Financing an Empire

Banks, Bourses, and Capital Markets of the Roman Republic

Thesis by

Tao Tan

Advisor

Richard A. Billows

Submitted in partial fulfillment of the
requirements for the senior thesis
of the Department of History

Columbia University

New York, New York

2007

ABSTRACT

Financing an Empire: Banks, Bourses, and Capital Markets of the Roman Republic

Tao Tan

THIS work examines early forms of commercial banking and capital markets found in the mid-to-late Roman republic. Despite the vast body of research on the commercial enterprises of antiquity, little is known about the financial structures and organizations that made such enterprises possible and the scale and extent of their reach. Previous historical research has not adequately considered the economic and financial implications of the systems themselves, leading to misconceptions of their role and function. This work does not attempt to search for evidence of modern finance in ancient Rome, but rather addresses how the ancient Romans dealt with the universal problems of wealth, liquidity, capital needs, and risk. Chapters 1 and 2 provide an overview of both the social and economic structure of the Roman financial establishment. It is argued that legal records and correspondence indicate widespread involvement across class lines in a commercial environment wherein concepts of debt, interest, and investment were well-understood. Chapter 3 examines Roman commercial banking arrangements, where assets, monies, and income streams were transferred, reassigned, and loaned with relative ease. Of particular interest are how specific debit and credit instruments functioned and their role in the Roman monetary hierarchy. Chapter 4 investigates the Roman investment banking system, where new assets were securitized, marketed, and traded in active primary and secondary markets. The *publicani* are noted for their active role in building the physical infrastructure of the Roman republic, and for their involvement in "public companies" formed for the purposes of pooling capital, diversifying risk, limiting liability, and issuing marketable shares that conferred ownership. This study suggests that the Romans developed ingenious systems and institutions that, while lacking many latter-day refinements, strongly resembled modern banking systems and capital markets. During the mid-to-late republic, these institutions were crucial for the day-to-day conduct of business and for the effective governance of the rapidly expanding empire.

CONTENTS

NOTE ON TRANSLATIONS

ABBREVIATIONS are from the *Oxford Classical Dictionary* and are listed in the appendix. All translations, except where noted, are from the Loeb Classical Library's editions of the various classical sources cited. Where the interpretation of the text hinges on a meaning of a phrase, I have on occasion left particular terms untranslated. The specific editions of the Loeb translations are listed and denoted in the bibliography.

ACKNOWLEDGEMENTS

No academic work is the fruit of a single man's labors, and this is certainly no exception. To that end, I have many people to thank, beginning with my teacher and advisor. **Richard Billows**, whom I met during my first exposure to Roman history in the summer after my sophomore year, has been a consistent source of knowledge, wisdom, advice, and humor during my college years. To him, I owe everything from my decision to focus my studies in classical history to the completion of this thesis. Over the years, he has offered his advice, his counsel, his patience, and his guidance, all for which I am profoundly grateful. Any and all remaining errors are mine and mine alone.

Whatever success I have found at Columbia University, I owe to four exceptional people. **Wm. Theodore de Bary**, **Sunil Gulati**, **Kenneth Jackson**, and **Perry Mehrling** have led, taught, and guided me through my parallel interests in history, economics, and the great books of the Core Curriculum. They have stimulated my interests, driven my ambitions, and occasionally brought me down to earth. No Columbia student could ask for more committed teachers, more honest advisors, or better mentors.

Finally, I must acknowledge my debt to **Geraldine Visco** and the Department of Classics, where weekly departmental lunches (that I somehow found myself a regular guest at, in spite of not actually being in the department) provided an Aristotelian forum somewhere between intellectual ferment and general tomfoolery, and where, every Thursday, the great minds of history, Greek, Latin, fashion, and economics met over soup and sandwiches.

DEDICATION

IN memory of **J. W. Smit** (1930-2006), Queen Wilhelmina Professor Emeritus of the History, Language and Literature of the Netherlands, tobacco dealer, businessman, radical, pianist, soccer player, freedom fighter, writer, social organizer, economist, historian, bond trader, Dutch, American, Columbian, artist, musician, chef, scholar, philosopher, linguist, mentor, Renaissance man, master teacher, and absent friend.

"Quod enim munus rei publicae adferre maius meliusve possumus, quam si docemus atque erudimus iuventutem?"
"What nobler employment, or more valuable to the republic, than that of the man who instructs and educates the youth?"
Marcus Tullius Cicero, *De Divinatione* 2.2

曾子曰，士不可以不弘毅，任重而道遠，
仁以為己任，不亦重乎，死而後已，不亦遠乎。
"The scholar must be stout-hearted and enduring, for his burden is heavy and his Way is long. His burden is service to humanity. Is that not heavy? His Way lasts until the end of life. Is that not long?"
Zengzi, *Analects of Confucius* 8.7

1. INTRODUCTION

THE study of Roman finance is constrained, first and foremost, by the unlikelihood that fields of classical history, economics, and business might intersect. David Hollander has pointed out that the bulk of modern scholarship on this topic has unfortunately focused on Roman coinage.[1] To the extent that serious economic scholarship has been attempted, notably with Tenney Frank's seminal *Economic History of Rome*, the focus has been on the Roman economy as a whole and the state of agriculture in Italy. Second, such studies are constrained by the diversity of evidence with respect to the proper functions of banks, loans, credit, and debt. When one encounters a rare, and usually oblique, reference to a transaction, a detailed description of the mechanics of the transaction is usually lacking. Finally, a proper context in which to consider quotations of interest rates and prices is usually lacking.

The banking and financial trades invariably deal with the flow and accumulation of capital. To borrow a modern, but wholly applicable, framework of understanding, banks exist to provide two essential function: to receive and provide capital from and for owners of said capital, and to raise capital from new sources. Some consider regulating and stabilizing an economy, or central banking, to be a third function, but it is important to note that the mechanisms for such regulation are already described in the first two functions, but put into practice on a national scale. Thus, banking may describe two distinct activities.

"Commercial banking" describes the receipt of deposits and the issuance of liabil-

[1] David Hollander, *Roman Money in the Late Republic* (Ph.D. dissertation, Columbia University, 2002), 1.

ities. Commercial banking activities include the set up and maintenance of savings and demand-deposit accounts, the issue of loans, and the facilitation of transactions between parties. In general, commercial banks deal exclusively in cash or in fungible, monetized assets that are already in existence.

"Investment banking" describes the creation of new monetized assets and their resultant sale to raise capital. The amount, value, and ultimately, marketability of these assets are based on assessments of the creditworthiness or profit potential of the issuer. The term "capital markets" refers to the aggregate pool of investors willing to purchase the securities, and thus advance capital to the issuer, for an expected return on their investment.

From the mid-republic onward, there was an identifiable and coherent community of financiers and bankers active in commercial affairs. It is important to note, as Charles Barlow points out, that this was indeed a professional community, not a class, as participants ranged from slaves to equestrians to aristocrats.[2] Financiers performed three distinct functions: assessing money, making loans, and keeping deposits, and the same financier might perform two or more of these functions.

Nummularii were money-assayers and comprised exclusively of slaves. A *nummularius's* job was to test coins for fineness and check for evidence of debasement. If the coins passed muster, the *nummularius* would seal them in a bag and attach a carved piece of bone known as a *tessera* certifying the value of the currency.[3] Livy reports that upon receipt of the first installment of Carthaginian tribute following the Second Punic War in 199 B.C., quaestors (presumably relying on *nummularii*) found 25% of the silver to be base metal.[4] Though low in the social order, *nummularii* were respected and served a vital function as all elements of Roman society depended on them to guarantee the soundness of currency.

[2] Charles Barlow, *Bankers, Moneylenders, and Interest Rates in the Roman Republic* (Ph.D. dissertation, University of North Carolina at Chapel Hill, 1978), 9.
[3] Barlow, *Bankers, Moneylenders, and Interest Rates*, 113.
[4] Liv. 32.2.1–2.

Feneratores, commonly translated as "moneylenders," were widely reviled by Roman society. The evidence is as diverse as it is clear: Plautus's plays poked fun at them, Sulla's proscriptions targeted them, and Catiline's appeals to the masses promised relief from them.[5] On the other hand, *argentarii*, or "bankers," were considered far more socially acceptable. Cicero describes Pythius, an *argentarius* hailing from Syracuse, as "command[ing] favours of all classes."[6] In spite of their different public perceptions, functions frequently overlapped: Jean Andreau notes that *argentarii* were known to offer short-term loans, at high interest, at auctions for winning bidders without ready money.[7]

To these three, a fourth group, known as the *publicani*, may be added. The New Testament refers to them as both the tax-collectors of the empire and sinners, but their rise to prominence can be traced to the Roman republic's financial difficulties in the Second Punic War.[8] *Publicani* were contracted by the state to create commercial public syndicates to supply the logistical needs of the army and build large-scale public works, all of which, according to Ernst Badian's excellent overview of the subject, involved quite extraordinary sums.[9] The *publicani*'s activities in raising and assembling the funds made them Roman equivalent of investment bankers, who raised capital from willing investors based on an expected return.

But what sort of power did these bankers and financiers exercise? How were their contracts structured? Were their methods indispensable for the proper conduct of business, or were they curious outsiders who appeared during crises and the occasional capital project? This work is an attempt to address those questions. In the following chapters, I will examine the framework of the Roman macroeconomy,

---

[5] Plaut., *Mostell.* Argument; App., *B. Civ.* 1.96; Plut., *Cic.* 14.4.

[6] Cic., *De Off.* 3.14.

[7] Jean Andreau, *Banking and Business in the Roman World* (Cambridge: Cambridge University Press, 1999), 30–31.

[8] Mark 2:16; Luke 15:1.

[9] Ernst Badian, *Publicans and Sinners: Private Enterprise in the Service of the Roman Republic* (Ithaca: Cornell University Press, 1972), 21.

the financial mechanisms associated with early banks and capital markets, and the economic and social impact of such arrangements in the late republic.

2. FINANCIAL FRAMEWORK

CAPITAL markets exist to provide for the efficient and optimal allocation of a given capital stock. The size of the capital stock does not appear to be an overly important factor. The attention that the burgeoning microcredit and microfinance industries have been receiving from the media and academia are ample evidence. Moreover, as R. A. Radford's well-known "Economic Organisation of a P.O.W. Camp" has shown, markets and exchanges can arise in nearly any situation where assets can be freely traded.[1] The phrase "freely traded" implies *liquidity*, or the ability of a buyer to buy and a seller to sell at will, and refers to the key economic requirement of a functional capital market.

Interest, or the "rent" paid for the use of capital, is an essential part of any monetized economy. Through the mechanism of interest, loans can be made wherein capital may flow from those who have it to those who want it, leading to an optimized, return-maximizing asset allocation.[2] Debt was widely understood and utilized as a way to access financing from the earliest days of the Roman republic. The Law of the Twelve Tables (*ca.* 450 B.C.) deals explicitly with the methods of collecting debt default judgments:

> When debt has been acknowledged ... thirty days must be the legitimate time of grace. After that, then arrest of debtor may be made by laying on hands. Bring him into court. If he does not satisfy the judgment, or no one in court offers himself as surety on his behalf, the creditor may take the

[1] Radford's paper details a primitive, closed economy where Allied P.O.W.s traded items from their Red Cross aid packages using cigarettes as currency.

