

Chapter 1

Ancient Roots

Although there is no direct evidence of technical analysis from ancient civilizations, scattered indirect evidence can be uncovered in early market practices. Bearing in mind that technical analysis is not merely a toolbox of head-and-shoulder-like patterns and MACD-like indicators—as many think of it today—but rather the use of past prices to forecast future ones in the most general sense, we find evidence of it in Babylonian price records, Greek market sentiment assessments, and Roman seasonality patterns. Our predecessors not only followed market prices but also made conscious attempts to measure supply/demand imbalances in price data and react to them for their profit, often combining their insights with “data” from fundamental nature or astrology. It should come as no surprise that in ancient times technical forecasting methods were inextricably linked with and in some cases arose from trading and speculation; hence in this chapter we review them side by side.

The Beginnings

People trade. During the late preceramic Neolithic, which is when the settled village life began and plants and animals were domesticated, the settlers from the Jordan Valley engaged in exchange of local resources—such as salt, bitumen, and sulfur—with nomads, as well as in the long-distance trade of obsidian, and domesticated wheat and sheep with the Central Anatolian Plateau and the Zagros-Taurus arc (a mountain range situated between Europe, Asia, and the Levantine corridor to Africa).¹ In the ceramic phases of the Neolithic, settlers formed agricultural villages in the Zagros Valley while nomadic herders established encampments in the higher elevations. Although there is no evidence of markets in the Zagros during the sixth millennium B.C., the villagers traded grain, flour, fruit, vegetables, and crafts for the nomads' butter, wool, lambskins, and livestock. Long-distance trade expanded too, to include a variety of new materials such as alabaster, marble, cinnabar, wood, limestone, greenstone, and iron oxides.² In the later ceramic phases of the Neolithic, around 5000 B.C., villages became highly specialized, and towns or temple centers, possibly equipped with markets, came into being. Long-distance trade flourished like never before, spanning a distance of 1,500 miles and a striking variety of raw materials.³

During the early Bronze Age, specifically in the twenty-fourth century B.C, Sargon the Great established the first Mesopotamian empire with its capital at Agade and with the city's temple serving as the center of the empire's economic life. The merchant officially worked for the temple and pursued his private entrepreneurial activities on the side. As political power became more secular, the merchant's domain extended to the palace as well.⁴ Sumerian epic literature, including the *Epic of Gilgamesh*, abounds in the allusions to the commercial realities of this period.⁵ After the fall of the last one of these empires, the Third Dynasty of Ur, at around 2000 B.C., numerous and decentralized city-states emerged, each ceremonially headed by its own king but in reality run by the merchants. The same merchants established trading colonies in Anatolia, such as the famous *karum* Kanesh.⁶ In the ensuing Old Babylonian period, trade was in the

hands of so-called *takamaru* whose role encompassed that of merchants, brokers, merchant bankers, money lenders, and government agents. *Takamaru* dealt in slaves, foodstuffs, wool, timber, garments, textiles, grain, wine, metals, building materials, and cattle and horses. They would either do the trading themselves or loan money to others to go on trading journeys for them.⁷

The Late Bronze Age was characterized by a rigid political structure, and all trading activities were controlled by the palace.⁸ In the Iron Age, political power became decentralized and the large palace-towns of the Bronze Age were replaced by numerous, diffuse settlements extending to previously unpopulated areas. Needless to say, both overland and sea trade benefited enormously. As a result, merchants became more free, both in their business activities and in their physical movement. An Iron Age merchant was no longer a palace official who pursued his own profit as a sideline; he was active mainly for his own profit, and stimulated not by royal order but by perceived market advantages.⁹

Nowhere was the focus on getting rich so pronounced as in ancient Babylon, an early hotbed of commercial innovation. For example, ancient Babylonians established a system of weights and measures, formalized business deals by introducing contracts written on clay tablets and signed by the parties involved, and invented limited partnerships where one partner would raise capital at home while the other would travel for business. Accumulation of wealth was important not just for kings and temples, but also for private individuals such as the famous Murashu family, who were wealthy bankers from Nippur of the fifth century B.C. In fact, it was at this time that trading evolved to the point of a profession—a trader acted as a middleman or a broker and dealt in products he did not produce.¹⁰ It is under such conditions that technical analysis came into being in ancient Babylon.

