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NIALL FERGUSON

The Ascent of Money

A Financial History of the World

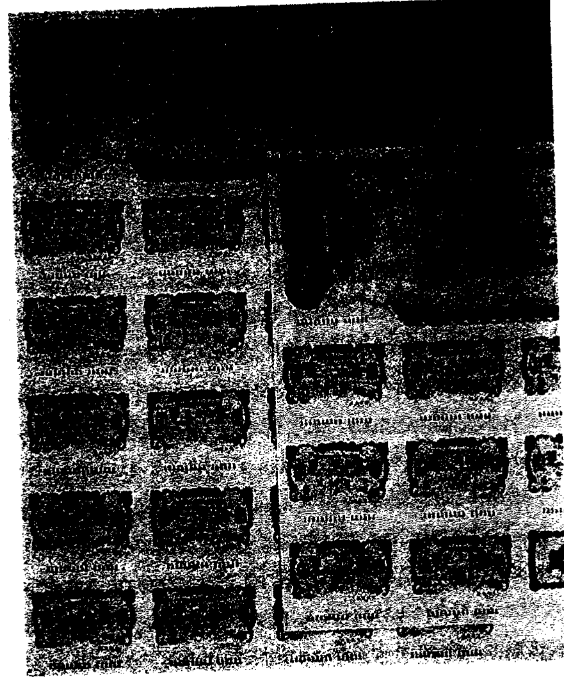
PENGUIN BOOKS

2

Of Human Bondage

Early in Bill Clinton's first hundred days as president, his campaign manager James Carville made a remark that has since become famous. 'I used to think if there was reincarnation, I wanted to come back as the president or the pope or a .400 baseball hitter,' he told the *Wall Street Journal*. 'But now I want to come back as the bond market. You can intimidate everybody.' Rather to his surprise, bond prices had risen in the wake of the previous November's election, a movement that had actually preceded a speech by the president in which he pledged to reduce the federal deficit. 'That investment market, they're a tough crowd,' observed Treasury Secretary Lloyd Bentsen. 'Is this a credible effort [by the president]? Is the administration going to hang in there pushing it? They have so judged it.' If bond prices continued to rally, said Federal Reserve Chairman Alan Greenspan, it would be 'by far the most potent [economic] stimulus that I can imagine.'[1] What could make public officials talk with such reverence, even awe, about a mere market for the buying and selling of government IOUs?

After the creation of credit by banks, the birth of the bond was the second great revolution in the ascent of money. Governments (and large corporations) issue bonds as a way of borrowing money from a broader range of people and institutions than just



Japanese government ten-year bonds, complete with coupons

banks. Take the example of a Japanese government ten-year bond with a face value of 100,000 yen and a fixed interest rate or 'coupon' of 1.5 per cent – a tiny part of the vast 838 trillion yen mountain of public debt that Japan has accumulated, mostly since the 1980s. The bond embodies a promise by the Japanese government to pay 1.5 per cent of 100,000 yen every year for the next ten years to whoever owns the bond. The initial purchaser of the bond has the right to sell it whenever he likes at whatever price the market sets. At the time of writing, that price is around 102,333 yen. Why? Because the mighty bond market says so.

From modest beginnings in the city-states of northern Italy some eight hundred years ago, the market for bonds has grown

to a vast size. The total value of internationally traded bonds today is around $18 trillion. The value of bonds traded domestically (such as Japanese bonds owned by Japanese investors) is a staggering $50 trillion. All of us, whether we like it or not (and most of us do not even know it), are affected by the bond market in two important ways. First, a large part of the money we put aside for our old age ends up being invested in the bond market. Secondly, because of its huge size, and because big governments are regarded as the most reliable of borrowers, it is the bond market that sets long-term interest rates for the economy as a whole. When bond prices fall, interest rates soar, with painful consequences for all borrowers. The way it works is this. Someone has 100,000 yen they wish to save. Buying a 100,000 yen bond keeps the capital sum safe while also providing regular payments to the saver. To be precise, the bond pays a fixed rate or 'coupon' of 1.5 per cent: 1,500 yen a year in the case of a 100,000 yen bond. But the *market* interest rate or current yield is calculated by dividing the coupon by the market price, which is currently 102,333 yen: 1,500 ÷ 102,333 = 1.47 per cent.* Now imagine a scenario in which the bond market took fright at the huge size of the Japanese government's debt. Suppose investors began to worry that Japan might be unable to meet the annual payments to which it had committed itself. Or suppose they began to worry about the health of the Japanese currency, the yen, in which bonds are denominated and in which the interest is paid. In such circumstances, the price of the bond would drop as nervous investors sold off their holdings. Buyers would only be found at a price low enough to compensate them for the increased risk of a Japanese default or currency depreciation. Let us imagine the

