

The Price of Time

**The Real Story
of Interest**



**Edward
Chancellor**

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*For Henry Maxey
A reward for waiting.*

Nothing is more amusing than the multitude of laws and canons made in every age on the subject of the interest of money, always by wiseacres who were hardly acquainted with Trade and always without effect.

Richard Cantillon, 1730

The question of interest has long been the object of contemptuous neglect.

Eugen von Böhm-Bawerk, 1884

Don't give me a low rate. Give me a true rate, and then I shall know how to keep my house in order.

Hjalmar Schacht, Reichsbank president, 1927

Our earth is degenerate in these latter days: bribery and corruption are common; children no longer obey their parents; every man wants to write a book, and the end of the world is evidently approaching.

Assyrian tablet, c. 2,800 BC

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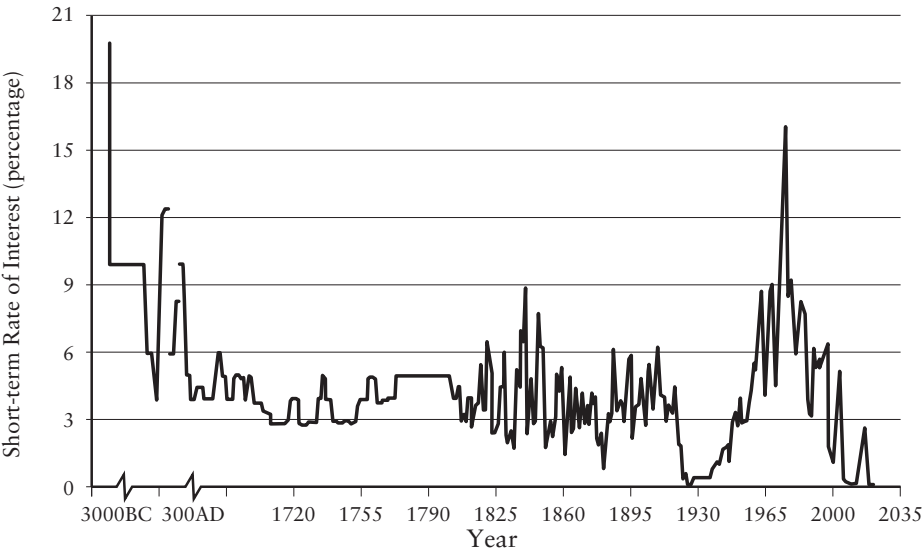
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Five millennia of interest rates



Introduction

The Anarchist and the Capitalist

In 1849, a debate took place in the pages of *La Voix du peuple*, a socialist publication, between two members of the French National Assembly. On one side stood Pierre-Joseph Proudhon, the self-proclaimed anarchist, best-known today for his motto ‘property is theft’, and a regular contributor to *La Voix*. On the other side was Frédéric Bastiat, a free-trade advocate and pamphleteer. Bastiat was renowned for his satirical economic parables. He made the case against unproductive state interventions, for instance with his ‘Petition of the Candlemakers’, in which candlemakers request a law requiring people to close their blinds and shutters against the sun, in order that more candles could be sold.

The subject under discussion was the legitimacy of interest. Proudhon took an old-fashioned view. Interest, the anarchist proclaimed, is ‘usury and plunder’. Usury was an unequal exchange levied by those who, because they didn’t deprive themselves of the capital they lent, had no right to demand a greater sum in return. Interest constitutes a ‘reward for idleness, [and was] the basic cause for inequality, but also of poverty’.¹ In short, Proudhon continued, adapting his most famous statement, ‘I call interest THEFT.’²

That was not the end of the critique. Proudhon complained that interest compounds debt over time, so that a loan over time would grow to become larger than an orb of gold the size of the Earth.³ Charging for loans slows the circulation of money, he suggested, causing ‘the stagnation of business, with unemployment in industry, distress in agriculture, and the increasing imminence of universal bankruptcy’.⁴ Interest fuels class antagonism and restricts consumption by raising the price of products. In a capitalist society, said Proudhon, workers can’t afford to acquire the objects they produce with their own hands. ‘Interest is like a double-edged sword,’ concluded Proudhon, ‘it kills, whichever side it hits you with.’⁵

There was nothing original in Proudhon’s invective. His complaints had an ancient pedigree. He cited the Hebrew word for interest, *neschek*,

which derives etymologically from the bite of a serpent.⁶ Proudhon's rhetoric was high-flown and repetitive, and his economic analysis was not profound. In his *History of Economic Analysis*, Joseph Schumpeter lamented Proudhon's complete inability to analyse. Even so, Proudhon had some original proposals. He wanted to nationalize the Banque de France, expand the money supply and reduce interest rates close to zero. His People's Bank would charge half a per cent to cover its costs. Gold would be replaced by paper money. In addition, Proudhon demanded a tax on capital (tantamount to negative interest). The reduction in interest, he envisaged, 'would instantly produce incalculable results all over the Republic and across Europe'. There would be no more debt, insolvencies and bankruptcies would decline, consumption would increase and labour would be guaranteed employment. Once interest was no longer taken by the parasitic class of lenders, worker incomes would rise.⁷

Bastiat was having none of this. Interest wasn't theft, he maintained, but a fair reward for a mutual exchange of services. The lender provides the use of capital for a period of time, and time has value. Bastiat cites the famous lines from Benjamin Franklin's *Advice to a Young Tradesman* (1748): 'Time is precious. Time is money – Time is the stuff of which life is made.'⁸ It follows that interest is 'natural, just and legitimate, but also useful and profitable, even to those who pay it'.⁹ Far from depressing output, capital made labour more productive. Far from stoking class antagonism, Bastiat believed that capital benefited everyone, 'particularly the long-suffering classes'.¹⁰

Bastiat foresaw disaster if Proudhon's plans were put into practice. If lending were not rewarded, there would be no lending. To restrict payments on capital would be to abolish capital.¹¹ Savings would disappear. Proudhon's national bank would lend, but if the bank demanded security for its loans working people, lacking security, would be no better off. The abolition of interest would only benefit the wealthy. 'In your system,' Bastiat wrote to Proudhon,

the rich will indeed borrow gratis, while the poor will not be able to borrow at any price.

When a rich man presents himself at the bank, he will be told: You are solvent, here is the capital, we lend it to you for nothing.

But let a worker dare to show his face. He will be asked: 'Where are your guarantees, your lands, your houses, your goods?'

'I have only my arms and my probity.' [The worker replies.]