Before drawing parallels between ancient Babylonian practices and modern-day technical analysis, we must first verify that prices in those times were not fixed and controlled by the prevailing rulers, but rather were determined in the market through the interaction of buyers and sellers.

First of all, the existence of markets in ancient Mesopotamia is well established. Not unlike today, the word “street” was associated with the market; for example, Sumerian tablets from the second millennium



Chlorite vase with alternating bands of mountain-like motifs and date palm trees, the Gulf region or southern Iran ca. 2700–2350 B.C. Vessels in the same style are found throughout the ancient Near East, evidence of the region's flourishing long-distance trade.



Clay tablet with a seal impression, Mesopotamia ca. 3100–2900 B.C. Commercial record-keeping was widespread in ancient Mesopotamia. This tablet records the distribution of grain by a large temple. The seal impression depicts a man with two dogs on a leash hunting for boars.

document the existence of the *sūk shimātim* or “commercial street” and note that *sāchiru* (peddlers, retailers) were selling goods on the “street.”¹¹ The Old Babylonian term *bīt machīri* “seems to refer to the stall of a merchant . . . small in size . . . and adjacent to other stalls.”¹² As markets evolved from ad hoc gatherings to more established fixtures of civic life, so did the words that described them: The Akkadian term *machiru*, which initially had the abstract meaning “price, market value” and “commercial activity,” acquired the concrete meaning “marketplace” by the beginning of the Old Assyrian and Old Babylonian periods.¹³

Moreover, literally thousands of documents from Assyrian trading stations in Anatolia record price fluctuations. For example, one trader reporting about the high price of Babylonian textiles states, “if it is possible to make a purchase which allows you a profit, we will buy for you.”¹⁴ Evidence from the third millennium B.C. suggests that prices of barley fluctuated widely. One shekel of silver at different times purchased 10, 20, or 120 quarts of barley, and based on prices, one could then distinguish between *mu-he-gal-la* or a good growing season and *mu-mi-gal-la*, a bad one.¹⁵ Further evidence suggests that price increases were directly linked to increases in demand. When numerous merchants seeking to buy copper arrived in Anatolia, an Anatolian trader knew the impact this would have on the price of copper and wrote to his associate: “Within the next ten days they will have exhausted its [the palace’s] copper. I shall then buy silver [that is, sell copper] and send it to you.”¹⁶ Prophets, too, recognized that increases in supply would lower market prices: When the ninth-century prophet Elisha forecasted the lifting of the Syrian siege, she also noted that “tomorrow about this time a measure of *soleth* [fine wheat flour] shall be sold for one shekel, and two measures of barley for a shekel in the games of Samaria.”¹⁷

Ancient Babylon

One of the great legacies of ancient Babylon is the trove of clay tablets on which they inscribed their myths, laws, and records. For example, a large number of tablets, some dating back as far as the second millennium B.C.,

pose textbook-like interest rate problems and provide their solutions.¹⁸ In another corpus of tablets, ancient Babylonians kept diaries of astronomical observations and prices of various commodities in the city for almost four centuries. Although the earliest known diary dates back to 651 B.C., it is commonly believed that most of the diaries originated between 747 and 734 B.C., during the reign of Nabonassar. The two earliest diaries, written in 651 and 567 B.C., covered 12 months each.¹⁹ Later diaries spanned various lengths of time, ranging from days, weeks, months, or even years. A typical full-sized diary covered either an entire Babylonian year or the first half of it.²⁰

Slotsky characterizes the Mesopotamian records of the market values of commodities as an old and continuous tradition that spanned not only astronomical diaries but also literary works and commemorative establishments.²¹ To illustrate her point, she points to the Old Babylonian royal inscriptions that listed “ideal” commodity prices in order to “propagate the image of a prosperous reign.”²² Among her other examples are the Laws of Ešnunna and the Hittite Law Code, both of which specified legal prices for various commodities. Other sources of commodity prices include the Chronicle of Market Prices as well as literary texts such as the *Coronation Prayer of Assurbanipal* and the *Curse of Agade*.²³

The basic unit of money was the shekel of silver, and prices were quoted as the amount of commodity that one shekel could buy. For example, one diary records the following price quotation: “This month, the equivalent for one shekel of wrought silver was barley, 2 *pān* 4 *sūt* 3 *qa*.”²⁴ Continuously throughout the centuries, the diaries document the values of the same six commodities—barley, dates, mustard/cuscuta, cress/cardamom, sesame, and wool—a testament to their importance in ancient Babylon. As Slotsky explains:

