The Price of Time

The Real Story of Interest



Edward Chancellor

'Persuasive, perfectly timed and gripping'

EMMA DUNCAN, *THE TIMES*, BOOKS OF THE YEAR

WINNER OF THE HAYEK BOOK PRIZE

PENGUIN BOOKS

THE PRICE OF TIME

'Is it possible to write a highly engaging history of the world going back to Hammurabi, unfolding along the way a bitingly comprehensive explanation for its problems today, all told through a single character? Apparently yes. Edward Chancellor has done it, an achievement all the more notable since his drama is built around a character so unheroic on its surface: his "price of time" is interest rates. This is a timely, vitally important and hugely readable book' Ruchir Sharma

'Chancellor shines a spotlight on a topic that is an inevitable consequence of societies' needs, since the dawn of civilization, to trade and barter . . . peppered with compelling facts and anecdotes' Emma Newlands, *Scotland on Sunday*

'A sweeping historical analysis of how our financial system once again became untethered from the world it is supposed to serve. At the heart of such derangement, Chancellor argues, is a single factor: artificially low interest rates . . . Chancellor's learned and engrossing history concludes with a sombre warning. Compared with more heavy-handed forms of government intrusion, central bankers' manipulation of interest rates may seem rather innocuous, and it is much less likely to provoke howling objections from ordinary citizens. But more than any other, it threatens the efficiency and integrity of the free-enterprise system' Adam Rowe, *Wall Street Journal*

'Interest rates haven't simply fallen – they were pushed. And by their pushing, the world's central banks have constructed the hall of mirrors in which every investor has become, of necessity, a speculator. So argues Edward Chancellor in this brilliant chronicle of the most important prices in capitalism. You must read it. It is a masterpiece of history, analysis – and properly understated outrage' James Grant, editor of *Grant's Interest Rate Observer*

'A great read on why the world is in its current mess. In short, low real interest rates distort financial economies given enough time. We have had low rates for much too long' Bill Gross, bond investor and PIMCO co-founder (Twitter)

'There is a real wealth of historical material here that makes the book a joy to read' Michael Pettis, University of Beijing (Twitter)

'Besides being a first-rate economic historian, Chancellor is also a master wordsmith; almost unique among serious finance books, *The Price of Time* serves well as bedtime reading. . . . More than twenty years ago, Edward Chancellor's *Devil Take the Hindmost* supplied readers with one of the most engaging and incisive descriptions of financial manias ever written. That was a hard act to follow, but *The Price of Time* nicely fills the bill; it is a serious work of political economy that is part comprehensive guide to the world financial system's greatest peril and part literary chocolate torte' William J. Bernstein, author of *The Delusion of Crowds*

Copyrighted Material

'I wish *The Price of Time* were the book that I had written' William White, former Chief Economist, Bank for International Settlements

'Well I'll be darned! Chancellor has done the nearly impossible: he has made a potentially dreary topic – interest rates – into a witty, philosophical and highly entertaining story crammed with historical anecdotes starting with the Babylonians and ending yesterday' Jeremy Grantham, Founder and Chief Investment Strategist, GMO LLC

'He manages to be both erudite and readable and to make an argument with style' George Trefgarne, *The Oldie*

'Every bit as gripping as any science fiction novel. It's an amazing book . . . truly magisterial in scope . . . He describes the reasons for the current distortion of the markets and why wealth and income disparity were so pronounced in the last twenty years. He lays blame on the Federal Reserve and central banks around the world distorting the markets with low interest rates. You'll want to buy this book and get it the first day available' John Mauldin, *Thoughts from the Frontline*

'This is not just a worthy successor to his history of financial speculation, *Devil Take the Hindmost*, but an urgently needed warning . . . Anyone who wants a fresh perspective on today's problems – and anyone in Westminster hoping to chart a new economic course as Boris Johnson's successor – needs this book on their summer reading list' Marc Sidwell, *Sunday Telegraph*

'*The Price of Time* addresses the biggest economic question of the past fifteen years. Have the experimental monetary policies pursued by the world's leading central banks since the financial crisis of 2007 and 2008 been a miracle cure or an epochal mistake? It situates this contemporary dilemma in a rich historical context. For this is just the latest instalment of an ancient debate over the nature and role of interest in a well-functioning economy . . . The carnage being wrought by even the modest increase in borrowing costs so far in 2022 is not encouraging. At least if you've read this scintillating book and heeded the infamous Chancellor signal, you'll know what needs doing when we emerge from the wreckage' Felix Martin, *Reuters*

