2 Equity Shares in Antiquity

locupletare amicos umquam suos destitit, mittere in negotium, dare partis
(he never ceased enriching his friends, sending them upon commissions, bestowing shares upon them)
Pro C. Rabiro Postumo [2.4]

eripuerisne partes illo tempore carissimas partim a Caesare, partim a publicanis?
(Did you not at the same time filch shares when they were at their highest, in part from Caesar, in part from the tax-farmers themselves?)
Pro Vatinium testem interrogatio [12.29]

Cicero (106–43 BC)

A EQUITY CAPITAL AND 'MARKETLESS' TRADING

Trade, Markets and Money

The study of commercial life in antiquity is hampered by the limited and fragmented evidence available. Business activities following the introduction of the printing press in the 15th century are captured in a substantial number of notarial records, merchant archives, toll registers, company records, price *courants*, records of legal proceedings and the like. In contrast, information about Roman, Greek, Egyptian, Phoenician, Babylonian, Sumerian, Assyrian and other ancient civilizations survives in a relatively small number of sources. While archaeology has been able to fill in some gaps, "the general inadequacies of the evidence accentuate the role of conceptualization in historical research" (Bang 2008, p.3). The only sources available deal with a small slice of ancient history and cannot provide enough detail to construct an accurate historical record. In addition, many sources deal only with a particular non-commercial activity (e.g., military campaigns, classical literature, criminal law, royal edicts),

leaving no trace of many aspects of ancient commercial life. Careful examination and scrutiny of sources has to be supplemented by 'artful' interpretation. "Sources are . . . not self-explanatory. They must be interpreted to bring us to the ancient reality" (Bang 2008, p.3).

In modern times, the difficulty of determining specifics of commercial activities in the ancient world is reflected in the ongoing debate over the extent of 'the market economy'. This debate features ideologically charged questions such as 'Was a market economy present at the beginnings of civilization?' Seeking a reflection of modern times in ancient societies, Temin (2001, 2004, 2006), Malmendier (2009) and other economic historians "have gone their own way in creating models that describe how early civilizations might have developed if it had followed the lines of modern individualism at the outset" (Hudson et al. 2002,

Figure 2.1 Stele for Code of Hammurabi in the Louvre

p.19). Ancient historians, anthropologists and sociologists often find alternative explanations of the available sources. For example, an early contribution by Weber (1896/1909) argued that ancient Mesopotamian irrigation systems required continuous supervision, giving rise to complex bureaucratic structures that employed bonded and forced labor on an immense scale. The upshot was an ancient world characterized by despotic states dominating economic life, what Dale (2013) identified as "hydraulic-bureaucratic official-states". In this interpretation of ancient life, there was limited scope for a 'market economy' and the associated use of equity capital in commercial ventures.

Understanding the context of economic life and commercial activity is essential to identifying methods of organizing and valuing equity capital in the ancient world. Polanyi (1957) provided insight into the problem by identifying three essential commercial institutions: trade, markets and money. For Polanyi, trade in ancient Mesopotamia was "marketless", though the precise meaning of this claim requires considerable clarification (e.g., Dale 2013; Cangiani 2011; McCloskey 1997; Silver 1983). In modern times, all three institutions have merged into the market system. Economic historians "tend to assume that the same triadic nexus applied in earlier epochs, and to assume markets to have been the generative and coordinating instance, with trade conceived of as a movement of goods through markets, facilitated by money as a means of exchange" (Dale 2013, p.160). Polanyi and other economic anthropologists, however, such as Finley (1973, 1981), view trade, markets and money as discrete elements that need to be examined independently.[1] Avoiding the argument about economic development based on consideration of the three essential institutions in the ancient world, the 'triadic nexus' still provides helpful structure to interpret the use of equity capital in the ancient world (e.g., Oka and Kusimba 2008).

To see the importance of equity capital in the structure of ancient trade and commercial activity, consider some basic characteristics. For Polanyi, trade was a method of acquiring goods that were not available locally. Goods could be traded for in various ways, not just the price-driven mutually beneficial exchange of the market. As such, market trade was "geared toward making a profit" and was well suited to the use of monetized accounting. However, there was also 'administered trade', in which prices "were fixed largely by custom, statute, or proclamation, and perhaps should not generally be called prices at all" (Polanyi 1966, p.xix).[2] Instead of variable prices for services being set in markets, 'prices' for many important economic activities in the agrarian societies of Old Babylonia and other parts of Mesopotamia were set by fiat, supporting the view advanced by Polanyi (1957) that there was 'marketless trade'. Similarly, in ancient societies money could serve different functions than in a monetized market economy. For example, commodity 'money' of ancient times such as barley could serve as 'currency' in the payment of tribute or taxes with little or no use as a store of value or medium of exchange. This begs questions such as 'What were the methods used to organize and value equity capital in ancient times? Were equity capital shares transferable, and, if so, could the monetary value of equity capital fluctuate? What methods of contracting and accounting were employed?'

In the search for marketless trading in the ancient world, Polanyi (1977, p.124) observed:

> [A] market mechanism is beyond the most nimble spade. While it may be comparatively easy to locate an open space where, sometime in the past, crowds were wont to meet and exchange goods, it is much less easy to ascertain whether, as a result of their behaviour, exchange rates were fluctuating and, if so, whether the supply of goods offered was changing in response to the . . . up or down movement of those rates.

Unfortunately for any examination of 'ancient times' that seeks 'general explanations', ancient historians have gradually come to recognize the extensive commercial diversity of ancient societies and the sometimes dramatic evolution and devolution in commercial practices and laws that took place over time within the same society. It is not surprising that economic historians such as Rostovtseff, Temin and Malmendier, pondering the character of economic activity in

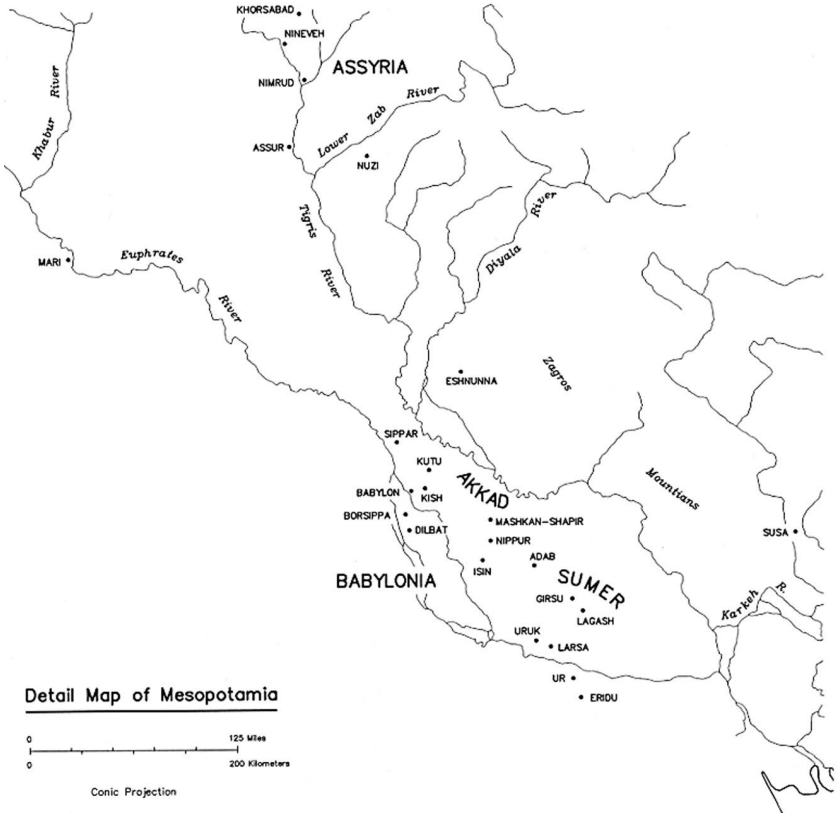

Figure 2.2 Bronze Age Mesopotamia City States

Source: Oriental Institute, University of Chicago

ancient times, seek answers predominately in the Greek and, especially, Roman civilizations. Yet, even Polanyi recognized the emergence of widespread monetized market-driven trade in Greek times, possibly earlier. By Greek times, rudiments of the 'law merchant' governing rules of conduct in commercial practice had evolved, reflecting a level of 'generality' in international trading that was relatively sophisticated in terms of monetized valuation and accounting accuracy.

The historical importance of Roman law governing the usage, organization and valuation of equity capital is difficult to understate. Roman law played a fundamental role in the development of commercial law throughout Europe and, via the mechanisms of colonization, throughout the modern world. Yet, despite numerous sources evidencing Roman civilization, the character of trade and markets in Roman times is not completely clear. That significant bulk trade in goods extended throughout the Roman Empire is well established, if only from archaeological evidence. The works of Cicero and others provide some account of the workings of the *publicani* in tax farming and public works construction. What is often overlooked in the search for evidence of markets, money and trade is the fact that Roman commercial law evolved from laws and customs going back millennia, to a time when a large segment of commercial activity was not purely monetary in character. In turn, relevant laws were shaped by commercial activity of the time and did not evolve in a linear fashion, either temporally or geographically.

The Bronze Age Law Codes in Sumer and Babylon[3]

The earliest form of record-keeping, called cuneiform script, is thought to have begun in Sumer, in southern Mesopotamia, during the 4th millennium BC. It consisted of using a wedge-shaped stylus to make impressions on wet clay tablets (see Figure 2.3). Because many cuneiform documents originated as commercial contracts, especially 'loans' associated with agricultural production, we have considerable information about the evolution of commercial practices throughout ancient Mesopotamia. Accurate interpretation of these documents—which is where the history of equity capital begins—requires understanding of another artefact: the law codes of the various city states that characterized the region.

The law codes of ancient Sumer and Babylonia reflect the symbiotic relationship between the legal codes that have survived from ancient times and the character of trade that is likely associated with such codes. In modern times, the Code of Hammurabi (ca. 1780 BC) of Old Babylonia is the best-known illustration of such law codes (Kent 1903). However, the code of Lipit-Ishtar, ruler of the Sumerian kingdom of Isin, preceded the Code of Hammurabi by as much as 175 years (Steele 1947, p.159). Because laws of this era required the use of written contracts for common commercial activities, a great many cuneiform tablets related to these activities were produced, many of which remain to be interpreted.[4]

Only fragments of the Isin law code survive. However, based on those fragments, there were laws relating to the use of boats, possibly relevant to the

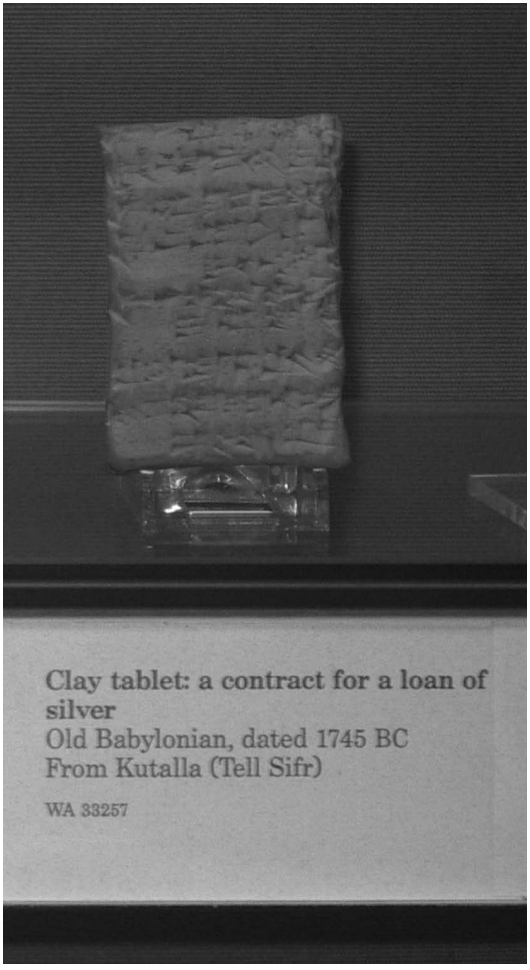

Figure 2.3 Sumerian Cuneiform Tablet, A 'River Loan' of Silver, British Museum Collection

conduct of trade. There were also laws dealing with slaveship, servitude, and feudal obligations. Steele (1947) estimated there were only a little over a hundred laws in the complete Lipit-Ishtar code, compared to over 250 laws in the Code of Hammurabi. Steele (1947, p.162) concludes: "In general, there appears to have been considerable revision of the individual laws and probably even some rearrangement of the laws within the larger groups during the interval between Lipit-Ishtar and Hammurabi. A majority of the extant Sumerian laws, however, find either close parallels or at least analogues in the Babylonian code." The increase in the number of laws likely reflects the increased sophistication of commercial activity by Hammurabi's time.

Unfortunately for our study, sections of the Code of Hammurabi that almost certainly relate to commercial activities and equity capital in particular have been obliterated. However, combining archaeological evidence from 'loan' documents with the laws that have survived gives us a somewhat clear picture of commercial activities. For example, Laws 45 and 46 identify the difference between debt (rental lease) and equity capital transactions in agricultural production:

> 45. If a man rent his field for tillage for a fixed rental, and receive the rent of his field, but bad weather come and destroy the harvest, the injury falls upon the tiller of the soil.
>
> 46. If he do not receive a fixed rental for his field, but lets it on half or third shares of the harvest, the grain on the field shall be divided proportionately between the tiller and the owner.

