collusion, I will assume for exposition purposes 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 market) I assume that the retail market is invisible, by assuming that the costs of that sector is zero. I also assume that the costs in the wholesale sector are also zero.⁵²

Because Athens imported grain from several different sources, there is good reason to believe that the supply curve of grain to Athens (via its port Piraeus) was upward sloping.⁵³ Furthermore, because the ships supplying grain were only required to sell 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.⁵⁴ 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. Because we do not know whether grain exporters at this time typically planned trips that would have them sell grain in multiple areas or if they simply planned all the grain on a single ship to be sold in one location or some combination of these strategies, I will assume that the two-thirds restriction affects the supply curve making it very inelastic at some

⁵²This is an unrealistic assumption given the existence of the grain merchants and the assumption that they have to provide some beneficial service. However, the addition of costs for this sector needlessly complicates the analysis.

⁵³The 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.

⁵⁴Presumably, ships from different areas would have different opportunities to sell any of the remaining 1/3 of their grain cargo at the differing ports on their return trip.

unspecified fraction (less than or equal to two-thirds) of the expected equilibrium quantity of imported grain. There is nothing to indicate that grain was a Giffen good in the relevant price range in this market so I will assume that as with most demand curves, the demand for imported grain in Athens is downward sloping. This implies that the equilibrium in the imported grain market prior to Anytus instructing the grain merchants to collude can be illustrated by Figure 1.⁵⁵ In this equilibrium, the price of imported grain is given by P_c and the quantity of imported grain is given by Q_c .

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*, making the grain merchants effectively monopsonists. As is normal in the case with monopsonists, the buyer faces an upward-sloping supply curve. This implies that the marginal cost of purchasing additional grain exceeds the price of grain.

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 selling imported grain to the Athenians. 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. Anything that reduces the supply 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. This is in contrast to the typical case of a monopsony buyer in which the buyer faces an upward sloping supply curve but sells her output in a competitive market.⁵⁶

This control over the amount of grain imported through Piraeus gave the grain merchants the power to also act as monopoly sellers of imported grain. The price the grain merchants were willing to offer the *emporoi* affected the amount of grain they were willing to sell. The amount of grain supplied in turn affected the retail price of grain. Controlling the wholesale price paid to the *emporoi* meant that 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, the grain merchants would consider the impact of their actions had on both the wholesale *and retail* price of grain. This combination of monopoly and monopsony 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 2.

In Figure 2, the optimal quantity (Q_m) for the grain merchants can be found at the intersection of the marginal cost and marginal revenue curves. Once the optimal quantity is known the wholesale and retail prices that support that quantity can be found. A quantity of Q_m , implies a wholesale price

⁵⁵To avoid cluttering the graph, Figure 1 only shows the equilibrium after the supply shock. Figures can be found at the end of the paper.

⁵⁶An example of this might be the old bituminous coal company towns in West Virginia and Pennsylvania where the company faced an upward-sloping supply curve of labor (And therefore acted as a monopsonist) but sold its output in the national and presumably competitive coal markets.

of W_m and a price of P_m that will clear the retail side of the market. The wealth transfers from this collusion are clear. The grain merchants made an additional profit of $(P_m - W_m) \cdot Q_m$.⁵⁷ This transfer is represented by rectangles A and B in Figure 3. The prices consumers pay increases from P_c to P_m while the available quantity of grain consumed falls from Q_c to Q_m . The loss in consumer welfare from the grain merchant's collusion is represented by Areas A and C in Figure 3. The *emporoi* likewise saw the terms of trade turn against them with the prices they received for grain falling from P_c to W_m , and the amount of grain which was profitable to sell in Athens decreasing from Q_c to Q_m . Their welfare loss is represented by areas B and D. The total loss in social welfare is represented by triangles C and D.

As noted above, Anytus observed that the grain merchants were “outbidding each other and fighting amongst themselves.”⁵⁸ He told them to stop competing when purchasing grain “judging it beneficial to you, their customers, that they should purchase for as reasonable price as possible.”⁵⁹ However, by ordering the grain merchants to collude on setting the wholesale price, he gave them the power to set the quantity of imported grain and its retail price.

