

In Dubious Battle: An Economic Analysis of Emperor Hadrian's Fish and Olive Oil Laws

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Abstract — “Cut out the middleman!” is a familiar advertising slogan and an article of faith for some modern consumers. Heeding the slogan is a matter of free choice, however. The first part of this article argues that the emperor Hadrian was convinced that middlemen served no productive purpose and only raised transaction costs. So convinced indeed that he employed the power of the state to exclude them from participation in markets, most famously from the fish market at Eleusis. The anti-middleman policy had damaging economic results. The second part of the article summarizes the details of Hadrian's Athenian Olive Oil Law and then relies on economic theory to predict its economic impact in the short and the long run. It is concluded that Hadrian's policy resulted in a decline in the production of Athenian olive oil, which constituted a misallocation of scarce productive resources. Hadrian's law increased administrative and transaction costs and, predictably, it transformed Athenian consumers, his chosen beneficiaries, into “evildoers” and “profiteers.”

Wacke¹ notes, “The Classical jurists affirmed in express terms that the agreement on the price in a given contract was left to the discretion of the parties to the contract and that they were also allowed to snatch a bargain (*invicem se circumscribere*) (for example, Paul. *Dig.* 19.2.22.3).” On the other hand, “The emperor is

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¹ A. Wacke, “Freedom of Contract and Restraint of Trade Clauses in Roman and Modern Law,” *LHR*, 11 (1993), 2–3.

not bound by statutes”² or what comes to the same thing: “A decision given by the emperor has the force of a statute. This is because the populace commits to him and into him its own entire authority and power, doing this by the *lex regia* which is passed anent his authority.”³ With the passage of time exceptions to market economy principles became the rule. Economic policy evolved under the emperors from a paternalistic altruism as manifested in the grain dole to a “beneficial ideology” involving the granting of *beneficia* or arbitrary favors/exceptions,⁴ to a “Caesar madness” in which rulers hallucinated that economic laws were subject to their veto, to a frustrated lashing out at productive citizens to, finally, outright expropriations and other predatory behaviors.

This paper relies on standard economic analysis to determine the effects of two iconic, much discussed economic policies drawn from the earlier Empire, Hadrian’s interventions in the fish market at Eleusis (illustrating “Caesar madness”) and in the olive oil market in Athens (illustrating “beneficial ideology”). From a more general legal and economic perspective, these policies illustrate the inevitable pitfalls when emperors unconstrained by formal constitutional checks and balances moved from deployment of police and military forces to maintain public order into solving technical economic problems where appearances are often deceiving and unintended consequences abound. But, it may well be asked, does standard economic theory apply to ancient Rome? There is good reason to believe it does.

There are of course real issues in testing the predictions of economic models. Most obviously, the data necessary for rigorous econometric testing is rarely available in ancient economies. Usually, the analyst must rely on bits of evidence and casual observations that are subject to various interpretations. The economist may well be tempted to select the version that confirms the economic model. Indeed, the evidence may be so slim that the economist, as in the present paper, relies heavily on his model to describe the behavior of ancient economic actors. Historians and scholars of law may well object to this mode of analysis. In defense, it may be suggested that the economic models so utilized are not *ad hoc* statements but rather components of a disciplined

² D.1.3.31 (Ulpian 13 *leg. Iul. Pap.*).

³ D.1.4.1 pr. (Ulpian 1 *inst.*).