* This should not be confused with the yield to maturity, which takes account of the amount of time before the bond is redeemed at par by the issuing government.

price of our bond fell to 80,000. Then the yield would be 1,500 ÷ 80,000 = 1.88 per cent. At a stroke, long-term interest rates for the Japanese economy as a whole would have jumped by just over two fifths of one per cent, from 1.47 per cent to 1.88. People who had invested in bonds for their retirement before the market move would be 22 per cent worse off, since their capital would have declined by as much as the bond price. And people who wanted to take out a mortgage after the market move would find themselves paying at least 0.41 per cent a year (in market parlance, 41 basis points) more. In the words of Bill Gross, who runs the world's largest bond fund at the Pacific Investment Management Company (PIMCO), 'bond markets have power because they're the fundamental base for all markets. The cost of credit, the interest rate [on a benchmark bond], ultimately determines the value of stocks, homes, all asset classes.'

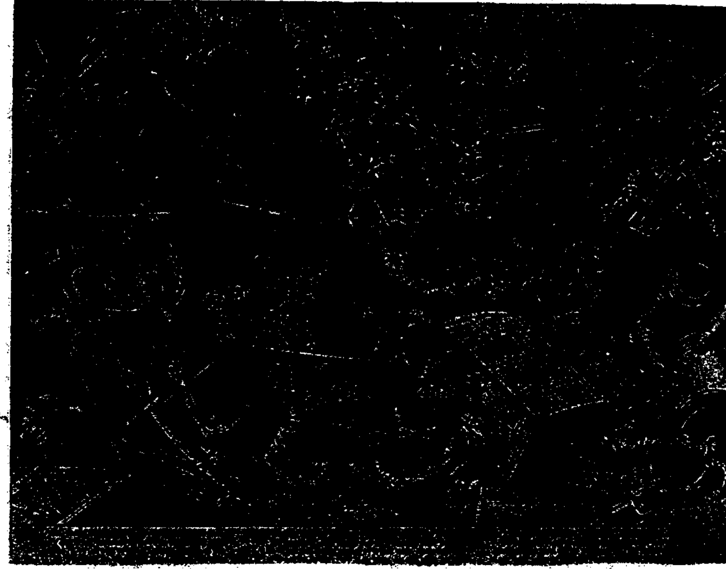
From a politician's point of view, the bond market is powerful partly because it passes a daily judgement on the credibility of every government's fiscal and monetary policies. But its real power lies in its ability to punish a government with higher borrowing costs. Even an upward move of half a percentage point can hurt a government that is running a deficit, adding higher debt service to its already high expenditures. As in so many financial relationships, there is a feedback loop. The higher interest payments make the deficit even larger. The bond market raises its eyebrows even higher. The bonds sell off again. The interest rates go up again. And so on. Sooner or later the government faces three stark alternatives. Does it default on a part of its debt, fulfilling the bond market's worst fears? Or, to reassure the bond market, does it cut expenditures in some other area, upsetting voters or vested interests? Or does it try to reduce the deficit by raising taxes? The bond market began by facilitating government borrowing. In a crisis, however, it can end up dictating government policy.

So how did this 'Mr Bond' become so much more powerful than the Mr Bond created by Ian Fleming? Why, indeed, do both kinds of bond have a licence to kill?