'*The Price of Time* is highly readable. The timing and telling of this economic horror story make it gripping and persuasive . . . this astute history suggests we're about the reap the whirlwind of low interest rates' Emma Duncan, *The Times*

'A comprehensive and well written account of the subject, and will interest anyone who wishes to understand the complexities of international finance' *The Tablet*

ABOUT THE AUTHOR

Edward Chancellor is the author of *Devil Take the Hindmost: A History of Financial Speculation*, which has been translated into many languages and was a *New York Times* Book of the Year. After reading history at Cambridge and Oxford, he worked for Lazard Brothers, and until 2014 he was a senior member of the asset allocation team at GMO. He is currently a columnist for *Reuters Breakingviews* and has contributed to the *Wall Street Journal*, the *Financial Times, MoneyWeek* and the *New York Review of Books*. In 2008, he received the George Polk Award for financial reporting for his article 'Ponzi Nation' in *Institutional Investor*.

Copyrighted Material

EDWARD CHANCELLOR

The Price of Time

The Real Story of Interest



Copyrighted Material

PENGUIN BOOKS

PENGUIN BOOKS

UK | USA | Canada | Ireland | Australia
India | New Zealand | South Africa

Penguin Books is part of the Penguin Random House group of companies
whose addresses can be found at global.penguinrandomhouse.com



First published by Allen Lane 2022
Published in Penguin Books 2023
001

Copyright © Edward Chancellor, 2022

The moral right of the author has been asserted

Typeset by Jouve (UK), Milton Keynes
Printed and bound in Great Britain by Clays Ltd, Elcograf S.p.A.

The authorized representative in the EEA is Penguin Random House Ireland,
Morrison Chambers, 32 Nassau Street, Dublin D02 YH68

A CIP catalogue record for this book is available from the British Library

ISBN: 978–1–802–06015–7

www.greenpenguin.co.uk



Penguin Random House is committed to a sustainable future for our business, our readers and our planet. This book is made from Forest Stewardship Council® certified paper.

Copyrighted Material

For Henry Maxey
A reward for waiting.

Copyrighted Material

Copyrighted Material

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

Copyrighted Material

Copyrighted Material

Contents

List of Illustrations xi
List of Figures xiii
Preface to the Paperback Edition xvii

Introduction: The Anarchist and the Capitalist xxiii

PART ONE
Of Historical Interest

1 Babylonian Birth 3
2 Selling Time 17
3 The Lowering of Interest 33
4 The Chimera 45
5 John Bull Cannot Stand Two Per Cent 62
6 Un Petit Coup de Whisky 82

PART TWO
How Low Rates Begot Lower Rates

7 Goodhart's Law 105
8 Secular Stagnation 124
9 The Raven of Basel 130
10 Unnatural Selection 140
11 The Promoter's Profit 156
12 A Big Fat Ugly Bubble 172
13 Your Mother Needs to Die 188
14 Let Them Eat Credit 200
15 The Price of Anxiety 218
16 Rusting Money 235

Copyrighted Material

PART THREE
The Game of Marbles

17 The Mother and Father of All Evil 251
18 Financial Repression with Chinese Characteristics 264

Conclusion: The New Road to Serfdom 290
Postscript: The World Turned Upside Down 304

Acknowledgements 313
Select Bibliography 315
Notes 335
Index 379

Copyrighted Material

List of Illustrations

1. Code of Hammurabi, 1750 BC. (Photograph: Science History Images / Alamy)
2. Cuneiform tablet: quittance for a loan in silver, *c.* 20th–19th century BC. (Metropolitan Museum of Art, gift of Mr and Mrs J. J. Klejman, 1966. Photograph: Metropolitan Museum of Art)
3. Death of a monk and a usurer (litho), French school. (Photograph: The Stapleton Collection / Bridgeman)
4. *The Money Lender and his Wife*, 1514 (oil on panel) by Quentin Massys (c. 1466–1530). (Photograph: Bridgeman)
5. *Some Considerations of the Consequences of the Lowering of Interest and the Raising of the Value of Money*, by John Locke, 1691. (Photograph: copyright © Christie's Images / Bridgeman)
6. Portrait of John Law by Leonard Schenk, 1720. (Photograph: Rijksmuseum)
7. A banknote of John Law's Banque Royale, Paris, 1 January 1720. (Photograph: copyright © Christie's Images / Bridgeman)
8. Satirical illustration of speculators in the rue Quincampoix during the Mississippi Bubble, *Het Groote Tafereel der Dwaasheid*, 1720. (Photograph: Rijksmuseum)
9. Cartoon depicting John Bull balanced atop a steam engine, nineteenth century. (Photograph: World History Archive / Alamy)
10. Pierre Joseph Proudhon (1809–1865), French socialist and political theorist. (Photograph: Bridgeman)
11. Portrait of Frédéric Bastiat, French economist (1801–50) by an unknown artist, nineteenth century.(Photograph Stefano Bianchetti / Bridgeman)
12. *The Overstone Cycle of Trade* (from a print). (Photograph: Senate House Library, University of London)
13. Portrait of central bankers Hjalmar Schacht, Benjamin Strong and Montagu Norman, *c.* July 1927. (Photograph: Federal Reserve Bank of New York)
14. Christie's auction of *Salvator Mundi*, a painting attributed to Leonardo da Vinci, 15 November 2017. (Photograph: Eduardo Munoz Alvarez / Getty)