⁴ See R. MacMullen, “Personal Power in the Roman Empire,” *Am. J. Philology*, 107 (1986), 519–21; V. Nutton, “The Beneficial Ideology,” in P. D. A. Garnsey and C. R. Whittaker, eds., *Imperialism in the Ancient World* (Cambridge 1978), 209–21.

theoretical construct. Further, these models have often undergone testing in various economic environments, including pre-industrial economies. This is a good deal more than can be said of alternative approaches to theorizing ancient economies.⁵ Moreover, the fact that the Romans did not formulate a body of abstract economic principles does not mean that they were ignorant of transaction costs and of the effects of changes in supply and demand. Actually, Romans made market-oriented calculations and were intellectually and behaviorally attuned to market forces, especially in the critical grain market. Finally, if only by means of trial-and-error and imitation, economic actors would conform to the predictions of modern economic analysis. Calculation, after all, is costly and calculation of maxima and minima is especially costly. To carry calculation beyond the point at which its incremental benefit to the decision-maker is less than the incremental cost is economically irrational. Maximization models are tractable tools that serve to predict the direction of changes in the economic behavior of participants who typically rely on much cruder decision-making procedures. The most alert participants in an economy, including an ancient economy, are the most likely ones to flourish and survive.

I. Hadrian's Fish Law: "Cut Out the Middleman"

Hadrian's epistle about the sale of fish at Eleusis clearly illustrates his favorable disposition towards Athenian consumers, his great and arbitrary power, and his misunderstandings about merchants and the role of market behavior. Hadrian demanded:

I want the vendors and retail vendors to have been stopped from their profiteering or else a charge to be brought against them before the herald of the Areopagus. . . . Let the fisherman themselves or the first vendors who buy from them make all the sales, for it raises the price when those who are third in line of purchasers of the same goods sell again. Have this letter engraved on a stele and set up at Piraeus in front of the Deigma [place where samples were displayed].⁶

⁵ See M. Silver, "Historical Otherness, the Roman Bazaar, and Primitivism: P. F. Bang on the Roman Economy," *J. Roman Archaeology*, 22 (2009), 421–43.

⁶ *IG 2² 1102*. Translation from J. H. Oliver, *Greek Constitutions of Early Roman Emperors from Inscriptions and Papyri* (Philadelphia 1989), no. 77, at 193–95.

Quite probably in referring to “profiteering” Hadrian had in mind that middlemen in the Eleusis market were operating as a cartel to raise the price of fish. The collusion proposition is economically dubious because of the cost of organizing providers of fish into an effective cartel. The cartel’s problem is not just to reach an agreement about how to divide the market among middlemen and about what price to charge but also to police and enforce the agreement. Cartels are notoriously vulnerable to free riders — meaning members who cheat on the agreement and nonmembers who undersell its monopoly price. In the longer run nonmembers would include nonlocal merchants who entered the Eleusis market to share in the available monopoly profit. No matter how unlikely in practice, suspicions of collusion by merchants were never far below the surface of the popular Roman mind. Be all this as it may, however, the ruler is not content with the standard threat to prosecute price-fixers. Hadrian’s peculiar policy for Eleusis clearly implements a belief that sales to and by middlemen are unproductive — that is, repeated sales serve only to raise consumer prices. This understanding finds direct support in Hadrian’s words and is indirectly supported by a Callistratus passage discussed below.⁷

Hadrian, a great admirer of Athens,⁸ intervened in the fish market because he ardently wished to make fish cheaper for consumers but in doing so he impatiently brushed aside any consideration of the basic ideas of “transaction costs.” Suspicion, disdain and even hatred for those who did not produce (perform physical labor) but “only” bought and sold precluded rational thought. Consequently, Hadrian harmed the consumers whose welfare he sought to promote and, at the same time, he harmed fishermen whom he had not accused of “profiteering.” Intentions should never be identified with economic results.

Transaction costs include costs of acquiring/disseminating information, transport, and forming/enforcing contracts. They are the costs of running markets, whether ancient or modern. In accomplishing a given objective there will generally be tradeoffs between processes economizing on production costs and different processes economizing on transaction costs. The rational economic actor seeks to achieve his objective by utilizing the

⁷ See below notes 17 to 21 and accompanying text. Conceivably Hadrian believed that a policy reducing the number of middlemen would discourage collusion. Actually, a reduction in numbers would lower the cost of organization and hence facilitate cartel formation.

