CHAPTER 5

LAW AND ECONOMIC INSTITUTIONS*

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The landscape of the Greek and Roman economies (as of all other economies both past and present) is invariably configured, not just of individuals, but also of institutions, the organized activity of production and commerce. If population and technology established the basic limits within which the economies of the Greek and Roman worlds could develop, it also seems clear that law and other institutions surrounding the economy represented an exogenous factor affecting productivity in the Greek and Roman worlds.[1] An analysis of the complex relationship between legal institutions and the economy can help us to understand better the basic relationships that characterized the economy of the Greco-Roman world. Law and legal institutions helped determine the forms within which economic activity was organized and had important consequences for the basic welfare of people of all classes in the ancient world. Legal institutions shaped the distribution of wealth between the state and citizens or subjects, between city and countryside, between elite landowners and peasant farmers, and even between masters and slaves. It is thus worth examining how these institutions are likely to have influenced economic behavior, allocation of resources, and predictable outcomes in terms of performance and growth. Did legal institutions serve to promote or inhibit the type of investment that was necessary for greater productivity and ultimately for growth in the ancient economy? Did they foster the concentration of wealth in the hands of a small elite, or instead promote a more even distribution of wealth?

The institutional environment of an economy consists of "the background constraints, or 'rules of the game.' These can be both formal, explicit rules (constitutions, laws, property rights) and informal, often implicit rules (social conventions, norms)."[2] Such rules have an astounding array of forms, but most arise in three broad sectors: "firms" (economic enterprises

* In this chapter, references to the Digest take the form of "Author (Source), D." instead of the simpler abbreviation "*Dig.*" used in the other chapters.

[1] For the basic role of population as a constraint on the ancient economy, see above, Chapter 3; for the relationship between technological development and the ancient economy, see below, Chapter 6.

[2] Klein 2000: 489; cf. North 1991.

of all different sizes and degrees of complexity, including those engaged in agricultural production, manufacture of goods, and provision of customer services; those devoted to transport, storage, and wholesale and retail marketing; and those that primarily organize, facilitate, or finance commerce); "markets" (including not only physical markets such as officially sanctioned markets and fairs, urban areas associated with specific goods or crafts, and so on, but also the conceptual markets of economics); and governmental structures, such as legislatures, magistracies, and courts, that are often deeply involved in setting up, regulating, and taxing the economy.

Particularly in smaller or more informal non-governmental institutions, participants may enforce their own rules, for instance through internal rewards and sanctions administered by business associations.[3] But larger institutions, even of "traditional" origin, are commonly subjected also to external enforcement mechanisms such as judicial systems or third-party arbitration. It is here, of course, that law may be significant in the functioning of an economy; for, as modern development economics has repeatedly shown,[4] economic progress tends to occur when a government shares in, or at any rate seeks not to thwart, the economic objectives of its citizens.

Within the ancient world, to what extent was economic growth fostered or impeded by the institutional and legal framework within which the Greek and Roman economies operated? Accurate statistics are required for measuring economic performance, and since for the ancient world these are largely lacking, it might well seem that, except through conjecture, this question cannot be answered either in general or with respect to any specific times and territories. That is largely, but not quite entirely, true. The question may be at least formally addressed through modern scholarly methods associated especially with Law and Economics and with the New Institutional Economics (NIE).[5] By such methods, we can also hope to grasp the deeper implications of the question: how, on the modern understanding, economic and institutional development came to be, and remained, co-dependent. This chapter aims at providing an overview of the methods themselves, and then suggests several ways in which these methods can be applied to come to a deeper understanding of economic organization and the possibilities for economic growth in the Greek and Roman worlds.[6]

[3] Although legal rules are much easier to observe, much recent economic attention has centered on non-legal rules; see Panther 2000.

[4] Clague 1997.

[5] These two disciplines overlap to a considerable extent. For a good survey, see Mercuro and Medema 1997. A comprehensive website is devoted to Law and Economics: Bouckaert and De Geest 2000; other basic essays are collected in the *New Palgrave Dictionary* (1998). On the New Institutional Economics, see especially Furubotn and Richter 1998.

[6] For this reason most examples are drawn from Roman private law, which has the advantage of being more easily cognizable. However, the methods themselves are readily extensible to all Greek and Roman settings.

I NEOCLASSICAL ECONOMICS AND THE COASE THEOREM

Traditional economics has surprisingly little to say about law and economic institutions, and it is important to understand why. For more than half a century, mainstream economics has been dominated by the Neoclassical approach, which treats economic activity as originating in the given, stable preference functions of individuals (e.g., for wheat bread over rye, for wine over beer, and so on). The behavior of individuals is assumed to be rational in that it is calculated to maximize these preferences. Further, no chronic information problems obstruct such rational behavior; although individuals may have to deal with a measure of probabilistic risk, they do not suffer from severe ignorance, radical uncertainty, or divergent perceptions of reality. Finally, economic behavior is characterized by the attainment of, or at least the continual movement toward, states of equilibrium. The intersection of supply and demand curves is, of course, a familiar example of such an equilibrium.[7]

Of these assumptions, the most important, and the one establishing the "methodological individualism" that distinguishes Neoclassical Economics, is that individuals and their stable preferences are the irreducible starting points of analysis, while the rational efforts of individuals to maximize their personal preferences (what is referred to as Rational Choice theory) provide the basis of all economic analysis.[8] The achievements of Neoclassical Economics, though undeniably spectacular, are necessarily limited by these initial assumptions. Problematic here is less the realism of these assumptions, than whether they are "good enough" in that the theory developed from them yields accurate predictions about the real world.[9] Neoclassical Economics, an elaborate structure of high intellectual caliber, has produced many valuable insights. With respect to institutions, however, it has been far less successful.

Neoclassical analysis assigns to law and legal institutions a recessive role. Law is important because it allocates property rights to individuals, and then provides the means both to protect and to convey these rights. But law itself has little independent salience beyond serving in this paternalistic background role. In particular, law has little independent role to play in promoting efficiency within the economy.[10] To some extent, the explanation

[7] This description is adapted from Hodgson 1994: 60. On the emergence of the "Neoclassical Consensus," see Beaud and Dostaler 1995: 79–95.

[8] Rutherford 1994: 31–7.

[9] Friedman 1953. Still, it should be noted that the concept of *homo oeconomicus* as a rational chooser (with a clear picture of all available alternatives, a complete ordering among them, and the skill necessary to make whatever complicated calculations are required to discover, without mistake, the optimal course of action) is decidedly inaccurate as a predictor of much human conduct. Ulen 2000, summarizes empirical research.

[10] Efficiency is a problematic concept, of course. Perhaps the best discussion is Coleman 1988.

for such passivity is ideological opposition to government interference with the market. But much more important, from an intellectual perspective, are the implications of the Coase Theorem, widely and correctly understood as the central building block of Law and Economics.[11]

Consider the cheese factory at Minturnae, a famous problem described by the Roman jurist Titius Aristo in the first century AD.[12] Of two adjoining landowners, B has a shop, while her neighbor A runs a cheese factory that, when operating normally, would emit large quantities of smoke onto B's property. The Roman legal system, by initially allocating property rights to these two landowners, determines whether or not B can legally prevent A from emitting the smoke and hence from operating his cheese factory.

What the Coase Theorem establishes, somewhat surprisingly, is that, under the artificial friction-free conditions of Neoclassical Economics, it makes no difference which rule of property law is settled upon, whether that B has a right to stop the emissions or that A has a right to continue them. No matter the rule, an efficient outcome will still occur.

To understand why, suppose the following: the damage caused to B by A's smoke would be 100 currency units per year. B can prevent the damage by building and maintaining a wall that would cost her 50 per year, while A can prevent the damage by a smokestack that would cost him 75 per year. Under these circumstances, the efficient outcome seems to be that B should build the wall, since this outcome leaves both parties satisfied at a lower cost to both. Accordingly, in this particular situation it may seem that a rule giving B the right to prevent emissions of smoke from A's cheese factory[13] leads to a less efficient result because it forces A to build a smokestack if he wishes to continue emitting smoke, thereby causing 25 in additional expenditure.

But such a conclusion overlooks the capacity of rational actors to bargain cooperatively around the legal rules. For example, under the seemingly inefficient rule, A may still arrange a contract with B whereby A will pay B 50 per year, or a bit more, to build and maintain the wall. In the process, the two parties will split between them a cooperative surplus, the 25 that they save from A's not having to build a smokestack. So the result, even under the seemingly inefficient rule, is exactly the same: it is B who ends

[11] Named after Ronald Coase, who first formulated it. See Coase 1988: 95–156, a celebrated paper first published in 1960. Coase began by "arguing that, from an economic perspective, the goal of the legal system should be to establish a pattern of rights such that economic efficiency is attained": Medema and Zerbe 2000: 836.