Mountains of Debt

'War', declared the ancient Greek philosopher Heraclitus, 'is the father of all things.' It was certainly the father of the bond market. In Pieter van der Heyden's extraordinary engraving, *The Battle about Money*, piggy banks, money bags, barrels of coins, and treasure chests – most of them heavily armed with swords, knives and lances – attack each other in a chaotic free-for-all. The Dutch verses below the engraving say: 'It's all for money and goods, this fighting and quarrelling.' But what the inscription could equally well have said is: 'This fighting is possible only if you can raise the money to pay for it.' The ability to finance war through a market for government debt was, like so much else in financial history, an invention of the Italian Renaissance.

For much of the fourteenth and fifteenth centuries, the medieval city-states of Tuscany – Florence, Pisa and Siena – were at war with each other or with other Italian towns. This was war waged as much by money as by men. Rather than require their own citizens to do the dirty work of fighting, each city hired military contractors (*condottieri*) who raised armies to annex land and loot treasure from its rivals. Among the *condottieri* of the 1360s and 1370s one stood head and shoulders above the others. His commanding figure can still be seen on the walls of Florence's Duomo – a painting originally commissioned by a grateful Florentine public as a tribute to his 'incomparable leadership'. Unlikely though it may seem, this master mercenary was an Essex boy born and raised in Sible Hedingham. So skilfully did Sir John



Pieter van der Heyden after Pieter Bruegel the Elder, *The Battle about Money*, after 1570. The Dutch inscription reads: 'It's all for money and goods, this fighting and quarrelling.'

Hawkwood wage war on their behalf that the Italians called him *Giovanni Acuto*, John the Acute. The Castello di Montecchio outside Florence was one of many pieces of real estate the Florentines gave him as a reward for his services. Yet Hawkwood was a mercenary, who was willing to fight for anyone who would pay him, including Milan, Padua, Pisa or the pope. Dazzling frescos in Florence's Palazzo Vecchio show the armies of Pisa and Florence clashing in 1364, at a time when Hawkwood was fighting for Pisa. Fifteen years later, however, he had switched to serve Florence, and spent the rest of his military career in that city's employ. Why? Because Florence was where the money was.

The cost of incessant war had plunged Italy's city-states into crisis. Expenditures even in years of peace were running at double

tax revenues. To pay the likes of Hawkwood, Florence was drowning in deficits. You can still see in the records of the Tuscan State Archives how the city's debt burden increased a hundredfold from 50,000 florins at the beginning of the fourteenth century to 5 million by 1427.[2] It was literally a mountain of debt – hence its name: the *monte commune* or communal debt mountain.[3] By the early fifteenth century, borrowed money accounted for nearly 70 per cent of the city's revenue. The 'mountain' was equivalent to more than half the Florentine economy's annual output.

From whom could the Florentines possibly have borrowed such a huge sum? The answer is from themselves. Instead of paying a property tax, wealthier citizens were effectively obliged to lend money to their own city government. In return for these forced loans (*prestanze*), they received interest. Technically, this was not usury (which, as we have seen, was banned by the Church) since the loans were obligatory; interest payments could therefore be reconciled with canon law as compensation (*damnum emergens*) for the real or putative costs arising from a compulsory investment. As Hostiensis (or Henry) of Susa put it in around 1270:

> If some merchant, who is accustomed to pursue trade and the commerce of fairs, and there profit from, has, out of charity to me, who needs it badly, lent money with which he would have done business, I remain obliged to his *interesse* [note this early use of the term 'interest'] . . .[4]

A crucial feature of the Florentine system was that such loans could be sold to other citizens if an investor needed ready money; in other words, they were relatively liquid assets, even though the bonds at this time were no more than a few lines in a leather-bound ledger.

In effect, then, Florence turned its citizens into its biggest investors. By the early fourteenth century, two thirds of households had contributed in this way to financing the public debt,

though the bulk of subscriptions were accounted for by a few thousand wealthy individuals.[5] The Medici entries in the 'Ruolo delle prestanze' testify not only to the scale of their wealth at this time, but also to the extent of their contributions to the city-state's coffers. One reason that this system worked so well was that they and a few other wealthy families also controlled the city's government and hence its finances. This oligarchical power structure gave the bond market a firm political foundation. Unlike an unaccountable hereditary monarch, who might arbitrarily renege on his promises to pay his creditors, the people who issued the bonds in Florence were in large measure the same people who bought them. Not surprisingly, they therefore had a strong interest in seeing that their interest was paid.