All six commodities were staples. Barley, dates, sesame, and wool were in widespread use since earliest times and for millennia maintained their economic role as units of payment and exchange. Mustard/cuscuta and cress/cardamom grew to become commodities of great significance, especially in the first millennium, because of their popularity in the Mesopotamian diet and their widespread use in medicine. All were of domestic

origin, all were storable, and all were raw materials from which other basics were derived.²⁵

During the four hundred years of their production, the layout of the diaries did not change much. They typically start with a title, which specifies the time range covered by the diary, such as, “Diary from month I to the end of month VI of year 23 of Arses, who is called King Artaxerxes.”²⁶ Longer diaries were produced by compiling shorter ones, and hence are divided into several distinct sections. For example, a half-year diary is divided into six or seven sections, each section corresponding to a lunar month. At the beginning of each section a scribe would record his observations of the first signs of visibility of the new moon. He would devote the body of the section to a detailed description of the moon’s progress among the Normal Stars and planets during that month. He would also provide supplementary information regarding weather, comets, meteors, eclipses, equinoxes, and solstices. Toward the end of the section he would give an account of the last signs of visibility of the moon. Finally, the concluding passage would consist of the planetary positions data, the market values of the six commodities, and the water levels of the Euphrates. Sometimes, some historical notes relating to earlier months or years would be included in the conclusion.²⁷

Choosing the Stocks

Now let us consider the parallels between Babylonian diaries and contemporary technical analysis. The very fact that the diaries documented the values of the same six commodities throughout centuries has some semblance to modern practices. First of all, some of the classic technical analysis manuals advise carefully choosing a small number of stocks on which to focus your attention. For example, according to Gartley, “a few well-chosen charts, religiously studied, can be of far greater use in making decisions to buy and sell stocks, than a large portfolio including several hundred stocks, which receive only casual attention.”²⁸ Second, technical analysis teaches one to follow the chosen stocks over a long period of time. As Schabacker puts it, “understanding of the technical action of any stock or group of stocks can

come only from long study of actual market action and market history.”²⁹ By following the same six commodities over a period of four hundred years, ancient Babylonians did just that.

Diaries as a Form of Charts

To describe the ancient Babylonian custom of recording market quotations, Slotsky writes that they “were charted regularly so that fluctuations during each month of the year could be noted.”³⁰ However, as an example of this charting practice, she gives not a graphical chart but the following statement: “until the 15th, $5\frac{1}{2}qa$; the 16th and the 17th, $5 qa$ one-fourth and half of one-fourth.”³¹ Nevertheless, her labeling of the astronomical diaries as a form of charts is valid. Careful reading of Schabacker’s work, which happens to be “among the most influential ever written on the technical side of the market,” suggests that he would agree with this statement.³² According to Schabacker, while a chart “may take many different forms and may be adapted in such forms to many various codes of important market factors . . . from a general standpoint . . . [it] is merely the visible record of stock market action over a period of time.”³³ And a visible record of market quotations is what the Babylonian diaries undeniably were. Gartley, another one of the “illustrious names in the field of technical analysis,”³⁴ suggests that a chart’s “primary function is to provide accurate factual data.”³⁵ The diaries certainly provided this function. As Slotsky puts it, “To anyone who has dealt intensively with the analysis of the diaries’ market data, there can be little doubt that these prices were real market values.”³⁶

Time Scale and Volatility

In his classic text *Stock Market Theory and Practice*, Schabacker wrote that “there are daily charts, weekly charts, monthly charts and even yearly charts.”³⁷ He added that “the smaller the time period charted individually the more flexible the chart will be, and therefore the more valuable in tracing minor past habits and actions.”³⁸ This would imply that higher volatility calls for a smaller time period, so that minor fluctuations can be more effectively traced. Schabacker’s advice is remarkably similar to the practices of ancient Babylonian scribes. These scribes

would adjust the frequency with which they recorded the market quotations in the astronomical diaries according to the level of market volatility. When volatility increased, “instead of the regular quotation at the end of each month, there might be quotations for the beginning and end of the month; the beginning, middle, and end of the month; ranges of days; or even daily.”³⁹ When fluctuations became even more rapid, “the smallest changes would be charted.”⁴⁰ For example, on a particularly volatile day, prices would be reported twice a day, both in the morning and in the afternoon.⁴¹