[12] Cited by Ulpian (17 *ad Ed.*), D. 8.5.8.5. The facts are slightly altered to make the situation clearer. It is uncertain why a cheese factory would emit a substantial volume of smoke.

[13] For emissions, this is the rule in Roman law, absent a servitude: Alfenus (2 *Dig.*), D. 8.5.17.2; Ulpian (17 *ad Ed.*), D. 8.5.8.5–7. But the rule is reversed if, for instance, the cheese factory gave off loud and irritating noise (not an "emission").

up building the wall.[14] Given cooperative bargaining, the use of resources is efficient regardless of the legal rule.

From this perspective, it is obviously of paramount economic importance that a legal system assigns property rights clearly and also provides a secure means for conveying them. But otherwise, so long as we remain within the strict assumptions of Neoclassical Economics, the exact legal allocation of rights does not matter to efficiency. Indeed, this point can probably be put even more strongly: Under the standard assumptions of competitive markets (especially that transaction costs are zero and that actors behave rationally), and so long as property rights are well defined, negotiations among affected parties will result in an outcome that is both efficient and invariant.[15]

II TRANSACTION COSTS

The Coase Theorem might suggest that law and other institutions have only very limited consequence for the functioning of the economy. But in fact the reverse is true. What the Coase Theorem actually does is explain why transaction costs are crucial to any understanding of an actual economy. Recall the cheese factory in Minturnae. In the real world, if B can legally prevent A from operating his cheese factory, substantial resources may be required to arrange a deal whereby B agrees to forgo this right and build a wall instead. B must be contacted, the two parties must be brought together and agree on their deal, and so on. This point becomes even clearer if A's cheese factory has, not just a single neighbor B, but rather five neighbors, any one of whom can prevent the emissions, but whose collective disutility from the smoke is still just 100. In these circumstances, it may be extremely costly, perhaps even impossible, for A to strike a bargain with so many other parties. Indeed, the transaction costs could become so high that they exhaust the cooperative surplus entirely, in which case the result may well be inefficient because rational actors won't bargain to efficient outcomes if the costs of bargaining eat up the gains.

Transaction costs, though a ubiquitous feature of economies, are not always easily isolated. Broadly, they take two forms.[16] First, some outlay is

[14] Since this is true, it also makes no difference if the monetary values in the example are altered. Also, it is of no inherent economic consequence that A and B share the 25 profit, rather than A retaining it all for himself; this result is not inefficient in itself.

[15] This formulation is paraphrased from Medema and Zerbe 2000: 837. Compare Coase 1988: 104: "It is necessary to know whether the damaging business is liable or not for damage caused, since without the establishment of this initial delimitation of rights there can be no market transactions to transfer and recombine them. But the ultimate result (which maximizes the value of production) is independent of the legal position if the pricing system is assumed to work without cost." Medema and Zerbe examine criticism of the Coase Theorem, but conclude that "it has withstood all of the challenges that have been mounted against it to date" (875). See also de Meza 1998: 270–82.

[16] See generally Allen 2000. What follows draws heavily on Furubotn and Richter 1998: 42–7.

normally required in order to participate within a marketplace of economic transactions. For example, someone seeking to buy a commodity (such as wine) must seek out a seller and arrange a contract, all of which takes time, effort, and often the direct investment of resources; but likewise the buyer must both monitor the other party's execution of the contract and enforce against breach. The presence of such transaction costs tends to make markets function less efficiently. Second, also within an economic enterprise (such as a farm or workshop), there are costs associated with setting up, maintaining, and modifying its organization, as well as with running it. Particularly important here are the costs associated with decision making, monitoring the execution of orders, and measuring the performance of employees.

Whatever their form, transaction costs consistently arise because one fundamental assumption of Neoclassical Economics has been violated: the accurate information that is required for sound economic decision making is in fact not readily available, often difficult to obtain, and therefore expensive – at times prohibitively so. Therefore economic decisions must often be made with less than perfect information. But whether through evolution or conscious design, institutions provide rich information upon which actors can develop expectations regarding the future behavior of other actors.[17]

Many consequences flow from this reality, and all have enormous significance for the institutional environment of economies. In the first place, if transaction costs are considered, it is no longer true that the initial allocation of legal rights is a matter of indifference to an efficient outcome of transactions, particularly when transaction costs are heavy.

The broader point, an important one, is that institutional rules frequently arise, either spontaneously or deliberately, as a means to mitigate transaction costs, thereby encouraging parties in the real world to bargain to the same efficient outcomes they would have obtained ideally. The frictionless world of Neoclassical Economics reserves limited place for institutions; but when its more unrealistic assumptions are relaxed, these institutions become far more salient in assessing economic performance. This is not to say that such rules are always successful in their purpose. As Douglass North has shown, institutions are quite capable of acquiring a life of their own, surviving long after their original purpose has been served.[18] Nor is it always true, finally, that institutional rules aim mainly at economic efficiency. Many legal rules, in particular, may arise simply because some rule is required to resolve questions of law, the exact content of the rule being of considerably less significance. In such instances, the rule's utility may lie chiefly in its

[17] See esp. Schotter 1981. [18] North 1990, esp. 92–104.

clarity, since clear law tends to encourage cooperative bargaining.[19] But in general it repays the effort to think about institutional rules in the context of their economic operation.

III ASYMMETRICAL INFORMATION AND ADVERSE SELECTION

Some of the most interesting problems in Law and Economics arise from transactions when one party has knowledge that the other lacks. Sale often presents this problem; a seller of a slave, for instance, frequently knows far more about the slave's quirks than does a potential buyer. Such asymmetry can be so severe that it impedes exchanges and disrupts markets, as buyers either pay too much for goods or hold off from purchasing because they fear latent defects.

In this regard, it is helpful to consider the markets and fairs through which a large part of ancient commerce was channeled. Markets are organized locations for the regular sale of goods, frequently urban and subject to public regulation, and often with a degree of product specialization and a defined architecture; fairs are more episodic events. Both were familiar aspects of ancient economies, although with some regional variation.[20] From the economics standpoint, the purpose of such commercial concentrations is obvious: they facilitate market transactions, including the production of goods, their transfer, and the guarantee of their quality.[21] Sellers and buyers can initially contact one another in a competitive setting, but this is perhaps less important than the network of long-term personal relationships that arise within regular markets: patterns of trust and reliance based upon prior experience. For instance, a buyer may use experience as a substitute when the cost of searching for product information is too high; or a seller may use past bargains as good evidence for a buyer's credit. As has often been demonstrated, cultivating these long-term "relational" contracts is often of more importance than obtaining the lowest price, with the result that actual markets do not always perform in strict accord with Neoclassical predictions.

But large commercial concentrations also attract in, especially at their margins and where participants engage in "one-off" transactions, considerable numbers of less scrupulous traders. The dangers that these traders pose are particularly acute in the case of complex objects of sale, and in

[19] Cooter and Ulen 2000: 89: "One of the most robust conclusions [of experiments testing the Coase theorem] is that bargainers are more likely to cooperate when their rights are clear and less likely to agree when their rights are ambiguous." On transaction costs produced by legal mistake and uncertainty, see Schwartz 2000.

[20] Frayn 1993; de Ligt 1993a.

[21] See Furubotn and Richter 1998: 283–319, to whom the subsequent remarks are also indebted; also McMillan 2002: 9–11. On relational contracts, *ibid.* 158–69; classic is Macneil 1978.

the ancient world no object was more complex than slaves. Here, the phenomenon known as "adverse selection" could easily occur: the market is heavily influenced by sellers who are attempting to sell defective slaves while revealing to buyers as little as possible about them. The consequence is an inefficient "lemon market" in which prices are depressed not only because of the influx of poor quality slaves, but also because potential buyers are wary and demand a large discount, while the sellers of sound slaves are deterred from entering the market because its prevailing low price levels prevent them from realizing full value. What results is a market failure owing to depressed prices.[22]

As is well known, the Curule Aediles, the magistrates in charge of the large-scale slave and livestock markets at Rome, attempted to counter the problem of asymmetrical information by establishing a new liability for sellers.[23] The seller of a slave (or, *mutatis mutandis*, of livestock) was obliged to notify the buyer as to substantial but non-evident disease or physical defects in the object of sale, and also as to other important information such as whether the slave had previously run away. Unlike the usual liability in the law of sale, this market liability was established irrespective of the seller's fault, meaning that a seller was held liable regardless of whether he knew or even should have known of the defect, and indeed even if he could not have known of it. The buyer's remedies were, however, limited to either rescission of the sale within six months or the difference in price had the buyer known of the defect within one year – a generous period of time during which the buyer became knowledgeable about the slave or the livestock. The evident purpose of this new liability was to restore confidence in the market by giving buyers an opportunity to undo sales when the object of sale turned out to be defective. Though a buyer might still face formidable transaction costs in locating the original seller and proving that the defect was present at the time of sale, proof was considerably easier than in the ordinary law of sale.