In market such as the one described in this paper and illustrated in Figure 2, the ability of a monopsonist/monopolist to control any one of the following; retail price, wholesale price or quantity purchased, determines the other two. Suppose instead of setting the wholesale price, the grain merchants were given the power to set the quantity of imported grain. This is the same optimization problem, with quantity rather than wholesale price as the choice variable the cartel optimizes over, would find the grain merchants choosing Q_m as the profit-maximizing quantity, resulting in a retail price of P_m clearing the retail market for imported grain and a wholesale price of W_m . Similarly, if the grain merchants were only given control over the retail price, profit-maximization implies that they

⁵⁷It might be argued that the restriction on profits to one Obol was designed to prevent such a price increase by the grain merchants. For instance in Figueira, p. 164, “There was no sense in lowering the prices that [grain merchants] paid *emporoi* unless those lower prices were passed on to the ordinary buyers.” (Figueira also argues that Anytus implemented the one Obol per-unit limit on profits for this purpose. None of the other sources discussing this speech agree with this interpretation of the text of Lysias's speech.) However, the mere existence of buyer's cartel would reduce the wholesale price and therefore the quantity supplied of imported grain. This reduction in supply would increase the shadow price of grain to P_m and does so regardless of whether the grain merchants charged that price or not. The only issue is whether the secondary market in grain or grain products is efficient or not. If it is efficient and the grain merchants obeyed the profit controls, someone else would have earned the profit from this restriction in supply. If it is not, there would have been a misallocation of grain among consumers. In short, the violations on the profit controls, if they occurred, did not affect the underlying reduction in the supply of imported grain. It is possible that the price discussed in footnote 46 above may have been the result of the grain merchants selling at different prices depending on the political influence of the buyer.

⁵⁸Lysias ¶8.

⁵⁹Lysias ¶8.

would choose a price of P_m necessitating that the grain merchants purchase Q_m grain, requiring that they only offer the *emporoi* a price of W_m to secure the necessary supply of grain. A monopsonist/monopolist 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 the case of the grain merchants, they were given the opportunity to coordinate on the wholesale price and the other two factors were determined as a result of that initial choice regardless of whether they actively colluded on these factors. Other monopsonists/monopolists would presumably coordinate on that factor that was most efficient way to maintain the collusive outcome in their markets.⁶⁰ In this case, the grain merchants were given the opportunity to collude on setting the wholesale price which effectively gave them control over the quantity of imported grain and its retail price.

A. Efficiencies

The grain merchants offered two justifications for their actions. For the collusion they offered the simple justification, discussed above, 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. As noted above this can only be interpreted as the merchants holding the grain for a future period in which its price is higher. Lysias 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.⁶¹

This type of storage 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 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 notes that “...if you reject the charge, when they admit that they are combining ... , you will be aiming a blow at the importers

⁶⁰It 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.

⁶¹Lysias ¶15.

[*emporoi*].”⁶² 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.⁶³ Lysias 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*]?”⁶⁴

In short, the *emporoi* now believe 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.⁶⁵

VI. Conclusion.

In this paper 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 though. 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

⁶²Lysias ¶17.

⁶³It is possible that the optimal quantity was that quantity defined by the vertical part of the supply curve in Figure 2. If that were the case, the grain merchants could have paid the *emporoi* effectively nothing for their grain and still obtained some grain for sale in Athens.

⁶⁴Lysias ¶21.

⁶⁵As further support for the claim that this was an efficiency was the fact that there was no evidence that the grain merchants agreed in anyway to store grain for future periods. Each of the grain merchants apparently decided independently to hold some grain off the market. The decision to hoard grain for the future was not made in concert with other grain merchants and therefore likely to be an efficient response to the change in the regulatory environment.

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 and in all likelihood they reduced the amount of grain supplied 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 but 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 time period with a lesser supply were essentially correct.