It appears that landowners were able to take a debt or equity position in the production of grain for the upcoming harvest. However, the situation may have been considerably more complicated. Significantly, Law 46 does establish there were legally defined half or third shares associated with dividing the returns to such agrarian ventures between the source of the equity capital and the laborer, providing some insight into the structure and scope of transactions in which rudimentary pricing mechanisms might have been used. In this vein, it becomes essential to make a distinction between commercial activity within a given state and trade between different states.

Given the agrarian character of economic life in ancient times, many laws deal with agricultural situations. Following two such laws:

> Law 64. If any one hand over his garden to a gardener to work, the gardener shall pay to its owner two-thirds of the produce of the garden, for so long as he has it in possession, and the other third shall he keep.
>
> Law 65. If the gardener do not work in the garden and the product fall off, the gardener shall pay in proportion to other neighboring gardens.

there is then the unfortunate gap in the Hammurabi law code created by obliterated sections of the stele. The code restarts with the following, dealing with trade to other areas:[5]

> 100. . . . interest for the money, as much as he has received, he shall give a note therefor, and on the day, when they settle, pay to the merchant.
>
> 101. If there are no mercantile arrangements in the place whither he went, he shall leave the entire amount of money which he received with the broker to give to the merchant.
>
> 102. If a merchant entrust money to an agent (broker) for some investment, and the broker suffer a loss in the place to which he goes, he shall make good the capital to the merchant.
>
> 103. If, while on the journey, an enemy take away from him anything that he had, the broker shall swear by God and be free of obligation.

> 104. If a merchant give an agent corn, wool, oil, or any other goods to transport, the agent shall give a receipt for the amount, and compensate the merchant therefor. Then he shall obtain a receipt from the merchant for the money that he gives the merchant.

Modern analysis of such laws has revealed the difficulties of translation, context and interpretation. In particular, commercial practice in ancient Sumer up to the Ur III period indicates a high degree of state control, in which 'merchants' (*damgar* in Sumerian) were likely functionaries of the city-temple under the direction of a palace official. The contrast with Old Babylonia of the early second millennium is striking (Van de Mieroop 2002, p.69):

> It is remarkable how the bias of our documentation has shifted from the previous Ur III period. While the 21st century [BC] textual record derives almost exclusively from central institutions, the temples and palaces of the early second millennium are poorly documented as compared to the private citizenry. The large majority of tablets from both licit and illicit excavations were found in the domestic quarter of the cities.

Due to the growth and size of Old Babylonia: "The central institutions 'privatized' many of their services . . . Private individuals acted as intermediaries between institutions and the citizenry, collecting dues, issuing payments and organizing the collection and distribution of resources". This context was favorable to profitable investment of private equity capital in commercial enterprise, leading, ultimately, to an equity capital valuation problem when, say, ventures were completed or where probate was involved. Such situations were managed by the extensive use of written contracts, including some partnership contracts.

B THE OLD ASSYRIAN EXTERNAL TRADING NETWORK

Merchants of Mesopotamia

The change in context across time and geography in Bronze Age Mesopotamia is reflected in the use of *tamkārum* for 'merchant' in Babylonian, which is consistent with the same usage in Old Assyria.[6] While there was a *gal damgar* (chief trader) in ancient Sumer, there were more layers in the process of extending credit to merchants marketing the largely perishable agricultural surplus generated by the Babylonian state. This change in reference reflects the rise of *kārum* (Veenhof 2010, p.42):

> In the Babylonia of the early second millennium BC a system emerged which allowed groups of merchants from various trading cities to settle in other cities, occasionally even—presumably on the basis of political agreements—in those of neighboring territorial states. These merchants were usually concentrated and often lived together with the local traders in a special area,

called *kārum*, "quay, harbor," where they conducted their business in the interest of themselves, their mother-city, and their host city.

Key elements in the commercial activity of 'merchants' were the extent of state control of agricultural production and the importance of trade beyond the borders of the state. In the first and second centuries of the second millennium BC, the borders of the Babylonian state did not extend to the Assyrian territory to the north: "during the first centuries of the second millennium BC . . . trade was the preferred, most efficient, and presumably also the cheapest way of obtaining the materials essential for its highly developed and urbanized culture" (p.41). In particular, the merchants of Assur in Old Assyria traded with Babylonians for wool, textiles, grains and slaves. These were exchanged for tin, copper, silver and other goods obtained through a network of Assyrian trading colonies, of which the important colony of Kanesh in Anatolia has proved a rich source of cuneiform documents.[7]

It is evident from the law codes and numerous cuneiform tablets that there were 'merchants' who invested equity capital in both agrarian production and commercial trade. It is also evident that there was considerable diversity in the specific role of 'merchants' across the various civilizations of Bronze Age Mesopotamia. While Law 46 of the Hammurabi code and other laws indicate that there were conventions surrounding distribution of returns to equity shares in Old Babylonia, rules for equity valuation appear to have considerable flexibility, in which written contracts played a crucial role. While it is the "loan document [that] is probably the most commonly preserved record from ancient Mesopotamia, and the Old Babylonian period (c. 2000 to 1595 BC) is especially rich in such records" (Van de Mieroop 2002, p.163), interpretation of such documents is complicated by the use of the same general contract format for different commercial situations. Without sufficient context, such as why the document was preserved, the tendency is to interpret a given tablet as a 'loan'. It was not until Neo-Babylonian times (626–539 BC) that contracts typically contained accurate dating and identification of the individuals involved, using a three-part name (person's name, father's name, family name), substantively increasing our ability to put documents in context.

While it is difficult to isolate many generalities regarding commercial activity across the millennia of the diverse civilizations of ancient Mesopotamia, it is still essential to distinguish between production within a given area of political control and trade between different areas. It is generally accepted among ancient historians that domestic agricultural production involved the use of debt-bondage contracting similar to the *nexum* contracts of the early Roman Republic, abolished by the *Lex Poetelia Papiria* in 326 BC (e.g., Finley 1981; Skaist 1994; Steinkeller 2002). Such 'loans', which comprise the bulk of surviving tablets from Old Babylonia, were made 'in kind' by wealthy landowners advancing goods to sharecroppers and subsistence farmers. The objective of the 'loan' was typically not to make interest but to obtain the labor and, possibly, the land of the debtor. In the event of default, debtors would make payment by providing bonded labor (either their own or a family member's) for a period of time. Money loans of silver for commercial purposes, such as payment for

goods obtained in external trade, were not common and typically earned a customary 20%.

The extent of control by the political, religious and military structures of the palace-temple organization over the societal wealth used in agricultural production was fundamental in determining the role played by 'merchants' in commercial ventures. For example, in Ur III the state controlled the bulk of agricultural production—that is, "during Ur III times, all arable land belonged to the state, meaning, consequently, that there was no outright ownership of such holdings . . . all arable land available in Ur III took the form of either 'temple estates' or subsistence land, the latter category also including the holdings of the royal family" (Steinkeller 2002, p.115). This situation is substantively different from that in Old Babylonia, where the extent of state ownership and direct control was significantly less and 'loans' were extended to merchants to market the agricultural surplus both domestically and externally. The situation was even more different in Assyria, especially in the Old Assyrian period, in which Assur served

Figure 2.4 Bronze Age Statue of Nannar, Sumerian Moon God

as the hub for a network of trading colonies (e.g. Larsen 1976, 1977; Veenhof 1997, 2010). In this case, state control was muted, and merchants played an important role in state activities.[8]

The Bronze Age was characterized by the spread and adoption of metallurgy required to produce bronze, a combination of mostly copper and some tin[9], which is significantly stronger than unalloyed copper. Bronze was used to produce weapons, agricultural implements, luxury goods such as statutes and the like. Though copper is relatively plentiful in the earth's crust, the acquisition of copper that had already been smelted, as well as tin and especially silver, was an important feature of the external trade of Babylonia and other states of the alluvial plain of southern Mesopotamia. In this trade, silver played an essential role as a medium of exchange and unit of account. Wool, woolen textiles and grains were exchanged for silver that was used to acquire copper, tin, lapis lazuli and other high-value items. More importantly, delivery of silver was the required method of settling the 'loan' that financed the initial allocation of goods involved in the external trade.

Ancient historians do not know with certainty where the tin and silver that Bronze Age Mesopotamians traded for came from. Of these two, tin has remained the more elusive (e.g., Dayton 1971; Stech and Pigott 1986; Muhly 1973; Amzallag 2009). From the perspective of equity capital organization, mining ventures are particularly important due to the possible need to maintain a permanent stock of physical assets. In cases where the mineral source is on the surface—for example, in alluvial deposits—it is possible for ore to be obtained without significant capital resources. However, where the ore body extends below the surface and some type of shaft mining is required, a 'permanent' equity capital investment could be needed (e.g., Richardson 1976). In addition, the impetus for a 'permanent' equity capital stock can arise in the smelting of ore in furnaces (not crucibles) and the establishment and maintenance of the external trading network to distribute processed ore to population centers. In turn, a long-lived physical capital stock is fundamental to the transition of equity capital organization beyond individual commercial ventures where there is distribution of profits and return of equity capital at the end of each journey or harvest cycle.[10]

The Trading Network of Assur

In the absence of detailed information on the organization of ventures for mining tin and silver, attention turns to the external trading networks needed to acquire high-value goods. Due to impressive efforts by ancient historians and archaeologists such as Larsen (1976, 1977), Veenhof (1997, 2010), Dercksen (1996), and Byrne (2003), we have gained substantial insight into the workings of the remarkably "modern" network of external trading colonies of Old Assyria in the first two centuries of the second millennium BC. Unlike in Babylonia and Sumer farther south on the alluvial plain, the more abundant rainfall and ecology of Old Assyria meant significantly less reliance on the 'bureaucratic, hydraulic oligarchies' of their southern neighbors. As a consequence, there was substantially less state control over both agricultural production and

geography. Treaties, rather than military might, were commonly used to support trade between cities. The economic and trading center of Old Assyria was the city of Assur. Veenhof (2010) describes the Assur of this period:

> Assur was not an "imperial" city, with a strong military and a ruling elite supported and supplied by a large productive territory and with income from subjected fringe areas. Its commercial presence in Anatolia and the trade routes through northern Mesopotamia had not been enforced, and could not be backed, by military power, but were based on mutual commercial interests, sealed by treaties.

Unfortunately, the archaeological evidence on the trading networks of Assur comes primarily from Anatolia, where 23 colonies (*kārum)* and 15 trading stations (*wabartum*) have been identified. That there was trading by merchants from Assur with other important trading centers in Mesopotamia such as Mari, Susa and locations in Elam seems necessary, but archaeological evidence is scant.[11]

Absent commercial ventures that require a permanent capital stock, equity capital is invested in single ventures associated with the harvest cycle or the transport and marketing of goods, either domestically or externally. In such cases, equity capital organization is relatively simple. Equity capital shares are generally non-transferable (i.e., illiquid), and valuation is determined at the end of the venture by the return of capital and distribution of shares in the profit from the venture, as determined in the initial contract. However, in Old Babylonia, there was little need for private equity capital to market goods domestically and, in most cases, externally. The state would 'loan' the goods to the merchant,

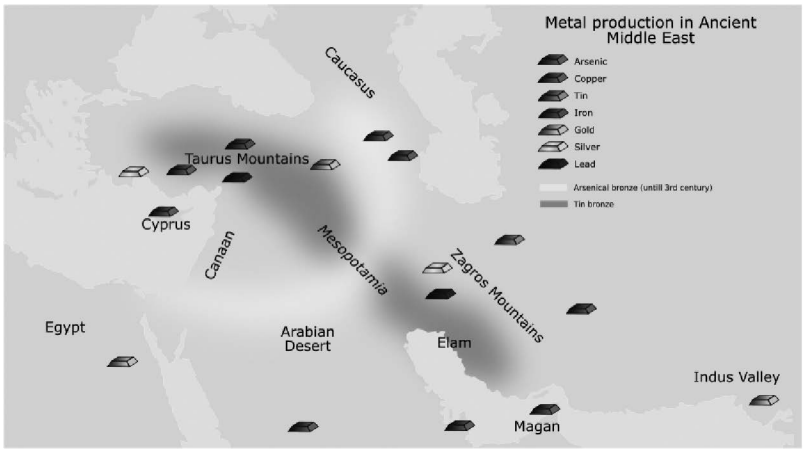

Figure 2.5 A map showing the major sites of metal production in the Ancient Near East, including Egypt, Asia Minor, Mesopotamia, Persia, and the Indus Valley Civilization

Source: van der Crabben (2012) from http://www.ancient.eu/image/350/

requiring the payment of silver at a later date after the sale of the goods. Domestically, merchants would often 'loan' these goods to sharecroppers and subsistence farmers. 'Profit' from such ventures would appear as loan 'interest' and would not have a direct equity capital component. As is common in agrarian economies, considerable capital investment was directed to land ownership. Given the often complicated social issues surrounding land ownership, in cases where equity capital was employed, valuation was driven by the annual profit from the agricultural production cycle.