[2] Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations* (Edinburgh: University of Edinburgh, 1776), 372.

> defaulter with him. He may bind him either in stocks or in chains ... On the third market day, creditors shall cut pieces (*partes secanto*).[3] Should they have cut more or less than their due, it shall be with impunity.[4]

It would stand to reason that given the precision to which debt transactions were regulated by the earliest forms of Roman law, the interest rates associated with borrowing and lending (*usuria*) would be backed by similar official sanction. Tacitus cites a now-lost law where "a provision of the Twelve Tables [decreed] that the rate of interest should not exceed one-twelfth (*unciario fenore*) per cent for the month."[5] By the late republic, lending and borrowing at interest had become commonplace.

Modern scholarship has uncovered a sizable body of references to interest rates in transactions, as well as a number of laws establishing a state sanctioned rate ceiling. The earliest example is the *unciarium fenus* ($8\frac{1}{3}\%$) of the Twelve Tables. Barlow correctly contends that it is mistaken to read this as a "rate." *Unciarium* derives from the Latin *uncia* and literally means "of the ounces", implying a measure of one-twelfth since the Roman *libra*, or "pound", was comprised of twelve *unciae*.[6] A popular form of payment in early Rome was likely bronze bullion, as Hollander suggests raw bullion was considered *pecunia* in the Roman mind up until the late republic.[7] Ergo, the law suggests that $\frac{1}{12}$, or one *uncia* for every *libra*'s worth of capital borrowed should be presented as interest upon repayment, no matter when the loan was originally issued. If one insists, however, on overlaying a modern financial framework on this transaction, a reconstructed annual interest "rate" was probably considerably higher and depended on the term of the loan, as loans made during the

[3] Warmington notes that this phrase, Shakespearean temptation aside, likely refers to a division "not of the debtor's person but of his property." Alan Watson agrees, as "there is no evidence whatever that any debtor was ever put to death, divided into pieces, or sold into foreign slavery."

[4] *Lex XII Tabularum* 3.6.

[5] Tac., *Ann.* 6.16. John Jackson cites Barthold Niebuhr, Karl Nipperdey, and Theodor Mommesen in his assessment that Tacitus meant $\frac{1}{12}$ of principal, or $8\frac{1}{3}\%$, as an interest rate of $\frac{1}{12}\%$ would be "impossibly low."

[6] Robert Whiston, "Fenus" in *A Dictionary of Greek and Roman Antiquities* (London: J. Murray, 1875), 527.

[7] Hollander, *Roman Money in the Late Republic*, 73.

planting season were likely repaid at the harvest instead of the next planting season.[8] The Law of the Twelve Tables had a significant effect on future financial legislation, as many laws made reference to the *unciarium fenus* even though the rates differed. The forcible seizure of debtors would remain relevant in Roman society until the *lex Poetelia* abolished *nexum* in 313 B.C.

One particular law bears note. As part of his reforms, L. Cornelius Sulla promulgated the *lex unciaria* in 88 B.C. The name would suggest a return to the $8\frac{1}{3}\%$ interest rate of the Twelve Tables, but there is reason to believe the so-called *lex unciaria* actually set the limit at 12%. People referred to the law as *unciaria* in recognition of its permanence, not its content.[9] First, records of interest rate legislation from the Twelve Tables to the *lex unciaria* are spotty at best and absurd at worst (the supposed *lex Genucia* of 342 B.C., for example, purportedly banned interest outright).[10] Second, the *lex unciaria* is only mentioned in a fragment by Festus, who implies that the law was only called *unciaria*.[11] Frank suggests the comment on the *decimam partem* (tenth part) can be disregarded as it was likely "of a different nature" that dealt with debt relief rather than interest rate ceilings.[12] The body of anecdotal evidence concerning interest rates in the period following this law's passage bears out Frank's view. Third, by the time Festus chronicled the law several centuries later, Sulla's *lex unciaria* had remained in force and consistent for much of that time.

The *lex unciaria*, while it set a interest rate ceiling, did not mandate the interest rate itself. On the contrary, the spot rate seemed determined by market forces. In a letter to Atticus, Cicero mentions that, during the election season of 54 B.C., the interest rate doubled from 4% to 8% between July 15 and July 27 due to rampant

---

[8] Barlow, *Bankers, Moneylenders, and Interest Rates*, 23.
[9] Tenney Frank, "On Some Financial Legislation of the Sullan Period." *American Journal of Philology* 54, 1 (1933): 54.
[10] Liv. 7.42.
[11] Festus 516: *"Unciaria lex appellari coepta est quam L. Sulla et Q. Pom tulerunt qua sanctum est ut debitores decimam partem..."*
[12] Frank, "On Some Financial Legislation", 54.

bribery.[13] In December of 62 B.C., Cicero wrote to P. Sestius, telling him that "there is plenty of money to be got at six per cent."[14] Less than a month later, in January of 61 B.C., Cicero reported to Atticus that even the relatives of the moneylender Caecilius couldn't "screw a penny out of [him] at less than 12 per cent."[15]

However, loan sharking and usury did occur. In another letter to Atticus, Cicero mentions an loan agreement between a commercial syndicate formed by M. Junius Brutus to the people of Salamis in Cyprus. This was flagrantly illegal to begin with, as Brutus was a senator. Despite the *lex unciaria*'s interest ceiling of 12%, Brutus's agent Scaptius rather brazenly "demanded 48 per cent in accordance with the terms of the bond."[16] When it was pointed out that such an extortionate rate was illegal, Scaptius produced a senatorial decree "ordering the governor of Cilicia [to] give judgment according to the bond."[17]

The trend of market-set interest rates continued into the Principate, which, if anything, reinforced it. Columella, in giving instructions to potential farmers, advises them on how to earn a greater return on their investment than the 6% rate offered at the time.[18] Duncan-Jones calculates a 60% drop in interest rates "after Augustus brought back treasure from Egypt."[19] When Pliny the Younger wrote to Trajan asking for advice as "people cannot be found who will borrow from public funds, especially at the rate of twelve per cent," the emperor responded with instructions to lower the interest on loans, as "to force a loan on unwilling persons ... is not in accordance with the justice of our times."[20]

Cicero's letters cite interest rates between 4% to 8% in everyday affairs. In Rome,

[13] Cic., *Att.* 4.15.
[14] Cic., *Fam.* 5.6.
[15] Cic., *Att.* 1.12.
[16] Cic., *Att.* 5.21.
[17] Cic., *Att.* 5.21.
[18] Columella, *Rust.* 3.3.8–9.
[19] Richard Duncan-Jones, *Money and Government in the Roman Empire* (Cambridge: Cambridge University Press, 1994), 21.
[20] Plin. (Y), *Ep.* 10.54–55.

however, it seems that the size and liquidity of the debt market kept interest rates under control. It is likely that the interest rate ceiling set by the *lex unciaria* was seldom reached as the bribery of the election season of 54 B.C. only succeeded in driving up rates to 8%. In the normal course of affairs, Cicero cites only one instance in 61 B.C. when rates were 12%.[21]

Was the officially sanctioned interest rate environment enforced or even relevant? In the *provinciae* and the less-populated and capital-rich areas, any manner of extortion could have taken place. When instances of loan sharking and predatory lending occur, such as Brutus's loan to Salamis, Cicero notes that even bystanders declared the behavior outrageous.[22] These transactions were probably not uncommon with respect to foreign governments for the simple reason that creditors could get away with it, and debtors had no legal recourse or other willing lenders. There were even legislative attempts, notably the tribune G. Cornelius's unsuccessful bill of 67 B.C., to forbid loans to foreign governments, because the attempts to exact harsh terms were so brazen.[23]

In the cities, perhaps the law wasn't strictly enforced, but economic principles certainly guaranteed its relevance in areas where a large and liquid capital market existed. First, loan sharking could not have been a common practice because it is economically unsustainable. As Pliny discovered, if interest rates were even a few percentage points above what the market could tolerate, industry and investment would grind to a halt and the Roman economy would cease to function. The 12% rate ceiling of the Sullan *lex unciaria* remained "the legal maximum for centuries."[24] The actual interest rate was determined by market forces, but usually remained well below the legal maximum. Therefore, interest rates were likely to have consistently remained low enough to encourage investment and permit adequate liquidity in the

[21] Cic., *Att.* 1.12.
[22] Cic., *Att.* 5.21.
[23] Dio. 36.38.4.
[24] Robert Maloney, "Usury in Greek, Roman and Rabbinic Thought." *Traditio* 26 (1971): 92.

urbanized and commercial areas of the Roman republic.

3. MONETARY INSTRUMENTS AND COMMERCIAL BANKS

THE chief prerequisite for a functional capital market is the existence of commercial banks and institutions dedicated to the store and movement of money. Aside from the well-known use of coinage and bullion, the Roman economy must have accommodated a variety of monetary instruments. Cicero reportedly paid $3\frac{1}{2}$ million sesterces for a house on the Palatine, a sum which, as calculated by William Harris, would have yielded $3\frac{1}{2}$ tons of silver coins.[1] It is conceivable that Cicero's slaves might have trucked the silver through the streets of Rome, but what of payments sent to Athens, or Delos, or the eastern *provinciae*? The dearth of physical evidence for the long-distance movement of precious metals indicates that payments on this scale must have been "for the most part paper, or rather documentary, transactions."[2] A comprehensive and wholly adequate survey of methods used for documenting these transactions can be found in Hollander's "Roman Money in the Late Republic". This work does not attempt to replicate that scholarship, though the author must acknowledge Hollander's precise and intuitive organization, but rather to examine the financial structure and monetary framework of those transactions.

A "hierarchy of money" exists in every system of payments in order to compare the value and suitability of different methods of payment. In our system, the top of the hierarchy is usually cash. Cash is universally accepted as money itself, and the closest physical representation to a claim on purchasing power. Next there is a debit instrument, such as a personal check, that entitles the payee to receive cash

[1] William Harris, "A Revisionist View of Roman Money." *Journal of Roman Studies* 96 (2006): 3.

[2] Harris, "A Revisionist View", 3.

on demand. Next, there is typically a credit instrument, such as a credit card, that represents a promise to pay in the future. Finally, there is tradeable asset, such as a Treasury bond, that does not represent the payer's obligation, but can be converted to cash, though not always on a determinate basis.

In each successive level of this monetary hierarchy, the method of payment is further away from "true" money or cash, either because the payment is not cash (Marcus, cannot, for example, submit as payment for goods a $50 check written to him by Titus), or because the payment is not available on demand (such as in the case of a credit card), or because the payment is not definite (such as the case of a tradeable asset, which can fluctuate in value). As one travels down the monetary hierarchy, each successive method of payment is more difficult to convert into cash, and therefore less liquid.

The hierarchy, however, is not static. The placement of the tradeable asset on the hierarchy of money depends largely on its role. A payer cannot, for example, typically present a share of stock or a corporate bond as payment in day-to-day transactions. However, that tradeable asset can back his personal obligation. A payer of dubious or insufficient credit desiring to make a significant purchase may find it difficult for his personal promise to pay, either on-demand or at some point in the future, to be taken at face value, but might find more receptive outlets if that promise-to-pay were certified by a known banking house, usually after the deposit of tradeable assets as collateral. Evidence exists for such a hierarchy and such a variety of payment systems in republican Rome.