Nevertheless, there was a limit to how many more or less unproductive wars could be waged in this way. The larger the debts of the Italian cities became, the more bonds they had to issue; and the more bonds they issued, the greater the risk that they might default on their commitments. Venice had in fact developed a system of public debt even earlier than Florence, in the late twelfth century. The *monte vecchio* (Old Mountain) as the consolidated debt was known, played a key role in funding Venice's fourteenth-century wars with Genoa and other rivals. A new mountain of debt arose after the protracted war with the Turks that raged between 1463 and 1479: the *monte nuovo*.[6] Investors received annual interest of 5 per cent, paid twice yearly from the city's various excise taxes (which were levied on articles of consumption like salt). Like the Florentine *prestanze*, the Venetian *prestiti* were forced loans, but with a secondary market which allowed investors to sell their bonds to other investors for cash.[7] In the late fifteenth century, however, a series of Venetian military reverses greatly weakened the market for *prestiti*. Having stood at 80 (20 per cent below their face value) in 1497, the

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bonds of the Venetian *monte nuovo* were worth just 52 by 1500, recovering to 75 by the end of 1502 and then collapsing from 102 to 40 in 1509. At their low points in the years 1509 to 1529, *monte vecchio* sold at just 3 and *monte nuovo* at 10.[8]

Now, if you buy a government bond while war is raging you are obviously taking a risk, the risk that the state in question may not pay your interest. On the other hand, remember that the interest is paid on the *face value* of the bond, so if you can buy a 5 per cent bond at just 10 per cent of its face value you can earn a handsome yield of 50 per cent. In essence, you expect a return proportional to the risk you are prepared to take. At the same time, as we have seen, it is the bond market that sets interest rates for the economy as a whole. If the state has to pay 50 per cent, then even reliable commercial borrowers are likely to pay some kind of war premium. It is no coincidence that the year 1499, when Venice was fighting both on land in Lombardy and at sea against the Ottoman Empire, saw a severe financial crisis as bonds crashed in value and interest rates soared.[9] Likewise, the bond market rout of 1509 was a direct result of the defeat of the Venetian armies at Agnadello. The result in each case was the same: business ground to a halt.

It was not only the Italian city-states that contributed to the rise of the bond market. In Northern Europe, too, urban polities grappled with the problem of financing their deficits without falling foul of the Church. Here a somewhat different solution was arrived at. Though they prohibited the charging of interest on a loan (*mutuum*), the usury laws did not apply to the medieval contract known as the *census*, which allowed one party to buy a stream of annual payments from another. In the thirteenth century, such annuities started to be issued by northern French towns like Douai and Calais and Flemish towns like Ghent. They took one of two forms: *rentes heritables* or *erfelijkrenten*, perpetual

revenue streams which the purchaser could bequeath to his heirs, or *rentes viagères* or *lijfrenten*, which ended with the purchaser's death. The seller, but not the buyer, had the right to redeem the *rente* by repaying the principal. By the mid sixteenth century, the sale of annuities was raising roughly 7 per cent of the revenues of the province of Holland.[10]

Both the French and Spanish crowns sought to raise money in the same way, but they had to use towns as intermediaries. In the French case, funds were raised on behalf of the monarch by the Paris *hôtel de ville*; in the Spanish case, royal *juros* had to be marketed through Genoa's Casa di San Giorgio (a private syndicate that purchased the right to collect the city's taxes) and Antwerp's *beurs*, a forerunner of the modern stock market. Yet investors in royal debt had to be wary. Whereas towns, with their oligarchical forms of rule and locally held debts, had incentives not to default, the same was not true of absolute rulers. As we saw in Chapter 1, the Spanish crown became a serial defaulter in the late sixteenth and seventeenth centuries, wholly or partially suspending payments to creditors in 1557, 1560, 1575, 1596, 1607, 1627, 1647, 1652 and 1662.[11]