The situation changed dramatically where external trading involved a permanent network of colonies, as in ancient Assur.[12] Building on contributions by Larsen and others surrounding the substantial archaeological finds at Kanesh, the most important Old Assyrian *kārum* in Anatolia, Veenhof (2010, p.55) identified an important equity capital element:

> The main and probably most successful traders in Kanesh were usually involved in many transactions, at times also together with partners, and many in addition carried out commission sales and purchases for relatives, friends, and women in Assur. Most of these traders had become more independent by having become managers of a "joint-stock fund" (called *naruqqum*, "money bag"), usually set up in Assur. This phenomenon appeared for the first time around 1900 BC and seems to have been an Old Assyrian invention that went beyond individual partnerships and cooperation in a joint caravan. The arrangement, rather similar to that of the early medieval *compagnia*, meant enlisting a number (usually about a dozen) of investors (*ummiānum*, "financiers"), who supplied capital rated in gold, usually in all ca. 30 kilos, ideally consisting of shares of 1 or 2 kilos of gold each. It was entrusted to a trader (the *tractator*), usually for ca. ten years, for the generally formulated purpose of "carrying out trade." The contract contained stipulations on a final settlement of accounts, on paying dividends, on the division of the expected profit, and on fines for premature withdrawal of capital (meant to secure the duration of the business). Investors or shareholders mostly lived in Assur, but successful traders in Anatolia too invested in funds managed by others, perhaps also as a way of sharing commercial risks. In such cases a contract would have to be drawn up in Anatolia that obliged the *tractator* "to book in Assur *x* gold in his joint stock fund in the investor's name." Among the investors we find members of the *tractator*'s family, but also business relations and others, probably a kind of "merchant-bankers," and other rich citizens, who aimed at fairly safe, long-term investments.

Larsen (1977, p.123) made a significant connection between practices of the Old Assyrian traders and those of Jewish merchants documented in the Geniza archive, an important documentary record that commences in the 9th century AD and has been an important primary source on the commercial activities of a network of Jewish traders in the Middle Ages:

> For the Geniza material Goitein has made the observation that "at least one-half of the international trade was based on informal business cooperation

> which could last for a lifetime and even for several generations" and it is therefore not at all surprising that in the similar Old Assyrian system we have not one example of a real partnership contract.

While detailed contracts laying out precise terms and conditions of enduring business 'partnerships' have not survived, Larsen was able to report details of a *naruqqu* contract (p.124):

> Landsberger has published the one known *naruqqu*-contract, a tablet which is now in the museum in Kayseri. It starts with a list of personal names, each connected with a sum of gold, i.e., the names of the investors and the size of their investments. At the beginning two lines are missing, and it can be seen from the rest of the text that the two names must have been connected with a total investment of 6 minas of gold; five men are noted for 2 minas each, four for 1½ mina, two for 1 mina, and one person is booked for 2½ minas. At the end of this list we find the name of the man who was entrusted with this *naruqqum*, a certain Amur-Igtar, and he is credited with an investment of no less than four minas of gold. The main body of the text continues as follows:
>
> > In all: 30 minas of gold, the *naruqqum* of Amur-Igtar. Reckoned from the eponymy Susaja he will conduct trade for twelve years. Of the profit he will enjoy (lit. "eat") one-third. He will be responsible (lit. "stand") for one-third. He who receives his money back before the completion of his term must take the silver at the exchange-rate 4:1 for gold and silver. He will not receive any of the profit.

After this follows a list of seven witnesses, the first one being the *laputtd'um*-official.

Based on additional archaeological evidence, Veenhof (2010) reported that

> The few contracts we have of the setting up of a joint-stock fund do mention the names of the investors, some of whom are family and business relations of the trader, but others are unknown and some are registered anonymously as *tamkārum*, probably again in order to enable the transfer of shares, e.g. in cases of disputed ownership or in connection with the division of an inheritance.

The fascinating evidence that there may have been trading in *naruqqum* shares, unfortunately, does not also provide detail about the methods used to price the equity capital or the goods involved in such transactions.[13]

An important theme in the early history of equity capital concerns the role of kinship and family relationships. The impersonal character of modern equity markets results in a traded 'price' that is mutually agreeable to both buyer and seller of the equity capital claim. The same is not necessarily the case where kinship and family bonds are involved. Pricing and trading of specific shares could reflect a host of additional factors beyond the 'fair value' of the actual shares. This difficulty is

compounded in ancient markets where scant evidence surrounding specific trades is typical. In this vein, Veenhof (2010, pp.56–7) provided the following useful summary of archaeological and other evidence uncovered in Kanesh:

> A "Kanesh trader" was supposed to invest his own money in his business, but its size and costs made investments, thus financing by others, necessary. This could be achieved in three different ways, perhaps in part by the same persons in different roles. Money could in the first place be obtained in the form of interest bearing long-term loans or commercial credit granted *in natura*, which for those who supplied them were fairly risk-free and yielded a substantial interest of 30% per year. More important, however, was a second possibility . . . the acquisition of capital in the form of a "joint-stock fund" (*naruqqum*, "money bag") supplied by investors, among whom we meet male (rarely also female) members of the *tractator*'s family, and others, rich and commercially interested citizens who aimed at fairly long-term investments with safe returns and a good chance of a share in the profit. Because many traders managed to create such funds, some investors and traders had "shares" in several of them, which could be inherited and sold; such investments, to quote Larsen, "crisscrossed the entire community" and made them "a factor in the creation of social cohesion." Finally, there were also merchants who acted (perhaps it was their specialization) as moneylenders, who supplied commercial loans, when traders experienced temporal shortages of cash, due to delayed caravans, arrears of commission agents, or special expenses (e.g. the purchase of a house).

The extent of family and kinship bonds is detailed further (p.58):

> Relations and cooperation between traders in Kanesh and merchants in Assur were frequently based on family ties, not rarely through several generations, and "Kanesh traders" could enjoy the support and advice of fathers, brothers, or uncles in Assur. They could also figure as their representatives in business and legal matters and in contacts with the city administration, and could provide help to overcome a financial crisis, e.g., by soft loans or acting as guarantors. But Larsen has recently shown that "family firms" as formal institutions did not exist; no "family" occurs as a creditor or debtor and ownership of funds—apart from formal partnerships—was basically individual. After the death of a *pater familias* and the division of the inheritance, his sons carried on independently, even in separate houses in the same colony. This development was perhaps stimulated by the fact that each son acquired his own "joint-stock fund" or inherited part of his father's shares in one, although we occasionally observe that the sons continued to work with their father's business relations, partners, or agents.

There is ample evidence that Kanesh traders from Assur intermarried with the local population, for a variety of reasons, and were able to maintain trading

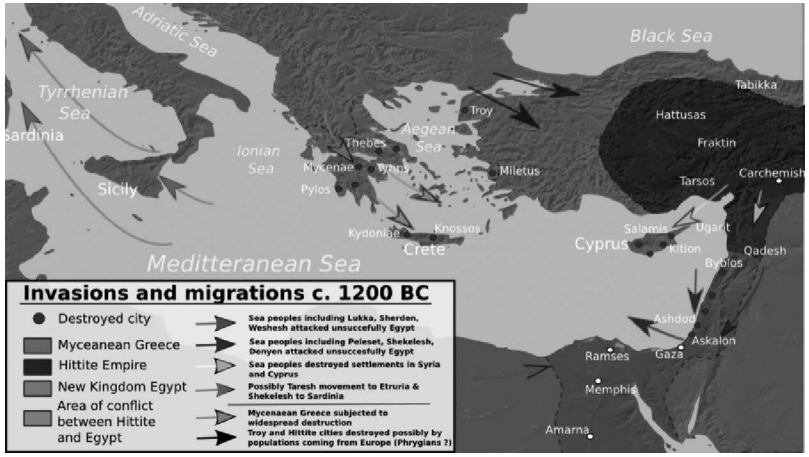

Figure 2.6 Bronze Age Collapse Map, 1250–1150 BC

activities well past the decline in influence of ancient Assur during the second and subsequent centuries of the second millennium BC.

C FROM THE BRONZE AGE COLLAPSE TO THE ROMAN REPUBLIC

Traversing the Bronze Age Collapse

The commercial law of Bronze Age Mesopotamia relevant to equity capital depended fundamentally on the legal concept of partnership and the use of written contracts. Specific practices and terminology differed across time and geography. For example, the *naruqqu* contract used in the external trading networks of ancient Assur does not appear in the evidence from Old Babylonia or Sumer of that time. Similarly, there is diminishing evidence of the contract in ancient Assur following the collapse of the external trading networks with the expansion of the Babylonian empire in Mesopotamia and the Hittite empire in Anatolia. From this, there is considerable distance to travel to the precisely codified Roman partnership law of *societas,* an important benchmark in the legal history of equity capital organization. In addition to the *societas*, the evolution of maritime law captured in the *Corpus Iuris Civilis* of Justinian details the *foenus nauticum* that impacted legal practices in civil law jurisdictions from the Middle Ages to modern times.[14] The contractual structure of 'sea loans'—also known as bottomry loans or transmarine loans—and the often high returns associated with external seaborne trade raise fundamental issues regarding whether and when these so-called loans—*foenus*—were, *de facto*, equity capital transactions.

If the roots of Roman commercial and maritime law relevant to equity capital are to be found in the practices of earlier civilizations, the chronology of such transfer has to traverse the Collapse of the Bronze Age civilizations that commenced around the end of the 13th century BC, often dated 1206–1150 BC. The Collapse severely impacted the Mycenaean kingdom in the eastern Mediterranean, the Minoan civilization in Crete and the Hittite empire in Anatolia and Syria following invasions by the mysterious 'Sea Peoples'. Archaeological evidence reveals destruction of many important trading sites during the Collapse. In turn, the period following the Collapse signals the beginning of an era involving struggles between empires and the subsequent transition of much external trade. This encouraged private merchants into domestic trade activities, significantly changing the commercial context for private merchants who had previously sought profit in external trade. In the emerging era of empires, political or military connections and debt capital assumed greater importance in commercial trade, such as the manufacture of textiles and the transport of goods.

There was a long period from which we have a paucity of details about the use of equity capital, only partly due to the destruction of possible archaeological evidence by invaders. For various reasons, merchants of the important Mediterranean civilizations following the Bronze Age Collapse, unlike merchants of ancient Mesopotamia, did not keep meticulous records. For example, in Hellenic Greece, following traditions inherited from ancient Egypt, verbal contracts using witnesses, instead of detailed written contracts, were common in many domestic commercial transactions.

A more compelling example of a lack of evidence about commercial activity is provided by the seemingly mythical Phoenicians. Despite being credited with the introduction of an alphabet and writing system that has descended to modern times as the Greco-Roman alphabet, what is known about Phoenicia comes largely from sources attached to other civilizations, including some references in the Old Testament.[15] Operating at a time when the power of empires was weakened, using advanced seafaring technology and heavily involved in external trade, the possibilities for profitable ventures using private equity capital seem compelling. Unfortunately, the little direct evidence that remains suggests an alternative course.

It is likely that the failure of certain types of archaeological evidence to survive from ancient Phoenicia is due to the use of timber for construction and religious statutory, combined with the likely use of leather (parchment or vellum) and papyrus for writing. The methods and media used to record commercial transactions contributed to a general absence of surviving commercial records across civilizations from the Bronze Age Collapse to the Middle Ages. Unlike the clay tablets and stylus common in Mesopotamia, papyrus and especially leather were costly to produce and, in the case of papyrus, significantly less durable. This meant that conventional merchant transactions either used less durable methods of recording business transactions or relied on verbal contracts with witnesses. Records on parchment or papyrus were reserved for more socially important items, such as religious text or the writings of philosophers and statesmen. Over time, considerable effort has been given to recovering,

translating and preserving such writings as the works of the Greek philosophers, such as Demosthenes, or the writings of Roman politicians, such as Cicero.

Despite the impact on business records of non-durable writing medium, some written evidence of commercial activity has survived from Egyptian, Greek and Roman times. This is not the case with Phoenicia. Important Phoenician trading sites such as Carthage and Tyre suffered considerable destruction at various times in history. These limitations to uncovering positive archaeological evidence have been compounded by the disproportionate attention given to regions south of Phoenicia associated with biblical history and the negative view of Phoenicians in several sections of the Bible.[16] This general lack of positive evidence about Phoenicia following the Bronze Age Collapse is unfortunate (e.g., Boyes 2012). The collapse of inter-regional trade for part of the 11th century BC was not total. Though the old Phoenician city of Byblos was sacked by invaders, the most important Phoenician trading city at the time of the Old Testament was Tyre, which was spared.[17] The speed with which the revival of inter-regional trade took place "indicates its dependence on what had gone before, and especially in the areas associated with maritime trade. . . . The area which recovered most rapidly was the southern Levant (Philistia and Phoenicia), linked both to Cyprus and now also to the incense-producing areas of southern Arabia, via the west Arabian coast route. This southern Levantine focus was the core region of expansion at the start of the first millennium" (Sherratt and Sherratt 1993, p.364).