'That does not reassure us, we must act with prudence and severity, we cannot lend to you gratis.'¹²

The ‘propaganda of free credit is a calamity for the working classes,’ Bastiat concluded. There would be fewer businesses, while the number of workers would remain the same. Wages would decrease. Capital would flee the country. If the bank lent freely, there would be a deluge of paper money. Order would be lost, and the country would exist perpetually on the edge of an abyss. ‘Free credit is a scientific absurdity, involving antagonism to established interests, class hatred, and barbarity.’ With these words Bastiat ended the correspondence.

At least Proudhon and Bastiat agreed on one thing. Proudhon believed the 1848 Revolution’s aims could be realized through monetary reform. With interest at three-quarters of a per cent, he said, three-quarters of the revolution would be achieved.¹³ ‘Free credit is socialism’s final word, its final slogan, and its final effort,’ Bastiat rejoined. ‘An inexhaustible paper money factory: that is your solution.’ To abolish interest on capital would result in the ‘annihilation of credit’ and the death of capital.

As with many debates about interest, before and since, the Proudhon–Bastiat contretemps was a dialogue of the deaf.¹⁴ Neither side heard what the other had to say. The tone of the correspondence became progressively more acerbic. In his last letter, Proudhon pronounced that Bastiat’s intelligence was asleep, signing off with the comment, ‘Monsieur Bastiat, you are a dead man.’¹⁵ This was not far from the truth. Bastiat suffered from tuberculosis and died a year later in Rome. He was forty-nine years old.

WHAT IS SEEN AND WHAT IS NOT SEEN

In the year of Bastiat’s death, a final pamphlet appeared. In ‘What is Seen and What is Not Seen’ Bastiat tells the parable of a merchant, Jacques Bonhomme, whose shop window is broken by his careless son. Neighbours thought that it wasn’t all bad news. At least repairing the window provided employment for the glazier, who could spend the money on food and other sundries. But Jacques Bonhomme now had less money to spend, says Bastiat. Here, Bastiat is urging readers to consider the broad consequences of any economic action, not just its effect on a particular beneficiary:

In the sphere of economics, a habit, an institution, or a law engenders not just one effect but a series of effects. Of these effects only the first is immediate; it is revealed simultaneously with its cause; *it is seen*. The others merely occur successively; *they are not seen*; we are lucky if we *foresee* them.

The entire difference between a bad and a good Economist is apparent here. A bad one relies on the *visible* effect, while the good one takes account of both the effect one can *see* and of those one must *foresee*.¹⁶

The bad economist, says Bastiat, pursues a small current benefit that is followed by a large disadvantage in the future, while the good economist pursues a large benefit in the future at the risk of suffering a small disadvantage in the near term. The American journalist Henry Hazlitt elaborated on Bastiat's Parable of the Broken Window in his bestselling book *Economics in One Lesson* (1946). Like Bastiat, Hazlitt lamented the

persistent tendency of men to see only the immediate effects of any given policy, or its effects on only a special group, and to neglect to inquire what the long-run effects of that policy will be not only on the special group but on all groups. It is the fallacy of overlooking secondary consequences.¹⁷

Hazlitt criticized the 'new' economics of his day which, he believed, considered only the short-term effects of policies on special groups and ignored the long-term effects on the whole community.¹⁸ He attacked what he called the 'fetish' of full employment. Schumpeter's idea of 'creative destruction' must be allowed to operate unhindered, Hazlitt wrote, as it was as important for the health of an economy that dying industries be allowed to die as it was for growing industries to be allowed to grow.¹⁹ Hazlitt compared the price system in a competitive economy to the automatic regulator on a steam engine. Any attempt to prevent prices from falling would only keep inefficient producers in business.²⁰

The supply and demand for capital are equalized by interest rates, Hazlitt maintained. Yet a 'psychopathic fear of "excessive" interest rates' induced governments to pursue cheap money policies. Easy money, wrote Hazlitt,

creates economic distortions ... it tends to encourage highly speculative ventures that cannot continue except under the artificial conditions that have given birth to them. On the supply side, the artificial reduction of interest rates discourages normal thrift, saving, and investment. It reduces the accumulation of capital. It slows down that increase in productivity, that 'economic growth' that 'progressives' profess to be so eager to promote.²¹

Hazlitt concluded by citing a well-known 1883 essay by William Graham Sumner. In this essay, Sumner described how A and B hatch a plan to help X, but ignore the impact on C. C is the 'Forgotten Man', a person 'who is never thought of. The victim of the reformer, social speculator and philanthropist.'²²

PROUDHON'S DREAM IS REALIZED

After the Lehman Brothers bankruptcy in September 2008, neoliberal economists implemented the anarchist Proudhon's revolutionary scheme. Central bankers pushed interest rates to their lowest level in five millennia. In Europe and Japan, rates turned negative – an unprecedented development. The results were not as Proudhon anticipated, however. Rather, Bastiat's grim forebodings about free credit appear closer to the truth.

Central bankers congratulated themselves for restoring calm on Wall Street. The bogey of deflation was dismissed. Unemployment came down sharply. These were the 'seen' effects of zero interest rates. The secondary consequences of zero interest rates went largely unseen. Yet they were there for anybody who cared to look.

In 2012, the Canadian economist William White published a short paper entitled 'Ultra Easy Monetary Policy and the Law of Unintended Consequences'.²³ White suggested that the sharp decline in interest rates had encouraged households to spend more and save less. The downside of bringing forward consumption from the future, White suggested, was that people must in fact save more for any predetermined goal; and, given the prevailing low interest rates, it would take much longer to accumulate a satisfactory nest egg.

The authorities believed that low rates would boost corporate investment. But White suggested firms were actually investing less. Furthermore, ultra-easy money was responsible for the misallocation of capital. Creative destruction was thwarted. 'It is possible,' White concluded, 'that easy money conditions actually impede, rather than encourage, the reallocation of capital from less to more productive resources.'

By lowering the cost of borrowing, ultra-easy money provided an incentive for investors to take undue risks. At the same time, insurance companies and pension providers were struggling to cope with the low interest-rate regime. Given the low cost of borrowing, governments were unconstrained to run up their national debts. In the last analysis, easy money served only to postpone the day of reckoning. 'Aggressive monetary easing in economic downturns is not a "free lunch",' concluded White, 'at best, it buys time to rebalance economies. In reality, this opportunity is wasted.' On Wall Street, they talked about 'kicking the can'.

White also suggested that monetary policymakers might face trouble exiting from their ultra-low rates. A few years after White's 2012 paper, the Fed embarked on a tentative tightening cycle but soon abandoned its

attempt to take interest rates back to normal levels. Instead, the Fed returned to printing money and cutting rates, and after Covid-19 struck the policy rate went back down to zero. White anticipated that central banks would also be forced to play a greater role in the provision of credit. This too has come to pass. During the pandemic year of 2020, central banks moved closer to directly financing government spending, as White predicted (see Postscript: The World Turned Upside Down).