The historical record does not show the verdict of the trial. However, being both middlemen and "resident aliens," these grain merchants were especially good targets (and scapegoats) for prosecutions.⁶⁶ Lysias played to these potential resentments by emphasizing that the grain merchants were "resident aliens" in Athens, middlemen and speculators and 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 you disasters that they get news of them in advance of anyone else, or fabricate the rumour 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.⁶⁷

More importantly though, Lysias also pointed out the impact the grain merchants actions had on the willingness of the *emporoi* to ship grain to Athens, Lysias 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."⁶⁸ 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

⁶⁶The speaker makes a special point that the grain merchants admitted to being "resident aliens" and subject to the laws of Athens. Lysias ¶5.

⁶⁷ Lysias ¶¶14–15.

⁶⁸Lysias ¶22.

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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Figure 1: Initial Equilibrium.

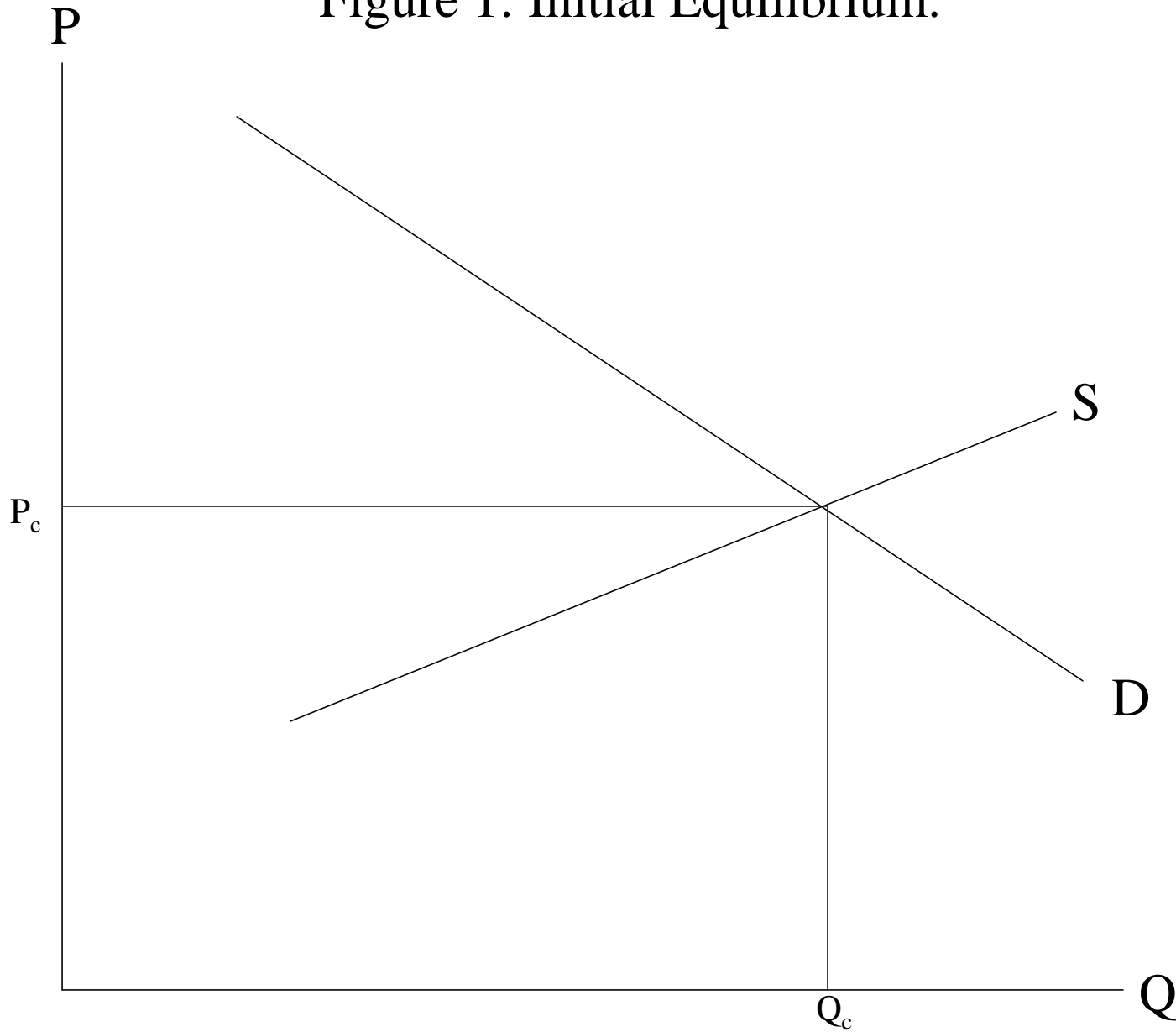


Figure 2: Post-Collusion Market for Grain.