3.1 Debit Instruments

How *did* Cicero pay for his $3\frac{1}{2}$-million-sestertius villa? The common and popular way to make payments in peacetime was through the *permutatio*, a term is usually translated as a "bill-of-exchange." The formulation of the word itself, especially *mutatio*, suggests a change of form, or an alteration.[3] *Permutationes* seemed to have facilitated contracts, rather than serving as contracts themselves.[4] Hollander believes they were a "procedure rather than a particular type of financial document," primarily on the basis of how the term is used in Cicero's letters.[5] In taking this view, he is partially correct.

Permutationes were documentary transactions that, instead of physically transferring money, allowed two counterparties to swap claims on each other's assets and income streams. They were debit transactions in the sense that one could spend another's funds, but no money actually moved. *Mutatio*, in particular, assists in interpretation: asset α or income stream α in location α would be swapped for asset β or income stream β in location β. Though no money was physically moved, the parties concerned could spend each other's funds *as if* it were their own; the money had indeed "changed form".

The distinction between debit and credit in *permutatio* transactions is sometimes unclear. One passage in particular is often pointed to as an example of a *permutatio* representing a credit transaction. Upon reaching his governorship in Laodicea, Cicero wrote to Atticus that he "may have to borrow to pay off the money [he] took from [Atticus]."[6] Hollander believes Cicero received a loan rather than a payment since clearly Cicero's governance-related expenses are tied to Atticus's *permutatio*.[7] At the heart of the matter, and the impetus for such an arrangement to begin with, was the desire to avoid both transporting money and converting back and forth between currencies. Hollander's theory of how the arrangement worked is as follows: Cicero would spend money Atticus had on deposit in the east, and then repay Atticus with funds he had on deposit in Italy when he returned to Rome. Since Cicero was spend-

[3] Donald Simpson, *Cassell's Latin Dictionary* (New York: Wiley Publishing, 1968), 385.

[4] Alan Watson, "The Evolution of Law: The Roman System of Contracts." *Law and History Review* 2, 1 (1984): 17.

[5] Hollander, *Roman Money in the Late Republic*, 76.

[6] Cic., *Att.* 5.15.

[7] Hollander, *Roman Money in the Late Republic*, 77.

ing money that he did not have, the *permutatio* amounted to a loan.

The author believes this to be incorrect. First, the amount of money required for a governor for a year's expenses abroad is enormous and there are few cases, even between friends, of loans of that magnitude and for that tenor being made on an interest-free basis. Second, if indeed interest was charged on this "loan," then prevailing interest rates in Rome at the time (estimated at between 5% and 10%) would have made the interest payment quite onerous. If the object of the contract was to avoid needlessly exchanging *denarii* and Asian currency (*cistophori*) at a loss, then it seems quite odd that Cicero would choose to replace whatever he might have lost on unfavorable currency rate risks with a 5-to-10% premium on the principal.

Hollander is correct when he asserts that whatever arrangement Cicero and Atticus reached "must have included an agreement on the exchange rate," amounting to a forward-rate agreement that eliminated exchange rate risk for both parties.[8] However, his argument that Cicero must have taken a loan is both economically questionable and unsupported by the text, as Cicero never mentions the terms, the settlement, or the result of this "loan" between himself and Atticus. However, Cicero is known to have used other means to compensate Atticus for advancing funds in their dealings.

A year before his death, Cicero wrote to Atticus, asking him to provide funds for his son Marcus.[9] Xeno, an Athenian known to and respected by both Cicero and Atticus owed Atticus 4,000 sesterces at that time, which Atticus suggested might be paid directly to Marcus, an arrangement Cicero evidently approved.[10] To reimburse Atticus, Cicero arranged to have the rents he received on properties he held in Rome to be remitted directly to Atticus. This arrangement involves an exchange of a swap of payments, in this case rent payments to Atticus in return for allowance payments to Marcus Tullius Cicero Minor.

[8] Hollander, *Roman Money in the Late Republic*, 78.
[9] Cic., *Att.* 12.24.
[10] Cic., *Att.* 13.37.

A similar mechanism was likely in place during Cicero's governorship. Cicero drew money from Atticus's deposits in the east. Meanwhile, regular payments were made from his deposits in the west to Atticus. No loan took place here and the amount Cicero mentions that he would borrow to repay Atticus involves the difference between the two amounts. If indeed that did involve a loan, which Cicero indicates it might, then the interest payment on the difference would be far more tolerable than if the entire amount of Cicero's expenditures over the year was a loan. Thus, the *permutatio* in this instance did indicate a debit transaction, as money was transferred from Atticus to Cicero as part of a swap of payments. This arrangement was by no means unique: the companies of *publicani* regularly swapped payment streams in their dealings.[11]

If Cicero and Atticus used this arrangement in this case, as they would again in 45 B.C. and as the *publicani* were regularly doing, then money would have been transferred free of exchange rate risk (as a forward rate agreement was part of the transaction), free of transportation risk (as no coin was ever physically moved), and free of unrealistic debt obligations (as Cicero was only responsible for the net difference). In short, it would have kept Cicero's transaction costs as low as possible while providing his administration with all the funding he needed.

Three characteristics of a *permutatio* are apparent when considering these letters. First, the *permutatio* was an established and commonly accepted method of transferring money over long distances. En route to Laodicea in 51 B.C., Cicero wrote to Ap. Pulcher that he expected to remain "only a very few days" in order to "collect the sum due on [his] Treasury draft" (*ex publica permutatione*).[12] Cicero's goal in this journey was to join the army on campaign in the eastern *provinciae*, and it is clear that *permutationes* were appropriate methods to collect monies owed from the public exchequer, even on the frontiers of the empire.

[11] Arnold Jones, "The Aerarium and the Fiscus." *Journal of Roman Studies* 40, 1 (1950): 23.
[12] Cic., *Fam.* 3.5.

With personal payments, at least where Cicero's affairs are concerned, using *permutationes* is almost routine. On several occasions, he either inquires about or instructs Atticus to arrange *permutationes* for his son Marcus, arrangements that Cicero never hints were unusual for a man of his station.[13] In the third example, he even asks for the amount of his son's "annual allowance payable at Athens" to be negotiated through a *permutatio*.[14] These examples show that the *permutatio* could be used to facilitate payments transfers between private parties, and designate both the amount and the place where payment may be received.

Second, *permutationes* were almost certainly used between people and organizations of known financial standing. Barlow believes that *permutationes* were originally used exclusively by governments and developed out of the necessities of Roman civil administration.[15] Cicero supports this since his *ex publica permutatione* of 51 B.C. is commonly believed to have been used for the purpose of financing his governorship. It is unlikely that the average Roman citizen could have made use of *permutationes*, since the process relied on a complicated network of personal contacts usually restricted to the elites in the business community and the civil service.

Third, the evidence strongly suggests that the *permutatio* represented a debit, rather than a credit transaction. From a legal standpoint, the *permutatio* signified a process that, once concluded, was irrevocable, and that risk and liability, along with ownership, was likewise transferred.[16] A letter to Atticus in 48 B.C. reveals Cicero's holdings in approximately 2.2 million sesterces in *cistophori* and Cicero's instructions for Atticus to "maintain [his] credit" through a *permutatio* in that amount.[17] At this point, Cicero was in the midst of sorting out an inheritance and his personal financial affairs were not entirely in order. The *permutatio* in this case did not amount to a

[13] Cic., *Att.* 12.24; Cic., *Att.* 12.27; Cic., *Att.* 15.15.
[14] Cic., *Att.* 15.15.
[15] Barlow, *Bankers, Moneylenders, and Interest Rates*, 168.
[16] Melius de Villiers, "Consideration in the Roman Law of Contract." *Journal of Comparative Legislation and International Law* 6, 1 (1924): 121.
[17] Cic., *Att.* 11.1.

loan, although it may have played some part in a credit transaction.

Two possible explanations can be presented here. First, the preservation of Cicero's credit might refer to Cicero's solvency in his personal loans and obligations outstanding. Recall that by 48 B.C., Cicero had fled Rome. Without his presence, and his personal (and unreliable) banker Philotimus missing, Cicero's creditors might have begun questioning his ability to satisfy his obligations. Indeed, Cicero placed his "whole hope of preserving [his] credit and private property" in Atticus's hands.[18] The reassignment of funds held in the Asian *provinciae* might either be an interest payment and partial amortization of an outstanding loan, or it might be additional collateral that his creditors demanded now that he was no longer in Rome.

Second, Cicero's property holdings and personal affairs were known to be complicated. It is likely that payments he authorized to his son and other parties strained not his ability to pay, or solvency, but his liquidity, or ability to pay on demand at a given location. As Cicero was able to use *permutationes* on a regular basis, he must not have kept all his funds in a single place. If he authorized more payments than his *argentarii* could redeem in a given place at a given time, then it would have been necessary to transfer funds. It is useful to think of this as Cicero's personal "reserve ratio" in the same way that a local bank may hold $100 million in deposits, but keep only $10 million in cash on hand: regardless of Cicero's holdings in the aggregate, it was necessary to keep a certain amount of assignable assets or income streams in a certain place to satisfy the payments made in that place. In both cases, the *permutatio* would be used for debit purposes.

Permutatio does refer to a procedure rather than a physical document; in no place does Cicero ever suggest that one should bring or draw up a *permutatio*. However, as a procedure, it was certainly almost synonymous with whatever physical document was associated with the procedure. A useful analogy would be the relationship of a

[18] Cic., *Att.* 11.1.

wire transfer to a personal check: one is a procedure and the other is a physical document, but both perform the same function, and each is a near-perfect replacement for the other. A *permutatio* represented a swap of one's assets or income streams in one location for a comparable one in another, and did not in any way imply a loan. Finally, a *permutatio* was only available to wealthy individuals, governments, and associations, as the payer had to be of known social and financial standing in order for payment to be accepted.

3.2 Credit Instruments

Evidence that the Romans engaged in loan transactions has been both comprehensive and well-documented. The preceding chapter examined the complexity to which a credit market operated. Here, the investigation centers on the role and function of credit in the Roman financial system. A distinction must be made between personal credit, or the use of credit by individuals, and public credit, or the state use of credit — roughly analogous to, but not synonymous with "deficit financing" — as a means of financing its operations.

A bond and a loan are nearly synonymous for our purposes in that both represent a legal contract between and debtor and a creditor. The creditor advances money, which the debtor promises to pay upon the conclusion of the contract. In the interim, the debtor agrees to make regular interest payments, and in some cases, adheres to certain conditions designed to preserve his creditworthiness. They key difference is that a bond is more likely to be a debt-based *security*, or a discrete asset that may be purchased and sold by third parties, whereas a loan is usually a *contract* negotiated between two parties that usually cannot be transferred.[19] Debt securities may fluctuate in value, depending on the likelihood of principal and interest payments

[19] Securities Training Corporation, *Series 7: General Securities NYSE/NASD Registered Representative* (New York: STC, 2006), 5.1.

being made on time. In any case, these credit instruments were conceptually well-understood and heavily utilized.

A popular contention in previous scholarship is that "credit-money," or the use of an IOU as a means of payment, "only [took place] under extraordinary circumstances," a view that Harris correctly dismisses.[20] The lack of such a concept as "public debt" until modern times may have contributed to this view, and indeed, there are very few cases of the Roman republican government itself borrowing money. However, the personal use of credit must have been quite pervasive.