This is a likely instance in which institutional development resulted from the realities of trading in the marketplace. Even the otherwise rather

[22] This paragraph was inspired by the famous study by Akerlof 1970, who sought to explain why the price of a new automobile falls so precipitously just after a dealer delivers it to a customer. For subsequent scholarship, see Furubotn and Richter 1998: 254–8. Adverse selection originated as a concept in insurance scholarship, where it was observed that insurance rates must take account of the insurer's lack of information about policy holders, since an undifferentiated insurance rate attracts undue numbers of risk takers. The major form of insurance in antiquity is the bottomry loan, on which see Millett 1983, and Cohen 1992: 30–40.

[23] The text of the edict for slaves is quoted by Ulpian (1 *ad Ed. Aed. Cur.*), D. 21.1.1.1. On the liability, see generally Buckland 1908: 52–68. Romanist literature, though recognizing the problem of asymmetrical information, did not isolate the problem from an economic perspective.

strained logic of Ulpian's comment on the Aediles' Edict[24] (this edict "was established to counter the deceit of sellers," yet "a seller ought to be held liable despite being unaware" of the defect) abruptly makes good sense. What is even more singular is another feature of the Aedilician liability for market sellers. Economists have been greatly interested in "signaling devices," institutions that arise, often informally, to counteract the effects of quality uncertainty and consequent adverse selection.[25] These devices indirectly communicate information about quality. In the case of the Roman slave market, one device was buyer insistence on knowing the "nationality" (*natio*) of slaves. Eventually, sellers were required to disclose this information, and Ulpian explains why it was sought: "there is a presumption that some slaves are good because they come from a nationality that is not of bad repute."[26] In other words, stereotypes about ethnic characteristics are used as an indirect signal of an individual slave's quality, under circumstances where direct knowledge of quality is difficult to obtain.

In broader terms, one of the contributions that NIE has made to the study of economic institutions is recognizing that the type of rationality assumed in Neoclassical Economics does not obtain in the real world. In Neoclassical Economics, economic actors have perfect knowledge about the transactions in which they are engaging, and this knowledge can be costlessly obtained. One of the general assumptions of NIE, by contrast, is that knowledge is costly, and as a consequence economic actors are limited in their ability to pursue rational goals. NIE analysis has thus tended to adopt Herbert Simon's concept of "bounded rationality," according to which people act rationally in pursuit of their goals, subject to the constraints on their ability and willingness to acquire knowledge. Simon also introduces the concept of the "satisficing solution," that is, a solution that is not necessarily the one that would be adopted under conditions of costless knowledge, but rather one that achieves a desired goal given the information available.[27] The implications of this concept of "bounded rationality" for economic analysis are complex and controversial. The concept helps to explain why most contracts tend to be incomplete, in the sense of not covering every eventuality that might arise. They are incomplete because the parties are handicapped in forecasting the future; it would be prohibitively costly, even if it were possible, to account for every conceivable contingency

[24] Ulpian (1 *ad Ed. Aed. Cur.*), D. 21.1.1.2 ("*Causa huius edicti proponendi est, ut occurratur fallaciis vendentium et emptoribus succurratur, quicumque decepti a venditoribus fuerint: dummodo sciamus venditorem, etiamsi ignoravit ea quae aediles praestari iubent, tamen teneri debere.*").

[25] The literature begins with Spence 1974; for a summary, see McMillan 2002: 53–64.

[26] Ulpian (1 *ad Ed. Aed. Cur.*), D. 21.1.31.21 ("*praesumptum etenim est quosdam servos bonos esse, quia natione sunt non infamata*").

[27] Simon 1983: 19–23, 84–5; cf. Williamson 1996: 10, 36–7.

that might affect the contractual relationship between the two parties. Bounded rationality is thus linked with transaction costs.

However, if knowledge is simply treated as a cost, then, as some would argue, there is very little to distinguish NIE analysis from that of Neoclassical Economics, since economic actors leaving contracts incomplete or not bothering to seek costly information in other types of transactions could simply be viewed as maximizing their utility by minimizing a cost that they have to bear. Another approach is to see economic actors as fully incapable of seeing the full implications of the decisions that they make. In the view of Geoffrey Hodgson, who argues for an "evolutionary" approach to economics, people organizing a firm have limited capacity to see how the transaction costs associated with one form of organization would compare with those of another. Instead, in his view, the actors will adopt a "satisficing" solution that accounts for a number of factors, including the actors' estimate of costs but a variety of other considerations, such as their values. Once an institution exists, however, it will tend to foster its own continuation, whether or not it continues to represent or ever represented the most efficient allocation of resources. Thus bounded rationality has an important effect on institutional "path dependence" (to be addressed below).[28]

IV THE PROBLEM OF AGENCY

Adverse selection is an example of how asymmetrical information can affect entry into a market. But also within long-established economic and legal relationships, the problem of information imbalance can cause difficulty. The most common form of this situation is somewhat confusingly described, in the Law and Economics literature, as "agency," where what is meant is not legal agency, but rather a situation in which: "a principal delegates some rights – for example, user rights over a resource – to an agent who is bound by a (formal or informal) contract to represent the principal's interest in return for payment of some kind."[29] The general problem here is that the agent operates on behalf of the principal, but has considerable control over the actual day-to-day operation of the activity; and because of this control, the agent usually has considerably greater information about the activity than does the principal, who often may be unable to monitor the agent's conduct directly.

Agency relationships are pervasive elements of social and economic life. In the modern world they assume protean forms: not just obvious examples like the relationship between stockholders and management, management and employees, or landowners and tenant farmers, but also subtler ones

[28] Hodgson 1999: 199–219.

[29] Eggertsson 1990: 40–1; see Furubotn and Richter 1998: 148–56, for further discussion.

like that between patients and physicians, clients and lawyers, constituents and their elected representatives, and so on. The ancient world also offers many examples, some unusual and highly interesting; the slave *peculium* is one obvious illustration, which will be discussed later in the chapter. This section concentrates on two types of agents: a tenant operating a farm leased from a landlord, and a husband holding a dowry that derives from his wife or her family.

The problem in agency relationships is how to counter the asymmetry of information. The agent's superior knowledge may lead him to engage in two related forms of misconduct: first, shirking, failing to pursue aggressively the principal's interest because the agent has only a limited interest in the venture's success; and opportunism, attempting to capture for himself either a portion of his principal's capital or a larger share of the profit. Usually this problem is resolved by constructing a contract providing the agent with sufficient incentive to perform effectively on the principal's behalf (often this means giving the agent a share of the income from the activity), while also permitting the principal to monitor for misconduct and to exact sanctions.

In a famous letter, Pliny the Younger, a Roman senator and landowner, discusses his anxieties about moving his farm tenants from fixed payment leases (the tenant pays a contractually set sum each year, normally after the harvest) to sharecropping (the tenant pays a set portion of the yield).[30] In Neoclassical Economics, a fixed payment lease is clearly preferable since it maximizes returns for both parties; so long as the leasehold remains productive, the tenant has a strong incentive to invest additional labor, over and above what is required to pay the rent, since he keeps all the surplus income. But the matter becomes far more complex when transaction costs are factored in.[31] Among the things that Pliny was obliged to consider are the following: risk resulting from climate and other exogenous circumstances (this risk is borne by the tenant in a fixed payment contract, but divided up in sharecropping); constraints on the tenant's financial ability to contribute both labor and human and physical capital; the danger that the tenant might prematurely abandon the lease, for example just before the harvest; the owner's need to protect the leasehold against undue depreciation caused by the tenant's carelessness; and the general costs of supervision by the owner. Transaction costs appear to be significant in explaining why contractual arrangements have varied so markedly across history.

[30] Plin. *Ep.* 9.37. On Pliny's agricultural practices, see Kehoe 1988b. Pliny was "risk averse"; he wanted steady income rather than maximum income; for the significance of this attitude for investment in agriculture and other industries in the Roman empire, see Chapter 20. Personal attitudes toward risk become very important when the Neoclassical assumption of free information is relaxed; see Cooter and Ulen 2000: 44–50.

[31] The following discussion draws heavily on Eggertsson 1990: 223–31.