⁸ See J. H. Oliver, “Roman Emperors and Athens,” *Historia*, 30 (1981), 419.

combination of processes minimizing total cost (production cost + transaction cost). He/she does not seek to minimize transaction cost and certainly does not aim to minimize the number of transactions. The latter irrational objectives are embodied in the ever-popular advertising slogan, “Cut out the middleman.”

The middleman or “market maker” specializes in transporting, displaying, marketing and searching out bids of potential buyers and sellers. The individual who “cuts out” the middleman will typically raise his total cost because he is a relatively high-cost producer of middleman-type processes and/or because he is diverting his time from productive (or even consumptive) processes in which he has a comparative advantage — i.e., is a relatively low-cost producer. Total costs will surely rise when rulers prevent transactors from utilizing the services of market makers.

Despite the increase in the number of transactions and in transaction costs, reliance on middlemen lowered the cost of providing fish to Roman consumers. The limits placed by Hadrian had the completely unintended effect of raising the price of fish and lowering the income of fishermen. By how much? This is difficult to say but a rough estimate is by not less than the two-obol market tax from which Hadrian exempted fishermen when they sold fish at Eleusis. The two-obol exemption might be understood as a kind of (intended) compensation to fishermen for forcing them to take time away from fishing, their more productive occupation.⁹ One may well wonder about the history of this exemption and whether the present epistle was Hadrian’s first and only fishing expedition at Eleusis or elsewhere. I suspect that the tax exemption was an afterthought — an attempt to respond to the protests of fishermen and/or consumers against the damage done to them by an earlier unsweetened version.

Some contemporary scholars seem to believe that Hadrian was a clear-sighted economic policy analyst. De Ligt¹⁰ believes that “peasant sellers” typically have lower costs than “professional sellers” and hence that the “Hadrianic law attempted to keep fish prices in Attica low by limiting the number of intermediate traders to one: intermediate traders had to sell directly to the

⁹ At the same time, it might be understood as compensation to consumers for the market price increase following the limitation on the participation of middlemen. Consumers and fishermen would actually share the benefit from the tax exemption.

¹⁰ L. De Ligt, “The *Nundinae* of L. Bellicius Sollers,” in F. J. A. M. Meijer and H. W. Pleket, eds., *De Agricultura: In Memoriam Pieter Willem De Neeve (1945–1990)* (Amsterdam 1993), 250–51 with n.22.

consumer, instead of being allowed to resell their stock to other intermediaries.” He refers to “the price-raising impact of intermediate trade.”¹¹ Oliver,¹² on the other hand, appears to see a possible productive role for middlemen but not in this case: “Since Eleusis, unlike Athens, was on the coast and accessible, the middlemen would have been performing no essential service.”

The unasked and unanswered question is, if cutting out the middleman lowered total costs why did fisherman (or first buyers) need to be legally required (and/or rewarded with tax exemptions) to sell directly to consumers? Under the conditions assumed by Hadrian, De Ligt, and Oliver, fishermen could have increased profits by exercising their free choice to participate in retail sales. It does not seem anachronistic or overly rational to assume that ancient fishermen like other ancient businesspersons and like their modern counterparts preferred higher incomes to lower ones. Indeed, De Ligt¹³ agrees that “peasants” participating in urban markets attempt to get the best price for their produce.

Oliver’s¹⁴ answer to this line of argument seems to be that Eleusis’ fishermen disregarded their obvious economic interests because wholesalers “worried” them into “letting them have all the supplies” This answer is simply a reach, which basically takes for granted that Hadrian must have known what he was doing. Thus, Jones¹⁵ simply refers to Hadrian “eliminating unnecessary dealers.” Similarly, Corcoran¹⁶ observes that if an individual were both fisherman and fish merchant he received “all the profit of the sale.” Why then would fishermen, ancient or modern, ever sell to merchants? Perhaps because “all the profit” is less than the profit a fisherman might make if he devoted all his time to fishing.