Much of what is known about Phoenicia is based on the recovery of artifacts, especially pottery, at trading sites. Combined with other positive archaeological evidence, the extension of the Phoenician seaborne trading network from the Bronze Age Collapse to the middle of the first millennium BC likely included

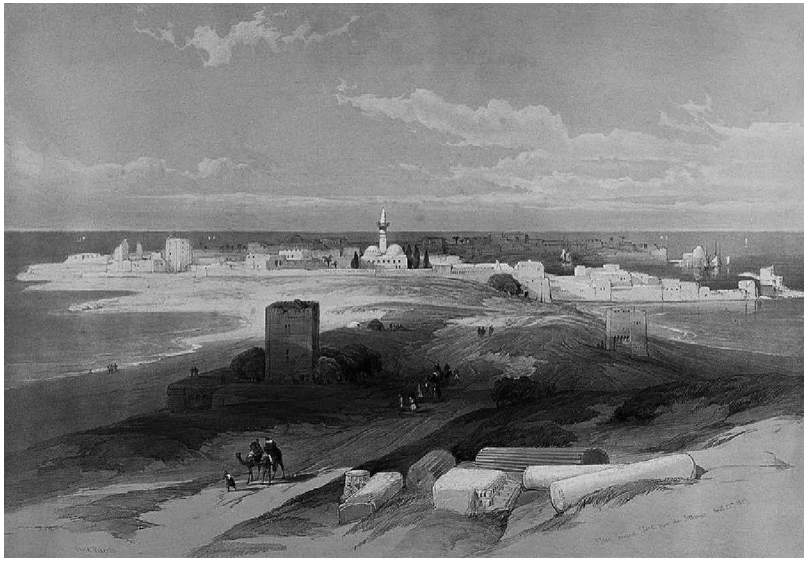

Figure 2.7 The ancient city of Tyre, taken from the isthmus. Coloured lithograph by Louis Haghe after David Roberts, 1843

the Levant, Cyprus, Egypt, Sicily, Northern Africa (especially Carthage), Sardinia, the Mediterranean coast of Spain and, possibly, the Canary Islands and Ireland. Various sections of the Old Testament make reference to Phoenicians (Canaanites), such as the reference to 'Tarshish merchants' in Ezekiel 27:12. Oppenheim (1967) argued the Phoenician trading network also extended into Mesopotamia via caravans. Phoenicians' dependence on mutually beneficial trade with other cultures, typically relying on trading posts instead of colonies, is well established. In contrast, the emergence of Greek seafaring following the Collapse relied more on colonization and encompassed the trading areas of the

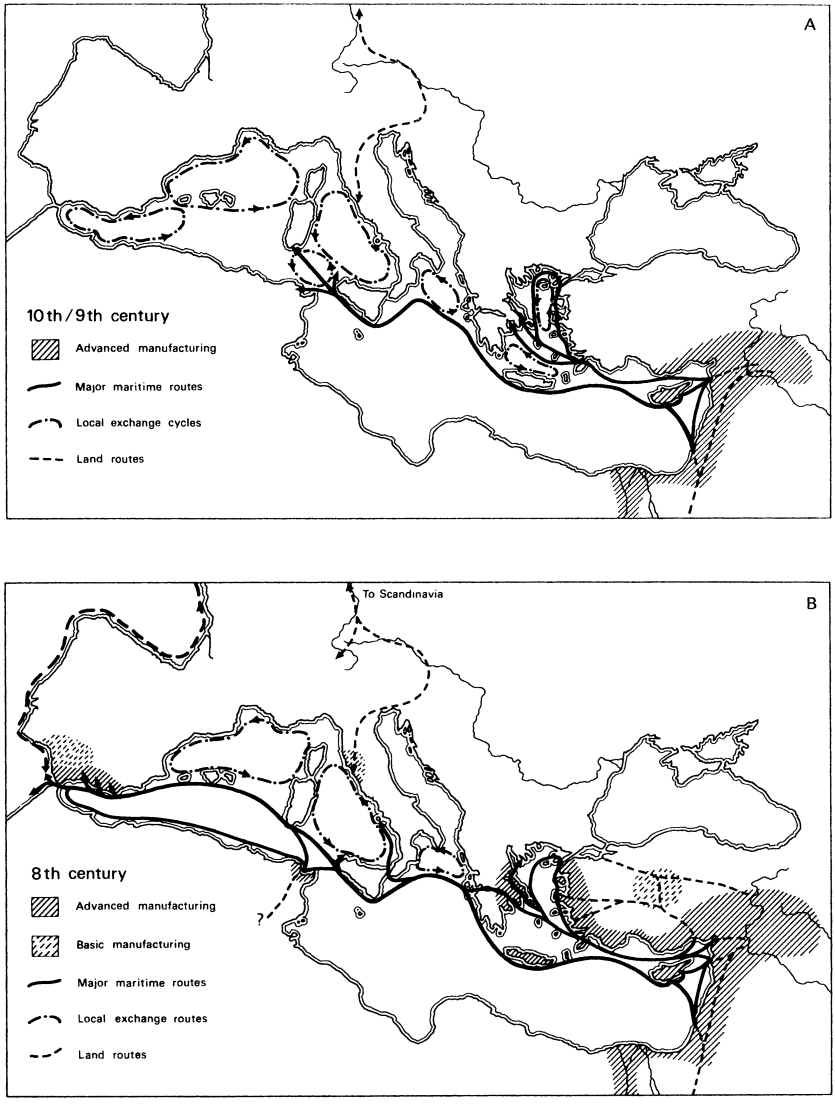

Figure 2.8 (*Continued*)

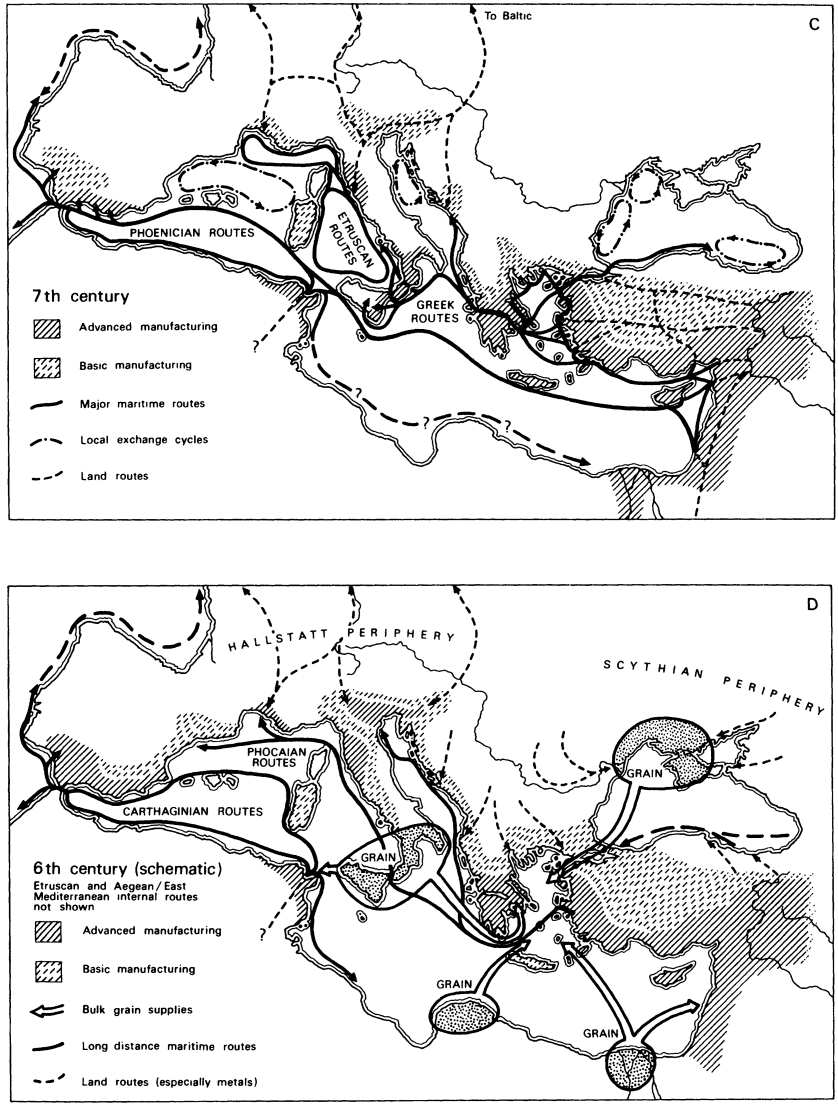

Figure 2.8a–d Phoenician and other trading routes, 10th to 6th century BC
Source: Sheratt and Sheratt (1993, pp.372–3)

pre-Hellenic Minoan and Mycenaean civilizations in the Aegean and parts of Italy (e.g., Boardman 2001).

The place of Phoenicia in the period leading up to the Roman Republic was described by Bikai et al. (1993, p.24) as follows:

> At the end of the Bronze Age, ca. 1200 BC, the decline of both Mycenaean Greece and of Egypt created a power vacuum in the eastern Mediterranean.

> Assyria, Persia, and classical Greece would not be major forces for some centuries to come. During the intervening years, the first centuries of the Iron Age, a center of activity developed that would lay the basis for much of later history, and that center was Phoenicia.

The geographical proximity of Phoenicia with trading centers in Anatolia, and the expansion of the Neo-Assyrian empire westward during this period, suggests a possible adoption of trading practices associated with the Old Assyrian colonial network. However, the archaeological evidence indicates the contrary (e.g., Sherratt and Sherratt 1993; Boardman 2001). The limited evidence available is insufficient to determine the Phoenicians' methods of financing external seaborne trade. Was it similar to the previous use of contracts by the Bronze Age seafarers from Ur in Sumer and Ugarit on the Mediterranean coast of southern Anatolia? Subsequently, the Greeks and later the Romans used sea 'loans' in which a source of capital was the wealthy landed or military classes that controlled political power and were able to extract relatively generous terms.

The Sea Loan (*Foenus Nauticum*)

The financing of long-distance trade is a complicated commercial transaction that evolved considerably over time. The sea loan or *foenus nauticum* contract used in the Roman Empire is described in *Digest* [22,2,1]: "A 'transmarine' loan consists of money carried abroad. If it is spent where lent, it is not 'transmarine'. But are goods bought with the money in the same position? It depends on whether they

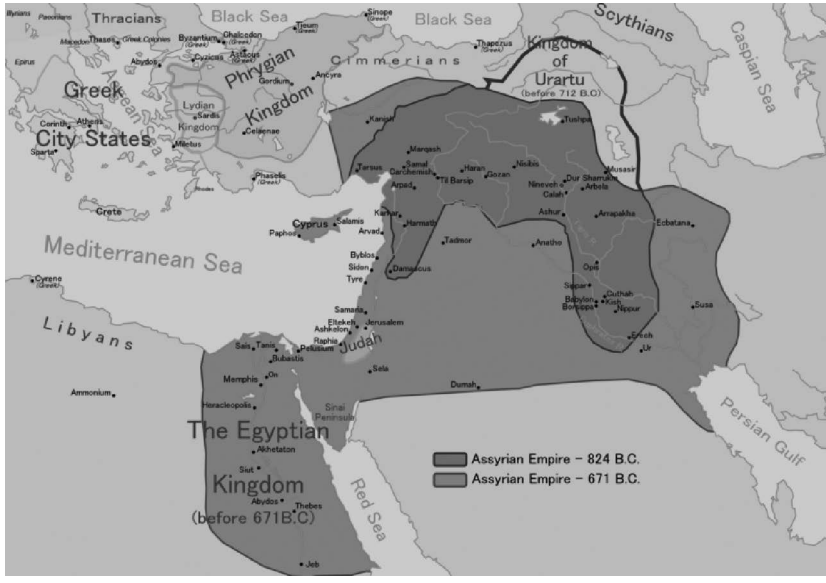

Figure 2.9 Assyrian Empire during the Iron Age

are carried at the lender's peril".[18] *Digest*[22,2,3] further details: "The risk of a transmarine loan is on the creditor from the day on which it is signed". While actual contracts from Greek and Roman times have not survived, considerable information has been gleaned from the writings of Demosthenes (384–322 BC)—for example, *Against Dionysodorus*. This source identifies common Greek practice with interest-bearing sea loans made to ship owners to finance the purchase of cargo for transport and sale in a foreign port. While it is often claimed that Roman contracting methods for financing long-distance trade were adapted from the Greek sea loan, it is also possible that a *societas* of labor and capital with some sharing of profit was also used. An important, if unrecognized, difference between these two methods of financing is that the sea loan involved a formal contract and the *societas* was formed and sustained by mutual agreement, "the *ius fraternitatis* which was intrinsic to the *societas*" (Pryor 1977, p.17).

In determining the meaning of 'usury', medieval scholastics struggled with the classification of sea loan as illicit 'usury' or a special form of licit *societas*. In more modern history, the transaction has typically been sweepingly classified as debt financing when considerable variation in contracting is apparent, over time and locale. Reference to transactions involved in financing long-distance trade as 'loans' has long standing (e.g., Emerigon 1811). Ziskind (1974, p.134) described the conventional view of the transactions as follows:

> In ordinary loans, if money was loaned to buy income property, and the buildings purchased with the borrowed money burned down, the lender's right to demand repayment was in no way diminished, or if a man borrowed money and purchased slaves with the hope that the slaves' productive capacity would generate income to pay off the loan, but the slaves ran away, again, the lender could still demand his money. Not so the bottomry loan. Although the specific terms of the contract varied from place to place and from one people and epoch to another, generally speaking, the transaction operated in the following manner: A shipowner or lessee of a ship would borrow a sum of money to either repair or outfit a ship or to acquire cargo for a one-way or round trip voyage. The loan was secured by hypothecating the ship, the cargo, or both. The obligation to repay the loan became due within a specified time-usually twenty days after the ship and cargo safely arrived at the destination stipulated in the contract. If the security became lost at sea due to pirates, storms, or some other disaster in which there was no evidence of negligence or criminal or fraudulent intent on the part of the borrower, then the obligation to repay the lender with respect to both the principal and the interest was automatically canceled. If the cargo was partially lost, repayment of the loan was usually on a *pro rata* or *ad valorem* basis. It also must be understood that the application of the money is seldom referred to in the Graeco-Roman documents—only that a ship or cargo was being hypothecated, and the loan will be repaid upon the safe arrival of the ship.