Copyrighted Material

Copyrighted Material

List of Figures

p. xi Five millennia of interest rates. (Source: Sidney Homer and Richard Sylla, *A History of Interest Rates*, 3rd edn (Hoboken, NJ, 1996), from Bank of America Global Investment Strategy, Bank of England, Global Financial Data)

p. 13 Minimum interest rates in the ancient world. (Source: Homer and Sylla, *A History of Interest Rates*)

p. 23 Commercial interest rates in medieval Italy, 1200–1570. (Source: Homer and Sylla, *A History of Interest Rates*)

p. 36 European interest rates, 1200–1800. (Source: Homer and Sylla, from William J. Bernstein, *The Four Pillars of Investing: Lessons for Building a Winning Portfolio* (New York, 2002))

p. 89 Discount rate of the New York Federal Reserve, 1920–1930. (Source: Federal Reserve Economic Data)

p. 106 Bank of Japan discount rate and Japanese nominal GDP growth, 1985–1995. (Source: Bank of Japan, Global Financial Data)

p. 117 US monetary policy in the early 2000s. (Source: Federal Reserve Economic Data)

p. 134 Long-term US interest rates, 1945–2021. (Source: Federal Reserve Economic Data)

p. 180 The Great American Wealth Bubble, 1954–2020. (Source: Federal Reserve Economic Data)

p. 205 Interest rates and inequality, 1945–2020. (Source: Global Financial Data and World Inequality)

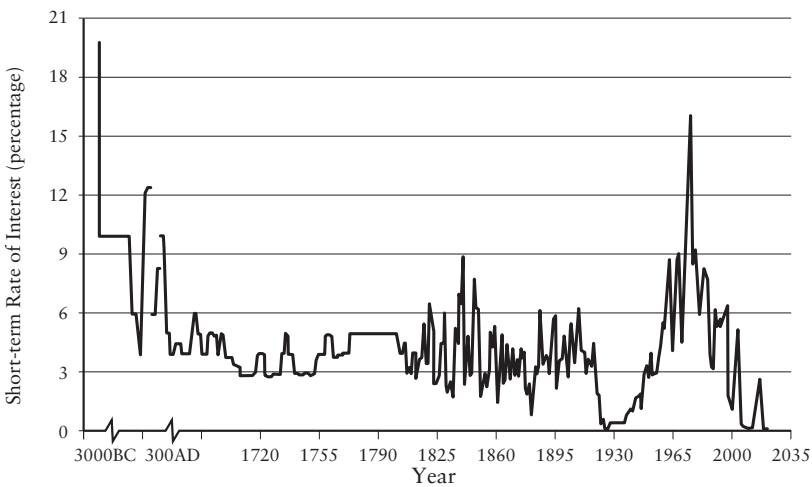
p. 244 The global stock of bonds trading at negative yields. (Source: Bloomberg)

p. 268 Financial repression in China. (Source: Global Financial Data)

Copyrighted Material

Copyrighted Material

Five millennia of interest rates



Copyrighted Material

Copyrighted Material

Preface to the Paperback Edition

As *The Price of Time* went to press in early 2022, the Fed funds rate was stuck at zero and the Fed was still buying securities – monetary policies that were first instituted during the global financial crisis of 2008. Given that this history of interest was written at at time when interest rates were at their lowest recorded levels, I describe at length what I saw as the various ill consequences of this unprecedented monetary experiment. In my view, the financial system had become so addicted to years of easy money that it wouldn't tolerate the return of interest rates to historically normal levels. Subsequent events have confirmed this view.

THE EVERYTHING BUST

During 2022, inflation in the United States and Europe reached a four-decade high. Having initially argued that inflation was only 'transitory', central bankers belatedly started to tighten. Over the course of the year, the Fed raised its policy rate seven times to a little over 4 per cent – a level roughly in line with its post-war average and around half the prevailing inflation rate. Financial turmoil ensued. By the end of December, the global stock and bond markets had shed some $30 trillion of value – one of the steepest market sell-offs on record, both in absolute terms and as a share of global GDP.