In this situation, the role of law is often to leave ultimate economic decisions to the parties, but to create institutions that clarify their choices, especially through default rules applicable when the express contract is silent. Such default rules can lower bargaining costs considerably, since parties need not bother to negotiate terms allocating risks they may well deem remote.[32] But it is important that such rules be framed with a weather eye to their probable economic effects. Generally, default rules should approximate what the parties would have agreed to had they actually bargained over all relevant risk, which usually means that risk should be borne by the party that can more easily guard against the occurrence of the risk. Thus, for instance, absent express provision in the lease, a fixed rent tenant bears the risk of both crop shortfall and declining market prices, the reason being that the tenant is in control of cultivation and normally better informed on the local market; but an exception may occur when crop failure is owing to uncontrollable catastrophes such as hailstorms.[33]

At times, default rules may go further, to overtly encourage productive investment. In this respect, the legal position of the tenant farmer is well known and has recently been discussed.[34] Briefly, the tenant is entitled to recover the cost of useful expenditures made on the landlord's property; in addition, his recovery is not predicated upon the landlord's prior or subsequent assent to the outlay. It will usually make sense to require full repayment by the landlord, since new farm buildings or orchards are more or less permanent and he will draw the long-term benefit of them. The relationship between a landlord and tenant is essentially an arm's length one, and the Roman jurists seem to treat the issue of expenditures as basically a matter of accounting; the tenant is envisaged as potentially willing to invest in the hope of increased income from the farm, all of which (in the standard Roman cash lease) he can capture for himself during the term of the lease. But an interesting text of Scaevola deals with a situation where the tenant's planting of vines results in the landlord increasing the rent during the ensuing term. Scaevola holds that even when the tenant is expelled for being unable to meet the higher payments, he is still allowed to recapture his expenses.[35] All of this seems to be entirely reasonable, and well calculated to encouraging tenant investment.

The legal position of a husband who is administering his wife's dowry is quite different.[36] Clearly it is in the interest of both husband and wife that dowry property be productively developed, since, depending on how their marriage ends, the property could ultimately pass to either one. But,

[32] Cooter and Ulen 2000: 199–205.

[33] Frier 1993a. Gaius (10 *ad Ed. Prov.*), D. 19.2.25.6, notes that this exception does not apply to sharecroppers, who by contract divide the risk of catastrophic crop failures with the landlord.

[34] Kehoe 1997: 193–209, discussing the major sources. [35] Scaevola (7 *Dig.*), D. 19.2.61 pr.

[36] On administration of dowries, see generally Treggiari 1991b: 327–40.

with a few exceptions, it is the husband who controls the dowry during the marriage, and his wife has very limited opportunity to determine whether his administration is competent and beneficial; her only real leverage, in most instances, is the threat of divorce. The situation is a difficult one, since it is not even controlled by the indirect mechanism of annual rental payments, which can broadly signal if the agency relationship is working properly. On the other hand, it is easy to see why the jurists were reluctant to impose any direct means for the wife to audit her husband's conduct, since that would be arguably destructive of marital harmony. And although it was theoretically possible for the husband to post security for his performance (such bonding is a common way to handle agency problems), the absence of surviving juristic discussion presumably indicates that this was rare despite the lengthy negotiations over dowry that regularly preceded marriage; the reason is doubtless that provisions concerning a husband's honesty were awkward in the pre-marital setting.

Instead, the jurists appear to resort to a somewhat indirect device. According to Paul,[37] the husband cannot recover useful expenses unless he had first obtained his wife's assent to making them. But the phrasing of the Latin text is equivocal; this is the holding of "some" jurists (*quidam*), apparently indicating that others held differently. The dissenting view may well have been that the wife's assent was not required, as other texts seem indeed to hold.[38] In deciding between the two rules, it is necessary to consider a number of aspects of the dowry situation: the desirability of the wife consenting to any long-term improvements in her dowry property; the instability of Roman marriage (high death rates, and the ease of divorce), which meant that the husband might not profit from long-term improvements; the husband's capacity to engage in embezzlement and other forms of opportunism, and the wife's limited means to prevent such misconduct during the marriage; and the perspective of public policy on all these issues. In any case, as is clear especially from the contradictory texts on opening quarries,[39] the economic interests of a husband and wife might diverge when it came to "improving" the dowry property; for instance, the husband might opportunistically seek quick profit even at the expense of the farm's long-term profitability.

Under these conditions, Paul's rule seems clearly superior, and it is a standpoint that is indirectly endorsed by public policy as well, in the form of the Augustan legislation forbidding the husband from alienating dowry land or manumitting slaves without his wife's consent.[40] The basic

[37] Paul (7 *ad Sab.*), D. 25.1.8. Similarly, Paul (79 *ad Plaut.*), D. 50.16.79.1.

[38] So, as it seems, Javolenus (6 *ex Post. Lab.*), D. 23.5.18 pr.; Ulpian (31 *ad Sab.*), D. 24.3.7.16.

[39] See esp. Javolenus (6 *ex Post. Lab.*), D. 23.5.18 pr.; Ulpian (31 *ad Sab.*), D. 24.3.7.13–14; Paul (7 *ad Sab.*), D. 24.3.8 pr. The issue is whether the husband can open a quarry that destroys existing agricultural land; comparable is strip-mining for coal.

[40] On land, Gai. *Inst.* 2.62–3; Paul *Sent.* 2.21b.2. On slaves, see Papinian, Ulpian, and Paul, D. 24.3.61–4.

framework here is a cooperative model of marriage, in which, as a matter of course, the husband makes no major decisions about the dowry without first seeking his wife's consent. The legal rules are founded, in other words, on a desire to foster marital relationships.

There is a deeper point here regarding the construction of institutions, particularly legal institutions. In the large literature that has grown up around New Institutional Economics, the suggestion is sometimes bruited that institutions can profitably be analyzed as though they are and should be constructed solely with an aim to promoting efficiency.[41] Caution is required in accepting so narrow a view of the genesis and development of legal institutions. As the example of Roman dowry should at least suggest, legal rules can often be related to underlying economic rationales, and where that is true such rationales are helpfully considered; but in the last analysis the benefit of this approach is sharply limited unless it is realized that other considerations (such as a public interest in preserving marital harmony by preventing dowries from becoming a source of wrangling between spouses) are also important in constructing rules.

This caveat notwithstanding, a cardinal implication of the Coase theorem should now be clear. Markets cannot and do not exist in isolation from their institutional context. Indeed, "for anything approaching perfect competition to exist, an intricate system of rules and regulations would normally be needed . . . Economic policy involves a choice among alternative social institutions, and these are created by the law or are dependent on it."[42]

V FIRMS

In Neoclassical Economics, a "firm" is defined as an "institution in which output (products and services) is fabricated from inputs (capital, labor, land, etc.). Just as we assume that consumers rationally maximize utility subject to their income constraint, we assume that firms maximize profits subject to the constraints imposed on them by consumer demand and the technology of production."[43] That is, firms are just individuals writ large. No special account need be taken of their internal form and organization, nor does their contribution to the economy require more detailed analysis.

This position is quite unsatisfactory. Imagine a Roman who wishes to acquire a carriage. She has the choice, either of purchasing one from a carriage manufacturer, or of arranging for a series of individual contracts with

[41] See, e.g., North 1981: 201–2 (emphasis added): "Institutions are a set of rules, compliance procedures, and moral and ethical behavioral norms designed to constrain the behavior of individuals *in the interests of maximizing the wealth or utility of principals*." North has since apparently abandoned this position.

[42] Coase 1988: 9, 28. [43] Cooter and Ulen 2000: 26 (emphasis in original removed).

the suppliers of each part of the carriage, from the raw materials through to the completed product. In the Neoclassical universe she already has all the knowledge required to pursue the latter course, and she also faces no costs in arranging and enforcing contracts, so that she is predictably indifferent as between these alternatives. The irreality of such a view has long been apparent, but the economic explanation for not only the existence, but also the attributes of firms was a long time coming, and again, much of the current debate on this issue has been inspired by a seminal article of Ronald Coase, "On the Nature of the Firm" (1937).[44] One of the most valuable insights of New Institutional Economics is that, in reality, institutionalized firms are not, or not simply, participants in a "market." Rather, firms are better described as *an alternative* to the market. Firms promote efficiency when they can marshal investments, in both physical and human capital, that would be more costly to acquire by means of individualized market transactions. Firms also lower costs by taking some transactions off the market and coordinating them internally. At the same time, the hierarchical structure of a firm gives the firm's owners, the principals, more control over the actions of their agents, the firm's employees, who, in a firmless world, would be individual external actors engaging in constant market transactions with the principals. The difficult challenge facing firms is to develop governance structures that promote economically efficient investment in physical and human capital and create the incentives for employees or agents to carry out the wishes of the owners.[45]

The recent debate in New Institutional Economics on the nature and governance of firms can help us to understand better the organization of business in the ancient world.[46] For our purposes, the issue is whether, in the Greek and Roman worlds, governance structures were developed that facilitated business and commercial activity by lowering transaction costs, or whether businesses limped along with inefficient forms of organization that restrained economic activity. Ancient governance structures could have simply preserved particular social structures or rewarded particular groups within society at the expense of others, but without fostering growth.[47] It has often been suggested that economic development in the Roman world was hampered by certain shortcomings in Roman law. One shortcoming was in the law of partnership (*societas*). In the Roman law of *societas*, partnerships never achieved a juristic personality that allowed them to function as a legal

[44] This paper is reprinted in Coase 1988: 33–55, and also in Williamson and Winter 1993: 18–33.