Part of the reason for Spain's financial difficulties was the extreme costliness of trying and failing to bring to heel the rebellious provinces of the northern Netherlands, whose revolt against Spanish rule was a watershed in financial as well as political history. With their republican institutions, the United Provinces combined the advantages of the city-state with the scale of a nation-state. They were able to finance their wars by developing Amsterdam as the market for a whole range of new securities: not only life and perpetual annuities, but also lottery loans (whereby investors bought a small probability of a large return). By 1650 there were more than 65,000 Dutch *rentiers*, men who had invested their capital in one or other of these debt instruments and thereby

helped finance the long Dutch struggle to preserve their independence. As the Dutch progressed from self-defence to imperial expansion, their debt mountain grew high indeed, from 50 million guilders in 1632 to 250 million in 1752. Yet the yield on Dutch bonds declined steadily, to a low of just 2.5 per cent in 1747 – a sign not only that capital was abundant in the United Provinces, but also that investors had little fear of an outright Dutch default.[12]

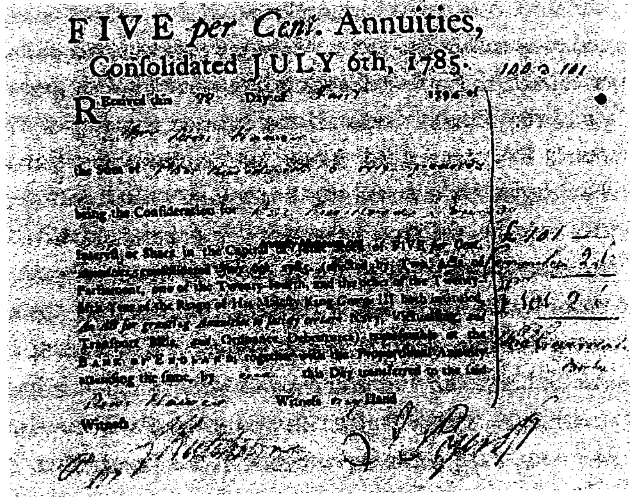
With the Glorious Revolution of 1688, which ousted the Catholic James II from the English throne in favour of the Dutch Protestant Prince of Orange, these and other innovations crossed the English Channel from Amsterdam to London. The English fiscal system was already significantly different from that of the continental monarchies. The lands owned by the crown had been sold off earlier than elsewhere, increasing the power of parliaments to control royal expenditure at a time when their powers were waning in Spain, France and the German lands. There was already an observable move in the direction of a professional civil service, reliant on salaries rather than peculation. The Glorious Revolution accentuated this divergence. From now on there would be no more regular defaulting (the 'Stop of Exchequer' of 1672, when, with the crown deep in debt, Charles II had suspended payment of his bills, was still fresh in the memories of London investors). There would be no more debasement of the coinage, particularly after the adoption of the gold standard in 1717. There would be parliamentary scrutiny of royal finances. And there would be a sustained effort to consolidate the various debts that the Stuart dynasty had incurred over the years, a process that culminated in 1749 with the creation by Sir Henry Pelham of the Consolidated Fund*.[13] This was the very opposite of the financial direction taken in France,

* Hence the name 'consols' for the new standardized British government bonds.

where defaults continued to happen regularly; offices were sold to raise money rather than to staff the civil service; tax collection was privatized or farmed out; budgets were rare and scarcely intelligible; the Estates General (the nearest thing to a French parliament) had ceased to meet; and successive controllers-general struggled to raise money by issuing *rentes* and *tontines* (annuities sold on the lives of groups of people) on terms that were excessively generous to investors.[14] In London by the mid eighteenth century there was a thriving bond market, in which government consols were the dominant securities traded, bonds that were highly liquid – in other words easy to sell – and attractive to foreign (especially Dutch) investors.[15] In Paris, by contrast, there was no such thing. It was a financial divergence that would prove to have profound political consequences.