Bastiat's claim that free credit would be a disaster for working people was not far off. After the subprime mortgage crisis, banks increased the lending rates charged to less creditworthy individuals and small businesses. Private equity barons and other well-connected figures on Wall Street, on the other hand, were able to borrow for peanuts. During the post-crisis decade, incomes barely grew and low-paying jobs proliferated. The less well-off were forced to borrow at high rates and received negative real returns on their deposits, while wealthy speculators and corporations borrowed cheaply and made out handsomely.

This book is about the role of interest in a modern economy. It was inspired by a Bastiat-like conviction that ultra-low interest rates were contributing to many of our current woes, whether the collapse of productivity growth, unaffordable housing, rising inequality, the loss of market competition or financial fragility. Ultra-low rates also seemed to play some role in the resurgence of populism as Sumner's Forgotten Man started to lose patience.

Part Two of this book (How Low Rates Begot Lower Rates) examines the unintended consequences of ultra-low interest rates (chapters 7 to 16). Part One (Of Historical Interest) sets the scene. We trace the origins of interest to the Ancient Near East (Chapter 1) and follow its story through the Middle Ages to the birth of capitalism in Europe (Chapter 2). We describe how interest and capitalism are inseparable. This principle may have been accepted by the date Adam Smith's *The Wealth of Nations* was published in 1776, but there has always existed a 'psychopathic' fear of excessive interest rates.

In seventeenth-century England, the most prominent exponent of lower rates was the wealthy City merchant Sir Josiah Child, who stood to benefit most from a reduction in the cost of borrowing. Child's arguments were refuted by the great liberal philosopher John Locke (Chapter 3). Early in the following century, the Scotsman John Law introduced paper money into France and reduced interest rates to 2 per cent. This great monetary experiment ended in disaster (Chapter 4). Still, Law anticipates the policies of modern central bankers with their ultra-low rates and quantitative easing (asset purchases).

By the nineteenth century, it was clear to some financial observers that speculative manias tended to coincide with periods of low interest rates. As Walter Bagehot, the Victorian era's most famous financial journalist, liked to say, 'John Bull can stand many things but he can't stand two per cent.' It was Bagehot who elaborated the rule that during financial panics the central bank must lend freely (Chapter 5), although his stipulation that relief lending should only be provided against high-quality collateral at penal rates is ignored by modern lenders of last resort.

Modern central bankers fret about the twin evils of inflation and deflation. Their goal is to achieve a stable price level. Yet over the past hundred years, several great credit booms – including the credit boom of the 1920s (Chapter 6), Japan's bubble economy of the 1980s and the global credit bubble preceding the 2008 Lehman crisis (Chapter 7) – have occurred at times when inflation was quiescent. On each of these occasions, the lack of inflation encouraged central banks to maintain interest rates below the economy's growth rate. Each of these credit booms ended in disaster.

In Part Three (The Game of Marbles) we examine the impact of ultra-low interest rates on emerging markets. The initial effect of reducing rates to zero on the world's reserve currency, the US dollar, was to drive capital flows into emerging markets. Commodity prices took off. Rising food prices helped to spur the 2011 popular uprising in the Middle East known as the Arab Spring. After the Federal Reserve started to tighten policy a couple of years later, commodity prices collapsed and emerging markets entered the doldrums. Two of the largest of these economies, Brazil and Turkey, suffered severe downturns. In China, low interest rates fuelled an extraordinary credit boom, accompanied by the greatest investment binge in history and an epic real-estate bubble.

THE COMPLEXITY OF INTEREST

The reader deserves a word of warning. Interest is an extremely complex subject. Over the centuries many theories have been advanced to explain its existence. The nineteenth-century Austrian economist (and three times his country's finance minister) Eugen von Böhm-Bawerk lists some two dozen different schools of thought in his magisterial work, *Capital and Interest*, ranging from the 'fructification theory' to what he called 'colourless theories' not worthy of serious consideration.*

* Besides the 'fructification theory' (where interest is said to 'derive' from rent on land), there's the surplus value (or profits) theory, productivity theory, 'use theory', 'abstinence theory' (spur

For Böhm-Bawerk interest determined the allocation of capital, affecting what he called the length of ‘time in production’. Other writers have emphasized the importance of interest for saving (‘the wages of abstinence’), its role in finance (‘the cost of leverage’) and the valuation of investments (‘the capitalization rate’). The most encompassing view of interest is contained in the notion of interest as the ‘time value of money’ or, simply, as the price of time. Most theories of interest contain a kernel of truth, if not the whole truth. Irving Fisher, the Yale economist and author of *The Theory of Interest*, wisely observed that ‘theories [of interest] which have been presented as antagonistic and mutually annihilatory are in reality harmonious and complementary.’²⁴

Then there’s the question of whether interest is a ‘real’ phenomenon, linked to tangible capital in the form of buildings and land, or a ‘monetary’ phenomenon. This question presents another problem. Are interest rates determined by ‘real’ economic factors or can they be manipulated? On these questions it’s possible to adopt a catholic position. Real factors are important. But under a system in which money is no longer tied to any actual commodity but is created by central banks (issuing ‘fiat money’) and commercial banks through their lending activities it seems clear that monetary policy has a huge influence on market rates. In recent years, bond yields only turned negative in places where central banks took short-term interest rates below zero.

Whether interest rates are related to economic growth is likewise open to question. The historical record suggests a weak statistical relationship between the pace of economic development and the cost of borrowing. The relationship between demographics and interest is also contested. Conventional wisdom today holds that a decline in population growth explains why interest rates have fallen. Japan’s experience in recent decades is cited in support of this argument. But some economists maintain that Japan is a special case and that interest rates can be expected to climb as the world’s population ages.²⁵

Mainstream economists, who believe that the level of interest is determined by the supply and demand for savings, refer to what they call the ‘natural rate’ of interest. This idea was championed by John Locke in the seventeenth century. In the 1930s, however, John Maynard Keynes and

to savings), ‘remuneration theories’, exploitation theory, reproductive theory and a number of Böhm-Bawerk’s ‘colourless theories’. To this list we should add Keynes’s notion, elaborated in his *General Theory*, that interest is required to discourage the hoarding of capital. Böhm-Bawerk rejected these explanations for interest, suggesting instead that interest arises because of man’s innate preference to enjoy present over future consumption. Needless to say, some economists deny the ‘time preference’ theory of interest.

his followers rejected the concept of a natural rate that balanced the economy at full employment. Since the natural rate cannot be observed directly, this argument is difficult to settle. Yet if the rate of interest is linked to profitability, as most economists have believed since the time of Adam Smith, then interest rates and the pace of economic growth (i.e. the rate of return for the whole economy) must also be connected.²⁶ Thus, the trend level of economic growth can be taken as a reasonable proxy for the natural rate.