This interpretation identifies some fundamental elements of the sea loan: the borrower was a ship owner or lessee, responsible for the loss of the mode of

transport; the borrower pledged collateral to ensure satisfactory completion of the contract; and the lender's funds were at risk in the event of shipwreck or loss of cargo. The interpretation also implicitly has the borrower bearing the commercial risk of being unable to sell the cargo profitably. Given the lender's general inability to be present when the goods were sold, such an allocation of this risk was commercially sensible. However, the risk of monitoring profit generated by the sale of goods varied. In particular, it is well known that long-distance trade in ancient times often involved inter-generational associations of merchants in different geographical locations (e.g., Goitein 1964, p.319). In addition, there was the practice of having a travelling partner or agent accompany the goods. Both of these features change the risk profile for the investor.

A fundamental characteristic of an equity capital financing is the sharing of uncertain profit or loss from a commercial venture. Such sharing of profit and loss is difficult when the investor is unable to adequately monitor the purchase, sale and transport of goods. There are a number of avenues to manage such commercial risks. Based on evidence in the Cairo Geniza, Goitein (p.316) concluded: "the Mediterranean and Indian trade, as revealed by the Cairo Geniza, was largely based not upon cash benefits or legal guarantees, but on the human qualities of mutual trust and friendship". In addition to using merchant networks to manage risks, the Romans were known to have a travelling partner accompany goods on the voyage. It is also possible that modern interpretations have been confused by the translation and interpretation of 'interest' in ancient sources. Given that a higher rate of 'interest' could be charged on a sea loan than a conventional loan, a sharing of profit based on the maximum expected profit from the venture could be determined before the voyage. Prior to Justinian imposing a maximum interest rate on sea loans, 'interest' rates could vary widely. Does an 'interest' rate of, say, 50% reflect a division of expected profit or a risk-adjusted interest rate on a commercial loan?

In a partnership, failure of the venture can result in complete loss of equity capital and, possibly, even further losses. In a venture financed with a 'loan', the profit or loss from the venture falls on the borrower, and, in return, the debt holder is only entitled to 'interest', possibly zero, plus return of principal. In the event of default, the creditor could claim the security pledged against the loan. By locating liability for loss at sea with the creditor, the sea loan differed from a conventional commercial loan. The characteristics of this risk of loss impact the interpretation of financing long-distance trade as debt or equity capital. Though external trade was essential in ancient civilizations, there was a substantive difference in the commercial risks of caravans, river barges and seagoing vessels as a mode of transport. The evidence from the *Digest* on the use of sea loans is applicable to a period of the Roman Empire in which, by the end of the Republic, the risks of piracy had been largely suppressed. There was also considerable political and commercial control in the far-flung regions of the empire. If risk of loss is high and ability to monitor is low, is the commercial rationale for the use of a 'loan' rather than a 'partnership' undermined?

In the financing of long-distance trade, did the *societas* of labor and capital and the *foenus nauticum* differ substantively in the sharing of profit and

loss? Unlike a conventional *societas*, the investor in a sea loan did not share in the commercial risk associated with generating profit from the sale of goods abroad. In the sea loan, the investor was also not responsible for the conduct of business and was not liable for agreements made by the borrower. However, the Roman *societas* was a flexible arrangement that allowed for considerable variation. Adjustment of shares in the profit and loss was permitted by agreement. Payment of a fixed 'share' was permissible. As long as the *societas* was not leonine, each partner could be fully responsible for certain losses. Given this, the key feature separating a *societas* of labor and capital from the *foenus nauticum* was the binding nature of the contract. A *societas* was held together by mutual agreement. The withdrawal or death of one partner ends the *societas*. The *foenus nauticum* had no such right of withdrawal. The contract was formal and binding.

The modern and widely held interpretation of financing long-distance trade in ancient times is reflected in Ziskind (1974, p.134) speaking about the Roman sea 'loan': "the *faenus nauticum* may be considered not as a loan per se but as a kind of maritime insurance in which the money advanced to the shipper served as an indemnity against possible loss, and if no loss occurred, the lender could expect repayment at an amount in excess of the customary or statutory interest rates set for ordinary loans." This common interpretation reflects the modern 'bottomry' loan onto ancient practice. A modern bottomry 'loan' is conceived as a combination of a loan and an insurance policy. The difference between the return on a bottomry 'loan' and, say, a loan of silver in a commercial venture is due to the charging of an insurance premium. In this interpretation, little attention is paid to fundamental context, especially: (a) the details of the parties involved in the contracts; (b) the difficulties of the voyage; (c) the relationship between the size of the 'interest' on the bottomry loan, the customary return on a commercial loan and the typical profit on an equity capital investment in an onshore business; (d) the medium used to effect delivery (e.g., payment in goods or silver); (e) the amount and type of collateral pledged to ensure return of principal; and (f) the maximum profit that could be earned.

Sea Loans in Earlier Times

An important theme in the history of equity capital is how the financing of long-distance trade changed over time. An early work by Oppenheim (1954) provides some essential context on financing during the dynasty of Larsa (ca. 1961–1674 BC) in Ur of the Old Babylonian period. During this time, there was extensive state control over the largely agrarian domestic economic activity, with merchants engaged in domestic trade often working as agents of the state. In contrast, different financing methods arose in the specialized seaborne trade with Telmun (also referred to as Dilmun), an important trading center on the western shore of the Persian Gulf. Telmun was especially important for trade in copper ingots that likely originated in mines in the area of modern-day Oman. It is also likely that goods from the Indus River civilizations and other far-flung regions could be obtained in Telmun. The voyage was likely undertaken in vessels made primarily from reeds and tar. In addition to specialized seafaring

skills and considerable courage, the voyagers would require reliable contacts or agents in Telmun to locate and exchange goods. Special arrangements would be warranted for such ventures.

Oppenheim provides the text of a surviving bottomry 'loan' contract for the seafarers of Ur (p.8):

> The exact nature of the business transactions typically performed in Telmun is unequivocally stated in UET V 367: "2 mina of silver (the value of) : 5 gur of oil (and of) 30 garments for an expedition to Telmun to buy (there) copper, (as the) capital for a partnership, L. and N. have borrowed from U. After safe termination of the voyage, he (the creditor) will not recognize commercial losses (incurred by the debtor) . . . they (the debtors) have agreed to satisfy U. (the creditor) with 4 mina of copper for each shekel of silver as a just [price (?)]".

This contract has two non-standard features for a loan: The 'creditor' cannot hold the 'debtor' responsible for commercial losses that prevent repayment, presumably associated with shipwreck, loss or spoilage of cargo and the like; and the 'creditor' could only demand payment with the 'safe termination of the voyage' when, presumably, the 'debtors' would realize profit from the venture. In addition, there does not appear to be any collateral pledged to secure the 'loan'. Oppenheim (1954, p.9) also reports a transaction in which 'shares' in an seafaring venture were traded, though the mechanism for determining price is not provided. Given all these features, is it more appropriate to refer to this Ur text as a bottomry 'partnership'? Is equitable 'sharing of profit and loss' consistent with the agreement of a fixed payment upon successful completion? Does it matter that the ownership of the boat is not stated?

Over time and geography, the bottomry arrangement varied. Ziskind (1974, p.138) reports a bottomry 'loan' from Ugarit just prior to the Collapse:

> Under the terms of this transaction, the Byblian king borrowed a large sum of money from the king of Ugarit, with an undisclosed quantity of ships valued at 540 heavy silver shekels pledged as security and an additional 50 shekels borrowed against the cargo. Whether these 590 shekels, at least 540 of them of the heavy type, corresponded to the exact amount of the principal is uncertain. It was customary among the Greeks that the value of the hypothecated property be equal to twice the principal in round trip voyages.

Together with Tyre and Sidon, Byblos was one of the important cities of Phoenicia. At this time, Ugarit and the Phoenicians were on good terms. The pledge of security in this arrangement and the presence of kings as parties to the contract changes the context considerably compared to the Ur III contract. Unlike the practice in Ur, Greece and Rome, in which private merchants were involved, in Ugarit of this time, and apparently also in Phoenicia, trade was a royal matter. It is possible, even likely, that the 'creditor' in the Ur text is a royal agent and the

bottomry 'partnership' is closer to an agreement by the state—the creditor—to purchase from seafaring merchants copper for future delivery, with an advance payment of silver to ensure delivery was made. Given the positions of 'creditor' and 'debtor' and the type of transaction, in such a case there would be no need for collateral.

Lack of details makes it difficult to determine the context of bottomry transactions in the period up to and including the Collapse. Information improves significantly as time progressed. For example, the bottomry arrangement of Ur can be compared with the text of a *harranu* partnership contract from private archives of Neo-Babylonian times (Wunsch 2002, p.238):

> Dar 134: "12 minas (of silver of current quality with a mark) of A (are) at the debit of B for a *harranu* venture. Of whatever he (B) achieves (lit. works) with these 12 minas, B will give a half share to A. B must not pursue (lit. go) another *harranu* venture apart from this one (. . .) B guarantees for this capital amount [of 12 minas of silver]. B is in charge of the *harranu* business. 5 witnesses, scribe. Babylon 5/viii/4 Dar (Nov. 8, 512 BC).

In the *harranu* partnership between merchants, the working partner guaranteed the equity capital principal that the other non-working partner had advanced to start the venture. Both partners split any profit, but one partner was responsible if the venture failed. There was also an absence of collateral to ensure the return of principal in the event the venture failed. The close connection with the bottomry 'partnership' of Ur is more than apparent.

Context, translation and interpretation of texts from ancient Mesopotamia face significant challenges. In terms of relevance to modern times, Greek maritime practices had substantial subsequent impact on the more formalized Roman practice: "the Romans were not the sea-faring people that the Greeks, Phoenicians, or Ugaritians were. The Roman maritime law was probably an appropriate adaptation of the laws and usages of the various sea-faring peoples the Romans had come to know or conquer" (Ziskind 1974, p.135). An early work by Finley (1953, p.259) described the bottomry 'loan' in Greece, where more precise information about the context of the arrangements was easier to obtain, as follows:

> In the fourth century B.C., from which our information about bottomry comes, a set pattern can be seen. The loans rarely, if ever, exceeded 2,000 drachmas; they were made for the duration of the voyage (weeks or months, no more); the articles of agreement were detailed and always in writing; interest rates were high, even an annual figure of 100 per cent was not unheard of; all the risks of the voyage, though not of economic failure, were borne by the lender, who held the ship or cargo or both as security for prompt repayment once the vessel was safely back in the harbor of Athens.

The use of written contracts in a commercial venture was not characteristic of Greek commerce, much of which was associated with land holdings. Hellenist

Greece tended to follow the commercial practice of ancient Egyptians, in which verbal agreements and witnesses were typically used. As for the return on bottomry transactions: "Land-secured loans, in contrast, averaged only a little less than the maximum for bottomry and frequently ran to far larger sums. They were often arranged verbally and without interest. When interest was charged, the rate was roughly 10 to 18 per cent". Land-secured loans were usually not for productive purposes, though such loans were made, but rather for consumption purposes – for example, to secure a dowry or to support 'elaborate expenditures'.

For bottomry transactions of the ancient Greeks, some actual 'interest rate' estimates are available. Circa 350 BC, Demosthenes gave accounts of a cargo of a thousand wine casks to be transported in a large oared vessel. When interest rates for regular loans were 12%–18% without insurance, an 'interest rate' of 22½% was charged on the sea loan, with provision for a further increase to 30% if the return voyage was delayed. Such numbers reflect a dramatic change in context compared to earlier times. By the fourth century BC seaborne trade was increasingly reliable due to improved maritime technology, such as larger ship size and better design. Larger oared vessels were more seaworthy and much more difficult to attack, deterring piracy. There was also increased knowledge of sea lanes and ability to plot courses using the stars, reducing the chance of shipwreck. Bottomry arrangements in both Greek and Roman times usually stipulated that the lender had the right to place on board the ship an employee, called a *kermakolouthos* in Greek times, whose job was to see that the lender's interests were not criminally subverted, further increasing the probability that the stated 'interest' would be paid.

Roman Sea Loans

One feature of a bottomry transaction that qualifies it as a 'loan' is the fixed return on the capital provided. Nearing the end of the Roman Empire, the change in commercial context associated with bottomry arrangements was such that the 'profit' from the transaction had become similar to that for money loans. "Before Justinian, the interest rate for ordinary loans was limited at twelve per cent with no limit for maritime loans. In 528 A.D., the interest ceiling was lowered and maritime loans were limited at twelve per cent" (Ziskind 1974, p.134). Kessler and Temin (2007, pp.323–4) documented the use of bottomry arrangements by private merchants in the massive Roman wheat market and identified the use of detailed written receipts (in triplicate) and sealed samples sent with each shipment as a method of reducing losses due to substitution of inferior grain. The extent of seaborne trading required to sustain Rome's demand for wheat, metals and other commodities created various opportunities to 'manage' the risks associated with seaborne trade.

Given the lack of surviving primary sources, precisely how commercial risks of seaborne trade were managed in Roman times is difficult to determine. One often-quoted source is Plutarch's *Cato Maior* [21.6–21.7]. For example, Kessler and Temin (2007, p.318) implicitly referenced this source when claiming:

"Cato's famous statement that he would take a one-fiftieth share in a *societas* that operated 50 ships . . . Verboven insist[s] . . . that 'Cato and the 50 traders simply joined hands to minimize the risks involved in the overseas merchant venture. When the journey was over and Cato's loan to finance the venture repaid, the *societas* would automatically be ended' ".[19] Written during the early Empire, Plutarch's *Cato Maior* [21.6–21.7], states (B. Perrin 1914, trans.):

> [Cato] used to loan money also in the most disreputable of all ways, namely, on ships, and his method was as follows. He required his borrowers to form a large company, and when there were fifty partners and as many ships for his security, he took one share in the company himself, and was represented by Quintio, a freedman of his, who accompanied his clients in all their ventures. In this way his entire security was not imperilled, but only a small part of it, and his profits were large.

