INTRODUCTION

This book examines the history of the ancient Egyptian economy, from the earliest written records at the beginning of the Early Dynastic Period, around 3000 BCE, until the end of the Ptolemaic Period and the Roman conquest of Egypt in 30 BCE. During these three thousand years, the ancient Egyptian economy underwent numerous changes, as did ancient Egyptian society and culture. This book explores the relationship between the changes in the economy on the one hand, and changes in social and legal institutions on the other. In particular, it will correlate economic changes with the development of writing and money.

In the past, many economists have assumed that the human "propensity to truck, barter and exchange one thing for another" is logical, inevitable, and universal,[1] and that economic behavior is the rational and predictable result of this propensity, together with supply, demand, and the available technology. This assumption, sometimes described as formalist, underlies classical, neoclassical, and Keynesian economics, and implies that economic behavior has changed primarily as a result of technological innovation. Formalist assumptions also underlie many discussions of the ancient Egyptian economy,[2] and a few Egyptologists have even argued for the direct applicability of Keynesian economic models to ancient Egypt, suggesting that state redistribution limited market price fluctuations,[3] or that state tax demands stimulated growth.[4]

In contrast, some economic historians and ancient historians have assumed that economic behavior is a learned behavior that is embedded in and therefore

unique to each culture, and that modern Western economic behavior is a relatively recent development, which has only achieved the appearance of universality through colonialism and globalization.[5] These assumptions are sometimes characterized as substantivist, in contrast to formalist economic models, and they imply that economic behavior has changed primarily as a result of cultural change. Many Egyptologists have also adopted a substantivist approach to the ancient Egyptian economy, arguing that market exchanges played a limited role in price formation,[6] and that most distribution occurred through institutional redistribution,[7] or through reciprocal gift-giving,[8] even in riverbank marketplaces,[9] and in long-distance river trade.[10]

More recently, however, there is a growing recognition among ancient historians that the formalist–substantivist dichotomy is overly reductionist,[11] and that economic behavior results from a complex and dynamic interaction between biological imperatives and bounded economic rationality, individual experience and social networks, cultural norms and legal and political institutions.[12] Some Egyptologists have similarly questioned whether purely formalist or substantivist models can explain the ancient Egyptian economy.[13] This book will therefore employ a New Institutional economic approach, which examines the relationship between changes in economic behavior on the one hand, and cultural norms, legal and political institutions, and technological innovations on the other. This approach has been used profitably in the Aegean,[14] but has not yet been applied to ancient Egypt. The ancient Egyptians would not have thought in these modern terms, but their behavior would nonetheless have been constrained by the institutions that these terms describe.

NEW INSTITUTIONAL ECONOMICS

Ronald Coase formulated some of the basic principles of New Institutional Economics in 1937, though the name was coined much later to distinguish it from the earlier school of Institutional Economics associated with Thorstein Veblen. Coase noted an apparent paradox in neoclassical economic theory. The market was supposed to be efficient and self-organizing through the price mechanism, and yet firms did not organize themselves through the price mechanism. Firms employed entrepreneurs and managers to allocate resources and labor through redistribution, rather than contracting out every business activity. Coase resolved this paradox by proposing that there were transaction costs involved in using the market, which could be avoided by conducting business within firms. He cited sales taxes as a concrete example, but he argued that other transaction costs arose from uncertainty, such as the cost of discovering the prices for various activities on the market, or the cost of negotiating and writing innumerable short-term contracts instead of a few long-term ones. Of

course, firms also had internal transaction costs, many of them inefficiencies arising from not using the market.[15]

Other economists have elaborated the concept of transaction costs, subdividing them into search costs, measurement or information costs, negotiation or bargaining costs, and enforcement or policing costs. Search costs arise from finding opportunities for exchange, from locating potential exchange partners, and from identifying the most appropriate exchange partners. Marketplaces, fairs, bourses, commodity and stock exchanges, and internet lists can lower search costs, because they bring potential exchange partners together and allow them to compare offers for exchange. Measurement or information costs arise from defining and comparing the quantity and quality of goods offered for exchange; they are sometimes treated together with search costs, or with negotiation costs. Physical marketplaces and fairs can lower measurement costs by allowing comparison of goods on offer, as can the use of official weights, measures, and certificates of quality and purity. Negotiation or bargaining costs arise from establishing terms of exchange acceptable to both parties, such as the place, time, and form of payment and delivery. Customary terms of sale, sanctioned by law, can lower negotiation costs. Enforcement costs arise from establishing and enforcing property rights, and from recording and enforcing agreements for the exchange of property rights. Effective legal institutions backed by a centralized state can reduce enforcement costs. On the other hand, new technologies such as the Internet have increased enforcement costs for intellectual properties.[16]