Does it even make sense to talk about the rate of interest in the singular when, in reality, there exists a near-infinite variety of different rates? There are short-term rates and long-term rates, policy rates and market rates, risk-free rates and rates on private debt. Large companies issue a vast number of different securities, each of which sports a different yield. Individual countries have their own interest rates, related largely to their inflation and default history. Differences between rates are mostly related to risk, and the relationship between them varies over time. Yet if it's acceptable to talk about the 'price level', composed of the prices of countless goods and services, then the rate of interest is also an acceptable shorthand for discussing the entire spectrum of interest rates.

The most important question addressed in this book is whether a capitalist economy can function properly without market-determined interest. Those, like Proudhon, who argue that interest is fundamentally unjust don't believe in its necessity. To modern monetary policymakers, interest is viewed primarily as a lever to control the level of consumer prices. From this perspective, there's no problem in taking interest rates below zero to ward off the evil of deflation. But influencing the level of inflation is just one of several functions of interest, and possibly the least important.

The argument of this book is that interest is required to direct the allocation of capital, and that without interest it becomes impossible to value investments. As a 'reward for abstinence' interest incentivizes saving. Interest is also the cost of leverage and the price of risk. When it comes to regulating financial markets, the existence of interest discourages bankers and investors from taking excessive risks. On the foreign exchanges, interest rates equilibrate the flow of capital between nations. Interest also influences the distribution of income and wealth. As Bastiat understood, a very low rate of interest may benefit the rich, who have access to credit, more than the poor.

In his debate with Proudhon, Bastiat pointed out that time had value. The leading writers on the subject, Böhm-Bawerk and Fisher, believed that interest was intrinsic to human nature: humans are naturally impatient

creatures and the rate of interest expresses their time preference.* Fisher's contemporary, the Swedish economist Gustav Cassel, author of a fine introduction to the subject, likewise insisted on the 'absolute and unconditional necessity of interest'.²⁷ Before the reader's patience wears thin, it is time to start our story.

* Böhm-Bawerk was adamant on this point. Fisher, however, could conceive of situations when an individual's time preference might turn negative. For instance, at times when incomes were declining rapidly, Fisher imagined that, if the stock of food was composed of spoiling figs, instead of hard tack, then the interest rate would be negative.

PART ONE

Of Historical Interest

I

Babylonian Birth

If wealth is placed where it bears interest it comes back to you redoubled.

Egyptian scribe, named Any, early first millennium BC

There was probably no other person in the whole country who had meditated so much on the question of interest. Margayya's mind was full of it. Night and day he sat and brooded over it. The more he thought of it the more it seemed to him the greatest wonder of creation. It combined in it the mystery of birth and multiplication. Otherwise how could you account for the fact that a hundred rupees in a savings bank became one hundred and twenty in the course of time? It was something like the ripening of corn. Every rupee, Margayya felt, contained in it the seed of another rupee and the seed in it another seed and so on and on to infinity. It was something like a firmament, endless stars and within each star an endless firmament and within each one further endless ... It bordered on mystic perception. It gave him the feeling of being part of an infinite existence.

R. K. Narayan, *The Financial Expert*, 1952

In the beginning was the loan and the loan carried interest. Well, this may have been the case. We don't know for sure, but it's now widely believed that the earliest transactions were for credit rather than barter. We do know that the Mesopotamians charged interest on loans before they discovered how to put wheels on carts. Interest is much older than coined money, which only originated in the eighth century BC. Some suggest that interest may have originated with the payment of blood money, known as *Wergild*, as compensation for murder and other injuries, with 'interest' as a penalty payment over and above the value of the injury.¹ On the other

hand, the French anthropologist Marcel Mauss in *The Gift* (first published in 1925) maintains that interest began with the practice of reciprocating gifts among tribal people.*

Prehistoric peoples probably charged interest on loans of corn and livestock. The association between interest and the fruit of a loan is embedded in ancient languages. Across the ancient world the etymologies of interest derive from the offspring of livestock. The Sumerian word for interest, *mas*, signifies a kid goat (or lamb).² The ancient Egyptian equivalent *ms* means to give birth.³ In ancient Greek interest is *tokos*, a calf. Among the several Hebrew words for interest are *marbit* and *tarbit*, meaning to increase and multiply. The Latin for interest, *foenus*, connotes fertility, and for money, *pecunia*, is derived from *pecus*, a flock. Our word capital comes from *caput*, a head of cattle. These derivations, claim Sydney Homer and Richard Sylla, imply that interest originated with

loans of seeds and of animals. These were loans for productive purposes. The seeds yielded an increase. At harvest time the seed could conveniently be returned with interest. Some part or all of the animal's progeny could be returned with the animal. We shall never know but we can surmise that the concept of interest in its modern sense arose from just such productive loans.⁴

The charging of interest for the loan of farm animals continued into modern times. In newly settled parts of the United States in the early nineteenth century, cows and sheep were commonly sold on trust, 'the terms being that double the number thus transferred, is to be returned in four or five years.'⁵ A connection between nature's productivity and interest was suggested by nineteenth-century German economist Karl Arnd, who claimed that the interest rate was regulated by 'the proportion, in which the timber in European forests is augmented through their annual growth . . . at the rate of 3 or 4 to 100. As a result interest in these countries cannot fall below that rate.'[†] In similar vein, Irving Fisher writes that

Nature is, to a great extent, reproductive. Growing crops and animals often make it possible to endow the future more richly than the present. Man can obtain from the forest or the farm more by waiting than by premature

* Such folk, claims Mauss, were not motivated by 'the cold reasoning of the merchant, the banker, and the capitalist . . . they repay with interest, but this is in order to humiliate the person initially making the gift or exchange, and not only to recompense him for loss caused to him by "deferred consumption"' (Marcel Mauss, *The Gift: The Form and Reason for Exchange in Archaic Societies*, trans. W. D. Halls (London, 1990), pp. 96–7).

[†] Marx calls Arnd's theory the 'primordial forest rate of interest' (Marx, *Capital*, vol. III, trans. Samuel Moore and Edward Aveling (London, 1974), p. 363 fn).

cutting of trees or by exhausting the soil. In other words, Nature's productivity has a strong tendency to keep up the rate of interest.⁶

Over the ages the linguistic connection between a loan and its natural fecundity became more abstract. The word usury derives from the Latin *usuarius*, meaning 'one who has the use but not ownership of a thing'.⁷ In the seventeenth century, a loan was still commonly referred to as the 'use' of money.