Evidence not only supports the predictions of economic analysis but also demonstrates that Hadrian’s anti-middleman policy did not necessarily concern only a few fish at Eleusis. After Hadrian, the jurist Callistratus who was active during the Severan period finds noticeable an “interruption of supply” and he urges fishermen and farmers (*cultores agrorum*) “ordered to bring things into a city to sell themselves” to “hand them over and

¹¹ Id., 251.

¹² Oliver (note 6), 195.

¹³ De Ligt (note 10), 250.

¹⁴ Oliver (note 6), 195.

¹⁵ A. H. M. Jones, *The Greek City from Alexander to Justinian* (Oxford 1940), 216.

¹⁶ T. H. Corcoran, “Roman Fishermen,” *Classical World*, 56 (1963), 99–100.

return to their work” as soon as possible.¹⁷ Here Callistratus recognizes that productive resources were being wasted by an attempt to “cut out the middleman.”^{18,19} More importantly, the jurist reveals that economic damage was magnified by the (otherwise unattested) continuation/renewal or extension of Hadrian’s policy to agricultural products such as grain, not just to fish sold at Eleusis and, likely, not only in Greece. Clearly, anti-middleman laws had not been repealed or gone unenforced in Severan times and, indeed, the Severi may have broadened their range of application and harm.^{20,21}

¹⁷ D.50.11.2 (Callist. 3 *cognit.*).

¹⁸ De Ligt (note 10), 260, understands Callistratus’ “ordered to bring things into a city to sell them themselves” to mean that farmers and fishermen were selling their produce to intermediate traders in cities and he adds:

The purport of this text is thus the very antithesis of the “fight against middlemen” Callistratus’ law is designed not to protect the interests of the urban consumer, but rather those of the Roman government: a higher level of agricultural production could be expected to result in increased government income from taxation.

My understanding of “to sell . . . themselves” is that farmers and fishermen were ordered to sell directly to consumers or perhaps to a “first vendor,” as under Hadrian. Further, I do not understand why ordering farmers and fishermen to bring their produce to the cities themselves might be expected to increase agricultural production. (Actually, total production would be reduced by this misallocation of productive resources.) Neither, do I understand why such orders might be expected to increase government tax-income as opposed to letting middlemen carry produce to the urban market and ultimately taxing sales to consumers. (Actually, taxing middlemen would probably be less costly for the government than taxing the sales of more numerous farmers and fishermen.) It is my judgment that De Ligt’s interpretation of Callistratus rests on his mistaken conviction, borrowed from ancient and medieval legislators, that middlemen are unproductive and only raise costs/prices.

¹⁹ N. Morley, “The Early Roman Empire: Distribution,” in W. Scheidel, I. Morris, and R. Saller, eds., *The Cambridge Economic History of the Greco-Roman World* (Cambridge 2007), 584, believes “peasant farmers” were “forced” by merchants “to assume the costs of bringing their produce to market.” He does not explain how this was accomplished. (Why not “force” them to turn over their produce for nothing?) The relation between Roman farmers and merchants was a market relationship in which neither side could force the other to do anything. The question for negotiation and market determination would be who, merchants or farmers, could more cheaply bring produce to markets. The Roman state could and did apply force to both merchants and farmers. It chose to force fisherman and farmers to bring their produce to market irrespective of cost.

²⁰ During the Late Empire cultivators were exempt from the Lustral Contribution (*Theodosian Code* 13.1.3), a general tax on trade and industry. The exemption encouraged them to participate directly in local

II. Hadrian's Olive Oil Law: Redistribution Roman Style

Hadrian's "Olive Oil Law" utilized coercive sales to increase the supply and lower oil prices for Athenian consumers.