Personal Credit

Two terms, *nomina* and *syngraphae*, figure prominently into discussions of personal credit. A *nomen*, or a "name," signified an entry into a *argentarius*'s *rationes* or *tabulae* (account books) and gradually became synonymous with personal debts. A *syngrapha*, on the other hand, signified a conditional contract between two counterparties that indicated specific features or conditions associated with the debt beyond such standard features as interest rate, principal amortization, length of loan, and the like.

Nomina seemed to be a fairly commonplace instrument since the early republic. Farmers, after all, frequently needed loans to facilitate their planting, a need addressed by the *unciarium fenus* of the Twelve Tables. So too was the phenomenon of continuously refinancing, or "rolling over" debt, a phenomenon that could possibly be explained by the relative scarcity of hard cash in the Roman economy with which to pay back loans; as mentioned before, only men of means could use the *permutatio*.

Though *nomina* were not overly complicated or notable instruments, the role they played within the Roman economy certainly was. With hard cash not always available, and *permutationes* available only to the elite, generic personal debts must have

[20] Harris, "A Revisionist View", 9.

played some role in allowing the Romans to conduct everyday business. The extent to which credit use exceeded debit transactions is demonstrated by Cicero's letters, where he repeatedly concerns himself with getting the stream of payments from his debtors to match the stream of payments he owed to his creditors.[21] Even Cicero often ran into problems, such as when he complained that a debtor might not pay on time in order for him to satisfy his creditor.[22]

The structural aspect of *nomina* concerns us here. As personal credit instruments, *nomina* seemed to be simple financial indentures, *i.e.,* they did not specify anything beyond an interest rate and a method of repayment. There is no instance of a *nomen* being backed by collateral. The *nomen* was backed simply by the mutual confidence the debtor and the creditor had in each other. The extent to which the orderly exercise and payment of *nomina* figured in contributing to the stability of the Roman economy and society is marked by the ease with which would-be revolutionaries, notably Catiline, were able to threaten both by promising *tabulae novae*. This was not lost on Cicero, who remarked to his son that "there is nothing that upholds a government more powerfully than its credit; and it can have no credit, unless the payment of debts is enforced by law."[23]

Faith, or *fides*, better translated as "credit" represented the sole basis on which personal credit was extended.[24] During periods of civil unrest, *fides* understandably disappeared and the financial system collapsed. *Nomina* were simply promises to pay on demand issued by various private parties, and during times of liquidity crises, *fides* meant nothing and the system collapsed into panic, such as in 88 B.C.[25] Such is the unfortunate result of relying on monetary instruments backed only by promises.

---

[21] Nicholas Rauh, "Cicero's Business Friendships: Economics and Politics in the Late Roman Republic." *Aevum* 60, 1 (1986): 9–10.
[22] Cic, *Att.* 16.2.
[23] Cic., *De Off.* 2.84.
[24] One should note that the bonds of the United States Treasury are backed by the "full faith and credit of the United States."
[25] Charles Barlow, "The Roman Government and the Roman Economy, 92-80 B.C." *American Journal of Philology* 101, 2 (1980): 214–215.

Entirely new implications arise when considering *syngraphae*. Like the *permutatio*, our primary sources for information about *syngraphae* come from Cicero, implying, among other things, that they were typically used by the well-off, well-connected, and well-established. *Syngrapha* is also a Latin transliteration for the Greek $\sigma\upsilon\gamma\gamma\rho\alpha\phi\acute{\eta}$, and has been variously defined as "bond," "promissory note," "agreement to pay," and "contract."[26] Unfortunately, terms like "bond" or "promissory note" imply a standardized set of features, when in fact *syngraphae* were far more flexible. The author considers the proper translation to be "loan covenant contracts," as *syngraphae* invariably involved a written promise-to-pay, but varied tremendously on the conditions attached.

There is no doubt that a *syngrapha* could act as a simple loan. Brutus's infamous 48% loan to Salamis, for example, ended with orders for the governor of Cilicia to "*ius ex illa syngrapha diceret*" (give legal judgment according to the terms of this *syngrapha*).[27] Another letter makes a compelling case for the possibility that the *syngrapha* could be much more complex. A few months later, Cicero referred to *"de aere alieno, de usura, de syngraphis,"* a phase that Hollander correctly interprets as either redundant, as *aere alieno* (indebtedness) and *syngrapha* would mean the same thing, or an implication that a *syngrapha* did not strictly mean a straightforward loan.[28]

Syngraphae, therefore, were contracts between known counterparties on which a variety of covenant conditions could be attached, *i.e.,* they did not simply specify the servicing and amortization of a loan. Some *syngraphae* even had features similar to derivatives, as they derived their value from exogenous conditions. A textual survey reveals the following:

[26] Simpson, *Cassell's Latin Dictionary*, 591.
[27] Cic., *Att.* 5.21.
[28] Hollander, *Roman Money in the Late Republic*, 84.

1. Cicero, *De Haruspicum Responsis* 29: In referring to Brogitarus's debt, Cicero notes "I shall believe the other to be a king when he has found the means to pay you what you advanced him under a *syngrapha*." This implies the *syngrapha* provides for repayment to Clodius *if and only if* Brogitarus became king, as the Cicero regards the validity of Brogitarus's kingship as contingent on his repayment of the *syngrapha*.

2. Cicero, *Philippic II* 95–96: Cicero informs M. Antonius that a *syngrapha* for ten million sesterces had been drawn up in Fulvia's apartment, and urges Antonius to consider its actions on its basis. He further implies that its value depends on the contents of Caesar's will regarding King Deiotarus's kingdom, *i.e.,* whether M. Antonius would authorize its return,[29] as "no lawyer . . . says there is a debt on that *syngrapha* for things that had been recovered before the *syngrapha* was made." Matters are complicated by Cicero's suggestion that Deiotarus need not honor the debt as he would recover his kingdom without Antonius's help.

3. Suetonius, *Divus Iulius* 23: Caesar enlisted support through senators who would defend his political positions in his absence, and "he did not hesistate in some cases to exact an oath to keep this pledge or even a *syngrapha*." In this case, Caesar used the contractual features of the *syngrapha* to ensure that his supporters would do as he said in his absence.

In the final example, there is ambiguity as to whether Caesar simply agreed to give his supporters money later, or whether he actually extracted money from said supporters, on which repayment would be contingent on their cooperation. Allowing for as wide a range of meaning as possible, a *syngrapha* could mean anything from a deferred bribe to a bond with covenants to a derivative instrument. Overall, *syngraphae* seem to involve loans that required either the counterparties to fulfill certain conditions, or refrain from undertaking certain actions, in order to successfully adhere to the covenants of the loan contract.

Public Credit

The Roman state itself during the republic was, relative to the imperial era, fiscally conservative, preferring to limit its role in the economy to producing coinage,[30] and

[29] John Ramsey, "The Senate, Mark Antony, and Caesar's Legislative Legacy." *Classical Quarterly* 44, 1 (1994): 143–144.

[30] Michael Crawford, "Money and Exchange in the Roman World." *Journal of Roman Studies* 60 (1970): 41.

preferring to contract out its material needs to *publicani* rather than conduct them itself. The senate authorized expenditures out of the public treasury, limited by the amount raised in tax revenues. For a state that sent its armies on campaign every year throughout the republican period, the financial needs of the Roman republic were kept remarkably afloat by treasure on hand, which Harris ascribes to the steady stream of booty and plunder gained on campaign.[31]

The lone exceptions are the situations during the Second Punic War. The years 218 to 202 B.C. were dreadful times to pledge one's allegiance to the senate and the Roman people. Approximately one-fifth of the adult male population of Roman territories were killed in battle, and countless others due to disease, starvation, and other effects of war. Armies were raised, only to be wiped out by Hannibal, who at one point camped near the gates of Rome itself. A number of references from Livy describe the desperation of the financial situation. P. Cornelius Scipio wrote from Spain in 215 B.C., urging that the tax structure be reformed under emergency measures, as the expenditures from the public treasury were insufficient to keep his army supplied. The Romans kept both garrisoned armies and armies on expedition supplied by a property tax, but "the number of those who paid that particular tax had been diminished" by the disastrous battles at Cannae and Lake Trasimene at the same time the demands placed on this particular revenue source increased several-fold.[32]

To meet this shortfall, credit had to be extended, not in the form of loans, but rather by an appeal to "those who by contracts had increased their property" to allow the state to defer its payments, while continuing to supply Scipio's army in Spain on credit.[33] Of course, the "character and love of country" touched the contractors in question to such a degree that they quickly agreed to such an arrangement, on the

[31] William Harris, *War and Imperialism in Republican Rome: 327-70 B.C.* (New York: Oxford University Press, 1979), 103–104.
[32] Liv. 23.48.
[33] Liv. 23.48.

condition that they be exempt from military service, and that the state insure them against maritime and shipping loss.[34] But, in return for those additional conditions, neither usually granted under normal circumstances, the liabilities of the state were renegotiated and the war effort carried on.

This form of public credit, however, was a renegotiated extension of a contract already in existence, and did not impose additional responsibility on the Roman treasury, other than insuring the contractors' shipments. Whether the Roman government saw its own *fides* as a distinct, marketable asset similar to the *nomina* used by the *argentarii* is not addressed in this situation. Another example from Livy offers clarification.

Five years later, in 210 B.C., the war effort was hardly on better footing. At Capua, Silarus, and Herdonia, Hannibal had slaughtered army after army. After raising yet another army and yet another navy, private citizens were asked to furnish the oarsmen with pay and rations for a month.[35] Naturally, this raised a great amount of resentment and hatred. The issue was resolved by imposing the levy on the senators first, reasoning that the wealthy classes ought lead by example. Details are plentiful: every senator and *eques* would bring his personal gold, silver, and bronze to the treasury, leaving only token jewelry for himself and his family. In raw bullion, each could keep an ounce of gold, a pound of silver, and five thousand *asses* in bronze.[36]

In 204 B.C., Livy reports, when Rome's fortunes had taken a significant turn for the better, the same consul who suggested the collection, M. Valerius Laevinus, suggested that the contributed sums be paid back.[37] *Prima facie*, this appears to be proceedings for the repayment of a loan. Was it in fact a gift that quietly turned into a loan to be repaid in hindsight? Arguments may be considered from both perspectives.

---

[34] Liv. 23.49.
[35] Liv. 26.35.
[36] Liv. 26.36.
[37] Liv. 29.16.

In the original appeal to the senators, M. Valerius Laevinus spoke of a "voluntary contribution" without any suggestion that it might serve as a loan. Indeed, the purpose of this very public contribution was to stir up patriotic fervor among the *equites* and plebians, so that they too might feel impelled to join the senators in their patriotic generosity. Finally, there was no legal document either stipulating the contribution, or recording the conditions of the contribution, as Laevinus felt it was important to conduct the drive "without first making any decree of the senate."[38] Entries were made in "public records" detailing each man's contributions, but no receipts were issued in recognition of these contributions. The primary purpose of the public records was so that the contributors could publicly compete to outshine each other in their patriotic commitments.

Later comments by Livy cast doubt on the gift nature of the contributions in the three instances where he discusses the aftermath:

1. Livy, *Ab Urbe Condita* 29.16 (204 B.C.): Laevinus acknowledges the the monies contributed (*conlatae pecuniae*), but also implies that they were a matter of of "public credit" (*publica obligata fide*). Later in the passage, it was decided to repay the funds in three equal installments.