BABYLONIAN MASH

Our understanding of early finance arises above the level of speculation thanks to the Mesopotamians, who recorded their loans on clay tablets. As with contemporary loan documents, these tablets record the names of creditor and debtor, the loan amount, the date of the loan and when repayment is due, and, in most cases, the amount of interest to be charged. Various types of collateral were demanded as surety for the loan and might take the form of houses, land and slaves. In one case, the lender takes as collateral the wife of the borrower to live in his house – an early example of debt bondage.

Credit transactions were commonplace in the Ancient Near East during the third and second millennia BC. Interest was generally paid in the same commodity as the loan, commonly silver or barley. It might also be paid in kind, with another commodity (dates, firewood, etc.) or labour services.⁸ Each tablet was marked with a seal and witnessed. Many loans were defaulted on, and disputes between debtors and creditors often ended up in court. In fact, since debt tablets were destroyed when loans were repaid, the archaeological record is of unpaid debts – of which there seem to have been a great number.

A loan document dated from the twenty-fourth century BC shows that a variety of characters each owed debts of 720 litres of barley, including Lugid 'the man of the levy'; Igizi, the blacksmith; U'u, the doorman from KA.KA.; Eki, the priest; Kikuli, the shepherd; and a number of others.⁹ Given that the monthly ration of barley distributed to men by the temples was 60 litres (women received 30 litres), these loans amounted to a year's supply of food, a not inconsiderable amount. One of the debtors, Gugish, 'the overseer of servants', owed the massive sum of 9,360 litres of barley, equivalent to thirteen years of rations. The provider of these loans is listed as Amarezem of Urnu, who was either an employee of the palace, providing the credit on behalf of that institution, or a private individual.¹⁰ Interest

is not mentioned in this instance, but it was probably charged at the rate of 33.33 per cent, the standard rate for barley loans in most tablets.

We don't know why these people needed to borrow. If there had been a harvest failure, the barley would have been needed to avoid starvation; historians concur that barley loans generally served consumption purposes. Alternatively, the barley could have been used for seed crop. In fact, Mesopotamian credit served a huge variety of purposes. Many commodities – including barley, reeds, wooden beams and bulbs – and livestock were sold on credit.¹¹ There were loans for the purchase of real estate and slaves, and for business ventures as well as consumption.

The region lacked many raw materials and had to import cedar wood, marble, copper and gypsum, for which it paid with exports of textiles, sesame oil, corn and dates.¹² Several domestic crafts, such as potting, reed-work, weaving and jewellery making, depended on the international trade.¹³ Foreign trade was often financed with credit. From the late third millennium, there is a record of silver lent to a trading partnership. More interest was charged for mercantile loans, but the loan principal did not have to be repaid in the event of business failure; this type of credit resembles the bottomry loans (i.e. loans on the ship's keel or 'bottom') that were common in Ancient Greece and in the Middle Ages.

The calculation of interest requires standardized measurements of time and value. The Sumerian calendar contained thirty days in the month and twelve months in the year.* Time, distance and weight, and also money and interest were measured in fractions of sixty – a number that lent itself to simple calculation being the lowest number divisible by the first six integers.¹⁴ Working out how much interest was due could still be a complex business. Pupils were taught how to calculate the rate of interest on a loan in which both principal and interest were combined.¹⁵ One test required the student in Old-Babylonian times to answer the following question: 'Give 1 *gur* at interest; in how many years are capital and interest equal?'† 'Awkward calculation,' we are told, 'is one of the characteristics of Babylonian mathematics.'¹⁶

The lender could contract to receive an interest payment in the form of labour services, performed either by the borrower, another family member or a slave – a practice known as anticretic interest. When interest was paid

* Silver loans were made by weight, and barley loans by volume. One mina of barley was worth 60 shekels. Interest on silver was paid at the rate of one shekel per mina (1/60th per month or 20 per cent a year). There was a fixed exchange rate between barley and silver.

† Assuming 20 per cent interest, paid annually and capitalized, Leemans calculates that the loan principal doubles with interest over 3 years and 283½ days (W. F. Leemans, *The Old Babylonian Merchant: His Business and His Social Position* (Leiden, 1950), p. 15).

by taking possession of the collateral, such as land, it was equivalent to rent or a modern capital lease. In fact, the Babylonians used the same word, *mas*, for interest and for rent. This ancient connection between interest and rent is still reflected in the modern German for interest, *Zins*, which derives from census or rent. The French expression for a public loan, *rentes*, originated with the French monarch borrowing against the rents of the Hôtel de Ville in Paris. From this derives the *rentier*, a person who lives off interest.

Some Babylonian debts were transferable and heritable. 'In Assyria in the fourteenth century [BC], deed-tablets were bought and sold in the market,' writes historian Morris Silver.¹⁷ Loans were made for varying lengths of time. Often repayment was due after harvest. Some were call loans, payable on demand. An example from the city of Sippar in the early second millennium states that the loan was to be repaid 'as soon as he [the creditor] will ask for this'.¹⁸ There is an example, also from the early second millennium, of a merchant calling in a promissory note from another merchant in order to repay a debt.¹⁹

By the second millennium we observe what appears to be a credit network. The name of Balmunamhe, a merchant of Larsa, is recorded in several documents, along with fellow merchants Puqum, Nur-Kubi, Warad-Sibi and Gimillum – the last mentioned being a witness to a house purchase made by Balmunamhe in the eleventh year of the reign of Warad-Sin (1770–1758 BC).²⁰ Many of these merchant-bankers lived in the same city district of Larsa. Balmunamhe was a significant figure who lent out money and barley at interest and dealt in slaves, whom he both rented out and received as collateral on loans. He also hired out ships. This great merchant traded property and, at length, acquired a large landed estate whose village was named after him. In these activities, Balmunamhe was a typical Old-Babylonian *tank-aram*, or merchant, although he operated on a larger scale than most.

There were many female creditors and borrowers.²¹ A woman of Ur is recorded as lending barley and silver to three partners for them to hire boats and crew for a sea voyage.²² In thirteenth century Assur, a business-woman paid for an order of bricks with letters of credit, promising to supply wool in exchange.²³ Another loan provided barley for 'female mill workers'.²⁴ In Sippar, the priestesses of the sun god Samas conducted extensive credit operations: they lent out silver and slaves, financed merchants' journeys and witnessed loan contracts.²⁵ These priestesses, known as *nadita*, appear to have driven male merchants from the lending business, and in the process they acquired great fortunes along with fine houses, gardens and fields, which they leased out.²⁶

It has been said that 'finance was born in the shades of sanctity'.²⁷ Temples were the main providers of loans in the Ancient Near East initially.