Blank Spaces

“Some charts are lined for every day in the year,” wrote Schabacker, “but this means that holidays leave a blank space which distorts the chart picture.”⁴² Just like technical charts, astronomical diaries report “interruptions or suspensions of commodity sales . . . on explicit dates in designated places.”⁴³ Sometimes these interruptions are confined to a single commodity. For example, one diary notes that “the 25th and 26th day, the sale of barley was cut off,”⁴⁴ while another one notes that the “[trade in bar]ley was interrupted in the streets of Babylon.”⁴⁵ Other times interruptions affected several commodities: “The sale of barley and everything else was cut off in the streets of Babylon until the 5th.”⁴⁶

Forecasting with Omens

The Babylonians’ celestial omen corpus records their attempts to forecast the cultivation, yield, and storage of various commodities, as well as the behavior of their market prices.⁴⁷ This forecasting was astrological in nature. For example, Slotsky notes that the flourishing of the dates and mustard/cuscuta crops “was assigned to the astrological region of Pisces when the ‘benefic’ planets were dim and the ‘malefic’ planets were bright.”⁴⁸ On the other hand, “sesame was assigned to the sign of Taurus, but when the ‘malefic’ planets were bright and the ‘benefic’ planets dim, it fell into the region of Pisces.” Among the six commodities, barley, dates, and sesame are mentioned most frequently in the celestial omen corpus.⁴⁹ For example, omens concerning barley include

statements such as: “the cultivated barley land will prosper,” “rust will affect barley,” “there will be no barley, business will be reduced, there will be famine,” “barley will disappear from the country,” “barley will become expensive.”⁵⁰ In the omens regarding dates, it is noted that “the date plantation will not prosper,” “dates will not prosper,” “the purchase price for dates will not be fair,” and so on.⁵¹ Similarly, in the case of sesame, it is said that “the sesame harvest will prosper,” “*kurusissu* rodents will eat the sesame,” “barley and sesame will increase, and the equivalent of [only] one *qa* will [have to] be paid for 1 *kur*.”⁵²

Diary keepers not only kept records of market prices and related phenomena but also used those data for scientific forecasting. Slotsky elaborates on this point as follows:

The diaries’ astronomical data were used not only to provide the observational basis of lunar and planetary theory, but also to predict phenomena for goal years (the years it would take for the moon or a planet to return to its original starting position). Although there is no comparable evidence to show that other diary observations were used for prediction, there are signs in the diaries that both market prices and the height of the Euphrates were carefully watched and subjected to some degree of control. . . . This raises the question of whether the scribes were attempting to correlate celestial observations with terrestrial events and ultimately trying to predict and even gain control over extreme changes in weather, water level, and prices.⁵³

Thus, ancient Babylonians not only charted their markets but also sought to forecast future prices based on the observed ones, just as modern-day technicians would do. And when the price forecast was not favorable, they attempted to change the future outcome by taking actions to control the future supply and demand. For example, they would shut down the market for a period of time or bring scarce commodities into the market, increase investment in canals and irrigation or change agricultural strategies, all to ease shortages or increase future supply.⁵⁴

Ancient Greece

The Iron Age brought an abundance of iron tools, and with them, a host of new market forces. At the most basic level, peasants and artisans desired to obtain them. In parallel, the agriculturally favorable climate of the ancient Mediterranean encouraged a lightly regulated society that rewarded individual initiative. Together, these two factors led to the birth of a new type of economy—the market-oriented economy—by the middle of the first millennium B.C.⁵⁵ The rapid development of trade and coinage widened the gap between rich and poor. Political power was divided among powerful clans and families, and the situation of the poor deteriorated. To repay debts, many



A silver coin of the Greek city of Corinth dating back to 345–307 B.C. One side of the coin shows Pegasus, the winged horse, while the other side reveals the head of the goddess Athena donning a tipped-back Corinthian helmet, and a boar running left in the background.

of the poor would sell members of their families (or even themselves) into slavery; others would sharecrop for their creditors.⁵⁶