Douglass North championed the use of new institutional economics and transaction costs in economic history. North suggested that transaction costs could be used to understand ancient as well as medieval and modern economic history. He accepted the substantivist assertion that nonmarket allocation systems predominated for most of history, and that market-based neoclassical models can therefore only explain a small fraction of historical economic behaviors. However, North disagreed with the substantivist assertion that markets and economic rationalism did not develop until the early modern era. Instead, he argued that nonmarket and market allocation systems have always coexisted, and that the choice between them is an economically rational one determined by transaction costs. North cited Coase's assertion that modern firms exist because nonmarket firm-internal transactions have lower transaction costs than firm-external transactions in the market. By analogy, ancient nonmarket allocation systems presumably existed because they too had lower transaction costs than the available markets. This could easily occur if the transaction costs of ancient markets were high, as a result of limited numbers of suitable exchange partners, limited information about such partners and their goods and services, and limited enforcement of transaction agreements.[17]

Enforcement

North identified the key institutions that governed economic choices as property rights, the state, and ideology. He argued that property rights were dependent upon effective third party or state enforcement, and the effectiveness of the state was in turn dependent upon ideology. He argued that the interaction between these institutions determined the transaction costs of available economic options, and thus shaped individual economic choices and the economy as a whole.[18] Douglass North and Robert Thomas argued that in medieval Europe, rulers enforced overlapping property rights that maximized their revenues in the short term, but discouraged private individuals from making long-term improvements to property, investments in trade, or technological innovations, because many of the benefits went to other parties or "free riders."[19] In early modern Europe, however, some emerging nation-states began to enforce private property rights that encouraged private individuals to make improvements, investments, or innovations, because the individuals could expect to retain the bulk of the resulting benefits. The nation-states enforced these private property rights, even though they restricted their revenues in the short term, because the resulting long-term economic growth allowed them to capture more revenues, particularly from trade, even though they constituted a smaller proportion of the economy.[20]

North has emphasized the importance of third party or state enforcement of property rights for economic growth in early modern Europe,[21] but he and others recognized that formal or hierarchical organizations could also enforce property transfer agreements, particularly within weak or fragmented states, or between them. In the twelfth and thirteenth centuries CE, merchant courts at the Champagne trade fairs in northern France enforced a private "Merchant Law" on traders between northern and southern Europe, who often did not know one another, and frequently came from regions under different legal authorities. The courts recorded agreements such as those for future delivery, and banned traders who failed to deliver or who delivered inferior goods from future participation.[22] In the thirteenth and fourteenth centuries CE, merchant guilds evolved in late medieval Europe to compel rulers to guarantee the security of foreign merchants and their property. Rulers were loath to provide guarantees unless forced to do so, but individual merchants lacked the leverage to force them. Merchant guilds could compel all of their members not to trade with cities whose rulers did not provide security, creating effective embargoes that could compel rulers to provide security. In Italy, trade was dominated by a few major cities whose governments acted like merchant guilds to compel trading partners to provide security to their merchants. In politically fragmented Germany, however, the Hanseatic League coordinated merchants

in numerous cities to the same ends. In early modern Europe, politically integrated states like England took over the functions of merchant guilds.[23]

Avner Greif has argued that informal or nonhierarchical organizations could also enforce property transfer agreements. In the eleventh and twelfth centuries CE, a group of Jewish merchants in the Muslim part of the Mediterranean, known as the Maghribi traders, emigrated throughout North Africa and the Levant, where they served as agents for each other. The members of this coalition operated under a variety of legal authorities, so they could not enforce agreements through a legal system. They, therefore, agreed that if one member accused another of cheating, the remaining members would refuse to deal with the cheater again, effectively depriving him of his livelihood. The long-term cost of cheating, therefore, far outweighed any short-term profit, and thus served as an effective deterrent.[24] Greif argued that the Maghribi traders' collectivist cultural beliefs encouraged sharing of information and collective enforcement, in contrast with contemporary Italian Genoese merchants whose individualist cultural beliefs discouraged the same behavior.[25]