Easy money produced the Everything Bubble, the greatest creation of virtual wealth ever witnessed. No asset was ever more virtual than Bitcoin and the other cryptocurrencies. Having played a prominent role in the bubble phase, cryptos now took centre stage in the Everything Bust. As the aggregate value of these digital currencies fell by $2 trillion, a number of crypto hedge funds and specialist lenders went to the wall. In November, the large crypto exchange FTX filed for bankruptcy. Its founder, Sam Bankman-Fried – who'd been recently lauded by his eminent financial

Copyrighted Material

backers as the next Pierpont Morgan – was subsequently charged with multiple counts of fraud.

A few weeks before FTX's bankruptcy, the UK pension industry found itself on the ropes. A feature of pensions' accounting is that when bond yields fall, the present value of their liabilities increases. As interest rates declined after 2008, several large UK pension providers were persudaded to hedge the risk of further rate declines by acquiring long-dated bonds. A smart move, it might seem, except they chose to leverage their investments in the derivatives market. Another potential problem was that the UK government bonds, also known as gilts, they acquired had negative yields. Thus, the pension firms were exposed to potentially large losses if long-term interest rates rose.

In late September, the Bank of England announced an increase in its policy rate to 2.25 per cent – little more than a third of its post-war average. This move sparked a crash in the gilts market. One long-dated UK government bond collapsed by 85 per cent, peak to trough. Pension providers received massive margin calls on their loss-making derivatives positions, forcing them to sell other investments and ultimately threatening their solvency. Regulators at the Bank of England were taken by surprise, as was the short-lived administration of British prime minister Liz Truss, whose contemporaneous announcement of tax cuts and unfunded spending increases further spooked the markets – a sign that the era of gaping fiscal deficits and soaring government debt, financed at the cheapest borrowing costs in history, was drawing to a close.

On 10 March 2023, one of America's largest banks collapsed. The Silicon Valley Bank (SVB), which boasted $211 billion of assets, had invested its customers' deposits in supposedly risk-free US Treasury bonds and government-backed mortgages. The trouble was that these fixed-income assets were acquired at near record-low yields. As the Fed tightened, SVB's bondholdings lost value, wiping out much of the bank's capital. Depositors ran for the exits. It was the second largest bank failure in US history.

SVB was based in Santa Clara, California, the epicentre of the US venture capital world. Venture capital had been a prime beneficiary of the easy-money era. Investors were drawn to the prospect of outsized returns offered by technology startups at a time when conventional investments yielded next to nothing. Furthermore, ultra-low interest rates raised the valuation of new businesses whose profits lay somewhere in the distant future. Startups, as Bloomberg columnist Matt Levine says, were 'a low-interest-rate phenomenon'.*

Copyrighted Material

* 'Startup Bank Had a Startup Bank Run', Matt Levine, Bloomberg, 10 March 2023.

During the final phase of the tech boom, in 2020 and 2021, Silicon Valley attracted masses of new investment, and much of the money was deposited with SVB. After interest rates rose, the torrent of money flowing into venture capital dried up. SVB's depositors now needed the money to support their cash-burning businesses. Thus, higher interest rates squeezed the bank's deposit base whilst simultaneously producing losses on its investments. A double whammy.

SVB's failure was preceded by the winding down of another bank, Silvergate Capital, and immediately followed by the collapse the New York-based Signature Bank. Their stories were similar in many respects to SVB's, except that they were bankers to the cryptocurrency world. As the crypto winter took hold, customers at Silvergate and Signature banks withdrew their deposits. Like SVB, these banks also lost money on their securities portfolios.

Losses suffered by these three failed banks were just the tip of the iceberg. By the end of 2022, US banks were sitting on some $620 billion of securities losses, according to the Federal Deposit Insurance Corporation. After SVB's closure, the ratings agency Moody's downgraded to negative the outlook for the entire US banking system. A loss of confidence in banks in general sounded the death knell for Credit Suisse, the Swiss investment bank that had been involved in a number of scandals in recent years. Deposit outflows from Credit Suisse picked up and the firm's bankruptcy was only avoided by a forced merger with its longstanding rival, the Swiss banking giant UBS.

Despite the massive extension of banking regulation since 2008, it is now clear that regulators, once again, were looking in the wrong direction. They failed to comprehend how ultra-low interest rates 'get into all the cracks', creating myriad faultlines. It's no small irony that former Congressman Barney Frank, one of the chief architects of the post-Lehman financial regulations, was on the board of Signature Bank. Once again, regulatory failure has forced central banks to roll out their safety nets.