In efforts to alleviate the plight of poor small farmers, Pisistratus during his tyranny (561–527 B.C.) introduced institutions that would eventually entrench the new, market-oriented economic system. It was

under his rule that the traditionally rural festival in honor of Dionysus, the god of wine and the patron of agriculture, turned into a popular urban phenomenon known as the City Dionysia or the Great Dionysia. Pisistratus encouraged farmers to specialize in a particular crop (for example, olives) and produce primarily for export. In addition, his construction of the great temple to Olympian Zeus further boosted the economy. As the economy grew, so did the demand for the specialized services of farmers, craftsmen, and merchants, who eventually had no time to grow their own produce, but had to obtain it from the market.⁵⁷ As Davisson and Harper put it, "For the first time in history, there appeared an urban class that made its living on the market, that needed to buy and sell in order to live."⁵⁸ Glotz vividly describes a scene from the market in Agora during the Athenian period:

One after another, at the hours fixed by the regulations, the different markets open; there are markets for vegetables, fruit, cheese, fish, meat and sausages, poultry and game, wine, wood, pottery, ironmongery, and old articles. There is even a corner for books. Every merchant has his place, which he reserves by paying a fee; in the shade of an awning or an umbrella he sets out his goods on trestles, near his craft and his resting beasts. Shoppers walk about; traders call to them; porters and messengers offer their services. Shouts, oaths, and quarrels. . . . When the open-air markets are shut the customers make for the covered hall, which is like an Eastern bazaar, with counters occupying the end.⁵⁹

Similar activities would take place at the fairs, which were held in connection with the festivals.

The earliest evidence of coins comes from the Lydian capital of Sardis and dates back to around 650 B.C.⁶⁰ The Greeks soon appropriated the idea, and by the fifth century B.C., the use of coins for commercial purposes had become widespread in Greece.⁶¹ The bank soon became "the indispensable organ of trade."⁶² The first banks were in fact temples, which would accept individual and state deposits and lend them out at interest; later, banks became private institutions.⁶³ The earliest considerable evidence of Greek banking is related to the

Athenian grain trade and dates back to the fourth century B.C.⁶⁴ With the emergence of banks came, ipso facto, the profession of banking:

For a long time there had been seen, sitting at a table, at the harbor or on the market, men whose business was to exchange money. . . . As time went on, the money-changers extended their business, investing funds outside the country and lending money for all kinds of undertakings. They needed a large capital, and acted as intermediaries between the sellers and buyers of money. In addition to exchange the *trapezitai* did business in deposits and loans. They were bankers.⁶⁵

Speculation

It was precisely the union of banking and trade that naturally led to speculation,⁶⁶ which became so pronounced that it even prompted Aristotle to write about *chrematistichè*, or the art of getting rich.⁶⁷ Seemingly everything was used as a pretext for speculation, as Glotz explains:

Corn and metal especially lent themselves to lucrative manipulation. Information was obtained on the state of the harvest in the producing countries, advantage was taken of political crises which impeded export or the free use of the seas, a storm, a shipwreck, the sudden arrival of a boat, everything was a pretext for rigging the market, and, failing true news, false news was invented. Since there were no time bargains to nullify variations by distributing them over a certain period, the smallest incident produced its effect instantaneously.⁶⁸

Glotz gives the example of a Sicilian banker who cornered the metal market by buying up the iron of all the factories, making a profit of 200 percent in the process, and suggests that Pythocles had done similarly with lead.⁶⁹ At the Athenian stock exchanges, which according to Lévy “differed from ours only in the absence of regulations,” traders were constantly watching news and prices, which at times fluctuated wildly, and they soon realized how they could manipulate prices to their advantage. In 585, famous mathematician and inventor of

meteorology Thales of Miletos cornered the oil market by buying or renting all the oil presses after having forecasted a good harvest of oil crop. And acquiring all the grain and iron prior to wartime was a profitable endeavor, since the demand for these materials would rise sharply during the war.⁷⁰ In their price sensitivities, Athenians were not only opportunistic but also prone to panics: When they thought the prices were too high, their hoarding and selling would push the prices into a downward spiral and crisis was imminent. The great orator Lysias referred to such panics in his speeches.⁷¹

In the fourth and third centuries B.C., Greek culture spread to include southwestern Asia and northeastern Africa, including Mesopotamia, Egypt, and Italy. This expansion was at first peaceful, then characterized by Alexander the Great's conquests. Mediterranean culture became more unified and trade became more open.⁷² The new Hellenistic market economy emerged, "[creating] a far larger area of trade in which the market replaced the port of trade and for the first time really integrated the ancient Near East with the Greek world."⁷³