The ancient Egyptian state was primarily interested in enforcing its own property rights for tax collection purposes. It did enforce individual property rights, but only insofar as they increased the efficiency of state revenue extraction. Consequently, responsibility for enforcing individual property rights was frequently shared with a variety of formal and informal organizations, or even private social control. This is most evident in the early first millennium BCE, when the Egyptian state fragmented and the temples took over the responsibility for enforcing property transfer agreements.

Documentation

This study will argue that the ability of states, organizations, and collectives to enforce property rights and property transfer agreements depends in part on documentation. Increasing use of documentation to hold individuals accountable across space and time lowers enforcement costs, and increasing collection and preservation of data to predict future outcomes lowers information costs. This applies to the initial development and subsequent diversification of applications of writing, as well as to the modern advent of digital documentation and the exploitation of big data.

Documentation existed before writing, of course, in the form of witnesses, human memories, and testimonies. Memories of important transactions could be strengthened and reinforced with accompanying public spectacles and rituals. In the ancient Near East, the development of writing did not immediately replace such nonwritten documentation, and indeed even now it has not fully done so. Furthermore, studies of writing in the ancient Near East have shown that it can serve several different documentary roles, which usually coexist,

though their relative significance may vary.[26] At one level, written documentation can be used to hold writers accountable and to enforce obligations. Writers retain documentation in case they are audited, so it does not have to be organized for accessibility to others.[27] At another level, written documentation can be used collect data in order to predict future outcomes, and make planning decisions based on these predicted outcomes. Documentation is retained and organized for accessibility to others for easy access and regular consultation.[28]

Egyptian history began with the invention of hieroglyphic writing at the end of the fourth millennium BCE. In the earliest periods of Egyptian history, the quantity and variety of written records was extremely limited. Most of the surviving economic records from the third millennium BCE concern state taxation and redistribution, and relatively few concern private transactions. In the course of the second millennium BCE, written records became more common and varied, and private records of transactions increased in number. In the first millennium BCE, the state finally began to document private transactions as well as state taxation and redistribution.

Older studies of the ancient Egyptian economy assumed that writing became the primary form of documenting economic activities after its invention, and that the surviving written documentation is representative of ancient economic activities. These studies have suggested that state redistribution dominated the ancient Egyptian economy in the earlier periods.[29] More recent studies have recognized that witnesses, memories, and oral testimonies continued to document economic activities alongside writings, that some activities were more likely to be documented in writing than others, and that the use of writing gradually increased through time. The surviving records are thus a biased sample, because the memories and oral testimonies of witnesses have not survived, except when they were committed to writing. These studies suggest that in the earlier periods the state chose not to document private transactions, and that the predominance of state taxation and redistribution in the surviving documentation from those periods overstates their role in the economy.[30]

Recent studies have also emphasized the limitations of the ancient Egyptian use of documentation. Chris Eyre observes that information collected in local documentation was rarely passed on to the central administration and if so only in summary form.[31] He asserts that the central authorities could not easily audit local documentary archives either, because they were rarely cataloged and indexed except in the memories of the local officials and transacting parties who possessed them.[32] Finally, he suggests that ancient Egyptian documents frequently required their scribes or possessors to authenticate them and interpret them, because they were effectively *aides-memoires* with little or no independent authority.[33]

This study, however, will argue that written documentation did preserve and transmit information that the state could use to hold its agents and subjects accountable and thereby enforce their transactions, despite all these shortcomings. The central administration may not have received much local documentation, but it was alerted to possible irregularities when agents or officials failed to meet their targets or when there were complaints against them, and when transacting parties signaled a dispute. The central authorities may not have been able to directly audit local documentary archives, but they could access them indirectly through audits of agents and officials and trials involving transacting parties, who would be obliged to produce them as evidence. Finally, the ancient Egyptians were well aware of the shortcomings of both written documentation and oral testimonies. They usually evaluated them together, and their judgments were based on the relative quality of both types of evidence.