[45] Williamson 1985; Williamson 1996.

[46] This approach posits that there can be many types of firms other than the "capitalist firm" that is the focal point of many contemporary analyses. For a broad definition of the firm, see Hodgson 1999: 220–46.

[47] For this question as a basic aspect of research in New Institutional Economics, see Becker 1992: 67.

entity distinct from the individuals comprising the partnership. Indeed, in the Roman law of *societas*, a partnership would dissolve at the death or withdrawal of one of the partners.[48] The one exception to this rule consisted of the *societates* that contracted to collect taxes for the state, particularly in the late Republic. In addition, the Roman law of agency, at least from a contemporary perspective, was also incomplete, since it lacked a legal category of an agent who could have full power to act on behalf of a principal.[49] As a consequence, Roman law does not seem to have provided an institutional setting to accommodate ongoing, complex business enterprises that would continue to function regardless of who the owners or employees were.

To be sure, there were some legal developments that fostered economic activity by defining property rights and reducing the costs of defending them. As Harris suggests (in this volume), the development of the consensual contracts, probably in the second century BC, including sale (*emptio-venditio*), lease (*locatio-conductio*), partnership (*societas*), and mandate (*mandatum*), established legal definitions for contractual relationships key to the Roman economy. Their enforcement by the state served to define property rights clearly and thereby to the lower transaction costs involved in doing business. In either the third century or second century BC, Roman law also introduced six remedies, later called the *actiones adiecticiae qualitatis*, that gave protection to people engaging in contracts with agents representing principals.[50] It is difficult to determine when these actions might have been instituted, and the connection between the creation of such actions involving agency and the use of agents in the Roman economy is likely to have been quite complex.[51] These actions did not create "agency" in the Roman economy, but they surely facilitated the employment of agents in increasingly complex business arrangements by defining the rights of third parties who contracted with agents as well as the liabilities of the principals who employed them. In as much as the *actiones adiecticiae qualitatis* limited the liability of principals, in all likelihood they were developed with a view to the interests of members of the Roman elite.

But analyzing the role of agency in the Roman economy by focusing on these remedies and their limitations seems to treat Roman law and society from the perspective of what was missing, rather than in terms of how the economy functioned. No economy can function without principals and agents, and recent work in New Institutional Economics sheds light on how ongoing relationships between principals and agents operated in the Greek and Roman worlds.

[48] Kaser 1971: 572–6; Garnsey and Saller 1987: 54.
[49] Plescia 1984. [50] De Ligt 1999; Plescia 1984: 178–80, 186–7; Kaser 1971: 605–9.
[51] For discussion of the origins of these remedies, see Aubert 1994: 46–91, who dates them to the late second century BC, and de Ligt 1999, who situates them earlier, in the third century BC.

Take the banking industry of fourth-century BC Athens. Athenian banks played a key role in arranging the financing of seaborne commerce that contributed significantly to the vibrant economy of Athens in the fourth century. In addition, they provided rich Athenians with a way to invest their wealth beyond the reach of state authorities seeking to impose taxes and liturgical obligations.[52] The organization of Athenian banking was affected by both formal legal institutions and informal social practices. Bankers were often foreign-born residents of Athens, but their employees were invariably slaves or foreigners. The Athenian prohibition against the ownership of land in Attica by non-citizens surely made banking an attractive occupation for foreign residents in Athens.[53] Although the prohibition ostensibly made it impossible for many bankers to extend credit against real security, bankers found many ways around this law by channeling such loans through Athenian citizens.[54] At the same time, banking provided opportunities for non-citizens in Athens because freeborn citizens retained a deep-seated social prejudice against being in the employ of other people for protracted periods of time. Indeed, Athenian law seems to have been quite flexible in allowing for arrangements that would result in women acting as owners of property, in contrast with the situation in conventional Athenian law.

If social institutions helped to shape the organization of the Athenian banking industry, it also seems clear that the particular form of Athenian banking arose in response to the efforts of bank-owners to find appropriate governance structures to allow them to manage their businesses profitably. In fourth-century Athens, it was commonplace for slaves to engage in business independently from their owners, and the banking industry took advantage of this opportunity to establish governance structures that gave bankers a great deal of control and flexibility in managing their banks. We can appreciate the role played by slaves by considering the case of Pasion, perhaps the wealthiest Athenian banker in the fourth century. This banker's affairs are revealed in several speeches in the Demosthenic corpus that show the efforts of his son, Apollodorus, to regain his inheritance.[55] Pasion, himself a non-citizen, operated one of the most important banks for several decades in the fourth century. He employed a slave, Phormion, as the manager of his bank. Shortly before his death in 370/69, Pasion leased his bank to Phormion, and when Pasion died, he passed the bank on to Phormion and also had Phormion marry his widow, Archippe. The use of a slave like Phormion as a manager allowed the owner of a bank to set someone up in business with some independence and discretion. Since a

[52] On the economic significance of Athenian banks, see Cohen 1992. For a very different interpretation, see Millett 1983.

[53] Cohen 2000: 141–3, 186–7. [54] Cohen 1992: 133–6. [55] Cohen 1992: 61–110.

bank was identified through its proprietor, the use of a slave agent did not compromise the exclusive status of the bank's owner, so the principal did not have to worry that the slave manager would set up a rival bank on his own and take clients with him. Leasing provided an additional advantage, in that it reduced the liability that the bank owners bore for the actions of his slave agent.

The use of slaves and social dependants in key business functions was perhaps an even more fundamental characteristic of Roman society. This practice finds its origin partly in the informal institutions of ancient Rome. The *familia* structure was so ingrained in Roman society that it provided a ready made structure around which to organize business activities, just as it did in the empire to organize the bureaucracy of the Roman government, as represented by the *familia Caesaris*. At the same time, the use of slaves or freedmen as agents, as D'Arms argues, allowed upper-class Romans to avoid the opprobrium associated with too close and direct an involvement in sordid business affairs.[56] From the perspective of NIE, this form of business organization was an appropriate response to the general constraints surrounding economic activity in the ancient world, especially the difficulty of obtaining the costly information that would allow a business owner or principal to enforce the obligations of his employee or agent. In any contractual relationship, one of the key concerns for each party is to protect against "opportunistic behavior," the tendency of a party to take advantage of asymmetries of information to create gain for himself at the expense of the other.[57] This consideration would be especially important when the agent was managing affairs at a distant location that the principal could not easily visit – we might think of a slave bailiff or *vilicus* managing a distant estate for a wealthy absentee landowner, or a business agent arranging commercial transactions for a trader in a far off port.

We can appreciate how Roman property owners dealt with this problem by considering the principal–agent relationship from the perspective of the "relational contract." The "relational contract" is a concept used by contemporary legal scholars to analyze long-term, dynamic business relationships (including employment), when the contracting parties at the outset are unable to anticipate or provide for all the future contingencies, but both sides have a vested interest in the continuation of the relationship. The theory of the "relational contract" posits that economic actors make decisions on the basis of limited, costly information. This conception of a contract is to be contrasted to that of Neoclassical Economics, which views the contract as a "discrete transaction" negotiated by parties with full knowledge of future contingencies.[58] To take the example of Roman

[56] D'Arms 1981. [57] Williamson 1979; Williamson 1985: 30.
[58] See above, in section III, as well as Hviid 2000, and Furubotn and Richter 1998: 158–69.

law, the most likely formal arrangements that existed between principals and legally independent agents (say, between the owner of a business and the free manager assigned to oversee its operations) would be based on the consensual contracts of lease and hire or mandate.[59] From a purely formal perspective, these contracts gave principals legal recourse against an agent deemed deficient. But from the perspective of the relational contract, taking an employee or business partner to court is really a last recourse; such a step ends the relationship, and the court proceedings serve simply to satisfy the legal claims of the two parties, and to divide whatever assets remain from the contractual relationship, with no consideration of any future relationship.

The use of social dependants as agents provided property owners with a great deal more leverage in negotiating the adjustments necessary to a long-term business relationship. Because of the social dependence involved, negotiations between a principal and slave agent in Rome were doubtless often one-sided, even if the agent preferred a different arrangement. But it is also not the case that slaves had no leverage of their own, and analysts of the slave economy have shown how slaves bargain with their masters, exchanging effort for privileges.[60] This observation, made in connection with agricultural slaves performing drudge labor, applies much more unmistakably to slaves working in positions of responsibility and discretion, over whom it is clear that masters exercised only limited control.

A business person managing affairs through his or her slave or even freedman enjoyed certain advantages over those from other governance structures to make periodic adjustments to the contractual relationship. In the Roman world, it is not simply that the owner could sanction a slave manager by confiscating the *peculium*, the property that the owner allowed the slave to control to manage a business, or that he or she could invoke social sanctions against an uncooperative freedman. The element of social dependence gave property owners a recourse lacking to their counterparts with free employees, whose employment they could terminate at will or sue in a court of law. One consequence of the use of social dependants as agents is that many aspects of the principal–agent relationships transpired outside the framework of the law, rather than in "the shadow of the law."[61] But the private rewards and sanctions that a property owner could use to influence the behavior of a slave were largely outside the purview of the law.