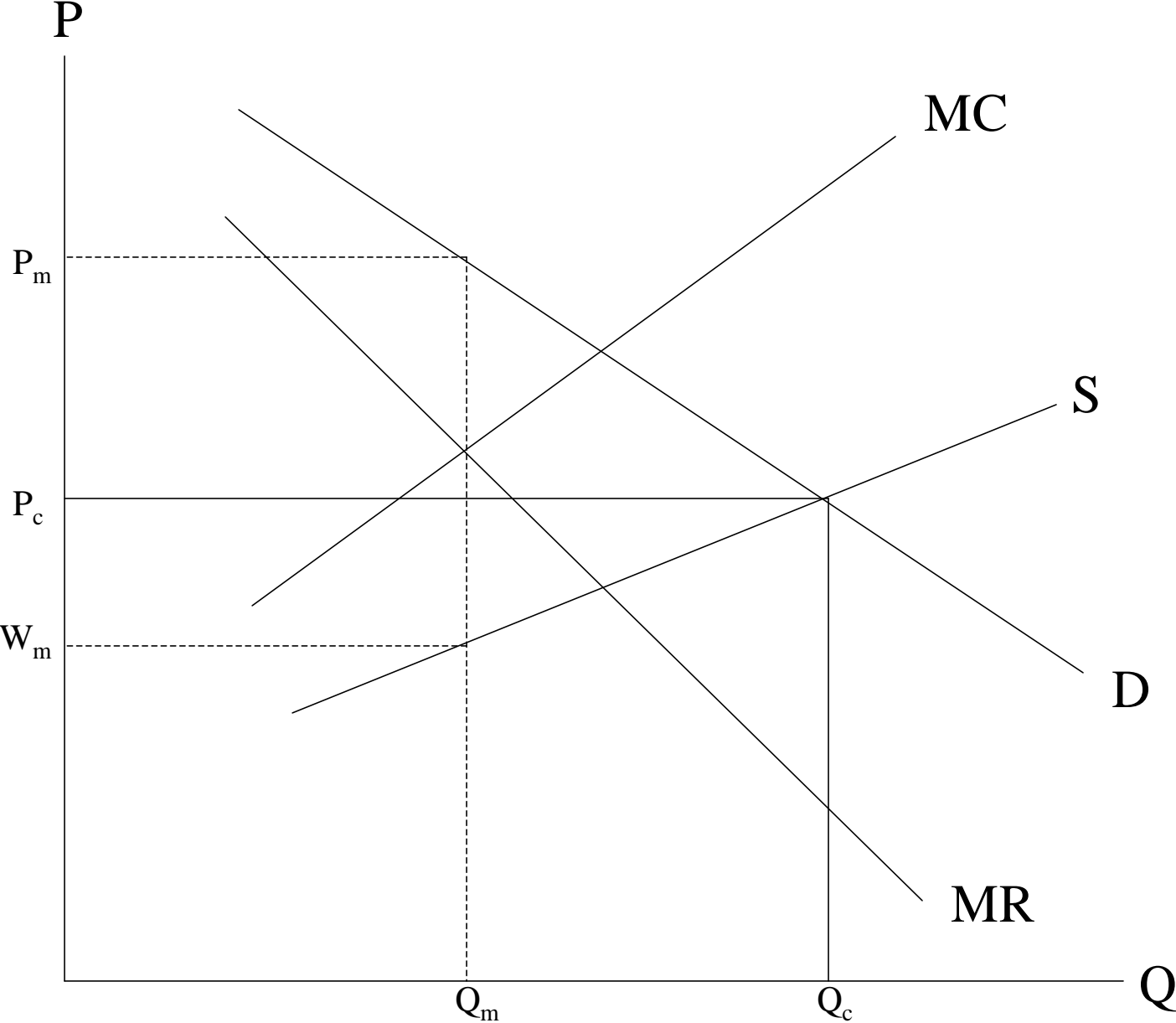
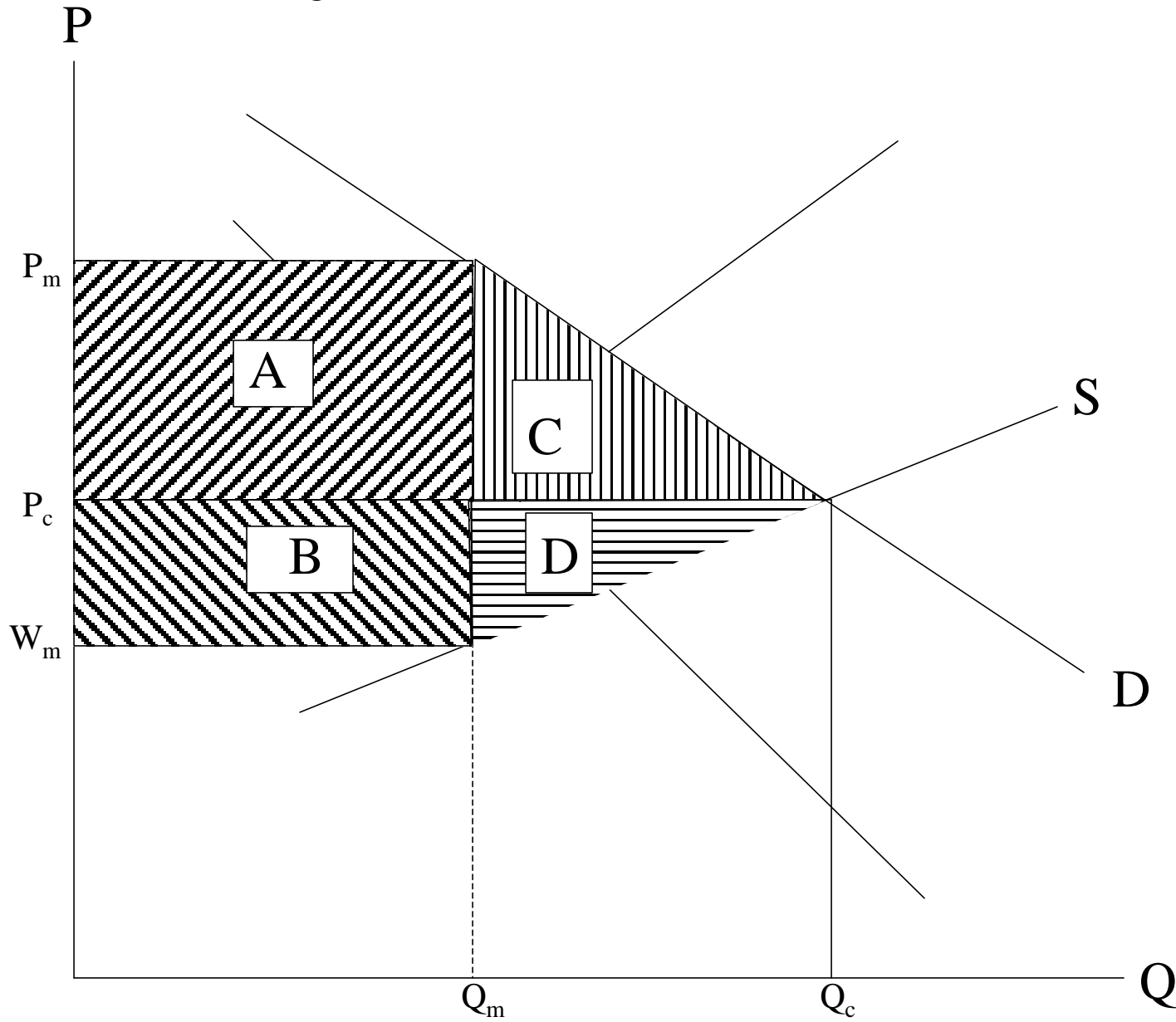


Figure 3: Welfare Effects.



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