2. Livy, *Ab Urbe Condita* 31.13 (200 B.C.): The money is explicitly referred to "loans" (*mutuam*) on which the third installment (*tertia pensio*) presumably became due.

3. Livy, *Ab Urbe Condita* 33.42 (196 B.C.): The contributors are specifically called "private lenders" (*privatis*). Later in the passage, it is implied that the arrangement of 204 B.C. could not be a regular circumstance, as the rampant exercise thereof would amount to the unlimited right of the state to seize property.

All three passages refer to the sum with a variant of the noun *conlatae*, a derivative of the verb *conferre*, meaning "to collect" or "to gather." In the original bout of fund-raising, the phrase used by Laevinus was *voluntaria conlatio*. The usage of the word is consistent throughout Livy's references, but the term itself does not assist in

[38] Liv. 26.36.

interpretation as it refers to simply the act of collecting treasure. What remains are the references to "public credit" and "loans." The phrase Laevinus chooses includes *fide*, which is multifaceted in its meanings but in the context of financial dealings suggests the same concept of *fides* as in the private sphere. Finally, the mention of *mutuam* is problematic as its usage elsewhere suggests a legal contract.

Livy's contradictions reflects on the confusion of this arrangement. Legally, the collection could not have been a loan, as there is no evidence of legal details, nor of any mention of repayment. Certainly, it could have been implicit, *e.g.,* "If Rome wins, she might be grateful for your support, but if Hannibal wins, you will certainly lose everything, including what you contributed," but any impressions in that area must be confined to speculation. When Laevinus mentions repayment, he specifically refers to the *"publica ... fide"*, implying that public trust depended on the Roman government honoring its commitments, whether written or unspoken.[39]

Two conclusions, however, may be drawn about public credit. First, it was very rarely used, as the dearth of evidence shows us. Indeed, there is no recorded instance again for the remainder of the republican period that the Roman government itself went into debt. Second, it was only used on an informal and unwritten basis. The first example of the state seeking credit involved working through a pre-existing contract to defer payment, not drawing up a new arrangement. There is a concept of a public *fides*, but not one that is precisely synonymous with the private *fides* that backed *nomina*. For that matter, there was no such thing as a "state *nomina*," as no receipts were issued to the contributors; their names were publicly recorded and conspicuously posted to facilitate competition and their own self-aggrandizement. In other words, the Roman government did not regard its power to tax and coin as a securitizable asset that could be tapped for raising money. There was no such thing as a government bond. Public credit was, at best, an informal understanding that was rarely, but

[39] Liv. 29.16.

successfully, utilized in times of dire need.

3.3 Liquidity

Some remarks are necessary with respect to the liquidity of these financial instruments. *Permutatio*, the debit instrument of record, appears to be the most liquid of all financial instruments. It was clearly a cash replacement, and could easily be used for transferring claims on large amounts of money over long distances without physically moving precious metals. It was also a personal transaction between two counterparties, usually of known reputation, that was non-transferable to a third party and concerned itself with the *transfer of ownership* rather than the *use* of money.

Nomina were the next level down the hierarchy. The affairs of both the elite and the populace at large relied on a balanced stream of debits and credits, not the physical movement of money, as evidenced by the widespread disarray that debt crises brought to Roman society. Unlike *permutationes*, however, *nomina* were negotiable, and actively marketed.

There is no evidence as to what extent *nomina* made up the balance sheets of Roman citizens. In one case, Cicero asserts that he absolutely had to settle his *nomina* in order to "keep [his] accounts clear."[40] However, there is evidence as to the relative "value" of different *nomina*, dependent, presumably, on the *fides* of the debtors. In 51 B.C., Cicero was so keen on paying a current debt that he was willing to go even further into debt rather than call in outstanding *nomina*.[41] At another instance, a certain Vettienus offered to purchase a non-performing *nomen* from Cicero at a 50% discount.[42] A transfer to a third-party at a discount, suggests Barlow, was by no

[40] Cic., *Att.* 16.6.
[41] Cic., *Att.* 5.1.
[42] Cic., *Att.* 12.3.

means unusual.[43]

The valuation and marketing of *nomina* based on the likelihood that interest and principal would be paid on time is another definite indication of the liquidity of the secondary market for debt. Moreover, the role that *nomina* played in facilitating financial transactions is hinted by the regularity that these personal IOUs changed hands. They were not synonymous with money in the sense that they could be used for payment, but they were quite close as they indicated a store of value that varied depending on their likelihood of being repaid, could be used for offsetting other obligations, and counted as form of *pecunia* in the Roman mindset.

Syngraphae, likewise, were even further down on the hierarchy, as they included legal covenants between two specific parties. The presence of specific conditions in *syngraphae* likely all but eliminated their negotiability with respect to third parties. Cicero did, on a single occasion, mention a transfer of a *syngrapha*, but it is unclear if he referred to an actual transfer of a contract, or merely the delivery of a document.[44] In any case, it is unlikely that *syngraphae* could be easily converted into money.

This was not an attempt to search for examples of modern instruments in the ancient sources, but rather to seek evidence of how the Roman business community dealt with the universal problems of scarcity and liquidity. As can be seen, they developed devices and procedures very similar to those used by commercial banks that very efficiently dealt in the movement, transfer, and maintenance of money and monetary instruments. The existence of each level in the hierarchy of money indicates the degree to which financial instruments of varying liquidity played in the Roman macroeconomy. The ease at which these instruments could be converted into cash is counterbalanced by the extent to which these instruments offered legal and financial features not found in cash, and the demand thereof for these features. The complexity of the Roman financial system, at least in urban centers, provided for the efficient and

[43] Barlow, *Bankers, Moneylenders, and Interest Rates*, 162.
[44] Cic., *Fam.* 7.17.

effective valuation, transfer, and negotiation of money, credit, and existing assets.

4. ROMAN CAPITAL MARKETS

DURING the republican period, the Roman state largely refrained from constructing or operating physical infrastructure, preferring to contract out to companies of *publicani* (*societas publicanorum*). Though he was prone to relying on tradition, myth, and assumption, Dionysius of Halicarnassus posits the first contracts to the consulship of Postumus Cominius Auruncus (*ca.* 493 B.C.), who, after expelling the Volscians, "let contracts for the building of temples to Ceres, Liber, and Libera."[1] Livy's claim, which places contracts at the beginning of the fourth century B.C., holds more credibility. The famous geese of the Capitoline, who had warned the consul M. Manlius of an impending Gallic attack in the sack of 390 B.C. with their loud honking, were apparently fed at public expense as "one of the first contracts arranged by the censors" following the departure of the Senones.[2]

These examples indicate three things: engaging private contractors was a regular practice from the early history of the republic, private contractors could be hired for the entire range of tasks from the mundane to the monumental, and finally, there was apparently no stigma associated with turning over projects of great civic and religious significance to private contractors. For almost the entire span of the Roman republic, the *publicani* were responsible for the construction of bridges, roads, temples, aqueducts, and civic buildings, the manufacture and shipment of arms and supplies for Roman armies, and, most infamously of all, tax-farming.

Despite the seeming familiarity of the *publicani*, the publicly held corporation

[1] Dion. Hal., *Ant. Rom.* 6.17.2.
[2] Liv. 5.47; Plin. (E), *HN* 10.26.

is very much a modern innovation. Three features of these corporations bear note: first, there is the concept of *corporate personhood*. Under English common law, the corporation is a separate legal entity of perpetual existence, colloquially known as a "artificial person," with many of the rights normally granted to individual persons.[3] Second, there is *limited liability*, wherein officers of the corporation may enter into contracts and obligations on behalf of the corporation without becoming personally liable; the corporation assumes all responsibility. Third, the corporation may opt for *equity financing*, wherein ownership interest in the corporation is securitized and sold, and where ownership does not necessarily imply additional managerial or fiduciary responsibility.

The modern business corporation, comprised of the aforementioned characteristics, is traditionally believed to have become relevant with the English and Dutch joint-stock companies of the seventeenth and eighteenth centuries. Ulrike Malmendier argues that the *societas publicanorum* were the true predecessors of modern corporate entities.[4] This is difficult to evaluate, as our modern concepts of corporate personhood are legally abstract and do not figure into legal scholarship until after the Middle Ages.[5] It is known for certain, however, that the *publicani* made extensive use of the third feature, equity financing.

4.1 Financial and Legal Structure

Equity financing is a straightforward financial concept. A company that desires to raise significant capital can securitize part or all of the company itself into equity securities. Equity securitization, like debt securitization, is the process of partitioning an aspect of the company into discrete legal units, in this case ownership interest of

[3] Stewart Kyd, *A Treatise on the Law of Corporations* (London: J. Butterworth, 1794), 13.

[4] Ulrike Malmendier, "Roman Shares" in *The Origins of Value: The Financial Innovations that Created Modern Capital Markets* (New York: Oxford University Press, 2005), 40.

[5] In any case, the legal character of *collegia* and *corporationes* have already been well-established. See "Collegium" by Long in Smith's *Dictionary of Greek and Roman Antiquities*.

the company itself, which can then be sold to and traded among willing investors, thereby raising the needed funds. Equity securities (or stock) represent a share of ownership of the company, and therefore the rights and privileges normally accorded to principals, including voting rights with respect to retaining managers, and in many cases a claim on a portion of the company's revenues.[6] If the company's profit potential and quality of management rises, then the value of the equity stock rises in response as investors are willing to pay more for an opportunity to own a part of the company. The key advantage of equity financing over debt financing is permanent capital: a company that requires additional funds constantly may opt to sell itself permanently rather than negotiate loans on a regular basis.

Roman *partes*, or "shares," is the term that appears most frequently in reference to the companies of the *publicani*.[7] The brevity and passing nature of their mention in Cicero's extensive correspondence implies, according to Badian, that the Roman business classes understood them well and dealt with them extensively.[8] Unfortunately, such brusque treatment also precludes a general description of what exactly *partes* were and what they conferred. Badian defines *partes* as simply "no more than what a *socius*" held in a *societas*.

Letting contracts was a well-established practice, but less known is when the capital requirements to bid on contracts became so significant that investors had to form collective enterprises.[9] The motives for forming the *societas publicanorum* are fairly predictable: a desire to pool capital from many sources, and a desire to spread out risk to many sources. Plutarch's biography of Cato the Elder reports on one of the Censor's infamous business practices:

[6] STC, *General Securities*, 4.1–4.2.

[7] The term *partes* itself does not assist in interpretation, as it simply means "parts," "portions," "pieces," or "shares." Indeed, the *"partes secanto"* of the Twelve Tables (see ch. 2) has been variously interpreted as meaning either splitting up a debtor's corpse or his property.

[8] Badian, *Publicans and Sinners*, 102.

[9] Badian believes G. Gracchus's law on Asia was a key driver in requiring investors to pool funds (104). Harris, in his review, disagrees, citing instances of malfeasance on a large scale from the Second Punic War (434–435).

> He 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 ... In this way his entire security was not imperiled, but only a small part of it, and his profits were large.[10]

This was problematic in a number of ways. To begin with, the *lex Claudia* of 218 B.C. made it illegal for senators to engage in maritime trade. Aside from allowing him to dodge the law, this arrangement also allowed Cato to compel the capital commitment and cooperation of his debtors. Prior to Pompey clearing the seas of pirates in the celebrated summer of 67 B.C., shipping was a dangerous, albeit extremely profitable, business that had massive barriers to entry and required an extensive capital base. Cato skillfully used debt to leverage other investors' funds to finance the enterprise, thereby leaving himself underexposed to the risk, but overexposed to the return. Among other things, this practice allowed him to avoid liability.[11] Equity financing was clearly a well-understood business practice.