The Roman system of establishing slaves in business and providing them with *peculia* also contributed to solving one of the central problems

[59] Aubert 1994: 110–12. [60] Eggertsson 1990: 203–13.

[61] This now famous phrase has been used to characterize negotiations in divorce settlements in the US, in which the legal rules surrounding divorce establish overall constraints affecting the negotiations of the two parties: Mnookin and Kornhauser 1979.

identified by analysts of the firm, that of monitoring the firm's employees. In a modern firm, it is often difficult to ascertain whether employees are working to achieve the goals of the principals or the firm's owners. The problem of monitoring performance becomes especially difficult if, as is likely, the firm's managers have goals different from the firm's owners; their incentive will be to induce their employees to serve their own interests, rather than those of the owners.[62] So even employees who might be shirking from the point of view of the ownership of a firm may be responding rationally to incentives established by their immediate managers. Recent scholarship on this issue suggests that firms can be most effectively governed when those participating in governance, whether owners, managers, or employees in employee-owned or socialist firms, invest their own resources and so share in the risk of running the business. As "residual claimants," or owners of the proceeds of the firm, they have an incentive to invest the funds of the firm appropriately and to avoid maximizing their immediate gain at the expense of the firm's long-term interests.[63]

To turn to ancient Rome, Roman property owners faced the challenge of creating the proper incentives for their slave managers to pursue profits without engaging in short-term strategies that might squander their assets. This problem was perhaps more salient than in a modern firm since long-distance business arrangements added to the costs of information and exacerbated problems caused by asymmetries of information between agent and principal. But by assigning the slave manager a *peculium* and allowing him to manage his business independently, Roman property owners overcame this difficulty to some degree. The slave manager acting with a *peculium* became an independent businessman in his own right and so had every incentive to monitor efficiently and rigorously the employees (including slaves) in his charge, and much less of an incentive to line his own pockets at the expense of his owner. In effect, the slave manager became a kind of "residual claimant" over the proceeds of the business, even if formally the slave's owner was the ultimate owner of the business. The incentives created by allocating *peculia* required slaves to be confident that, absent exceptional circumstances, they would retain whatever profits they earned. The major cost for property owners was that they surrendered a great deal of control over their businesses, and they probably sacrificed income that they might have received from a more centralized system of managing their business interests.

The use of social dependants as agents also stemmed from property owners' efforts to reap the benefit of their investment in human capital. Recent scholarship on the nature of the firm suggests that firms are most likely to be vertically integrated when business operations require investment in

[62] Alchian and Demsetz 1972. [63] See, in general, Furubotn and Richter 1998: 354–404.

specific assets.[64] In the ancient world, especially in businesses like banking, the most important investment was likely to have been in human capital, that is, the training of individuals capable of conducting the business of the firm. Training in crafts and trades was conducted within the confines of an *oikos* in the Greek world or a *familia* in the Roman, and it was often not available in other settings. Both the owner and the slave had a vested interest in this relationship: the owner to profit from the skills that the slave had acquired, and the slave to gain valuable training and the possibility of economic independence. In Egypt, by contrast, apprenticeship contracts indicate that training in crafts and industries was accomplished in accordance with different principles, with a skilled third party receiving compensation for the training of a child, whether slave or free, in a trade.[65] The organization of the ceramic industry in the Roman empire (see below, Chapter 20) offers an example of how investment in human capital was managed within the *familia*. In the ceramic industry, knowledge was apparently passed on from artisans of servile or freed status to their own dependants. Although it is difficult to be sure of the precise relationships involved when successful workshops spawned what appear to be branch workshops, the most likely scenario is that workers took the skills that they had acquired and set out to create their own establishments. Whether the former patrons or employers retained an interest in the new workshop is hard to determine.

The difficulty of acquiring the necessary information to manage far-flung business interests led large landowners to use friends and other people of their own social status to manage, or at least to oversee the management, of business affairs. One clear example of this comes from the Heroninos archive, which attests the management of a large estate in the Fayyum region of Egypt during the third century AD (see also Chapter 20). Aurelius Appianus, the owner of the estate with which this archive is concerned, belonged to the equestrian order and was also a member of the city council in Alexandria. The central management of the estate, located in the capital of the Arsinoite nome, exercised an exacting supervision over the performance of the managers of the village-based units of the estate; these managers, or *phrontistai*, had to present a detailed accounting for the income and expenses connected with the lands for whose cultivation they were responsible. But strikingly, Alypios, the person to whom many of these accounts were submitted was an equestrian and an estate owner in his own right.[66] It is hard to imagine that Alypios worked for Appianus under a contract such as lease or mandate, and it seems much more likely that this agency

[64] Williamson 1985: 85–102.

[65] Apprenticeship contracts were especially important in the weaving industry in Roman Egypt, as discussed in Chapter 20.

[66] Rathbone 1991 14–22, 58–61.

relationship was built largely on the personal trust between the principal and agent. Any disagreement between Appianus as principal and Alypios as agent would probably have been resolved through informal means, rather than "in the shadow of the law." How Alypios or other people in comparable decisions dealt with Heroninos or other *phrontistai* is a different matter.

This method of managing businesses through friends or social dependants had significant implications for the organization of the Roman economy. For one, it tended to reinforce the strict social hierarchy that helped to preserve the economic and social privileges of the landowning elite: there was little capacity for developing a class of artisans let alone entrepreneurs who were fully independent of elite patronage or control. Successful freedmen who gained wealth as artisans or business managers were ultimately dependent on a master or patron for an initial investment in skills and capital, and they often remained socially bound at least to some degree to their patron.

At the same time, the use of friends and social dependants suggests some of the difficulties inherent in managing property or businesses at long distance, which resulted from the difficulty of enforcing contracts, both formal ones that property owners might enter into with agents of various sorts, or the informal contracts that defined the relationship between a master and a slave. The limited degree of control that property owners could exercise over agents is likely to have affected their planning in economic matters. Instead of undertaking a potentially remunerative enterprise that required a great deal of planning and coordination, property owners might rather be content to skim off a portion of the profits from agents who themselves undertook to manage the businesses in question and used their own *peculia* as a source of operating funds. These agents, even when they were of slave status, could operate with a great deal of independence. The organization of business in the Roman empire was usually decentralized, with limited vertical integration. The tendency of the Romans (and of the Greeks) to use social dependants as agents suggests the complex interplay among the costs of information, the difficulty of using the courts or other legal sanctions to enforce contracts, the difficulty of using private means to enforce contracts, and the economic goals of property owners.

VI PROPERTY

As we have seen, Neoclassical Economics already lays stress on the vital "pre-economic" role of law in defining and distributing property rights – not only who owns what, but what ownership means and how it can be exercised – since property rights then become the basis for hypothetically friction-free

negotiations leading to efficient allocations and economic development.[67] Although this assumption remains basic in New Institutional Economics, emphasis on transaction costs produces new complications.[68]

For example, what counts as property susceptible of public or private ownership? The Roman jurists draw the lines with seeming ease and exactitude,[69] but many problems lurk just behind their bland phrasing. Nature's law (we are solemnly told) dictates that the sea is common to all, and therefore also the seashore, to the highest tidemark; it follows that anyone may build and own a fishing shack on the seashore. But try telling that to the villa owner whose seascape was thereby obstructed. The problem eventually required official intervention.[70] But why ever shouldn't a villa owner be able to own the adjacent seashore? Ostensibly, Roman law here runs up against the well-known "tragedy of the commons," an effect (observed since Aristotle) whereby commonly held and accessible property is less productively exploited than private property.[71] Private property rights offer both static benefits – the prevention of overuse by those who can ignore the costs their use imposes on others – and dynamic benefits – the long-term incentive to invest in creating or improving a resource.

However, establishing exclusive rights to property requires the state and private individuals to pay considerable costs, costs so high that they may render it economically unviable to accord exclusive ownership of a resource. Certainly it can be doubted that producing new private property always increases social welfare; the resources devoted to defining, monitoring, and enforcing exclusive rights may be worth less than the additional output that private ownership brings. This point seems obvious enough for the seashore, and so also for wild animals or running water. But even with regard to ordinary land – farms, houses, commercial buildings – the Greeks and Romans generally lacked the systematic public registries that are necessary for conclusive resolution of disputes over ownership, boundaries, land use, servitudes, and liens; adequate resources and bureaucracies were simply

[67] Landis and Posner 2003: 14 (footnote omitted): "When transaction costs . . . are low, Ronald Coase's well-known analysis of transaction costs implies that enforceable contract rights are all that society needs, beyond some underlying set of entitlements so that parties have something to contract about, to obtain optimal use and investment."