The olive growers shall deliver the third part of the oil. . . . They shall deliver the oil partially at the beginning of the harvest, in proportion to what is being [harvested, making delivery] to the public oil buyers who watch out for the [public requirements]. . . . Also he who sells for export shall file a declaration with the same officials as to how much he is selling and to whom and where the ship is moored. . . . In order that the penalties against evil-doers may be strictly imposed, the oil shall be delivered to the city at whatever market price may prevail in the country. If at any time there should occur an abundance of oil and the amount being delivered . . . should exceed the public requirements for the whole year, those who are not therefore selling the oil either in whole or in part shall make out a second declaration and state how much the amount then owed is which the public oil buyers . . . do not want to accept from them, and when they have done so, it shall be permitted to them, on the one hand, to keep what they owe²²

markets. It is not known whether at this time the participation of middlemen was legally restricted.

²¹ Callistratus may provide a framework for interpreting a striking change in the Roman import of Baetican olive oil. Broekaert suggests:

[W]hen the Severi started to rule the Roman Empire and added oil to the regular food distributions, the names of the oil merchants suddenly disappear completely [from the Dressel 20 amphorae] and are replaced by the formulae *Dominorum nostrorum* (sometimes accompanied by *Augustorum*) followed by the names of Septimius Severus, Caracalla and between 205 and 211, Geta. After the murder of Caracalla in 217, the imperial names are substituted by the phrase *fisci rationis patrimonii provinciae Baeticae* or *fisci rationis patrimonii provinciae Tarraconensis*. From 230 onwards, the names of individual merchants appear again on the amphorae, in addition to the *tituli* with a *fisci*-phrasing.

W. Broekaert, "Roman Economic Policies during the Third Century AD: The Evidence of the *Tituli Picti* on Oil Amphorae," *Ancient Soc'y*, 38 (2008), 199. Several scholars have suggested that the Severi did not, like Hadrian, command the Spanish growers to market their own oil but instead decided to replace the (in their view) redundant or parasitic middlemen with their own employees. For discussion and citations, see id., 200–203.

²² Translation from Oliver (note 6), no. 92, at 232–34

If a foreign merchant violated the terms of the oil law, Athens was granted the right to pursue the violator to his hometown and even appeal to the emperor to have him prosecuted.²³

Pleket²⁴ maintains: “Intervention in the Athenian oil-market was necessary because the producers tended to export their oil on a massive scale, thereby causing a serious shortage on the local oil market and a considerable price increase.” However, Hadrian’s law is not time-limited, as might be expected if it was meant to deal with a crisis and, indeed, it explicitly considers future contingencies. As Oliver²⁵ points out, “It guaranteed a cheap supply of oil for the city’s requirements, even when bad harvests occurred. In a good year the producers could sell more for export, because the city would not need a third of the crop.” Athenian private consumers and buyers/consumers for public use surely preferred to purchase more Athenian olive oil at a lower price. The same is equally true of external consumers. Indeed, it is true of consumers anywhere/anytime of anything! Thus, there is no need to postulate a crisis or generalized instability in the oil market. The simplest explanation of the ruler’s intention is that he sought to bestow a favor upon all Athenian consumers by permanently lowering the price they paid for Athenian olive oil. This means that the long-term consequences of the law need to be carefully examined within the framework provided by economic theory.

The olive oil market in Athens may reasonably be characterized as, to use the economist’s term, a “perfectly or pure competitive market” — that is, one in which there are many sellers (growers) and many buyers (Athenian and international) each selling/purchasing only a very small fraction of the total and each taking the price as given and outside his/her individual control. Hence, prior to Hadrian, the price of olive oil in Athens would be set by the intersection of the aggregate supply curve of the growers with the aggregate demand curve of all Athenian consumers and exporters.

Each individual grower has a supply curve showing at each price of oil how much he will seek to produce and offer for sale.