This study will further argue that the Egyptian state always privileged the documentation and enforcement of state revenues over those of private property transfers, but the difference in documentation, enforcement, and transaction costs steadily decreased through Egyptian history, thereby reshaping the Egyptian economy. In the third millennium BCE, the state fostered the use of written documentation primarily to enforce the collection and redistribution of state revenues, because it increased the efficiency of extraction, which more than offset the additional costs of the written documentation. On the other hand, the state did not support written documentation of private transactions, perhaps because it had no effective means of taxing private transactions, and thus could not recapture the additional costs of written documentation. In turn, this differential use of writing, and the resulting difference in enforcement and enforcement costs, may have meant that "investment" in state redistributive networks, through state service for example, was less risky and more attractive than investment in property or participation in entrepreneurial property transfers. The predominance of state taxation and redistribution in the surviving documentation from the earliest periods may overstate its role in the economy, but it may also reflect its privileged, favored status.

In the second millennium BCE, the state began documenting individual rather than collective tax obligations, primarily to eliminate free riders and increase efficiency of tax collection. This documentation could also be used to enforce private title to property, but it did not regularly record transfers of title, and consequently was of limited use for enforcing private property transfers. Only in the early first millennium BCE did the state and its agents began to encourage written documentation of private transactions, through temple notaries. The differential use of writing for state and private transactions diminished, and with it the difference in enforcement and enforcement costs. Investment in property and entrepreneurial property transfers became more competitive with "investment" in state redistributive networks through state

service, and hence became more common in both the archaeological and the written record. Increasing material investment in heavily built "tower houses" in the later first millennium BCE parallels increasing numbers of house sales in the same period.[34] Nonetheless, the state continued to privilege documentation and enforcement of state transactions over private ones, and the price of land remained relatively low throughout the pharaonic period.[35]

Chris Eyre has argued that the Egyptian state increasingly encouraged documentation of private transactions in the first millennium BCE, because the governing regimes were increasingly of foreign origin, Libyan, Nubian, Persian, and Greek, composed of military rather than scribal elites, who could not always speak Egyptian.[36] He suggests that it was the need for these colonial regimes to inform themselves about native custom in order to control native behavior that led to the social disembedding of native Egyptian written culture.[37] This study, however, will argue that the Egyptian state encouraged documentation of private transactions in response to changes in the media of exchange that allowed the state to tax and recapture the costs of documenting private transactions.

Media of Exchange

Most economists would agree that fluctuations in the money and credit supply have a profound effect on economic behavior. This study will argue that money is also a socially constructed economic institution, and that changes in its construction also affect both the money supply and economic behavior. Modern monies simultaneously serve at least three different functions, as a measure of value, a medium of exchange, and a store of wealth, but some ancient monetary systems employed many commodities for different purposes. Gold, silver, and copper only slowly came to fulfill all of these purposes simultaneously, and only gradually replaced most other commodities. This reduced some of the information costs of comparing the values of different commodities, and some of the search costs of finding parties with suitable commodities to exchange, because gold, silver, and copper served as measures of value, were always suitable to exchange, and could be stored indefinitely. The adoption of coinage further lowered information costs, because states used die stamps to certify and guarantee the weight and purity of individual pieces of gold, silver, and copper.

Some scholars assign the invention of coinage a privileged role in this development, associating it with major changes in economic behavior in the Aegean starting in the seventh century BCE. David Schaps links the invention of coinage with a growing reliance on market exchanges as a source of livelihood,[38] with increasing use of short-term rather than long-term contract labor, including mercenary soldiers,[39] and with the development of commercial

credit.[40] Others, however, argue that the invention of coinage was only one step in the incremental development of money. Christine Thompson has collected archaeological evidence from the Levant dating from the twelfth to the seventh centuries BCE, showing that lumps of silver (*Hacksilber*) were sometimes placed together in bags, often of standard weights, and then sealed with stamped clay bullae to certify their weights. It was then a small additional step to stamp or seal lumps of silver of standard weights, rather than bullae attached to bags containing these lumps, and thus to invent coinage in Lydia in western Anatolia.[41] John Kroll has argued that lumps of silver were also used in the Aegean in seventh and sixth centuries BCE, prior to the widespread adoption of coinage.[42]