[68] On what follows, see especially Eggertsson 1990: 83–124; Furubotn and Richter 1998: 69–120. This topic is very complex, and only the briefest rehearsal is offered here.

[69] See, for instance, Gaius, *Inst.* 2.2–14; see Just. *Inst.* 2.1–2. Roman law is quite advanced in comparison with Athens: Harrison 1968: 228–35.

[70] The sea and seashore as common property: Marcian (3 *Inst.*), D. 1.8.2; Just. *Inst.* 1.1.1, 5. Resulting conflict with local property owners: Ulpian (57 *ad Ed.*), D. 47.10.13.7. Legal intervention: Pomponius (6 *ex Plaut.*), D. 41.1.50 (shack builders need praetor's permission). Celsus (39 *Dig.*), D. 43.8.3, is apparently the first jurist to solve the problem by expropriating the seashore for the government – a harbinger of things to come.

[71] Arist. *Pol.* 2.3.1261b 33–8. See Cooter and Ulen 2000: 123–6, 159–62.

unavailable. And beyond this come the exclusion costs: initially to assign property rights, and then to enforce them. The former are sunk costs that do not affect private decisions once the transfer of rights has occurred, but the latter are variable costs that both individual property owners and the state must recurrently sustain.[72]

Such considerations help when we turn to consider two other kinds of property, one largely absent from the ancient world, and the other largely absent from our own. First, intellectual property: "ideas, inventions, discoveries, symbols, images, expressive works (verbal, visual, musical, theatrical), or in short any potentially human product (broadly, 'information') that has an existence separable from a unique physical embodiment, whether or not the product has actually been . . . brought under a legal regime of property rights."[73] In modern law, intellectual property rights involve a delicate trade-off between the social good of allowing the property's creator to appropriate its social value (thereby encouraging innovation) and the social cost of permitting the property's owner to exclude others (thereby possibly impeding an idea's dissemination). But for many reasons the cost of establishing intellectual property rights tends to be very high: such property is hard to identify because it has no unique physical site; ideas, because they often "await discovery" (as it were), tend to provoke wasteful overinvestment by competitors racing to seize a monopoly on them; and they are particularly costly to protect from replication.[74] Although the ancient world already witnessed the modest origins of intellectual property (for instance, symbolic trademarks indicating the source of traded goods), in general even the fairly well developed Roman law of intangible property never extended far enough to embrace ideas as objects of dominion.[75] This helps to explain why literature remains the preserve of the leisure class.

Far more difficult is the issue of slavery, property rights in human beings. The same issues bedevil scholarly discussion, which has been extensive.[76] Briefly, the key question is not whether slavery is profitable in itself, but rather whether widespread slavery can be an economically stable institution in the very long run, granted the underlying certainty that human capital will never be more valuable to someone other than the person who embodies it – with the consequence that, in the absence of countervailing factors, slaves will eventually buy back from their masters the rights to their human capital. This argument assumes that slaves, who for their labor receive little beyond subsistence, will shirk or engage in opportunistic behavior

[72] Eggertsson 1990: 96. See also Bouckaert 2000 on original assignment.

[73] Landis and Posner 2003: 1.

[74] Landis and Posner 2003: 16–21. The social costs of intellectual property are so high that some have doubted whether the current system is justified at all.

[75] Trademarks: Greenberg 1951: 879–80. Roman law on intangibles: Kaser 1971: 376–7; on intellectual property: Schickert 2005.

[76] See the review by Engerman 1986; and especially Eggertsson 1990: 203–13.

unless prevented (meaning high agency costs for the master), that they can negotiate with masters for their freedom (despite the high costs of enforcing such contracts),[77] and that manumitted slaves can then find work for pay based on their effort. Under these conditions, slavery should disappear not because it is unprofitable, but because masters will find it even more profitable to let slaves buy themselves back.

It remains unclear, as well, under what conditions slave labor will enjoy an actual competitive edge over free labor, particularly in light of high agency costs for monitoring slaves. It has been hypothesized that pain incentives (as opposed to ordinary rewards) can significantly enhance productivity in activities that are effort- and land-intensive, such as forms of agriculture, mining, quarrying, and public works that utilize primitive technology.[78] What this hypothesis suggests is that slavery arises earliest and is most durable in effort-intensive economic sectors where pain works as an incentive; but to the extent that slave labor spills over into care- and capital-intensive sectors (such as viticulture or domestic service), ordinary rewards, including manumission, will be preferred to mitigate agency costs.

VII PATH DEPENDENCE

One theme addressed in NIE literature is the degree to which the establishment of social and economic institutions locks a society on a particular path, to the exclusion of potentially more efficient institutional arrangements.[79] In the NIE literature, the concept of "path dependence" typically refers to the choice of technologies, when network effects or other factors result in the choice of one technology over another possibly preferable technology, but society eventually has so much invested in the first technology that it is too costly to switch to the superior alternative.[80] Douglass North has extended the idea from technology to institutions, arguing that the choice of particular economic institutions can create a path dependence that makes the choice of potentially more efficient alternatives prohibitively costly.[81] In this connection, we must also consider the uncertainty, resulting costly information or "bounded rationality," that surrounds the original choice of investment strategy or institutional arrangement.[82]

[77] From Marcus Aurelius on, such contracts could be accomplished through a legal fiction: Ulpian (6 *Disp.*), D. 40.1.4 pr.–1. But informal arrangements of this type are referred to already in the late Republic: e.g., Alfenus (4 *Dig.*), D. 40.1.6. See Buckland 1908: 636–40. It is also worth noting the statutory limits placed on manumission (*ibid.* 533–51), since they may conceivably result from the ultimate inviability of slavery.

[78] Fenoaltea 1984, with an examination of Roman slavery at 647–50. See also Domar 1970.

[79] North 1990.

[80] Liebowitz and Margolis 2000. This theory remains controversial, however, even for technology, since historical examples have proven difficult to isolate.

[81] North 1990: 92–104. [82] Liebowitz and Margolis 2000: 985–6, 994–5.

The significant role that institutional path dependence played in the ancient economy can be illustrated with three examples drawn from the agrarian history of the Roman empire. The first is the development of the slave-based villa in late Republican Italy. This form of agriculture involved the intensive cultivation of relatively compact estates to produce wine, olive oil, and other crops for Rome and other markets, especially in southern Gaul, accessible by sea from the western coast of Italy, where this form of agriculture was concentrated (see below, Chapter 20). These estates were organized in such a way as to make intensive use of the land by pressing slaves into service as laborers. The development of the villa economy provided elite Romans with a way to invest newfound wealth in expanding markets for agricultural produce, and the elite were able to take advantage of wars to create a slave labor force that they could exploit profitably.

The villa economy may have increased productivity in the Roman economy, but it carried with it significant costs, some of which were recognized by contemporary Roman observers. Agrarian reformers in the late Republic decried the use of large numbers of slaves in agriculture. The use of slaves probably helped Rome to develop commercial agriculture, but the economic growth that resulted from the villa economy was uneven, with the lion's share of the newly created wealth going to a small class of elite landowners, while the earning capacity of free farmers probably suffered. The loss of income for free farmers that is likely to have resulted from the villa economy reduced their cumulative demand for goods and so tended to depress economic growth.[83] The intensive use of slave labor in agriculture required landowners to develop structures to monitor how their estates were run, and to police against revolt by the slaves. Moreover, the investment that landowners made in slaves used funds that might have been used for other forms of investment, but it presumably provided landowners with an adequate level of profit. So the very powerful people in Rome had a lot invested in this system and sought to promote structures that would foster its profitability in the future. Thus, as in the US South before the Civil War, the substantial investment that landowners had in slaves gave them an incentive to struggle to maintain this form of agriculture in the face of political and economic changes that threatened its profitability.[84] Gradually, beginning in the first century and increasingly in the second century AD, this form of agriculture gave way to a more decentralized organization of estates.

[83] See E. L. Jones 1988: 59, 103.

[84] For the South, cf. Wright 1978: 128–57. Other manifestations of path dependence involve the creation of ideologies and legal rules that support an initially efficient institution, but tend to impede its alteration if it later becomes inefficient. In Roman law, an example is probably the emergence, during the late Republic, of the harsh distinction between slaves and freemen, along with strong conceptions of property ownership. See Kaser 1971: 283–9, 400–4.