²³ See K. Harter-Uibopuu, “Hadrian and the Athenian Oil Law,” in R. Alston and O. van Nijf, eds., *Feeding the Ancient Greek City [Groningen-Royal Holloway Studies on the Greek City after the Classical Age, 1]* (Louvain 2008), 138.

²⁴ H. W. Pleket, “Epilogue,” in R. Alston and O. van Nijf, eds., *Feeding the Ancient Greek City [Groningen-Royal Holloway Studies on the Greek City after the Classical Age, 1]* (Louvain 2008), 189.

²⁵ Oliver (note 6), 238.

This supply curve will be positively sloped indicating that more olive oil will be supplied when the offered price rises. The basic reason for the positive slope is that cost per unit produced rises as output increases. The aggregate supply curve, the horizontal sum of the individual supply curves (at each price the sum of the quantities supplied by individual growers), shows the total amount produced and offered for sale at each price. It will be positively sloped indicating that the higher the price the more oil will be offered for sale.

Some buyers are Athenian consumers; others are exporters. Each Athenian consumer (private or official) has a demand curve showing at each offered price how much oil he will seek to purchase. This demand curve will be negatively sloped indicating that the lower the price the more oil will be sought. The aggregate Athenian consumer demand curve, the horizontal sum of the individual demand curves, is also negatively sloped.

There are various ways to model the demand of the exporters for Athenian olive oil. For any good or service, the availability of good substitutes (alternatives) increases price elasticity — that is, it makes the quantity demanded (in percentage terms) increase (decrease) more steeply in response to very small (percentage) decreases (increases) in price. The other side of this coin of very elastic demand is that even large (percentage) changes in quantity offered for sale will have only a subdued impact on price. In antiquity many regions were capable of supplying the Mediterranean world with more or less equivalent olive oil and would be encouraged to participate by even small increases in price. Indeed, Sicily was capable of increasing production and the major producers of olive oil at this time were Spain and North Africa.²⁶ Thus, the international demand for Athenian oil would be relatively elastic.

Concerning the elasticity of demand it is important to avoid misunderstandings. As a basic staple the demand for *generic* olive oil would probably not be very elastic. However, the previous argument for high elasticity applies not to olive oil generally but to *Athenian* olive oil, for which there were many good substitutes in the world market. For expositional simplicity I utilize an economic model in which the external demand for Athenian olive oil is “perfectly elastic” — that is, the external demand curve is horizontal at the prevailing international price of

²⁶ See R. B. Hitchner, “Olive Production and the Roman Economy: The Case for Intensive Growth in the Roman Empire,” in W. Scheidel and S. von Reden, eds., *The Ancient Economy* (Edinburgh 2002), 71–83.

olive oil. This means that Athenian olive oil producers can sell as much or as little as they wish to at the prevailing international price; they cannot sell any of their olive oil to exporters at a higher price. The aggregate demand curve (Athenian consumers plus exporters), beyond a brief initial range formed by the aggregate Athenian consumer demand curve (the range where it lies above the international price), is the horizontal international demand curve.

In the market equilibrium one price of Athenian oil, the international price, will prevail and be paid by all buyers, whether Athenian consumers or exporters, and collected by all growers.²⁷ At the international price the quantity of oil actually sold/purchased by each participant in the market is equal to the quantity each participant desires to sell/purchase. That is, as economists use the terms, there is neither a “shortage” (more demanded than supplied at the prevailing price) nor a “surplus” (less demanded than supplied at the prevailing price). In the long run the international price will be greater than or equal to the production cost per unit of each Athenian grower choosing to participate in the market.²⁸ Exporters purchase most Athenian oil and the remainder, very much less than one-third of the total, is purchased by Athenian consumers.