Palaces also supplied credit. These institutional creditors used the interest on loans to redistribute resources, handing out food rations to widows and orphans and others. Over time, the job of collecting taxes and making loans came to be handled by middlemen. Some of these merchants became very wealthy. In the Neo-Babylonian period of the first millennium BC, the Egibi family provided an array of merchant-banking services: accepting deposits, providing loans, settling client debts and speculating in commodities. The Egibis, who acquired large estates and were rewarded with senior official positions, were the Rothschilds of the Ancient Near East.²⁸

THE EIGHTH WONDER OF THE WORLD

The Mesopotamians invented what Einstein supposedly called the eighth wonder of the world, namely compound interest.* A clay cone covered with cuneiform inscriptions records a border dispute between Lagash and Umma, two neighbouring city states in Southern Mesopotamia. This document was issued in the name of Enmetena, a ruler of Lagash before 2400 BC. It states that, some four decades earlier, Umma had occupied some agricultural land belonging to Lagash, agreeing at the time to make annual payments to Lagash of 300 *gurus* (litres) of barley for the land. But Umma had failed to meet its obligations. Enmetena took back the disputed territory and demanded a back payment for the unpaid grain. This debt, claimed Enmetena, accrued compound interest at the rate of 33.33 per cent a year and now totalled 4.5 trillion litres of barley – an impossibly large sum.[†] Failure to pay resulted in war between the two cities.²⁹

The Enmetena document points to an early and enduring problem with interest, namely that when a debt compounds with interest it is liable to become unpayable. The Sumerians had a phrase for compound interest, *mash mash*, which implies livestock replicating itself, so the debt multiplies ad infinitum.³⁰ The problem of debt compounding at a geometrical rate has never lost its fascination. As the English philosopher Richard Price calculated in the late eighteenth century: ‘A penny . . . put out to 5

* There is no evidence that Einstein ever made this comment. The first known reference, according to the Quote Investigator website, is an advertisement for The Equity Savings & Loan Company published in the *Cleveland Plain Dealer* of Ohio in 1925: ‘The Eighth Wonder of the World – is compound interest. It does things to money. At the Equity it doubles your money every 14 years’ (<https://quoteinvestigator.com/2019/09/09/interest/>).

[†] William Goetzmann comments that this is equivalent to 580 times the annual barley harvest of the United States (William Goetzmann, *Money Changes Everything: How Finance Made Civilization Possible* (Princeton, 2016), p. 35).

per cent. compound interest at our Saviour's birth, would, by this time, (that is, in 1773 years) have increased to more money than would be contained in 150 millions of globes, each equal to the earth in magnitude, and all solid gold.' Karl Marx cited Price's calculations approvingly (as did Proudhon in his debate with Bastiat).³¹

Debt crises, exacerbated no doubt by the horrors of compound interest, were a regular feature of Mesopotamian history. It is perhaps no coincidence that Enmetena of Lagash was also the first ruler in the ancient world to proclaim a debt cancellation. After Lagash's first debt relief another followed roughly fifty years later. The fiftieth year was also that appointed in the Book of Leviticus for proclaiming debt jubilees or clean slates in Ancient Israel. Afterwards, Babylonian debt write-offs were customarily announced at the start of a new reign.* Debt jubilees subsequently occurred in Ancient Greece and later still in Rome. In 594 BC, the Athenian Solon, known as the 'Lawgiver', announced the 'shaking off of the burdens'. Solon ordered the smashing of mortgage stones (*horoi*) which marked out an indebted property, thereby releasing citizens from debt bondage. He also reduced the rate of interest.³² Aristotle claims that prior to these reforms 'the poor together with their children were enslaved to the rich'.³³

It is a curious fact that the earliest known set of laws, Hammurabi's Code, which dates back to around 1750 BC, is largely concerned with the regulation of interest. The Babylonian king codified existing credit practices with the customary interest rates set in stone – quite literally, since the Code survives for posterity engraved in cuneiform script on a basalt stele. The maximum rate of interest for silver loans was set at 20 per cent and for barley at 33.33 per cent. There were penalties for lenders who charged more than the maximum rate of interest, failed to subtract repayments from principal, used fraudulent weights or demanded compound interest. The conditions for keeping persons as collateral for loans were specified. After crop damage caused by flooding or drought, the Code instructs that interest must be forgiven.³⁴

Drawing up financial regulations is one thing but getting people to follow the spirit of the law is another matter. What we call 'regulatory arbitrage' – namely, the attempt by financial practitioners to evade

* Clean slates limited the social disturbances that arose when borrowers fell into a state of debt bondage or had their lands foreclosed by creditors. *Misarum* acts only touched upon consumer (grain) loans, while commercial (silver) debts were unaffected. This suggests that the rulers were mostly concerned with the social consequences of excessive personal debt (Michael Hudson, 'Reconstructing the origins of interest-bearing debt and the logic of clean slates', in *Debt and Economic Renewal in the Ancient Near East*, eds. Michael Hudson and Marc van der Mieroop (Bethesda, Md, 2002), p. 7).

regulation – turns out to be as old as the law itself. The highest chargeable rates may have been capped by Hammurabi, but he didn't specify over what time period. Lenders could apply the maximum legal rate for a term as short as a month, which made an extremely high annual percentage rate. Like the charges exacted by modern credit-card issuers, one Babylonian loan demanded a late payment penalty at an annualized 260 per cent.³⁵ An Ishchali loan was recorded in an account book with conditions unspecified, which 'served nicely to hide the charging of interest and the true rate of interest from the king's market police'.³⁶ Attempts to bypass financial rules elicited still more regulation. For instance, an edict in the seventeenth century BC legislated against attempts to disguise interest-bearing loans as advances for the purchase of merchandise.³⁷

THE LEVEL OF INTEREST RATES

How the level of interest rates is determined remains one of the most perplexing problems in the field of economics. Some believe that the interest rate is derived from the returns on real assets – the surplus yielded by farmland, the profitability of an industrial concern and, more generally, by productivity growth across the entire economy. Others attribute it to the rate of population growth and to changes in national income (the annual change in GDP being derived from changes in population and productivity). Some maintain that the rate of interest reflects society's collective impatience or time preference, while still others claim that interest is influenced primarily by monetary factors.