The crisis of the UK pension industry was resolved by the Bank of England committing to acquire billions of pounds worth of gilts – a return to quantitative easing only days after the Bank had declared its intention to start selling bonds (quantitative tightening). The collapse of the Silicon Valley Bank prompted the federal authorities to insure all US bank deposits, regardless of size. The Federal Reserve also announced it would lend to banks taking collateral at par rather than market value. JP Morgan estimated that this emergency loan programme would inject up to $2 trillion into the banking system. The Swiss National Bank provided UBS

Copyrighted Material

with around $100 billion of credit and guarantees to facilitate the takeover of Credit Suisse.

The difference between these latest bailouts and those that occurred during the financial crisis is that this time central banks themselves were losing money hand over fist. By early 2023, the Federal Reserve's cumulative losses on its securities holdings stood at almost $26 billion. The Swiss National Bank, which had bought stocks as well as bonds, had lost $143 billion. Potential losses at the Bank of England were estimated at up to £200 billion. Meanwhile, the Reserve Bank of Australia announced that its own equity had been wiped out. Central bankers don't spend a lot of time worrying about their own insolvency. After all, they can always print more money.

While these market ructions occurred after *The Price of Time* was published, they won't have taken readers completely by surprise. Vast losses in the global bond and stock markets, the near-failure of the UK pensions industry, the cryptocurrency implosion, banking failures, regulatory lapses and yet more bank bailouts are all consistent with the book's central theme that years of easy money had rendered the financial system unstable.

MONETARY STABILITY VERSUS FINANCIAL STABILITY?

At the time of writing, it seems unlikely that the worst is behind us. The great wealth bubble has not fully deflated. In the United States, stocks remain expensive by historic standards. Property markets are taking their time to adjust to higher mortgage costs. House prices are now falling around the world, from Auckland, New Zealand to Vancouver, Canada. Commercial real estate losses are picking up, and some listed property funds have suspended investor redemptions. Real estate downturns are usually protracted affairs, and this one will probably be no different.

Although falling interest rates boosted earnings, corporate profit margins are still elevated. Corporate lending standards have also declined as companies took on more debt. But we have yet to see a significant pick-up in insolvencies. Private equity firms have been slow to mark down the value of their leveraged buyouts, despite the fall in the public markets. Since bankruptcies were suppressed by ultra-low rates, it follows that rising borrowing costs pose a threat to the legions of corporate 'zombies' out there. All this will take time to play out.

Copyrighted Material

As the European Central Bank tightens, the solvency of Italy, with its massive public debt, and even the future of the Eurozone, may once again

come into question. Japan's public debt is larger than Italy's, but the Bank of Japan kept its policy rate negative and continued buying securities to suppress long-term rates, even as other central banks tightened. How Japanese financial institutions – the world's largest creditors – fare when the BOJ eventually hikes is anyone's guess. China's housing bubble has now burst, but a mountain of debt remains. Nor has the international carry trade fully unwound: the Bank for International Settlements recently identified foreign exposure to tens of trillions of dollars of US debt hidden in the derivatives market.

Shortly before the collapse of Silicon Valley Bank, Fed chair Jay Powell signalled to the US Congress that interest rates would have to rise higher than anticipated in order to bring down inflation. After SVB's demise, the bond markets expected the Fed to pivot. The US central bank is caught between a rock and a hard place. If Powell and his colleagues continue tightening to contain inflation, they risk triggering another financial crisis. However, if they ease prematurely, monetary stability could be lost. In the book, I conclude that the extraordinary financial imbalances of the easy-money era would probably be resolved by a prolonged bout of inflation and negative real interest rates (financial repression). I still hold to that view.

Edward Chancellor
Chipstable, 22 March 2023

Copyrighted Material

Copyrighted Material

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]

Copyrighted Material

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]

Copyrighted Material

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.

Copyrighted Material

> 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]

Copyrighted Material

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'.

Copyrighted Material

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).

Copyrighted Material

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.*

Copyrighted Material

* 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.

Copyrighted Material

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.

Copyrighted Material

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.

Copyrighted Material

* 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

Copyrighted Material

Copyrighted Material

1

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

Copyrighted Material

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).

Copyrighted Material

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

Copyrighted Material

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 283⅓ days (W. F. Leemans, *The Old Babylonian Merchant: His Business and His Social Position* (Leiden, 1950), p. 15).

Copyrighted Material

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 *tankarum*, 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 businesswoman 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]

Copyrighted Material

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/2012/09/09/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).

Copyrighted Material

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).

Copyrighted Material

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,

Copyrighted Material