Given reasonably effective enforcement of Hadrian’s law by the “public oil buyers,” the regulation has the effect of causing *two* oil prices to prevail for Athenian oil — one paid by all Athenian consumers and the other, the international price, paid by the exporters. For Athenian consumers (private and public) to be willing to hugely increase their purchases of Athenian oil from a very small percentage to up to one-third of the original total quantity, the price they pay must be lowered well below the international price. Recall that the demand curve of each Athenian consumer is negatively sloped; they will purchase additional Athenian oil only if the price is lowered. In addition, at

²⁷ Compare E. Lo Cascio, “The Role of the State in the Roman Economy: Making Use of the New Institutional Economics,” in P. F. Bang, M. Ikeguchi, and H. G. Ziche, eds., *Ancient Economies, Modern Methodologies: Archaeology, Comparative History, Models and Institutions* (Bari 2006), 229.

²⁸ Total cost is understood to include the “normal profit” — that is, a profit just sufficient to keep a producer from exiting the olive oil industry in the long run. If total receipts were to exceed the total cost of a producer he would be earning an “abnormal profit” (or “rent”) — that is, a profit more than sufficient to keep him in the industry (and, indeed, a profit that would encourage new producers to enter in the long run).

prices below the international price the demand of the Athenian public for Athenian oil (basically generic oil which lacks good substitutes) will probably not be very elastic.

The result of Hadrian's law is that up to one-third of the oil crop is sold locally at a "low" price and the remainder, not less than two-thirds, is sold at the higher international price. The (expected) price received by producers is the weighted average of the two prices. The weights are two-thirds for the (constant) international price and one-third for the lower (probably much lower than before) price paid by Athenians. It will be understood that this average price received by growers must be less than the original (international) price. The price paid by Athenians is indeed a "market price" — that is, it is the price generated by the market in response to Hadrian's law — but there is no objective basis for describing it, with Lo Cascio,²⁹ as a "fair price."

Economic theory shows that Hadrian has so far succeeded in implementing his "beneficial ideology": Athenian consumers do pay a (probably much) lower price and acquire much more Athenian olive oil than prior to his intervention. This benefit is at the expense of growers, also Athenians, who receive a lower price than in the free market (also a "fair price"?). However, the effect is not only redistributive — that is, a transfer of wealth from producers to consumers. In the longer run producers will adjust to Hadrian's intervention: the lower price received by Athenian growers will reduce the total amount of olive oil they plan to produce and offer for sale. Some growers would eventually exit from the olive oil industry if the (expected) weighted average price dropped below their unit cost of production and/or if superior economic opportunities became available in other industries. This is not to say that farmers might easily turn away from olive oil but only to acknowledge that the persistence of a lower price would encourage exit in the long run. Indeed, it is well known that farmers in Roman times were even inclined to desert lands whose revenues failed to cover costs.

The total decline in Athenian production would depend importantly on how low the price had to become to convince Athenians to purchase one-third of total production. That this price would typically be rather low is indicated by an exception in Hadrian's law permitting more than two-thirds of production to be

²⁹ Lo Cascio (note 27), 230. Had Hadrian instead chosen a price to be paid by Athenians for oil then the market would have determined the quantity they purchased. There would be no objective basis for calling this the "fair quantity."

exported “at any time there should occur an abundance of oil and the amount being delivered . . . should exceed the public requirements for the whole year . . .” Taken literally this seems to mean that even at a zero price (giving oil away) the quantity demanded by Athenian consumers would fall short of the one-third reserved for them by the authorities. Thus, the Athenian price is typically low enough that favorable growing conditions resulting in an increase in total production by (say) 20%, a fair bumper crop, might make oil redundant.