Malmendier (2009, p.1089) referenced *Cato Maior* in making the fanciful claim that shares in the *societates publicanorum* were traded:

> Plutarch quotes Cato with the expectation that his readers in the early Roman Empire would understand his boasting. In other words, educated Romans knew about the possibility of buying shares in the *societates publicanorum*.

One problem with the interpretation that this source supports claims of Roman share trading involves timing. Plutarch was discussing the consul and censor Marcus Porcius Cato (*Maior*, the Elder) (234–149 BC), while primary sources on trading of shares are silent until the time of Cicero and Cato the Younger, great-grandson of Cato the Elder, about a century later (Nelson 1950). In addition, the commercial context is different. As a condition for a loan from Cato, borrowers in a sea loan were required to form a partnership in which Cato participated. This is substantively different, in both a legal and a commercial sense, from the tax farming and public works activities associated with the *societates publicanorum* of the late Republic. The source does reveal that senators, consuls and others of high Roman office during the middle Republic did conduct business through others, Quintio the freedman in the case at hand. As for share trading, despite philological issues with the ancient Greek text for 'he took one share in the company', there is no supporting evidence in this source for share trading.

Another problem with this interpretation is that the Cato commercial context being proposed is confusing. A 'share' in a partnership was being purchased, presumably by payment of equity capital at the creation of the partnership, while a 'loan' was being made to members of the partnership. The apparent stability and reduced payment size to the contributor of capital in a sea loan is a result of the substantially lower risk of a zero payout than for those supplying labour. However, there are essential equity capital features of the ancient sea loan transaction. Similar to the Neo-Babylonian partnership, there were Greek and Roman contracts in which one partner would provide financing for the

Figure 2.10 Marcus Porcius Cato (234–149 BC) a.k.a. Cato the Elder

trading venture, while the other partner would do the work, with a predetermined sharing of the profits upon completion of the venture. However, in such cases, the lender's personal liability would no longer be limited to the amount on loan. At least since Weber (1891), the peculiar characteristics of ancient capitalism have been recognized and explored; "political capitalism" (Love 1991) in the Roman Empire. Aside from some direct state-sponsored trade, such as the *annona,* tasked to supply wheat for about 15% of the population of Rome, there was almost complete domination of sea loan transactions by *equites*. Only a few wealthy freemen and clandestine senators, acting through *familiares*, participated, attesting to the importance of politics in the commercial affairs of the Empire.[20]

The evolution of the bottomry arrangement illustrates the difficulties of classifying the source of commercial financing as debt liability or equity capital partnership. One debt-like feature of a bottomry arrangement is the fixed

payment to the creditor. The 'creditor' does not share in the profit beyond what is stated. Yet, modern equity security markets feature fixed coupon preferred stocks that have a set dividend. In this case, it is the inability to force default in the event a dividend payment is not made that determines the classification as equity capital. Translated to the ancient bottomry arrangement, in which the stated return could be 100% or more, not including possible additional gains due to favorable exchange, the return stated in the contract may have been based on an estimated value for a share in the expected profit from the venture. In effect, the equity valuation problem is solved by making a two-state expected value calculation, in which the return in one state is zero and in the other state is the payment specified in the contract. This sharing arrangement would be preferable to one in which an accurate accounting of the profit upon safe arrival in harbor has to be determined based on transactions in a foreign market that could not be observed and would be hard to monitor.

Another characteristic of the bottomry contract, similar to secured debt liabilities, is the addition of collateral conditions in bottomry contracts going back at least to Bronze Age Ugarit. Such conditions were conventional by Greek and Roman times. However, this condition was aimed more at obtaining the agreed payment from profit upon safe return than at ensuring repayment of principal if the venture failed, as was the case in a conventional debt contract. As evidenced by the maritime law in the *Corpus Iuris Civilis* of Justinian (AD 482–565), in addition to the *foenus nauticum,* the ancient Roman jurists discussed such problems as shipwreck, cargo liability, jettison, salvage, and injuries, all relevant to the need to obtain collateral. Another aspect of the sea loan contract that does not qualify as a 'loan' is that the stated 'interest' was afforded separate treatment from customary land- or money-based interest rates. Unfortunately, the absence of commercial records from Old Testament, Greek and Roman times often reflects the attitude of Aristotle (*Politics,* Book I, ch. 11, sec. 5), in which discussing "the various forms of acquisition . . . minutely and in detail might be useful for practical purposes; but to dwell long upon them would be in poor taste". Similar attitudes appear in the New Testament, such as Matthew 21:12, with Jesus throwing out the 'money lenders'.

D *PECULIUM* AND ROMAN LAW OF *SOCIETAS* (PARTNERSHIP)

What Is *Peculium*?

As Pryor (1977) demonstrated, whether bottomry arrangements were, *de facto*, a special type of partnership designed to deal with the hazards of seaborne trade is difficult to determine precisely. Over time, Roman legal notions associated with the *foenus nauticum* and *societas* evolved into the Italian *commenda* and *compagnia* arrangements of the Middle Ages and the Renaissance, which had subtly different features designed to satisfy requirements of medieval canon and civil law. In combination with bottomry arrangements, it was the Roman *societas* that evolved into the modern concept of equity capital in partnerships employed in legal systems of Europe and, through the colonization process,

throughout the world (e.g., Poitras 2000; Musacchio and Turner 2013). However, given the reliance of Roman law on the concept of the individual and the family (*familia*), Roman commercial law did not develop a framework for business organization applicable to the permanent private equity capital stock associated with modern limited liability corporations. While subsequent evolution of the *commenda* and *compagnia* forms of business organization did significantly impact the later organization of equity capital, the widespread use of *peculium* contributed to commercial capital's continued entanglement with the household balance sheet in Roman times (e.g., Abatino et al. 2011).

Interpretation of the role of *societas* in Roman commercial activity requires considerable context. Hansmann et al. (2006, p.1358) described the widespread use of *peculium* in slave-run commercial ventures during the Empire as follows:[21]

> Slaveholding was extensive in ancient Rome, and it was to their slaves that Roman families frequently delegated the responsibility for managing commercial activity. This arrangement was congenial to Roman social mores, under which trade was considered demeaning. Moreover, Rome's slaves often exhibited commercial talent, in part because they frequently were captured in colonial wars with societies such as Greece in which commercial activity was less discreditable. It was common practice for a master to provide his slave (or sometimes his own son) with a set of assets, termed a *peculium*, for use in a business venture. The *peculium*, plus any profits it generated, formally remained the property of the master. The master benefited from the arrangement either by receiving regular payments from the slave, or by offering manumission as a reward for efforts by the slave that grew the *peculium*'s assets. Unlike the *societas*, the *peculium* business exhibited a degree of asset partitioning. Although default on *peculium* debt enabled creditors of the *peculium* enterprise to sue the slave's master, the master's liability was capped at the value of the *peculium* (plus any distributions he had received from it) so long as he had not participated in its management.

The use of *peculium* combined with the rules surrounding the *familia* and the *pater familias* (p.1357):

> the Roman family [was] both large and, from a creditor's view, robust. The family had an indefinitely long life span, remaining intact over multiple generations. Moreover, those persons to whom a family member evading creditors would be most inclined to pass his assets—close relatives, and especially descendants—were themselves part of the same entity and thus also liable for the same debts. The wealth of a single, prosperous Roman family was apparently sufficient to finance the typical commercial firm, thus reducing the need for multi-owner enterprise forms such as the partnership.

As such, a modern connection to the *societas* needs to recognize the significant differences in commercial context arising in Roman times.

The Roman Law of *Societas*

Interpretation and context for commercial legal structures in Roman times need "at least in part to [account for] Rome's reliance on other forms of organization for most business activity. Chief among these alternatives were the family and the *peculium*" (Hansmann et al. 2006, p.1357). Given this, Roman law formally permitted at least two legal structures where merchants could combine together in a commercial venture: the *societas* and the *collegium*. However, while a *collegium* could have a corporate personality, uses for *collegia* were limited to certain social or public activities, such as the organization of fraternal orders for soldiers, and lack relevance to the equity capital used in most commercial ventures. In contrast, a *societas* could be formed for a wide range of commercial and social activities, to be determined by the partners (*socii*). The length of a *societas* was flexible. It could be formed for limited duration (*vel ad tempus vel ex tempore*) or in perpetuity (*in perpetuum*). Malmendier (2009) traced the perpetual *societas* to the ancient custom of *consortium ercto non cito* (partnership by undivided inheritance), in which heirs to an estate decide to administer the inheritance jointly rather than distributing it among the testates. Given the ancient history of partnerships, this begs an archaeological question: Is the Roman treatment of partnership consistent with the treatment of 'family and kinship' partnerships and the disposition of estates in Old Assyria and Babylonia?

In commercial practice, the *societas* had no legal personality in a 'corporate' sense. Partners were responsible for the liabilities of the commercial venture and had the rights to the profits and return of capital as set out in the partnership agreement. As Hansmann et al. (2006, p.1356) observed, beyond this point there is little connection to modern partnerships:

> The simplest ancient Roman commercial form was the *societas*, a term often translated as "partnership" because it referred to an agreement among Roman citizens to share an enterprise's profits and losses. Beyond joint enterprise, however, the *societas* had little in common with the modern partnership form. For one thing, the *societas* lacked mutual agency; each partner had to endorse a contract to be bound by it. Partners also did not stand behind one another's obligations: the default rule of liability when they cosigned a debt was *pro rata* rather than joint and several. More generally, Roman law made no distinction between the obligations and assets of the *societas* and those of its members, precluding the rules of weak asset partitioning that characterize the modern partnership.

A *societas* was formed by simple consent, *consensus* or *affectio societatis,* with each *socius* (partner) making a contribution to the venture that could involve: financial (money) investment; the provision of skills and labor—in long-distance trade during the Republic this was often associated with the contribution of the captain or traveling partner; or in-kind capital such as goods, rights or claims. This has reflections in modern venture (equity) capital 'start-ups', where a corporation is formed with 'shares' distributed to the venture capitalists providing

financial backing and further shares given to the commercial functionaries involved in running the business. Unless otherwise stated in the partnership agreement, differences in the form and amount of 'equity' capital were permissible. In anticipation of the triple contract employed in medieval times, the partnership could also permit differential sharing of profit and loss, with the possibility that a given partner could be exempted from sharing any loss. However, a partnership where a partner was totally excluded from profits (*societas leonina)* was not permitted.

Following Buckland (1963), four main technical forms of Roman *societas* can be identified: (a) the *societas omnium bonorum*, in which the current and future property of partners became common property of all *socii*; (b) the *societas omnium bonorum quae ex quaestu veniunt*, the default commercial format, in which the property covered by the partnership was limited to that acquired for the purpose of the *societas*; (c) the *societas alicuius negotiationis*, probably the most common form of *societas*, in which the partnership was limited to profit and losses for a specific commercial venture; and (d) the *societas unius rei*, applicable to execution of a single transaction, which might not be commercial. Methods of dissolving a *societas* were: (a) *ex voluntate*, where either all *socii* agreed to dissolve or a single partner unilaterally withdrew; (b) *ex personis*, due to the death or *capitis deminutio* of a *socius*; (c) *ex rebus*, where the goal of the *societas* was accomplished or the agreed term of the partnership had expired, typical of bottomry arrangements; and (d) *ex actione*, where one *socius* initiated a suit against one or more of the other *socii* (*actio pro socio*).

Trading of Shares in the *Societates Publicanorum*?

It is conventional to observe that contractual design features of the *societas* worked against development of a group of merchants combining in commercial ventures with a permanent equity capital stock. In particular, a *societas* did not have a legal identify separate from that of the partners. If the partnership was not limited to a specific commercial venture, it was difficult for profit to be distributed over time, instead of at the end of the *societas*. Without the ability to sell and transfer shares, equity capital would be locked in, deterring the development of longer term commercial ventures. Malmendier (2009) and others observed that neither the classical Roman jurists of the Republic or Justinian jurists of the *Corpus Iuris Civilis* were able to construct the legal foundation for a contract that encouraged commercial organizations with a permanent equity capital stock. One "remarkable exception" to this case claimed by Malmendier, Badian and others was the *societas publicanorum*, the partnership of state franchisees. Consistent with the diminishing economic role of the *publicani* and use of the *societas publicanorum* during the Empire, the *Corpus Iuris Civilis* of Justinian only recognized the *societas vectigalium*, the partnership of tax collectors. This has some overlap with the tax-farming activities associated with the *societas publicanorum* of the late Republic, which covered a wider range of activities.[22]

Significantly, it is claimed that the *societaes publicanorum* of the Roman Republic developed a form of public trading in shares. While playing a

fundamental role in tax farming (i.e., bidding on contracts for collection of taxes in specific parts of the conquered territories), the *publicani* were also involved in contracts for the construction and repair of major public works, billeting and supplying of the armies, and working the Spanish mines.[23] Beyond this, there is far from complete agreement among historians. By some accounts (e.g., Rostovtzeff 1957; Malmendier 2009), by the time of Cicero and Julius Caesar, public trading in such shares was conducted at the Forum, in Rome near the temple of Castor. In 59 BC, it is claimed, Cicero provided a description of the trading in such shares (see the quote at the beginning of the section); the *societas* office or individuals already owners of shares were sources for obtaining shares; and it was common practice to trade 'unregistered' shares where purchasers did not become *socii*; both Caesar and Cassius were reported to have done so, presumably to evade the political fallout in the Senate associated with the perception of self-dealing.