None of these various interest-rate theories is strongly supported by ancient experience. As we have seen, Babylonian loan rates came in two standard forms (20 per cent for silver and 33.33 per cent for barley), and these rates remained unchanged for centuries – at least from the early Ur III period to the death of Hammurabi (c. 2100–1750 BC). The great stability of Babylonian interest rates suggests they cannot have been determined by economic factors alone.³⁸ Interest rates in Ancient Greece also remained stable for hundreds of years. From the fifth to the second centuries BC, the rate of interest demanded on loans made by the Temple of Apollo on Delos was at 10 per cent.³⁹

Over the centuries, interest rates in the ancient world declined substantially, but their long-term downward trend appears to have been more influenced by changes to the standard of measurement rather than economic factors. Under the Babylonian sexagesimal system, interest on silver loans was charged at the rate of one-sixtieth per month. The Greeks,

who introduced a decimal system, charged standard interest at 10 per cent per annum. Under the Roman duodecimal system, interest was usually at one-twelfth of principal, or 8.33 per cent a year.⁴⁰ Keynes, who studied Babylonian monetary history while researching his *Treatise on Money*, believed that interest rates were determined by custom rather than market forces. As his disciple Joan Robinson put it, interest has a ‘Cheshire cat grin [which] . . . remains after the circumstances which gave rise to it in the past have completely vanished’.⁴¹ Marx held a similar view, writing that ‘customs, juristic tradition, etc., have as much to do with determining the average rate of interest as competition itself.’⁴²

Based on the evidence of lending from the third to the first millennia BC, Marx’s conclusion seems sensible. Even in the modern world, custom has continued to play a role in setting the level of interest rates. As Homer and Sylla observe:

up to recently in the United States many types of interest rates fluctuated very sluggishly. A 6 per cent tradition lasted for at least two centuries. Usury limits generally lasted unchanged until the 1960s. The rates on bank loans charged by banks far removed from money market centers and from ‘Big Business’ were relatively stable for long periods.⁴³

Recent research from the Bank for International Settlements suggests that interest rates over the past hundred years or so have been more influenced by the nature of the various monetary regimes (Gold Standard, Gold Exchange Standard, Bretton Woods and Dollar Standard) than by economic factors such as individual savings and investment decisions.⁴⁴

Yet it’s also clear that ancient interest rates were not solely determined by custom and law. Morris Silver maintains that the ancient loan market responded to changes in the supply and demand for credit.* As we have seen, there were many private lenders in Mesopotamia – presumably they needed to be enticed into lending with the offer of a reasonably attractive reward. Loans made in the name of a temple deity were often at a lower rate to those provided by private individuals. This may be an early example of subsidized public lending, or perhaps the temples attracted a better class of debtor – after all, no one wants to default to a god. Higher rates on barley loans possibly reflected the fact that such loans were made at times when corn was scarce and that the loans were to be repaid after the harvest when barley was cheap and abundant.⁴⁵

* Morris Silver, *Economic Structures of Antiquity* (Westport, Conn., 1995), ch. 5 *passim*. Although it has been claimed that Ancient Greece lacked a true money market, a decree issued in the late fifth century BC by Plotheia, a district of Attica, calls for money to be lent out to borrowers offering the highest interest rate.

Despite the long-term stability of what one might call the ‘benchmark’ rate of interest in the ancient world there is also evidence that market rates varied across time and place. In the Neo-Babylonian period, rates as low as 5 per cent and as high as 240 per cent have been recorded.⁴⁶ Higher interest rates contained a risk premium, with loans to trading partnerships, known as *harranu* loans, yielding as much as 40 per cent (but if the ship was lost at sea the principal did not have to be repaid).⁴⁷ Interest rates in the Assyrian commercial stations of Cappadocia were higher than in Mesopotamia. Great merchants paid lower rates than less creditworthy borrowers,⁴⁸ while the interest premium on barley loans may have provided insurance against the risk of a royal decree of debt cancellation.⁴⁹

It is clear that interest rates were not correlated with economic growth, either in the ancient world or afterwards. In the first millennium of the current era, global economic growth has been estimated at a mere 0.01 per cent per annum. Yet, during this thousand-year period, real interest rates in Europe ranged between 6 and 12 per cent.⁵⁰ Nor do we observe any connection between the interest rate and demographic change. In fact, population growth and interest rates have often moved in opposite directions.⁵¹

The view that the rate of interest is determined by ‘real’ economic, as opposed to monetary, factors was advanced by the Scottish philosopher David Hume in his influential essay ‘Of Interest’ (1752).⁵² Yet Hume’s claim that interest rates are unaffected by changes in the money supply is not supported by the ancient history. After Alexander the Great seized and distributed large stocks of Persian gold and silver, prices are said to have risen and interest rates declined.⁵³ Suetonius, in *The Twelve Caesars*, describes how, when the Emperor Augustus brought the treasure belonging to the kings of Egypt back to Rome, money became plentiful and interest rates fell from 6 to 4 per cent.⁵⁴ After Augustus’ death, the Emperor Tiberius hoarded money, with the result that interest rates rose above the legal limit and a banking crisis erupted in AD 33. Tiberius then decided to lend out the imperial treasure free of interest to patrician families, which brought about an immediate decline in interest rates and an end to the crisis.⁵⁵ His actions constituted the world’s first experience of quantitative easing.*

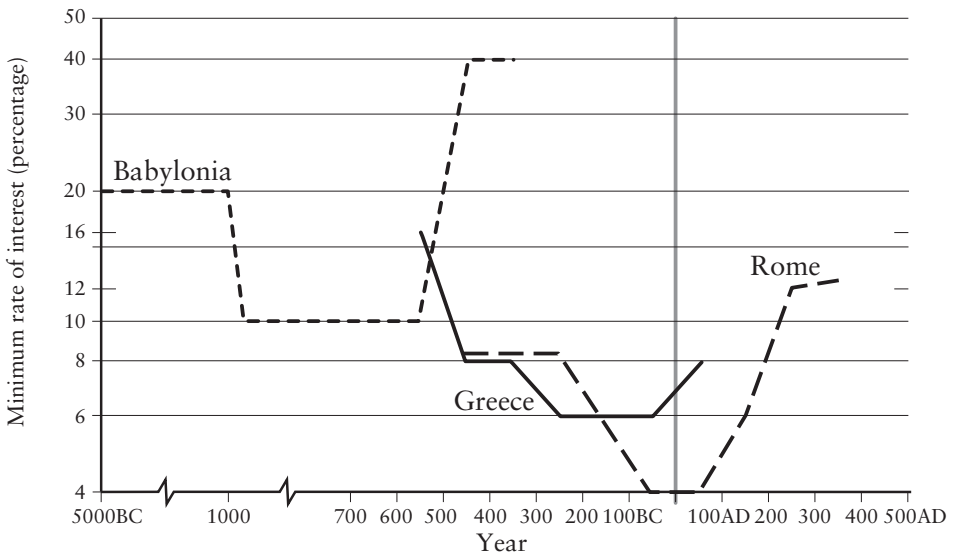
In short, the ancient history of interest provides no strong support for any particular view as to how the rate of interest is formed. Law and custom obviously played an important role. Yet occasional changes in the quantity of money in circulation also appear to have influenced interest

* It is curious to note that the chief beneficiaries of Tiberius’ quantitative easing were patrician families. As we shall see, this was also the case when the Federal Reserve revived the practice in 2008.

rates. Market forces were at play, to some extent at least. We see them in the variety of rates on offer and in the risk premiums charged on certain loans.⁵⁶ As major lenders, temples and palaces had an influence on the supply of credit and its price (interest), just as the modern central bank does today. The great difference is that in ancient times loans consisted of some commodity, such as silver, whereas nowadays a central bank is able to conjure fiat money out of thin air. In the twenty-first century it is much easier for the authorities to manipulate the rate of interest than in ancient times.