During the Hellenistic age, the art of speculation flourished. Speculators would often try to limit production in order to impose their own prices.⁷⁴ The most famous example is the wheat corner planned about 330 B.C. by Cleomenes.⁷⁵ Furthermore, the first system of insurance ever mentioned in history came into being during this time. Namely, in 324 B.C. Antimenos the Rhodian insured owners against the flight of their slaves for an annual premium of 8 percent.⁷⁶

Technical Analysis

While speculation and technical analysis are different endeavors—in their purest form, the former is akin to gambling and the latter to scientific forecasting—attempting to anticipate future prices is central to both. The very popularity of speculation in ancient Greece naturally led to the development of methods for technical analysis. Athenian merchants knew that information was crucial. They certainly knew the value of geographical and environmental information, such as trading routes, hazards along the way, and winds. For this purpose merchants devised their own manuals, such as the *Periplus Maris Erythraei* (its Roman equivalent is called *Expositio Totius Mundi*), which provided

information about the products sold in countries along the route to India and the attitudes of their rulers.

Adaptive Athenian traders also coveted timely news, and, combining news with data on price fluctuations, would change their strategies rapidly.⁷⁷ For example, upon hearing that grain prices had changed in a way he did not anticipate, a merchant might immediately redirect his ships, in effect recognizing persistence in prices and using past prices as an indicator of future ones:

Some of these men would send off the goods from Egypt, others would travel on board with the shipments, and others would remain here in Athens and dispose of the merchandise. Then those who remained here would send letters to those abroad to inform them of the prevailing prices, so that if grain were expensive in Athens they might bring it here, and if the price should fall they might head to some other port. This was the main reason, men of the jury, why the price of grain rose: it was due to such letters and conspiracies.⁷⁸

Athenian merchants also made inferences about market sentiment to try to predict future prices and decide how much of a given commodity to buy or hold. As Whitby puts it, “What counted overall were impressions, since a belief that grain was in short supply would rapidly escalate into reality as those who could afford to increased their personal stores, while those with substantial reserves held them back from the market in the hope of yet higher prices.”⁷⁹ To assess changes in sentiment—just as modern technical analysts do—ancient Athenians used prices: “[T]heir best indicator was probably the price level on the markets, which might fluctuate in response to rumors and changes in sentiment.”⁸⁰

Ancient Rome

Commerce played an important role in ancient Rome from its earliest days, so much that in early fifth century B.C. a guild of merchants dedicated a temple to Mercury—thought to be Rome’s first temple honoring this god.⁸¹ In fact, Mercury’s very name is derived from the Latin

merces, which means “the price paid for something, wages, reward, recompense,” which in turn is derived from the Latin *merx* meaning “ware, merchandise.”⁸² Every year on May 15, Mercury’s birthday was commemorated by traders in a lavish ceremony:

Thus the *Ides* of May became a festival for traders (*mercatores*) and Mercury’s temple the center of their guild (*collegium*). Ovid [43 B.C.E.–17 C.E.] . . . refers to an aqua Mercurii . . . a spring or fountain . . . from which a merchant would draw water in fumigated jars; with this water he wetted a laurel bough and then with this he sprinkled the goods he had on sale as well as his own hair.⁸³

During the early Roman Empire, particularly the peaceful and prosperous Augustan age (c. 43 B.C.–18 A.D.), Roman commerce was at its height. This period was characterized by market-oriented agricultural production, an increase in the demand for luxuries, more regular issue of Roman coinage, and a free movement of trade both nationally and internationally.⁸⁴ Farmers and craftsmen produced for the market; they would sell their produce and buy what they needed at periodic markets, *nundinae*, so called because they were held every ninth day—a different day in different cities to provide for more trading opportunities.