Though the roots of the *publicani* stretch to the beginnings of the Roman civilization, the influence of the *societates publicanorum* was greatest during the middle and late stages of the Republic. Under the Empire, the state moved to assume direct control of tax collection. Around 150 BC, the Greek historian Polybius recounted the following about the Roman Republic (Chancellor 1999, p.5) in *Rise of the Roman Empire*:

> All over Italy an immense number of contracts, far too numerous to specify, are awarded by the censors for the construction and repair of public buildings, and besides for the collection of revenues from navigable rivers, harbours, gardens, mines, lands—in a word every transaction which comes under the control of the Roman government is farmed out to contractors. All these activities are carried on by the people, and there is scarcely a soul, one might, say, who does not have some interest in these contracts and the profits which are derived from them.

A Greek aristocrat held as hostage for 16 years in Rome, Polybius examined the growth of the Roman Republic with the aim of aiding Greeks to understand how Rome managed to rise to dominate the region. By the middle of the first century BC, immense tax-farming opportunities were available at auction in Rome and certain provinces, primarily five-year contracts for tax collection in Asia. Arguing for state support of the often abusive tax collection practices of the *publicani,* Cicero observed: "financial confidence and the whole monetary system based on the Forum here at Rome is bound up with and depends upon these Asian investments". In 61 BC, when the *publicani* significantly overbid for the Asian tax-farming contract, Cicero argued successfully in the Senate for releasing the *publicani* from this contractual obligation. The subsequent transition from the Republic to the Empire led to devolution in the role of the *publicani*.

While it is tempting to trace the origins of equity capital trading and, by implication, valuation to the *societates publicanorum*, the historical record is insufficient to sustain such fanciful claims. There is no specific evidence concerning either pricing or trading practices. It is claimed that the *publicani* had

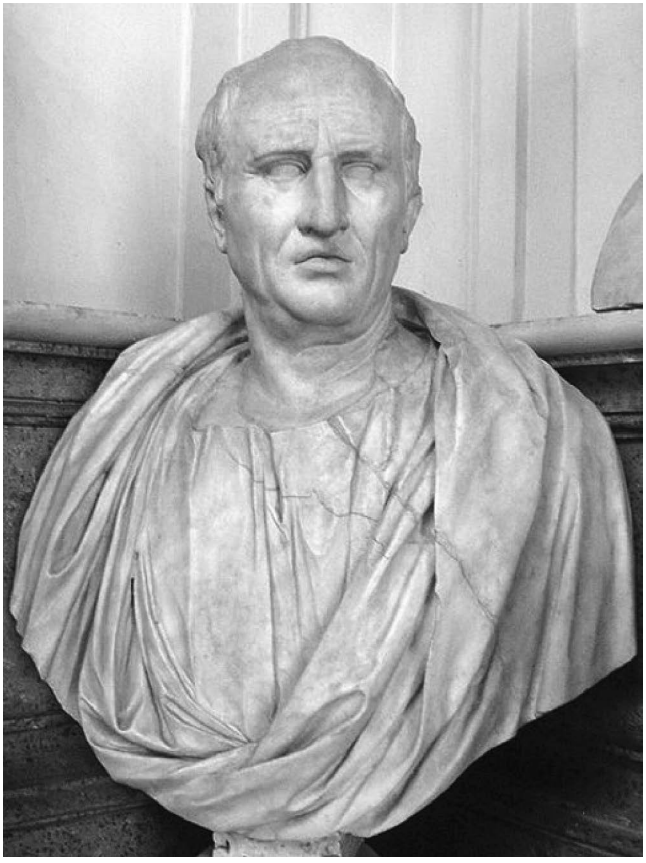

Figure 2.11 Bust of Marcus Tullius Cicero (106–43BC), *Musei Capitolini*, Rome

some elements of modern corporations, with ownership divided into shares (*partes*) with operational control by *magistri* who constituted a board of directors headed by the *manceps* (e.g., Badian 1972). However, Roman law was focused on the individual and had difficulties recognizing rights and duties for associations of individuals outside the *familia*. Following Malmendier (2009), the *publicani* were able to attain the appearance of continuous legal status that extended beyond the period for a particular contract because of the connection with Roman financial administration. In effect, the *publicani* "may be considered as vocational corporations but not as bodies derived from private law. Rather they appeared as political bodies that included social relationships of private law". Legally, contracts were entered into with the *manceps*, not with the *societas*. The specific listing of *socii* on contracts was only relevant to determining the collateral required to ensure fulfillment of the contract.

Though little can be said directly about the extent of trading in *publicani* equity claims, further background on the rigidity of the wealth-determined

Roman social structure is helpful. Duncan-Jones (1982, p.2) observed the rigidity that was formalized by Augustus during the early stages of the Empire: "The Roman state was firmly oligarchic and timocratic. The ownership of wealth was the essential prerequisite for all the high statuses of public life . . . Entry to the Senate, the body of knights (*equites*), the judiciary, and the local town council was in each case controlled by a property qualification . . . The formal structure of civilian wealth qualifications represented ratios of 1:2:4:12 . . . the senator [must have] three times the wealth of the knight." As is common with ancient history, it is difficult to determine the precise degree of rigidity in the *de facto* wealth classifications, especially between the periods of the Roman Republic and Empire. Nicolet (1966, 1974) indicated that, during the late Republic, wealthy *equites* who were the *publicani* were also often involved as moneylenders and merchants, though only a relatively small percentage of *equites* were involved in the public contracts. Recognizing that the *equites* roughly corresponded to the officer class, throughout Roman history building activity by the standing army during times of peace was commonplace. The *publicani* provided an expedient method of organizing such activities and compensating those involved. The organizational skills of past and present army officers were also well suited to the control and direction of large numbers of slaves involved in public works projects.

When the collection of tax-farming revenues was transferred to provincial officials following the reforms of Augustus, the role of the *equites* and the *societates publicanorum* in the tax-collection process changed significantly. Following Hansmann et al. (2006, p.1364):

> When Rome transformed itself from a republic into an empire in the first century B.C., the wealth and influence of the *publicani* drew jealous attention from the emperors, who ordered the state to take over much of the construction of public works. The *publicani* persisted for a time as tax collectors, but repeated clampdowns eliminated them from even this role by the end of the second century A.D.

Instead of being tax-collection contractors with the potential to generate profit from this activity, the role of the military in tax collection within the provinces devolved into managing any fallout from the often aggressive methods used by local tax collectors. Similarly, the role of the military in public construction projects during the Empire was diminished due to the increasing demands from foreign campaigns and sustaining control in conquered territories. While the army was, at times, available for public work construction during the Republic, such opportunities were diminished under the Empire. The organization of such activities was more rigidly controlled, with profits captured by the politically connected families and managed through the *peculium*.

In the unlikely event that senators such as Caesar and Cassius did trade unregistered shares during the Republic, it may have been more for political reasons than for profit. Returns to bottomry loans were likely to be more attractive than *publicani* shares (e.g., Kessler and Temin 2007). As such, the equity capital value of *publicani* shares had a significant political element, unlike modern

equity capital. Available evidence indicates that senators' wealth was based on income from large landed agricultural estates with income from loans or 'usury' of not more than 5%–10% (Duncan-Jones 1982, pp.17–32). Recognizing the substantial difficulties in trading registered shares, in the period leading up to a contract auction it is possible that the Forum was used as a trading venue for those *equites* seeking to purchase a share, and possibly a senator or two and some freemen seeking to trade shares through proxies. However, it is inaccurate to depict such trading as "an immense stock exchange where monetary speculation of every kind was going on" (Cunningham 1913, p.164) or that "crowds of men bought and sold shares and bonds of tax-farming companies, various goods for cash and on credit, farms and estates in Italy and in the provinces, houses and shops in Rome and elsewhere, ships and storehouses, slaves and cattle" (Rostovtzeff 1957, p.31).

Following Chancellor (1999, p.4), the Roman comic playwright Plautus was probably more accurate in describing the Forum as a collection of "whores, shopkeepers, moneylenders, and wealthy men." Polybius's observation about the widespread use of *publicani* contracting in the Roman Republic is consistent with an efficient oligarchic contracting method for determining compensation for the construction of public works and the collection of taxes. Such methods of organizing state tax collection and public duties have roots in Bronze Age Babylonia. The prevalence of 'loans' to members of the military for internal and external commercial ventures is well documented in Neo-Babylonia. As such, the ancient record provides little support for the position of Malmendier (2009, p.1007): "I propose that, contrary to widespread belief, the earliest predecessor of the modern business corporation was not the English East India Company nor the medieval *commenda* but the Roman *societas publicanorum* (i.e., the 'society of government leaseholders')." Insofar as the modern corporation requires a permanent stock of equity capital with transferable shares, those seeking ancient origins of modern corporate organization are advised to examine the colonial trading networks and "'joint-stock fund' (*naruqqum*, 'money bag')" of ancient Assur (Veenhof 2010, p.57).[24]

As with empire expansion in ancient Mesopotamia, the expansion of the Roman Empire led to the internalization of what had been external trade, with a resulting diminution of ventures involving private equity capital in the regions controlled by the Empire. In the post-Actium period, the search for the use of non-household equity capital in commercial ventures in which merchants combined in partnerships shifted to external trade—with regions around the Indian Ocean, with China and with regions of Africa. Following Rathbone (2000) and Fitzpatrick (2011, p.34), this dramatic change in context was because the Roman Empire:

> continually appropriated the wealth of the Mediterranean basin in its own treasury and citizenry through the mechanism of empire. Conquests were obviously profitable, with the massive influx of gold and silver after the Punic Wars; the conquests of Spain and Greece; and the conquests of Egypt, Jerusalem, Parthia, and Dacia producing astronomical inflows of gold and

silver that profoundly affected the Roman economy. It has been estimated that the treasure that Augustus brought back from Egypt saw interest rates drop 60%, and Caesar's plunder from Gaul resulted in a sharp slump in the price of gold. Key assets such as gold and silver mines throughout the empire were also crucial here, directly contributing to the income of the Roman state.

Where trade within the Empire could be carried on by agents ultimately responsible to Rome, trade outside the Empire required specialized knowledge and connections in the various ports of call. In the ancient world, this is the realm of equity capital (e.g., Nadri 2007).

NOTES

1 Temin (2006, p.133) observed: "Previous generations of ancient historians divided into 'modernists', who followed Marx as applied to ancient history by Rostovtzeff (1958), and 'primitivists', who followed Polanyi as applied to ancient history by Finley (1973). Ancient historians today universally argue that these positions are outmoded and counterproductive, but they frequently lapse into one position or the other when pushed." While technically correct regarding the too-general primitivist-versus-modernist distinction, substantive elements of Polanyi's and Finley's arguments about ancient society still receive considerable support, e.g., Greene (2011). For example, Steinkeller (2002, p.111) observed: "Finley's explanation of *nexum* as a voluntary bondage arrangement resulting from an unpaid loan has received broad acceptance among classicists, most emphatically by the British scholar Cornell".

2 Following about 100 laws dealing with family relationships, the treatment of slaves, the conduct of physicians and selling of family into slavery to settle debts, the Code of Hammurabi has about 50 laws like the following:

> 270. If he hire a young animal for threshing, the hire is ten ka of corn.
> 271. If any one hire oxen, cart and driver, he shall pay one hundred and eighty ka of corn per day.
> 272. If any one hire a cart alone, he shall pay forty ka of corn per day.
> 273. If any one hire a day laborer, he shall pay him from the New Year until the fifth month (April to August, when days are long and the work hard) six gerahs in money per day; from the sixth month to the end of the year he shall give him five gerahs per day.
> 274. If any one hire a skilled artisan, he shall pay as wages of the . . . five gerahs, as wages of the potter five gerahs, of a tailor five gerahs, of . . . gerahs, . . . of a ropemaker four gerahs, of . . . gerahs, of a mason . . . gerahs per day.
> 275. If any one hire a ferryboat, he shall pay three gerahs in money per day.
> 276. If he hire a freight-boat, he shall pay two and one-half gerahs per day.
> 277. If any one hire a ship of sixty gur, he shall pay one-sixth of a shekel in money as its hire per day.