The effort to enforce Hadrian’s law must have subjected responsible officials to violent headaches. Surely the law raised administrative costs³⁰ by an order of magnitude. Further, while a mathematical economist/econometrician would be able to formulate a rational olive oil production plan, ordinary farmers might well throw up their hands in despair. The increase in transaction costs might well have transformed rational farmers into irrational “peasants”! What is less obvious and much more interesting is that Hadrian’s law had to spawn a new class of middlemen = “evil-doers,” namely Athenian consumers. Consumers could not help noticing (or being reminded by merchants) that the Athenian olive oil they purchased was worth far less to them (as measured by the local price they paid for it) than it was to outsiders (as measured by the international price). Predictably they would have sold their olive oil (or their claims to olive oil) to “evil-doing” exporters. This behavior would have raised marketing costs and enforcement costs. We lack organizational details about exactly how the public oil buyers implemented Hadrian’s policy and how they sought to prevent resale but there must have

³⁰ Scholars of the ancient world have become increasingly familiar with transaction costs. See B. W. Frier and D. P. Kehoe, “Law and Economic Institutions,” in W. Scheidel, I. Morris, and R. Saller, eds., *The Cambridge Economic History of the Greco-Roman World* (Cambridge 2007), 113–43. However, the importance of “administrative costs” has been underestimated or gone unrecognized. Administrative costs are the costs of running firms/organizations. Real economic resources must be used up to transact over markets and real economic resources must be used up to transact within organizations — that is, to implement the policies/commands of chief executives, including rulers of states. In both the market and the organizational/political sector of society there are information costs and enforcement costs. The former costs arise because participants lack complete information concerning the relevant variables. The latter costs arise because employees/bureaucrats and clients/citizens, like sellers and buyers, behave opportunistically — that is, they pursue self-interest with guile. Administrative costs may cause organizational equilibria to deviate importantly from the commands of executives/rulers.

been no shortage of evildoers to pursue. Perhaps in the end they decided to ignore resale.

Athenian consumers did gain by consuming more oil at a lower price and/or selling it at a higher price than they paid. However, Hadrian's arbitrary and convoluted policy misallocated resources. With the passage of time productive resources were increasingly withdrawn from olive oil production and were employed to produce other things less valuable than Athenian oil as measured by its international price. Thus, there had to be what economists call a "deadweight loss" — that is, the total gains to Athenian consumers of olive oil were less than the total value of lost production.

III. Concluding Remarks

Long after Hadrian and even the Severi it continued to be obvious to Roman intellectuals and officials that middlemen were profiteers who raised transaction costs and produced nothing.³¹ Attempts to limit the role of middlemen were probably quite damaging. Hadrian's olive oil policy, on the other hand, would not have smothered the Athenian olive oil industry. It would, however, have harmed the Roman economy by reducing (perhaps significantly) the production of Athenian olive oil. The unintended consequences of high-minded, pro-consumer interventions into urban grain markets by emperors such as Commodus and

³¹ The rhetorician Libanius probably is exceptional in his defense of free markets. But Libanius was very much involved in commercial transactions, including the sale of wine in Cilicia. See J. H. W. G. Liebeschuetz, *Antioch: City and Imperial Administration in the Later Roman Empire* (Oxford 1972), 45–46. Garnsey and Whittaker maintain:

Libanius' ideological position is laid bare in a letter [*Letter* 379] to Rufinus, count of the east. While applauding the official for some unspecified intervention "worthy of Rome" . . . , Libanius enunciates a preference for "the free market" (*ten agoran automaton*). He was here speaking for the propertied class of the whole Graeco-Roman world, not just of Antioch.

P. Garnsey and C. R. Whittaker, "Trade, Industry and the Urban Economy," in A. Cameron and P. Garnsey, eds., *The Late Empire, A.D. 337–425* [*The Cambridge Ancient History*, 13] (Cambridge 1998), 334. It might be suggested that economic historians Garnsey and Whittaker lay bare their own ideological position in assuming that preference for free markets must be an expression of one's material interests.

Julian were truly disastrous.³² That is another, much longer, story, however.

³² See M. Silver, "Grain Funds in the Roman Near East: Market Failure or Murder of the Market," *Ancient History Bulletin*, 21 (2007), 100–101, and "The Plague under Commodus as an Unintended Consequence of Grain Market Regulation," forthcoming in *Classical World*.