The practical structure of ownership interest, however, does not assist us in determining the financial structure of the asset itself. Were *partes* fungible? That is, were *partes* uniform and interchangeable? Did a *societas publicanorum*, for example, issue 100 *partes* to 10 shareholders, where the most interested shareholder held 50 *partes* and the least exposed only held 2? Or, alternatively, did the companies issue 10 *partes* individually to the shareholders, but the specific *pars* held by the largest shareholder in our example conferred 25 times the ownership interest of the smallest shareholder? Though it may appear to be a pedantic distinction, the uniformity of the asset drastically affects its ability to change hands.

The available evidence is conflicting and unclear. Cicero's defense of G. Rabirius Postumus refers to the former's ownership of *"magna partis ... publicorum"*, which

---

[10] Plut., *Cat. Mai.* 21.6.
[11] Cic., *II Verr.* 1.55.143.

Watts translates as "many shares".[12] The author believes this to be incorrect since *magna* means "large" or "great," thereby rendering a better translation as "large shares."[13] Valerius Maximus confirms this, as he uses the diminutive *particulam* (literally, "little shares") when referring to T. Aufidius's holdings.[14] The diminutive does not imply number. These types of *partes*, therefore, were likely single units tailored to the wishes of the investor, instead of uniform units that investors accumulated as they wished.

Two considerations prevent us from concluding on this fact. First, even though *partes* were issued on a customized and individualized basis, there is fluctuation of price. Cicero accuses P. Vatinius of "filch[ing] shares when they were at their highest [prices]" in a speech denouncing P. Vatinius's influence-peddling schemes[15]. The passage suggests that a framework for evaluating the relative value of *partes* was also to be found. Finally, it was apparently possible to subdivide *partes*. Cicero's speech in defense of Q. Roscius makes reference to a "half share" as opposed to the "partnership as a whole" (*dimidia parte ... tota societate*).[16]

Badian has argued, convincingly, for different classes of *partes*: registered shares which conferred voting rights, which were held by major *socii*, and smaller, unregistered shares which did not, held by senators who were loathe and forbidden by law to associate with the *publicani* and by other classes as well.[17] His evidence stems from the fact that the two terms commonly used for "shareholder" — *socius* and *particeps* — seem to be found in regular association to each other, and that prominent figures such as G. Julius Caesar could be found among the ranks of the latter.

Badian's explanation can be expanded upon to resolve these issues. It is likely

[12] Cic., *Rab. Post.* 4.
[13] Simpson, *Cassell's Latin Dictionary*, 358.
[14] Val. Max. 6.9.7.
[15] Cic., *In Vat.* 12.29.
[16] Cic., *Q. Rosc.* 11.32.
[17] Badian, *Publicans and Sinners*, 103. See also Edward Chancellor, *Devil Take the Hindmost: A History of Financial Speculation* (New York: Plume, 2000), 4–5.

that the *particulae* were similar to depository receipts that represented a claim on an actual share without conferring ownership of the share itself. They would also direct any benefits of ownership to the bearer without requiring the bearer to be registered in the *tabulae* of the *societas publicanorum*. Such an arrangement meant that politically prominent figures could share in the very lucrative material benefits of the *societas publicanorum* without suffering the public stigma of the same.[18] Such an arrangement also permitted *particulae* to trade uniformly *en masse* and remove the heavy administrative burden of registering every single shareholder.

The *partes* and the concept of *partes* ownership, therefore, included the following:

1. A public company, known as a *societas publicanorum*.
2. A class of *partes*, known as *magna partes*, that conferred voting rights, were not always transferable, and involved registration of the holder in the *tabulae* of the company. They were also priced on a varying basis depending on the interest of the registered holder.
3. A board of directors, or general partners, called *socii*, who owned *magna partes*. The *socii* of the company were required to contribute their own capital, were registered as owners in the *tabulae* of the company, and as publicly-known owners, were entitled to vote in decisions on behalf of the company.
4. One or more additional classes of *partes*, sometimes referred to as *particulae*, that did not confer voting rights, were freely transferable, did not involve registration of the holder, and were very likely to be priced uniformly, to facilitate trading.
5. Unregistered shareholders, or limited partners, called *participes*, who owned *particulae*. The *participes* of the company were not publicly known (and thus included many who did not want to be seen dealing with *publicani*), but were fully entitled to a share of the proceeds of the company's operations.
6. Limited liability for certain shareholders in that owner of *particulae* did not necessarily incur liability on behalf of the *societas publicanorum*.[19]
7. Market-determined valuations for both *magna partes* and *particulae* that meant to reflect the profitability of the company and the quality of its management and oversight.

[18] Badian notes that no senator nor anyone else in the upper classes were ever referred to as *socii* of a company (103).
[19] Malmendier, "Roman Shares", 36.

8. Regular meetings of the company's *socii*, during which proposals would be debated, new *socii* admitted, and dividends paid.

The extent to which these *partes* were ancient forms of stocks is still an unresolved question. Nonetheless, they included many features found in modern equity financed firms. Indeed the process of securitizing equity, raising capital, and selling *partes* are the fundamental elements of investment banking.

4.2 Secondary Markets and Impact

The capital markets of Rome, however, were not limited to primary markets where capital was simply raised. There was a somewhat active secondary market as well. Secondary markets facilitate the trading of already-issued assets, such as *partes* and *nomina*. They do not concern the securitization of new debt or equity securities. Within the purview of secondary markets, however, further distinctions must be made. The secondary market itself is a common, physical place where buyers and sellers gather. The physical stock exchange has its roots in the secondary market. The third market, colloquially referred to as the over-the-counter market, involves the pairing of buyers and sellers outside of a centralized physical space by brokers and other intermediaries. Finally, the fourth market refers to trading between two private parties, outside of a centralized physical space, and without broker intermediation.[20]

There is some evidence that a form of a secondary market existed. Mikhail Rostovtzeff has identified the temple of Castor[21] as the exchange of Rome, where "crowds of men bought and sold shares and bonds of tax-farming companies, [and] various

[20] Zvi Bodie, et. al., *Investments*, 6^{th} ed. (New York: McGraw-Hill, 2003), 75–76. Third and fourth markets are technical terms for trading that occurs off-the-floor and over-the-counter. The key distinction is that the third market represents an environment where the demand for opportunities to buy and sell are so heavy that merchants do not need to physically be in the same place to transact their business, although the services of a broker to match buyer and seller may still be needed. The fourth market represents an environment where the demand is so high that buyers and sellers can locate each other and agree on a price without broker intermediation.

[21] One should note that modern day Roman Stock Exchange is located in the second century temple of Hadrian.

goods for cash and on credit."[22] However, Harris points out that the great innovation of Amsterdam and Venetian bourses in the 13th century was the idea of publicizing and continuously updating bid and offer prices. While the open-outcry public auction was doubtless known in ancient Rome, there is no evidence that *partes* and *nomina* were regularly and continosly marketed in this manner.[23]

Badian believes that it is far more likely that the lion's share of *partes* were purchased and sold in the over-the-counter, *i.e.*, in the third and fourth markets.[24] Although Badian is correct in pointing out the dearth of evidence to support active stock-exchange-style trading, what did occur cannot be termed over-the-counter. A permanent secondary market is a critical point wherein the volume and flow of extant securities reaches a critical mass sufficient to justify a permanent meeting place for buyers and sellers to congregate and conduct business. If the volume and flow is insufficient, there is no need for anything else other than an occasional auction, and certainly no permanent secondary market. A permanent secondary market is also *sine qua non* for third and fourth markets, as they arise only when the secondary market cannot offer sufficient liquidity to cope with the demand for opportunities to buy and sell assets. There is, for example, no need for NASDAQ, Instinet, or BATS if it were perfectly adequate for everyone to still gather in person on the floor of the New York Stock Exchange.

What did occur were simply private parties trading and bartering their *partes* among themselves. To speak of an over-the-counter "market" is meaningless since prices were arrived at on a privately negotiated, instead of a market-determined basis. This would be consistent with an economy where the volume of trading is too low to require a centralized exchange with continuously quoted bid and ask prices. However, Polybius, with expected exaggeration, reports that by the second century

[22] Mikhail Rostovtzeff, *Social and Economic History of the Roman Empire* (New York: Oxford University Press, 1957), 31.

[23] Harris, interview, 29 March 2007.

[24] Badian, *Publicans and Sinners*, 103.

B.C. "one may almost say that everyone is interested in these contracts,"[25] a view which Cicero confirms in his comment on the "property of many citizens" being at stake when supporting Pompey's command.[26] Many scholars have followed suit to conclude that an "active stock market life" existed in Rome.[27]

The author believes this view to be incorrect. True, Polybius did mention the widespread interest that the people held in the affairs of the *publicani*, but he could not have meant, as Rostovtzeff and Reinhard Zimmerman have interpreted, that somehow Rome in the second century B.C. was a place of mass stock ownership. Instead what Polybius meant by "interest" might have been no simpler than just that. After all, the contracts held by *publicani* directly affected the life of every Roman, as the execution of contracts for all the necessities of life, such as roads, bridges, aqueducts, grain shipments, and in many cases, tax payments, depended directly on which contractor's bid was successful. Moreover, the ripple effects of a typical construction contract, for example, affected every support industry from rock quarries and iron mines to work-site food vendors. What Polybius and Cicero described is not the case for widespread financial involvement in the *societas publicanorum*, but rather the extent of the sway that the *publicani* held over every single aspect of Roman state, society, economy, and life.

Partes did change hands in republican Rome, and there is much evidence to suggest that the dealings of the well-off were quite frequent. However, the fact that almost all *partes* (and indeed, all *nomina*) traded through private arrangements is not an indication of a widespread "stock market life," but rather the lack thereof of one. The business community was small enough for prospective buyers and sellers to, in most cases, already know a prospective counterparty. There were few opportunities for broker markets to arise, and certainly none for dealer markets. The marketing

[25] Polyb. 6.17.
[26] Cic., *Leg. Man.* 2.6.
[27] Malmendier, "Roman Shares", 38.

of financial assets in Rome, therefore, was done primarily through a Rolodex and a bulletin board, not a auction-style stock exchange.

Purchasing and selling *partes* and *nomina* in Rome was like purchasing or selling furniture: it was done on a negotiated basis, person-to-person, and well-insulated from the competitive pressures of the market. This view is supported by two facts. First, there is no evidence whatsoever of what was a typical price paid for a *pars*. Second, there is very little information on what systematic or technical processes buyers and sellers used to price each other's assets and come up with bid and ask prices. True, Cicero did have an instance where a financier offered to purchase a bad loan for 50% of par value, but the brusque and passing mention of the offer suggests that it was little more than an off-the-cuff quote.[28]

The capital markets of Rome were an efficient and effective place to raise money. The concepts of pooling capital and spreading risk were well-understood practices, and the scale of Roman enterprises since the Second Punic War often required contractors to form partnerships. However, though the primary markets were thoroughly well-developed, the volume of shares issued were not of sufficient quantity to justify full-featured secondary markets. While there were certainly auctions for new issues, and perhaps an occasional auction of seized assets, *partes* changed hands sufficiently infrequently so that trading in them could be accomplished almost entirely on a privately negotiated person-to-person basis.