Böhm-Bawerk declared that the cultural level of a nation is mirrored by its rate of interest. In the ancient world, interest rates charted the course of great civilizations. In Babylon, Greece and Rome interest rates followed a U-shaped curve over the centuries; declining as each civilization became established and prospered, and rising sharply during periods of decline and fall.⁵⁷ Very low interest rates appear to have been the calm before the storm. In the early Neo-Babylonian period (700–630 BC) rates on silver loans fell to a low of 8.33 per cent. By early fifth century BC, after Babylonia fell to the Persians, they spiked above 40 per cent.⁵⁸ In similar fashion, interest rates in eighteenth-century Holland reached a nadir shortly before the Dutch Republic was overrun by Revolutionary France. Given the extraordinarily low interest rates of the early twenty-first century, this is not a comforting thought.

Interest rates in the ancient world



The trend in interest rates in Babylon, Greece and Rome followed a u-shaped pattern: declining as each civilization became established and prospered, but rising sharply during periods of decline and fall.

THE NECESSITY OF INTEREST

Adam Smith famously claimed that humans have a ‘propensity to truck, barter, and exchange’. It would seem that they have just as strong a propensity to borrow and lend, and in doing so to charge interest. Anthropologists no longer accept that money originated to replace barter, as classical economists, including Smith, had maintained. There is no evidence for this barter-to-money myth. On the contrary, it seems likely that credit antedated money and that the earliest forms of credit bore interest.⁵⁹

What’s remarkable is how interest in ancient times had so much in common with its modern manifestation. There are the plethora of different types of interest-bearing loans, from grain loans to alewives to silver loans to merchants. There was a variety of different interest rates reflecting varying risks – the high cost of *harranu* loans for overseas traders containing an insurance premium against the risk of shipwreck. Likewise, there were those fiendishly difficult interest calculations of the type now performed by computers. The appearance of credit networks dominated by powerful financiers is strikingly modern. The same can be said of the periodic debt crises and endless attempts to evade financial regulations. A Wall Street banker sent back to Larsa in the seventeenth century BC would find much that was familiar.

Interest arose from some combination of need and greed. Interest existed at such an early stage of civilization because capital was in short supply. The palaces and temples had important outlays and needed to receive their dues and taxes on time. So they charged interest for late payment, just as the tax authorities do today. By demanding interest on loans, these public institutions were in effect rationing their resources. Barley loans were made to the hungry and to farmers who required seed corn. Lenders, private and public, were able to charge interest because wealth was unevenly distributed, and they possessed a command over resources which others – say, an ambitious alewife – wanted to borrow and were prepared to pay for the privilege.

‘The emergence of interest to incentivize lending is the most significant of all innovations in the history of finance,’ writes the financial historian William Goetzmann.⁶⁰ This point is well made. Finance allows people to transact across time. The farmer borrows barley to sow his fields but must wait until harvest before repaying the debt. Industrial processes – even the light crafts-based industries of the Ancient Near East – require time in production from raw materials to the sale of finished goods. A text from

third-millennium Mesopotamia shows that the preparation of cloth took over a year.⁶¹ Foreign trade consumes a lot of time. When capital is tied up in industry or trade, the interest charge bears some connection to the time used in production.

In any society with private property, whether in Mesopotamia or later civilizations, the payment of interest is required to induce people to lend their resources. Without interest, they would inevitably have hoarded their capital. In ancient Babylon, a person with spare funds had a choice between buying and cultivating some land or lending the money to a third party who could use the loan to acquire a farm. It seems obvious that the rate of interest and the productivity of capital, in this case the farm surplus, should bear some relation to each other.

Interest is required to place a value on long-lasting assets, such as housing. Ancient Sumer and its successor civilizations constructed the first large cities. From the third millennium onwards, there was a market for private buildings. Since houses could be bought on credit and rented out, it was natural that mortgages should yield something. It is notable that when the Emperor Augustus flooded Rome with treasure, interest rates fell and house prices rose. Little has changed since then. Two millennia later, property markets remain sensitive to changes in the money supply and interest rates.

As the Englishman Nicholas Barbon wrote in the late seventeenth century: 'Interest is the Rent of Stock [i.e. capital], and is the same as the Rent of Land: The first, is the Rent of the Wrought or Artificial Stock; the Latter, of the Unwrought, or Natural Stock.'⁶² The Scottish notation for interest in Barbon's day was '@rents'.⁶³ In the following century, the French economist and statesman Anne-Robert Jacques Turgot elaborated on Barbon's insight: 'Every capital in the form of money . . . is the equivalent of a piece of land producing a revenue equal to a particular fraction of this sum.'⁶⁴ For Turgot, the world of finance was a mirror held up to the world, with real and financial assets exchangeable for each other. Since land, buildings and factories produce income, so money must yield interest. This important insight is too often overlooked by modern economists.

To twenty-first-century policymakers, the interest rate is simply a lever used to control inflation and tweak economic output. Yet an acquaintance with the Babylonian origins of interest should give pause for thought. Interest has always been with us because resources have always been scarce and must be rationed somehow, because wealth is unequally distributed between creditors and borrowers, and because, as Böhm-Bawerk says, 'interest is the soul of credit.' Interest exists because loans are

productive, and even when not productive still have value. It exists because those in possession of capital need to be induced to lend, and because lending is a risky business. It exists because production takes place over time and human beings are naturally impatient.

Earlier generations of economists, who considered the problem of interest more deeply than their twenty-first-century counterparts, had no doubt as to its importance. For Böhm-Bawerk, interest was ‘an organic necessity’.⁶⁵ Irving Fisher called interest ‘too omnipresent a phenomenon to be eradicated’.⁶⁶ In similar vein, Joseph Schumpeter stated that interest ‘permeates, as it were, the whole economic system’.⁶⁷ The author of *Das Kapital*, an avowed enemy of interest, agreed with this arch-apologist for capitalism. In a phrase evocative of the ancient world in which a charge for lending was first recorded, Marx writes that ‘usury lives in the pores of production, as it were, just as the gods of Epicurus lived in the space between worlds.’⁶⁸