We can trace a different aspect of institutional path dependence in the Roman state's policies for administering state-owned property, or imperial estates, during the early empire. The Roman state owned property in virtually all provinces of the Roman empire, and the revenues from these estates represented a significant portion of the state's income. Imperial property included the private property of the emperor and other categories of state-owned lands, the administration of which was gradually subsumed under the imperial treasury, or *fiscus* (see below, Chapters 20 and 23). Imperial lands in Africa and Egypt were especially important for supporting the politically crucial programs of food distributions in Rome, and later in Constantinople. As a general rule, the imperial administration exploited these properties by leasing them out, in various forms, to individual small-scale cultivators. This type of land tenure is attested in north Africa, Asia Minor, Syria, and Egypt, and comparable systems of land tenure are likely in other provinces as well.[85] By exploiting its properties in this way, the administration was to some extent adapting tenure arrangements existing when the properties passed into imperial control. But the policy of the Roman state was to maintain the property rights of the small cultivators occupying the land. In North Africa, the Roman administration offered incentives, embodied in the *lex Manciana* and the *lex Hadriana*, encouraging farmers to bring unused lands under cultivation and to make a long-term commitment to them by investing in the cultivation of vines and olives. Indeed, the state consistently defended the rights of the small-scale imperial tenants to their lands, even when the claims of imperial tenants came into conflict with powerful interests, such as the large-scale lessees, or *conductores*, who collected the rent on imperial estates in Africa, or the landowners in towns in Asia Minor, who sought to reduce their own fiscal obligations by imposing a share of them on tenants of imperial estates adjacent to their towns.[86]

The policy that the Roman government followed in exploiting its properties carried substantial costs. Relying on small-scale cultivators no doubt helped secure stable and predictable revenues. Arguably, the state also promoted "distributional" goals by continuing the leasing out to small-scale cultivators, since this policy promoted the welfare of small farmers and protected them from large landowners. In broader terms, the state's policy of maintaining ownership over vast tracts of land across the empire provided the emperor with some security against the power of the increasingly wealthy landowners who comprised the senatorial and equestrian aristocracies of this period and who represented potential rivals to the emperor's authority. At the same time, this system of leasing, based as it was on secure property rights for the small-scale cultivators, made it virtually impossible

[85] Crawford 1976.
[86] The texts are collected in Hauken 1998; for what follows, see also Kehoe 2007.

to put the land to alternative uses, such as selling it back to private ownership and allowing the new private owners to develop their own methods of cultivating it. Such a policy might ultimately have promoted a greater social product, since it would have promoted the tendency of resources to find their most valued use, but the government's immediate and continued policy of leasing to small-scale cultivators precluded such options.

However, once a policy of relying on small-scale cultivators was developed – possibly as the result of a decision grounded in tradition of what to do with state property – it created a whole complex of property rights and established a basic institutional framework for a significant portion of the Roman economy. The strong property rights that the state accorded to imperial tenants probably also affected the conditions under which privately owned land was cultivated, since private landowners could only compete for tenants if they offered terms comparable to those on imperial estates. The likely result is that tenants cultivating land on private estates also enjoyed substantial security of tenure, a situation that affected the incentives of both large landowners and tenants to invest in agriculture. With some incentives for investment in agriculture diminished, many private landowners will have contented themselves with extracting a portion of the surplus produced by tenants who were cultivating their land autonomously, with little landowner investment. Such a relationship between landowner and tenant affected the balance of payments between countryside and city and the development of the urban economy.[87] These conclusions are admittedly hypothetical, but it seems clear that the policies that the imperial government followed in exploiting its own estates had broad implications for the Roman economy as a whole. In the later empire, the fiscal policy of the Roman government rested to a large degree on its ability to manage the relationships between landowners and the *coloni* cultivating their land.

Finally, we can trace another aspect of institutional path dependence in the agrarian history of Egypt, where the experiences of the Ptolemaic and Roman administrations indicate the ancient state's limited capacity to transform an agrarian economy. If Egypt in the early empire enjoyed conditions that promoted growth such as the development of secure private property rights (Rathbone, in this volume), we should expect to see an elite class in Egypt taking advantage of the increasing opportunities for commercial agriculture brought about by Roman rule by investing heavily in agriculture. However, the development of large estates and an elite landowning class comparable to that of other urbanized parts of the empire came relatively late to Egypt, in the third century AD.[88] To some

[87] Erdkamp 2001. [88] Rathbone 1991.

extent, at least, the delayed development of large estates in Egypt is the result of the complex set of legal and political institutions surrounding the agrarian economy that the Romans inherited from the Ptolemies. As Manning argues (in this volume), the Ptolemies sought to stabilize and broaden their base of revenues by adapting the land tenure system that the Saite and Persian rulers of Egypt had established. Much of their revenue came from land nominally belonging to the crown, or "royal land," but cultivated by people with secure tenure rights. In many parts of Egypt, in particular Upper Egypt, the Ptolemies had no choice but to rule through traditional local elites, often connected with the very powerful and wealthy temples. The local elite classes represented the link between the cultivators and the crown, and they played a crucial role in the collection of the taxes on which the Ptolemaic state depended. As a counter to these traditional bases of power, the Ptolemies also promoted urbanism and the interests of a Greek ruling class. The efforts of the Ptolemies to transform the agrarian economy can be seen especially in the Fayyum region, where, beginning with Ptolemy II Philadelphus, they reclaimed a great deal of farmland by lowering the level of Lake Moeris, settled a Greek military class as cleruchs, and organized economic and political life around the metropolis and villages. The Fayyum was also the site of experimentation with agricultural techniques, the introduction of new crops, and investment in more intensive forms of agriculture, especially viticulture. Elsewhere, it is doubtful whether the Ptolemies displayed the same capacity for creating new institutions.

The agrarian economy of Ptolemaic Egypt, then, was characterized by the small-scale cultivation of lands held by corporate entities, whether the crown or the temples. This situation continued when Egypt passed into Roman rule, except that the temples lost much of their land, which was then administered by the Roman state as public land, or *ge demosie*. Under Roman rule, some categories of land, in particular cleruchic land, nominally held at the pleasure of the crown in Ptolemaic times, became private land for all intents and purposes. By the third century, royal land had become largely assimilated with private land, the one significant difference being a separate rate of taxation. It seems clear that the institutional history of Egypt under Ptolemaic rule slowed developments that happened in other parts of the Roman empire with less firmly established agrarian regimes. But the really intriguing question concerns how this situation affected Egypt's capacity for agricultural growth, as well as the welfare of the various classes of people involved in Egypt's agrarian economy. Certainly, the creation of large estates by itself was no guarantee of economic growth. In the Ptolemaic period, the gift estates awarded to members of the Ptolemaic court, such as the estate of the financial minister or *dioiketes* Apollonius that was administered

by Zenon, may have been the locus for experimentation in agricultural techniques and for substantial investment in intensively cultivated crops. But it is unclear whether the same claim can be made for the first-century AD *ousiai*, complexes of agricultural properties set at the disposal of members of the Julio-Claudian court. These "estates" are better characterized as sets of properties from which the beneficiaries acquired the right to exact a rent, rather than an economic resource in which they invested in hopes of greater production.[89] The *ousiai* were, in effect, estates superimposed on an agrarian economy characterized by the small-scale cultivation of modest parcels. When the Julio-Claudian dynasty collapsed, ousiac land reverted to the state and was administered just like other state land.

The agrarian policy pursued by both the Ptolemies and the Romans represented an adaptation to the unique geographical conditions of Egypt and to Egypt's institutional history. The policy of both the Ptolemaic and Roman governments to maintain control over substantial portions of the country's land, from one perspective, represented a brake on agrarian growth, since it inhibited investment in agriculture by wealthy people able to take advantage of commercial opportunities.[90] At the same time, one could argue that, by assuring access to land and tenure rights to a broad population, both the Ptolemies and the Romans helped to maintain a viable peasant class with resources to create the type of demand needed to sustain economic growth. In this circumstance, the legal and administrative system of Egypt would have had far-reaching and potentially positive consequences for the economy.[91] It is not possible in this space to arrive at any conclusion about the Egyptian agrarian economy, but the contribution of NIE is to help formulate the questions, provide analytical tools with which to analyze the ancient evidence, and develop theories that advance the debate.

VIII CONCLUSION

In the absence of more robust empirical data, ancient evidence can seldom if ever be used to test the hypotheses that are characteristic of the current research agenda in New Institutional Economics. The use of these theories must be more indirect: to provide a richer account of how the ancient economy worked, what strains are likely to have affected its operation, and the ways in which ancient institutions were contrived in response to these strains. Above all, NIE affords us the opportunity to reconsider institutional aspects of the ancient economy that may initially strike us as bizarre or even counterproductive. NIE offers us an array of tools for taking a closer look.

[89] Parássoglou 1978; Kehoe 1992: 16–57. [90] Cf. E. L. Jones 1988: 49. [91] Cf. Field 1991.

From such research it may emerge – indeed, in numerous instances it predictably will emerge – that many curious economic institutions of the Greek and Roman world were, at least in their origins, the consequence of individuals struggling rationally (within their lights) to maximize their personal gain. To the extent that this is true, the "invisible hand" of Adam Smith should no longer be counted as generally missing from the ancient economy. Only, the hand was made flesh.