In his writings, Cicero speaks at length on the extent of the debt market. In some cases, interest rates fluctuated so quickly as to double within a month.[29] There is no stigma attached to borrowing and lending, as Cicero's own affairs adequately attest, unless one inappropriated exerted leverage over unwilling debtors, as Cato did. When discussing the *partes* of the *societas publicanorum*, however, they seemed less transparent and less widely dealt. The *partes* of P. Vatinius, for example, appeared

[28] Cic., *Att.* 5.1.
[29] Cic., *Att.* 4.15.

to take months, if not years, to dramatically appreciate in price.[30] Cicero hated Vatinius, but his attitude of abhorrence and horror also suggests a general disapproval for speculatory activities.

Finally, the social implications of market participation bear note. All classes, from peasants (on whose practices the original *lex unciara* was designed to regulate) to *equites* to senators, participated in loans. *Nomina* and other loans being issued and coming due could be used to offset balance sheet debts and credits. *Partes*, on the other hand, represented the underhanded dealings of *publicani*, and relatively lowly social status of the merchant classes. The moneyed nobility took special care to avoid them, senators were often forbidden by law to take part in their activities, and there is little evidence that the masses much use for them, as they could not be used as a form of "near money" to offset balance sheets. *Partes*, while sophisticated in form, nevertheless had a limited impact beyond their original function.

[30] Cic., *In Vat.* 12.29.

5. SUMMARY AND CONCLUSION

Few things survive upheavals of politics and history unscathed, and it is hardly surprising that the *publicani* did not. To begin with, they were hopelessly corrupt. Recall that the renegotiated contract of 215 B.C. where the supposedly patriotic *publicani* agreed to supply the armies on credit included a stipulation that the state be responsible for their maritime losses.[1] It was not until two years later, in 213 B.C., when it was discovered that the *publicani* had actually loaded rotting wooden ships with worthless scrap, and then claimed inflated payouts when they conveniently sunk far out at sea.[2] This incident adequately demonstrates the business morals of the *publicani*, who were apparently willing to defraud the state when the very existence of Rome was at stake.

Second, the *publicani* performed thoroughly distasteful and unpopular deeds. This included tax-farming, a practice the New Testament rather explicitly associates with sinners.[3] When they didn't deal directly with separating people from their hard-earned wealth, they supplied the armies, built the infrastructure of the republic, and kept the people in constant cognizance of their power to affect change. Whether the *publicani* were warmongers who encouraged warfare for the sake of securing profitable contracts is debated among scholars, but it is clear that war could not be conducted without the *publicani*.

The decline of the *publicani* closely mirrored the decline of the republic itself. As the most hated of all figures, they were often the first proscribed, initially by Sulla.

[1] Liv. 23.49.
[2] Liv. 25.3.
[3] Mark 2:16; Luke 15:1.

Legal reforms following the civil wars restricted their influence, and the expansion of the civil service under Augustus's division of the empire into *provinciae populi Romani* and *provinciae senatus* further encroached upon the tax-farming industry. The decline of the *publicani*, who drew their revenue from holding government contracts, can be traced to when the direct rule of the Principate preferred to conduct more and more administrative and physical tasks. In essence, the takeover of the business of governance by the government itself put the *publicani* out of business.

This work did not attempt to search for examples of modern finance in ancient Rome, but rather addressed how the ancient Romans dealt with the universal problems of wealth, liquidity, capital needs, and risk. As shown in this work, they developed a remarkable system of commercial and investment banks that resemble modern arrangements in many respects. The community of bankers and financiers reached across class lines, from the slave *nummularii* to the affairs of *equites* and senators.

This investigation began with an overview of the financial and economic framework of republican Rome. The earliest laws regulating debt date from the fifth century B.C., with the markets growing more and more sophisticated as Rome developed. By 54 B.C., markets had become so developed that interest rates could fluctuate and double within the span of a month.[4] The lack of Rome's financial reach outside of urban and financial centers did create opportunities for predatory lending, but the depth and liquidity within the cities all but guaranteed the relevance of the Sullan-era usury laws that appeared to have remained in force for centuries.

The depth and complexity of the debt market was a direct result of a remarkable commercial banking system. The Romans possessed a highly developed hierarchy of money and financial instruments appropriate for each level. For simple transfers of money where physically moving gold and silver was impractical, the *permutatio* served as a debit instrument. In reality, it was quite versatile, having been developed

[4] Cic., *Att.* 4.15.

for use on the trading networks of the *publicani*, and played a key role in complicated transactions, including swaps and currency exchanges.

The personal use of credit was as elaborate as it was pervasive. Debts that Romans owed each other, recorded as *nomina* in the account books, were used for offsetting present and future cash flows. *Nomina* traded in secondary markets, represented a form of "near money," and, it is suggested, were discounted according to the issuer's creditworthiness.[5] "Credit-money" played a clear and defined role in the finances of all classes, as gold and silver coinage was often insufficient (and in any case, difficult to move) to satisfy the capital demands of Roman society.[6] Credit was backed not just by the legal obligation to repay, but also by the moral suasion of one's *fides*.

The public use of credit, however, was less clear. In the two known instances where the Roman state itself went into debt during the republican period, both were informal and imprecise affairs. The first involved the renegotiation of an pre-existing contract,[7] and the second was presented initially presented as a gift with no pretensions of a loan.[8] To the extent that the state, as a corporate body, possessed *publica fides*,[9] it was honor-bound to recognize the generosity of its best citizens. However, it would not borrow again and never issued anything like a government bond for the remainder of the republican period.

The variety, complexity, and widespread use of these financial instruments and the clear existence of a hierarchy of money suggests a highly developed financial system. The discussion of Roman capital markets builds on these conclusions. The earliest credible records of government contractors can be traced to the fourth century B.C.[10] Over the years, contracts came to include building and maintaining physical infrastructure, supplying the armies and navies, and most infamously of all, tax-farming.

---

[5] Cic., *Att.* 5.1.
[6] Harris, "A Revisionist View", 9.
[7] Liv. 23.48.
[8] Liv. 26.36.
[9] Liv. 29.16.
[10] Dion. Hal., *Ant. Rom.* 6.17.2.

It is unclear at what point contracts became so large as to require pooling resources and sharing risk, but syndicates were active by the time of the Second Punic War.[11]

In many ways, the *societas publicanorum* resembled modern-day corporations. Ownership was apportioned into discrete legal units known as *partes*. They were governed by *socii*, who held *magna partes*, and were registered as such in the *tabulae* of the company. Shareholders who wanted to share in the bounties of the companies, but wished to avoid direct association, had the option of purchasing unregistered *particulae*, which allowed them to anonymously hold ownership and claim a share of the profits from the operations of the company. Both classes of *partes* were, to some degree, transferable.

The secondary market for *partes* existed to a limited extent. The temple of Castor was apparently the stock exchange of republican Rome, though it is likely that it hosted only auctions of new issues and an occasional liquidation of seized assets.[12] *Partes* did not trade over-the-counter since there was insufficient volume and flow for market price determination — a crucial feature of a "market." Rather, most transactions were private placements between known counterparties. As the wealthy citizenry of Rome were well-known to each other, it is likely that negotiated person-to-person trading was perfectly adequate for anyone desiring to buy and sell *partes*. In any case, there is little economic evidence of an active "stock market life" among the masses.

The Roman financial system was a highly complex and effective system. It accommodated forms of commercial banking and investment banking, and provided methods to transfer assets, borrow assets, create assets, and market assets. Prior to the Principate, when the senate governed the republic out of the conservative *aerarium*, the methods and practices of bankers, financiers, and *publicani* were indispensable for the effective rule and administration of an emerging empire. They were necessary

[11] Liv. 26.36.
[12] Rostovtzeff, *Social and Economic History of the Roman Empire*, 31.

in the day-to-day affairs of Rome, but proved especially essential in times of war and crisis. Their effectiveness at raising capital and forming collaborative enterprises are indicative of the ease of which they operated, and the lack of effective substitutes for their methods. Only when the Augustan Principate began taking over more and more of the duties of civil administration did the *publicani* see their influence wane.[13]

The Romans dealt with their issues of scarcity and liquidity with methods that strongly resemble those which are in use today. They invented and made active use of debit and credit processes, as well as debt and equity securities. Roman capital markets lacked many of the later refinements, such as derivatives, true over-the-counter markets, and the like, but that is a result of underexposure, not underdevelopment; Roman capitalists possessed no shortage of financial ingenuity. By the first century B.C., Rome was host to financial systems and capital markets of such complexity, scale, and innovation that, like the Pantheon, the aqueduct of Pont du Gard, and the *cursus publicus*, nothing like it would be seen in Europe again for over fifteen centuries.

[13] Malmendier, "Roman Shares", 33.

APPENDIX

A. INDEX OF ANCIENT SOURCES

APPIAN of Alexandria (95 A.D. – 165 A.D.), abbv. *App.*
B. Civ. = *Bella Civilia*, The Civil Wars

Marcus Tullius CICERO (106 B.C. – 43 B.C.), abbv. *Cic.*
Att. = *Epistulae ad Atticum*, Letters to Atticus
Fam. = *Epistulae ad Familiares*, Letters to Friends
Har. Resp. = *De Haruspicum Responso*, In Response to the Soothsayers
II Phil. = *Orationes Phillippicae*, Second Phillippic Oration
II Verr. = *In Verrem II*, Second Speech Against Verres
In Vat. = *In Vatinium*, Speech Against Vatinius
Leg. Man. = *De Lege Manilia / De Imperio Cn. Pompeii*, On the Manilian Law / On the Command of Cn. Pompey
Off. = *De Officiis*, On Duties
Q. Rosc. = *Pro Roscio Postumo (Comeodo)*, Speech on Behalf of Roscius Postumus (the Comedian)
Rab. Post. = *Pro Rabirio Postumo*, Speech on Behalf of Rabirius Postumus

Lucius Iunius Moderatus COLUMELLA (4 B.C. – 70 A.D.), abbv. *Columella*
Rust. = *De Re Rustica*, On Agriculture

Cassius DIO Cocceianus (*ca.* 155 A.D. – 229 A.D.), abbv. *Dio*
Dio = Roman History

Sextus Pompeius FESTUS (*ca.* late 2nd century A.D.), abbv. *Festus*
Festus = Fragments

DIONYSIUS of HALICARNASSUS (*ca.* 60 B.C – 7 B.C.), abbv. *Dion. Hal.*
Ant. Rom. = *Ρωτικη αρchιολογια*, Roman Antiquities

Lex XII Tabularum (*ca.* 450 B.C.)
Law of the Twelve Tables

Titus LIVIUS (*ca.* 59 B.C. – 17 A.D.), abbv. *Liv.*
Liv. = *Ab Urbe Condita*, From the Founding of the City

POLYBIUS (*ca.* 203 B.C. – 120 B.C.), abbv. *Polyb.*
Polyb. = The Histories

Titus Macchius PLAUTUS (*ca.* 254 B.C. – 184 B.C.), abbv. *Plaut.*
Mostell. = *Mostellaria*, The Haunted House

Gaius PLINIUS Secundus (23 A.D – 79 A.D.), abbv. *Plin. (E)*
HN = *Naturalis historia*, Natural History

Gaius PLINIUS CAECILIUS Secundus (63 A.D – 113 A.D.), abbv. *Plin. (Y)*
Ep. = *Epistulae*, Letters

Mestrius PLUTARCHUS (*ca.* 46 A.D. – 127 A.D.), abbv. *Plut.*
Cat. Mai. = *Cato Maior*, Life of Cato the Elder
Cic. = *Cicero*, Life of Cicero

Gaius SUETONIUS Tranquillus (*ca.* 69 A.D. – 130 A.D.), abbv. *Suet.*
Iul. = *Divus Iulius*, Divine Julius

Publius Cornelius TACITUS (*ca.* 56 A.D. – 117 A.D.), abbv. *Tac.*
Ann. = *Annales*, The Annals

VALERIUS MAXIMUS (*ca.* early 1st century A.D.), abbv. *Val. Max.*
Val. Max. = *Factorem et Dictorem Memorabilium Libri Novem*, Nine Books of Memorable Deeds and Sayings

REFERENCES

Bodie, Zvi, et. al. *Investments.* New York, NY: McGraw-Hill, 2003, 6th edition.