The Romans built permanent market halls, *macella*, where people could buy their foodstuffs. Wholesale customers frequented Forum Boarium for cattle, Forum Holitorium for vegetables, Forum Vinarium for wine, and Forum Cupedinis first for delicacies and later for more general provisions. Monumental market buildings were constructed: the Macellum Liviae by Augustus, the Macellum Magnum by Nero, and the Mercatus Traiani by Trajan.⁸⁵ As merchant stalls gave a commercial feel even to regular *fora*—open spaces in Roman towns where various religious or civic activities were conducted—with surrounding streets lined with shops and stalls.⁸⁶ Economically, Rome was at a level that was not only unprecedented but also would not be matched until early modern times. As Temin puts it:

From an economic point of view, the important characteristic of the early Roman Empire was the relatively large role played

by market forces, certainly as compared to the medieval economy that would follow. Large-scale production and movements of resources in the early Roman Empire were dominated by markets. This mode of organization promoted the exploitation of comparative advantage, helped by political stability, personal security, and widespread education. It also promoted a modest rate of economic growth that resulted in the prosperity of the early Roman Empire, which was not to be equaled in the West for almost two millennia thereafter.⁸⁷

It is from this period that much of the market evidence stems.

It may at first seem surprising that evidence of price records from an economy as advanced as ancient Rome is so scarce. But while the Babylonians recorded prices on clay tablets, ancient Romans used wax-covered wooden oblongs—a highly perishable medium. What did survive are occasional inscriptions of important transactions in stone, as well as papyral records from Egypt. However, despite the dearth of direct evidence, researchers generally agree that the Roman Empire was a true market economy.⁸⁸ An extensive study by Duncan-Jones on the economy of the Roman Empire finds that capital, labor, and goods all had prices,⁸⁹ and referring to commodity prices such as wheat, wine, and donkeys, Rathbone notes that they were “basically formed by the operation of free-market forces, that is, the fundamentals of supply and demand in a monetized economy.”⁹⁰

Because free-market prices contained information about the supply of and demand for goods, “it would be strange indeed if farmers and craftsmen operating in this context did not take prices into account when planning their activities,” writes Temin.⁹¹ He goes on to elaborate that “Roman prices, in other words, contained information about the availability of goods and even about the advantage to be gained from selling [the] farmer’s own produce.”⁹² This suggests that ancient Romans were making inferences about profit opportunities based on past prices, which is precisely what technical analysts do today.

It is not hard to imagine that prices exhibited a seasonal pattern, since in those days news traveled from Rome to Egypt at different speeds during different seasons: What took weeks in good weather took months in the winter. In fact, Temin points out that the available

scattered data are consistent with such a seasonal pattern and notes that due to the seasonality effect, “arbitrage could not have equalized prices in Rome and Egypt in any short period.”⁹³ In other words, arbitrage opportunities could be identified based on seasonality patterns in the price data; with this in mind, it is hardly inconceivable that market participants engaged in a form of cyclic analysis resembling that used by technicians today.

Negative Attitudes toward Traders

In ancient times, traders and bankers—indeed, all who avowed the profit motive—were universally despised. In ancient China merchants were hardly recognized as men, living at the very bottom of the social hierarchy. And as we will see in the next chapter, certain kinds of medieval merchants were routinely suspected of “having killed and skinned any cat that was missing.”⁹⁴ While the ancient Greeks deemed farmers moral and suitable to be generals, traders were viewed as greedy, dishonest, and unreliable—one source notes that “merchants can pile up money, but that does not qualify them to be generals.”⁹⁵ Traders were not considered trustworthy, as Xenophon’s Socrates explains while offering advice about choosing whom to have as friends:

“What about a good businessman who is determined to make a great deal of money and so always drives a hard bargain, and who enjoys getting money but is reluctant to hand it over?”

“In my view he is even less desirable than the last.”

“What about the man who is so dedicated to making money that he has no time for anything that won’t be profitable?”

“He should be avoided, in my opinion; he will be no use to anyone who associated with him.”⁹⁶

A passion for making money was considered a deep character flaw that evinced poor control over one’s emotions and an amoral willingness to exploit others for one’s own profit and to lie freely—“and there is no form of behavior that is less noble than lying.”⁹⁷

Wealth should not be seized; the wealth that comes to us from the gods is far better. If a man acquires great wealth through violence or force, or if he steals it through his words, as often happens when a man's mind is clouded by the desire for gain and dishonor tramples down honor, the gods soon deal with him.⁹⁸

Despite their social outcast status, traders themselves were proud of what they did and even celebrated their profession on their tombstones.⁹⁹ Although the social criticism presented above was directed at traders in general—referring to technical trading no more than it does to fundamental or speculative kinds—it goes to show how deeply ingrained in the human mind anti-trading attitudes were. In the rest of this volume, we will shed some light on why so many remain attached to technical analysis to this day.