Still other scholars have noted that in the ancient Near East silver was used as a measure of value, a medium of exchange, and a store of wealth already in the late third millennium BCE, although not for every transaction nor in great quantities.[43] This use of silver increased through time. In the Neo-Assyrian empire, copper was more commonly used than silver in exchanges in the eighth century BCE, but silver became more common in the seventh century BCE, perhaps due to an influx of silver tribute following the great expansion of the empire.[44] In the Neo-Babylonian empire, Babylonian temples in the seventh and sixth centuries BCE regularly obtained silver through donations, payments of rents and tithes, and sale of commodities, and they regularly used it to pay dues to the crown, parts of salaries to personnel, and to purchase commodities.[45] In the Achaemenid and Seleucid empires, the amount of silver probably continued to increase in the sixth through first centuries BCE.[46] As the amount of silver in circulation increased, some economic changes attributed to the invention of coinage in the Aegean also occurred in the ancient Near East, before the widespread adoption of coinage. The development of tax farming, banking, and commercial credit in Babylonia, particularly from the seventh century BCE onward, is an example of this.[47]

For much of Egyptian history, the Egyptians used a variety of commodities as media of exchange, measures of value, and stores of wealth, which are the three main uses of money. Grain, cloth, and copper predominated in the third millennium BCE, while gold and especially silver gradually became more common in the course of the second and early first millennia BCE. The Greeks began bringing silver coins to Egypt in the sixth century BCE, and the Egyptians began minting imitations late in the fifth or early in the fourth century BCE. They began minting bronze coins in the late fourth century BCE, and their use spread in the course of the third, second, and first centuries BCE. Some Egyptologists have emphasized that commodities like grain performed all of the functions of money.[48] However, while grain and cloth were sometimes used as stores of wealth, they were obviously not as concentrated or durable as copper and especially silver and gold, and indeed were

ultimately superseded by the latter as they became more common. There is, however, growing recognition among numismatists that the increased use of lumps of gold and especially silver in Egypt in the early first millennium BCE was transitional to the use of coinage in the later first millennium BCE, and that for several centuries the Egyptians treated Greek silver coins as convenient lumps of silver. This study will therefore emphasize the transformative role of the increased use of silver rather than the introduction of coinage. Increasing use of silver permitted the state to exact taxes on exchanges as a fraction of the value of the exchanges, and the state thereby acquired a fiscal interest in documenting, enforcing, and indeed encouraging private transactions, because it could recapture the costs of doing so and derive revenue from sales taxes. In turn, state documentation and enforcement of private transactions and transfers encouraged investment in property, by reducing title risks.

Redistribution, Markets, and Entrepreneurial Activity

Coase suggested that some transactions can be conducted more efficiently in markets, and some more efficiently in firms using nonmarket allocation systems, and that transaction costs determined the boundaries between the market and firms.[49] Williamson elaborated that simple and nonspecific transactions involving standardized, interchangeable commodities, or short-term labor contracts involving unskilled labor, tend to be efficient in markets, while complex and idiosyncratic transactions involving commissioned products, or long-term labor contracts involving skilled labor, tend to be efficient in firms.[50]

In the ancient Near East, there were no profit-maximizing corporations, and many state organizations, temples, and households were at best risk-minimizing and rent-seeking. Nonetheless, some state organizations, temples, and households did undertake entrepreneurial activities, and behaved like firms.[51] In Mesopotamia, patrilineal inheritance was dominant, some households were relatively long-lived, and a few were heavily capitalized, especially when their heads also held state or temple offices for successive generations. It is, therefore, often difficult to distinguish state and temple offices from the households of their office holders, causing some to debate whether Mesopotamian states were patrimonial societies with a bureaucratic veneer,[52] or bureaucracies incorporating patrilineal households.[53] In Egypt, patrilineal inheritance was less prominent than in Mesopotamia,[54] except during the twelfth through sixth centuries BCE as a result of Libyan cultural influence.[55] Most households were comparatively short-lived and lightly capitalized, except when their heads held state or temple offices, which they rarely did for more than a few generations,[56] except during the twelfth through sixth centuries BCE. Consequently royal palaces and temples more often undertook entrepreneurial activities than individual households, employing merchants, craftsmen, and laborers.