3 Dates for important periods in Bronze Age Mesopotamia can only be roughly defined. It is conventional to subdivide the Bronze Age into the Early (3300–2100 BC), Middle (2100–1550) and Late (1550–1200) periods. The Early

Bronze Age in Mesopotamia begins with the empire of Sargon (2350–2330) of Akkad (2350–2200 BC), which ends with the sack of Akkad and the rise of Sumer (2100–2000 BC), ending with the dynasty of Ur III. This is followed by the Old Babylonian period (2000–1600 BC), which includes the Isin-Larsa period (2000–1800 BC) and the reign of Hammurabi (1792–1750 BC). In the north of Mesopotamia, the Old Assyrian period begins around 1900 BC with the Middle Assyrian period commencing with the reign of Ashur-uballit I (1365–1330 BC) and ends with the Bronze Age Collapse. The Late Bronze Age is characterized by the emergence of Kassite rule in Babylon (1531–ca. 1155 BC) following the sack of Babylon by the Hittites in 1595 BC. This period also corresponds with the rise of Assyria. In the Near East and eastern Mediterranean, the Bronze Age Collapse is often dated 1206–1150 BC. This period is associated with the collapse of the Mycenaean kingdom in the Mediterranean and the collapse of the Hittite Empire in Anatolia and Syria in the face of technological advances in iron working, possibly originating in what is modern Bulgaria and Romania. If diffusionist arguments are not accepted, Cyprus is another possible locale. During the Iron Age, there was the subsequent rise of the Neo-Assyrian Empire (934–609 BC) and the associated Neo-Babylonian period (626–539 BC), a rich source of cuneiform documents from both temples and private archives of "prosperous businessmen . . . [though] the surviving evidence of business operations is often limited to records . . . mainly in the form of property titles" (Wunsch 2002, p.222).

4 Given the fragmentary character of the evidence, archaeologists of the ancient world are sensitive to the possibility of 'negative' and 'positive' bias in interpreting sources. More precisely, the absence of any evidence of a particular activity (negative outcome) does not necessarily imply that such activities were not present. Similarly, given the presence of a particular type of evidence (positive outcome), such as loan documents or land titles, it does not necessarily follow that the activities associated with such evidence was widespread or common. Speaking about loan documents from Old Babylonia, Van de Mieroop (2002, p.163) observed: "In order to investigate these documents from an economic point of view, it is necessary to focus on their context rather than their form . . . For private individuals this is usually only feasible when these texts are found in their archival context, unfortunately a rare occurrence".

5 Any presentation of the cuneiform writings for the Code of Hammurabi has to deal with the difficulty of translation of cuneiform script. In addition, in some modern presentations 'laws' are bundled together. For example, Laws 102 and 103 can be combined as "If a merchant lent money to a trader for benefit, and he saw a loss where he went, he shall pay back the principal of the money to the merchant. If, when he went on the road, an enemy made him give up what he was carrying, the trader shall so affirm by God and then shall go free" (Lewin 2003, p.16). The presentation of the Code of Hammurabi used here follows a translation of L.W. King and is consistent with the format used by many archaeologists.

6 There are differing conventions about referencing Old Assyria, with some sources foregoing reference to Assyria, instead referring only to ancient Assur, the main city in Old Assyria. This convention recognizes that the first and second centuries of the second millennium BC—the period when the commercial Assyrian trade centered at Assur reached its zenith—was a time before the emergence of the Assyrian Empire of the late Bronze Age. The era of ancient Assur or Old Assyria was characterized by trade agreements with a network of trading centers in Anatolia and possibly other areas.

7 The merchants of ancient Assur established this network by making treaties between Assur and the state authorities in the different colony locations. There

is evidence that some treaties required a death penalty for trading with Babylonians. For example: "A treaty concluded with a town near the Euphrates, in the area where one enters Anatolia proper, stipulates that the local ruler is forbidden to let Babylonian traders enter his town and, if they do, has to seize and extradite them to the Assyrians to be killed" (Veenhof 2010, p.51). In this fashion, Babylonian traders would be obligated to go to Assur, or vice versa, instead of trading directly with the relevant locations where the Assyrians were obtaining goods. Veenhof (2010, p.44) made the following observations about *kārum* trading: "This so-called '*kārum*-system' was very important for trade and for exploiting the economic potential of the cities and their countryside and even for trade across some territorial boundaries. But, as far as the evidence now available goes, it never developed, not even in powerful states such as Babylon, Larsa, or Mari, into a real 'colonial system', that is a more or less coherent network of traders settled in market-cities and emporia abroad serving the economic interests of a particular empire. What we are rather dealing with here were in essence commercial arrangements that facilitated regional, inter-city trade, in some cases also across territorial boundaries, by groups of merchants from various cities operating in, and from, other cities, preferably capitals and strategically located emporia and market towns. While these merchants were thus important for palaces and rulers in supplying them with required goods or converting their mostly agricultural surpluses—tasks also performed by local traders and occasionally by officials of the palace sent out on particular commissions—they were basically private entrepreneurs."

8 Regarding the positive evidence: "In the case of Assur nearly all our extensive written documentation (nearly 25.000 cuneiform texts, less than half of which are accessible) consists of the archives of ca. eighty Assyrian traders who had settled in *kārum* Kanesh (excavated since 1948), while Assur itself has yielded very little data, also archaeologically" (Veenhof 2010, p.47).

9 The metallurgy associated with production of bronze in ancient times is discussed in Amzallag (2009), Yener et al. (1993), Muhly (1973) and various other sources. An important feature of the technology of metallurgy is the transition from crucibles to open furnace smelting.

10 Even this relatively simple method of equity capital valuation can be complicated. For example, in some Old Assyrian contracts the equity capital would be paid in 'gold' and the return of equity would be valued in 'silver', where the exchange ratio in the contract would be twice the market rate, producing a 100% return to the contributors of equity capital before the 'profit' was distributed.

11 The area of Elam and its important trading center Susa are likely sources of Bronze Age tin. The amount of tin was considerable, so there may have been many small mines from which the tin was aggregated for trading in a central location; and, more likely, there were a small number of large mines sourcing the tin. There is also some evidence of tin having been mined in Afghanistan during this period. Afghanistan was also an important source of lapis lazuli, a cherished semi-precious stone. It is known that Elam was an important trading center for lapis lazuli. The connection with significant Bronze Age tin trading in Elam is only suggestive. Whether merchants from Assur established *kārum* in Elam, and vice versa, is not yet known.

12 Motives for the Anatolian authorities permitting these colonies are provided by Veenhof (2010, p.47): "These settlements had been established on the basis of treaties (called "oaths") concluded between the Assyrian authorities and many local rulers, who allowed the Assyrians to settle, travel, and do business in the various Anatolian 'countries' in exchange for the right to levy taxes on

imported tin (ca. 3%), textiles (5%), and a preempt part (10%) of the latter. These treaties in combination with the efficient colonial organization, commercial skills, good transport and information facilities, agency and representation, and the administrative support of the mother-city of Assur stood at the basis of Assyrian commercial success."

13 Veenhof (2010, p.56) reported the following: "A remarkable feature was that the shares invested gold at an exchange rate of gold:silver = 4:1, while the real rate was 8:1. This means that after the term stipulated the investor would in any case get 200% of his investment back, augmented, if the business had been successful, by one third of the profit." While this claim was not supported by documenting the primary evidence, the possibility of being able to pay in equity capital using gold and receiving return of capital and share of profit in silver has fascinating implications.

14 Justinian (482–565 AD) was emperor of the eastern Roman Empire from 527 to 565. Ziskind (1974) described the Roman maritime law that evolved into the *Corpus* of Justinian: "The sea loan was only one aspect of maritime law the *Corpus* touched upon. The ancient Roman jurists also discussed such problems as shipwreck, cargo liability, jettison, salvage, and injuries. That these subjects should be of interest at all to the Roman jurists is most striking when one considers that the Romans were not the sea-faring people that the Greeks, Phoenicians, or Ugaritians were. The Roman maritime law was probably an appropriate adaptation of the laws and usages of the various sea-faring peoples the Romans had come to know or conquer."

15 Bikai et al. (1990, p.24) observed: "until the late 1960s, the Phoenicians were known mainly from chance finds, from a few excavations at their colonies around the Mediterranean like Carthage and Motya, off the coast of Sicily, and from what had been written about them by classical and biblical authors, hostile witnesses at best. In the 20 years since, there has been great progress, particularly at sites in the western Mediterranean. That progress was marked by a major exhibition in Venice in 1988 . . . which brought together hundreds of Phoenician objects for the first time." The increasing availability of positive evidence provides a benchmark to identify previous finds that were not known to be Phoenician because of the absence of comparable objects.

16 Noting that Phoenicians were likely descended from Semitic tribes, some scholars even suggest an anti-Semitic bias in the lack of searches for positive evidence (e.g., Bikai et al. 1990, p.23), though the credibility of such statements is questionable.

17 There is considerable debate about the extent of the destruction the Sea Peoples inflicted on the Phoenicians (e.g., Gilboa 2005). On this issue, the views of Boardman (2001, p.34) are germane: "We know a lot more about antiquity now than we did fifty years ago, without necessarily understanding it any better". The descriptions of Phoenician history from the late Bronze Age to the early Iron Age are based on very limited archaeological data. The views presented here reflect the loosely held but far from unanimous consensus currently proposed.

18 Given the absence of business records from Roman times, it is difficult to determine how widely used was the sea loan versus *societas* in the organization of maritime trade. Items in the *Digest* are a difficult source; because the *Digest* was prepared during the latter stages of the Empire, it lacks connection with earlier developments. However, the *Digest* lists only nine rulings on sea loans, compared to eighty-four on partnerships. Restrictions on the allowable interest in sea loans during the Empire indicate that a considerable amount of maritime trade was 'controllable' and the perils were lower than in early

periods. Possibly there was some change in the organization of capital needed for maritime ventures around this time.

19 A number of personages are referred to as 'Cato', including Marcus Porcius Cato (234–149 BC), 'Cato the Elder' and Marcus Porcius Cato Uticensis (95–46 BC), 'Cato the Younger' or 'Cato of Utica'. There is also Dionysius Cato, an anonymous author of the *Distichs of Cato* from the 3rd or 4th century AD, thought to be possibly Cato the Elder or Cato the Younger. The *Distichs* became an important work in the Middle Ages for the study of Latin. Both Cato the Younger, a contemporary of Cicero, and Cato the Elder are featured in the *Lives* by Plutarch. Cato the Younger played an important role in the defense of the Republic against the machinations of Caesar. The quote is from the *Lives* of Cato the Elder (XXI) and, as such, refers to commercial arrangements during the middle Republic.

20 The *Lex Claudia* of 218 BC restricted the commercial activity of senators and their sons, a Stoic view that such activity was incompatible with senatorial status. Senators were prohibited from owning ships of greater capacity than 300 *amphorae* (about 7 tonnes), so that they could not conduct the large-scale seaborne transportation associated with bottomry arrangements. As a consequence, the wealthiest individuals in Roman society, the senators, usually operated in such ventures clandestinely—for example, through proxies or agents. Under Augustus (30 BC–14 AD) there was a transition of tax collection from the *equites*-dominated *publicani* to regional governors, causing a transition of *equites* activity to private moneylending and equity capital investments. Consistent with the views of Aristotle and the New Testament, the rationale for the *Lex Claudia* was that obtaining wealth through commercial activities was a lower-class activity. The highest Romans were expected to derive wealth from landholding, government service, and profits from military expansion of the Empire.

21 Despite apparent similarities, the *peculium* differs significantly from the *naruqqum* 'joint-stock' fund of Old Assyria. These differences highlight the character of modern 'equity capital'. Both involve the advancement of capital for a commercial venture. However, the *naruqqum* involves combining the equity capital of different merchants, while the *peculium* is an extension of the *familia*. In effect, the *peculium* had a single owner, the household, entitled to all profits but with limited liability when not directly involved in managing the venture. In the *naruqqum*, profits were shared *pro rata* among the partners. In modern economic terms, the *peculium* is associated with household equity and the *naruqqum* with equity of a firm. Searching for the historical roots of modern equity capital involves a search for firm, not household, equity.

22 As in Bronze Age Babylonia, tax collection was not done by the state but rather contracted, usually to 'merchants' in Babylonia and *equites* in Roman times. Roman partnership law established more permanence for the *societas publicanorum* to allow for the long time periods involved in tax farming.

23 Because aggregate production was primarily agrarian, the bulk goods trade was important in ancient markets. While the movement of higher-value goods by land was the basis of the caravan travel, waterborne transport was the mainstay for moving grain, pottery, wine, oil and other bulky commodities needed to sustain urban centers. Even as late as the Roman Empire, the huge number of grain ships bringing supplies from Egypt and Africa to Rome have left hardly any trace in the archaeological record. As such, the organization of this trade could have been closer to the bottomry loans common in Greek seaborne trade. However, a document from the second century AD, the Muziris Papyrus, provides evidence of political capitalism dominating such trade.

(Muziris was a port city in what is now the Indian state of Kerala.) This interpretation is consistent with the need to have political influence to ease the burden of onerous customs duties and other charges that were common in the Roman Empire, especially after the collapse of the Republic.

24 In general, the search for 'first instances' of a particular form of business organization in the historical record ignores the importance of context and, where relevant, translation and interpretation. Where the ancient world is involved, lack of evidence and the potential bias in interpretation posed by evidence that is available also assume importance. Modern forms of business organization are the result of evolution in commercial practices over the millennia of recorded history. This evolution has been uneven, both temporally and geographically. As a consequence, it is possible to isolate certain features of modern practice, find what appears to be a striking reflection in the commercial practice of some past society, and claim a 'first instance'. Such a 'static' comparative exercise ignores the 'dynamic' of evolving commercial practice. For example, was Malmendier (2009) correct in finding a reflection of modern limited liability corporate organization in the Roman *publicani*? Available evidence has Cicero appealing to the Senate to have the terms of a *publicani* contract renegotiated because the *publicani* had bid too high a 'price' for an important tax-farming agreement. This seems to indicate that 'limited liability' was not inherent in the *publicani* arrangement. Similarly, the role of the *manceps* appears to be similar to that of a *tractator,* placing the *publicani* closer to organizational formats found in ancient Mesopotamia than the modern corporate form.