Hornblower, Simon, and Anthony Spawforth. *The Oxford Classical Dictionary.* New York, NY: Oxford University Press, 1996, 3rd edition.

Kyd, Steward. *A Treatise on the Law of Corporations*, volume 2. London, UK: J. Butterworth, 1794.

Long, George. "Collegium." In *A Dictionary of Greek and Roman Antiquities*, edited by W. Smith, London, UK: J. Murray, 1875, 310–311.

Securities Training Corporation. *Series 7: General Securities NYSE/NASD Registered Representative*, volume 1. New York, NY: Securities Training Corporation, 2006.

Simpson, Donald P. *Cassell's Latin Dictionary.* New York, NY: Wiley Publishing, Inc., 1968.

Smith, Adam. *An Inquiry into the Nature and Causes of the Wealth of Nations.* Edinburgh, UK: University of Edinburgh, 1776. Ed. E. Cannan, London School of Economics, 1904.

Whiston, Robert. "Fenus." In *A Dictionary of Greek and Roman Antiquities*, edited by W. Smith, London, UK: J. Murray, 1875, 524–528.

ANCIENT SOURCES

Briscoe, John. *Valeri Maximi Facta et Dicta Memorabilia*, volume 1. Stuttgart, Germany: G. Teubner Stuttgart und Leipzig, 1998.

Cary, Earnest. *Dio Cassius: Roman History, Volume III*, volume 53 of *Loeb Classical Library*. Cambridge, MA: Harvard University Press, 1914. English translation from Latin.

———. *The Roman Antiquities of Dionysius of Halicarnassus, Volume III*, volume 357 of *Loeb Classical Library*. Cambridge, MA: Harvard University Press, 1940. English translation from Latin.

Foster, Benjamin O. *Livy: From the Founding of the City, Volume III*, volume 172 of *Loeb Classical Library*. Cambridge, MA: Harvard University Press, 1924. English translation from Latin.

Freese, John H. *Cicero VI: Pro Quinctio – Pro Roscio Amerino – Pro Roscio Comoedo – De Lege Agraria Contra Rullum*, volume 240 of *Loeb Classical Library*. Cambridge, MA: Harvard University Press, 1930. English translation from Latin.

Gardner, Robert. *Cicero XII: Pro Sestio and In Vatinium*, volume 309 of *Loeb Classical Library*. Cambridge, MA: Harvard University Press, 1958. English translation from Latin.

Grose-Hodge, Humfrey. *Cicero IX: Pro Lege Manilia – Pro Caecina – Pro Cluentio – Pro Rabirio – Perduellionis*, volume 198 of *Loeb Classical Library*. Cambridge, MA: Harvard University Press, 1927. English translation from Latin.

Jackson, John. *Tacitus: The Annals, Volume IV*, volume 312 of *Loeb Classical Library*. Cambridge, MA: Harvard University Press, 1937. English translation from Latin.

Miller, Walter. *Cicero XXI: De Officiis*, volume 30 of *Loeb Classical Library*. Cambridge, MA: Harvard University Press, 1913. English translation from Latin.

Moore, Frank G. *Livy: From the Founding of the City, Volume VI*, volume 355 of *Loeb Classical Library*. Cambridge, MA: Harvard University Press, 1940. English translation from Latin.

———. *Livy: From the Founding of the City, Volume VII*, volume 367 of *Loeb Classical Library*. Cambridge, MA: Harvard University Press, 1943. English translation from Latin.

———. *Livy: From the Founding of the City, Volume VIII*, volume 381 of *Loeb Classical Library*. Cambridge, MA: Harvard University Press, 1949. English translation from Latin.

National Council of Churches. *The Holy Bible: Revised Standard Version*. New York, NY: The World Publishing Co., 1962.

Paton, William R. *Polybius: The Histories, Volume III*, volume 138 of *Loeb Classical Library*. Cambridge, MA: Harvard University Press, 1923. English translation from Latin.

Radice, Betty. *Pliny: Letters and Panegyricus*, volume 59 of *Loeb Classical Library*. Cambridge, MA: Harvard University Press, 1969. English translation from Latin.

Sage, Evan T. *Livy: From the Founding of the City, Volume IX*, volume 295 of *Loeb Classical Library*. Cambridge, MA: Harvard University Press, 1935. English translation from Latin.

Shackleton Bailey, David R. *Cicero XXV: Letters to Friends, Volume I*, volume 205 of *Loeb Classical Library*. Cambridge, MA: Harvard University Press, 2001. English translation from Latin.

Warmington, Eric H. *Remains of Old Latin, Volume III*, volume 329 of *Loeb Classical Library*. Cambridge, MA: Harvard University Press, 1938. English translation from Latin.

Watts, Neville H. *Cicero XI: Pro Archia Poeta – Post Reditum In Senatu – Post Reditum ad Quirites – De Domo Sua – De Haruspicum Responsis – Pro Plancio*, volume 158 of *Loeb Classical Library*. Cambridge, MA: Harvard University Press, 1923. English translation from Latin.

———. *Cicero XIV: Pro Milone – In Pisonem – Pro Scauro – Pro Fonteio – Pro Rabiro Postumo – Pro Marcello – Pro Ligario – Pro Rege Deiotaro*, volume 252 of *Loeb Classical Library*. Cambridge, MA: Harvard University Press, 1931. English translation from Latin.

Winstedt, Eric O. *Cicero XXII: Letters to Atticus, Volume I*, volume 7N of *Loeb Classical Library*. Cambridge, MA: Harvard University Press, 1913a. English translation from Latin.

———. *Cicero XXIII: Letters to Atticus, Volume II*, volume 8N of *Loeb Classical Library*. Cambridge, MA: Harvard University Press, 1913b. English translation from Latin.

———. *Cicero XXIV: Letters to Atticus, Volume III*, volume 97N of *Loeb Classical Library*. Cambridge, MA: Harvard University Press, 1918. English translation from Latin.

MODERN SOURCES

Allen, William F. "The Monetary Crisis in Rome, A.D. 33." *Transactions of the American Philological Association (1869–1896)* 18: (1887) 5–18.

Andreau, Jean. *Banking and Business in the Roman World*. Cambridge, UK: Cambridge University Press, 1999. Trans. J. Lloyd.

Badian, Ernst. *Publicans and Sinners: Private Enterprise in the Service of the Roman Republic*. Ithaca, NY: Cornell University Press, 1972.

Barlow, Charles T. *Bankers, Moneylenders, and Interest Rates in the Roman Republic*. Ph.D. thesis, University of North Carolina at Chapel Hill, Chapel Hill, NC, 1978.

———. "The Roman Government and the Roman Economy, 92–80 B.C." *American Journal of Philology* 101, 2: (1980) 202–219.

Boren, Henry C. "The Sources of Cicero's Income: Some Suggestions." *The Classical Journal* 57, 1: (1961) 17–24.

Broughton, Thomas R. S. *The Magistrates of the Roman Republic*, volume II. New York, NY: American Philological Association, 1952.

Chancellor, Edward. *Devil Take the Hindmost: A History of Financial Speculation*. New York, NY: Plume, 2000.

Crawford, Michael. "Money and Exchange in the Roman World." *Journal of Roman Studies* 60: (1970) 40–48.

de Villiers, Melius. "Consideration in the Roman Law of Contract." *Journal of Comparative Legislation and International Law* 6, 1: (1924) 120–124.

Duncan-Jones, Richard. *Money and Government in the Roman Empire*. Cambridge, UK: Cambridge University Press, 1994.

Frank, Tenney. *An Economic History of Rome: To the End of the Republic*. Baltimore, MD: The Johns Hopkins Press, 1920.

———. "On Some Financial Legislation of the Sullan Period." *American Journal of Philology* 54, 1: (1933) 54–58.

Harris, William V. "Review: Publicans and Sinners." *American Journal of Philology* 96, 4: (1975) 433–436.

———. *War and Imperialism in Republican Rome: 327–70 B.C.* New York, NY: Oxford University Press, 1979.

———. "A Revisionist View of Roman Money." *Journal of Roman Studies* 96: (2006) 1–24.

———. Interviewed by the author, New York, NY. 29 March 2007.

Hollander, David B. *Roman Money in the Late Republic*. Ph.D. thesis, Columbia University, New York, NY, 2002.

Jones, Arnold H. M. "The Aerarium and the Fiscus." *Journal of Roman Studies* 40, 1-2: (1950) 22–29.

Malmendier, Ulrike. "Roman Shares." Conference on the History of Financial Innovations, 2003. Yale University.

———. "Roman Shares." In *The Origins of Value: The Financial Innovations that Created Modern Capital Markets*, edited by W. Goetzmann and G. Rouwenhorst, New York, NY: Oxford University Press, 2005, chapter 2, 31–42.

Maloney, Robert P. "Usury in Greek, Roman and Rabbinic Thought." *Traditio* XXVII: (1971) 79–109.

Partnoy, Frank, and Shaun P. Martin. "Encumbered Shares." Law and Economics Workshop, 2004. University of California, Berkeley.

Radford, R. A. "The Economic Organisation of a P.O.W. Camp." *Economica* 12: (1945) 189–201.

Ramsey, John T. "The Senate, Mark Antony, and Caesar's Legislative Legacy." *The Classical Quarterly* 44, 1: (1994) 130–145.

Rauh, Nicholas K. "Cicero's Business Friendships: Economics and Politics in the Late Roman Republic." *Aevum* 60, 1: (1986) 3–28.

Rostovtzeff, Mikhail. *The Social and Economic History of the Roman Empire*. New York, NY: Oxford University Press, 1957.

Temin, Peter. "A Market Economy in the Early Roman Empire.", 2001. MIT Economics Working Paper 01–08.

———. "The Economy of the Early Roman Empire." *Journal of Economic Perspectives* 20, 1: (2006) 133–151.

Watson, Alan. *Rome of the XII Tables: Persons and Property*. Princeton, NJ: Princeton University Press, 1975.

———. "The Evolution of Law: The Roman System of Contracts." *Law and History Review* 2, 1: (1984) 1–20.

Zimmerman, Reinhard. *The Law of Obligations: Roman Foundations of the Civilian Tradition*. New York, NY: Oxford University Press, 1996.