Since it was arguably the most successful bond ever issued, it is worth pausing to look more closely at the famed British consol. By the late eighteenth century it was possible to invest in two types: those bearing a 3 per cent coupon, and those bearing a 5 per cent coupon. They were otherwise identical, in that they were perpetual bonds, without a fixed maturity date, which could be bought back (redeemed) by the government only if their market price equalled or exceeded their face value (par). The illustration opposite shows a typical consol, a partially printed, partially handwritten receipt, stating the amount invested, the face value of the security, the investor's name and the date:

Received this 22 Day of January 1796 of Mrs. Anna Hawes the Sum of One hundred and one pounds being the Consideration for One hundred pounds Interest or Share in the Capital or Joint Stock of Five per Cent Annuities, consolidated July 6th, 1785 . . . transferable at the Bank of England . . .


FIVE *per Cent.* Annuities,
Consolidated JULY 6th, 1785.

A 5 per cent consol purchased by Anna Hawes in January 1796

Given that she paid £101 for a £100 consol, Mrs Hawes was securing an annual yield on her investment of 4.95 per cent. This was not an especially well-timed investment. April that year saw the first victory at Montenotte of a French army led by a young Corsican commander named Napoleon Bonaparte. He won again at Lodi in May. For the next two decades, this man would pose a greater threat to the security and financial stability of the British Empire, not to mention the peace of Europe, than all the Habsburgs and Bourbons put together. Defeating him would lead to the rise of yet another mountain of debt. And as the mountain rose, so the price of individual consols declined – by as much as 30 per cent at the lowest point in Britain's fortunes.

The meteoric rise of a diminutive Corsican to be Emperor of France and master of the European continent was an event few could have predicted in 1796, least of all Mrs Anna Hawes. Yet an even more remarkable (and more enduring) feat of social

mobility was to happen in almost exactly the same timeframe. Within just a few years of Napoleon's final defeat at Waterloo, a man who had grown up amid the gloom of the Frankfurt ghetto had emerged as a financial Bonaparte: the master of the bond market and, some ventured to suggest, the master of European politics as well. That man's name was Nathan Rothschild.

The Bonaparte of Finance

Master of unbounded wealth, he boasts that he is the arbiter of peace and war, and that the credit of nations depends upon his nod; his correspondents are innumerable; his couriers outrun those of sovereign princes, and absolute sovereigns; ministers of state are in his pay. Paramount in the cabinets of continental Europe, he aspires to the domination of our own.[16]

Those words were spoken in 1828 by the Radical MP Thomas Dunscombe. The man he was referring to was Nathan Mayer Rothschild, founder of the London branch of what was, for most of the nineteenth century, the biggest bank in the world.[17] It was the bond market that made the Rothschild family rich – rich enough to build forty-one stately homes all over Europe, among them Waddesdon Manor in Buckinghamshire, which has been restored in all its gilded glory by the 4th Lord Rothschild, Nathan's great-great-great-grandson. His illustrious forebear, according to Lord Rothschild, was 'short, fat, obsessive, extremely clever, wholly focused . . . I can't imagine he would have been a very pleasant person to have dealings with.' His cousin Evelyn de Rothschild takes a similar view. 'I think he was very ambitious,' he says, contemplating Nathan Rothschild's portrait in the boardroom at the offices of N. M. Rothschild in London's

St Swithin's Lane, 'and I think he was very determined. I don't think he suffered fools lightly.'

Though the Rothschilds were compulsive correspondents, relatively few of Nathan's letters to his brothers have survived. There is one page, however, that clearly conveys the kind of man he was. Written, like all their letters, in almost indecipherable *Judendeutsch* (German transliterated into Hebrew characters), it epitomizes what might be called his Jewish work ethic and his impatience with his less mercurial brothers:

> I am writing to you giving my opinion, as it is my damned duty to write to you . . . I am reading through your letters not just once but maybe a hundred times. You can well imagine that yourself. After dinner I usually have nothing to do. I do not read books, I do not play cards, I do not go to the theatre, my only pleasure is my business and in this way I read Amschel's, Salomon's, James's and Carl's letters . . . As far as Carl's letter [about buying a bigger house in Frankfurt] is concerned . . . all this is a lot of nonsense because as long as we have good business and are rich everybody will flatter us and those who have no interest in obtaining revenues through us begrudge us for it all. Our Salomon is too good and agreeable to anything and anybody and if a parasite whispers something into his ear he thinks that all human beings are noble minded[;] the truth is that all they are after is their own interest.[18]

Small wonder his brothers called Nathan 'the general in chief'. 'All you ever write', complained Salomon wearily in 1815, 'is pay this, pay that, send this, send that.'[19] It was this phenomenal drive, allied to innate financial genius, that propelled Nathan from the obscurity of the Frankfurt *Judengasse* to mastery of the London bond market. Once again, however, the opportunity for financial innovation was provided by war.

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On the morning of 18 June 1815, 67,000 British, Dutch and German troops under the Duke of Wellington's command looked out across the fields of Waterloo, not far from Brussels, towards an almost equal number of French troops commanded by the French Emperor, Napoleon Bonaparte. The Battle of Waterloo was the culmination of more than two decades of intermittent conflict between Britain and France. But it was more than a battle between two armies. It was also a contest between rival financial systems: one, the French, which under Napoleon had come to be based on plunder (the taxation of the conquered); the other, the British, based on debt.

Never had so many bonds been issued to finance a military conflict. Between 1793 and 1815 the British national debt increased by a factor of three, to £745 million, more than double the annual output of the UK economy. But this increase in the supply of bonds had weighed heavily on the London market. Since February 1792, the price of a typical £100 3 per cent consol had fallen from £96 to below £60 on the eve of Waterloo, at one time (in 1797) sinking below £50. These were trying times for the likes of Mrs Anna Hawes.

According to a long-standing legend, the Rothschild family owed the first millions of their fortune to Nathan's successful speculation about the effect of the outcome of the battle on the price of British bonds. In some versions of the story, Nathan witnessed the battle himself, risked a Channel storm to reach London ahead of the official news of Wellington's victory and, by buying bonds ahead of a huge surge in prices, pocketed between £20 and £135 million. It was a legend the Nazis later did their best to embroider. In 1940 Joseph Goebbels approved the release of *Die Rothschilds*, which depicts an oleaginous Nathan bribing a French general to ensure the Duke of Wellington's victory, and then deliberately misreporting the outcome in

London in order to precipitate panic selling of British bonds, which he then snaps up at bargain-basement prices. Yet the reality was altogether different.[20] Far from making money from Wellington's victory, the Rothschilds were very nearly ruined by it. Their fortune was made not because of Waterloo, but despite it.

After a series of miscued interventions, British troops had been fighting against Napoleon on the Continent since August 1808, when the future Duke of Wellington, then Lieutenant-General Sir Arthur Wellesley, led an expeditionary force to Portugal, invaded by the French the previous year. For the better part of the next six years, there would be a recurrent need to get men and *matériel* to the Iberian Peninsula. Selling bonds to the public had certainly raised plenty of cash for the British government, but banknotes were of little use on distant battlefields. To provision the troops and pay Britain's allies against France, Wellington needed a currency that was universally acceptable. The challenge was to transform the money raised on the bond market into gold coins, and to get them to where they were needed. Sending gold guineas from London to Lisbon was expensive and hazardous in time of war. But when the Portuguese merchants declined to accept the bills of exchange that Wellington proffered, there seemed little alternative but to ship cash.

The son of a moderately successful Frankfurt antique dealer and bill broker, Nathan Rothschild had arrived in England only in 1799 and had spent most of the next ten years in the newly industrializing North of England, purchasing textiles and shipping them back to Germany. He did not go into the banking business in London until 1811. Why, then, did the British government turn to him in its hour of financial need? The answer is that Nathan had acquired valuable experience as a smuggler of gold to the Continent, in breach of the blockade that Napoleon had

imposed on trade between England and Europe. (Admittedly, it was a breach the French authorities tended to wink at, in the simplistic mercantilist belief that outflows of gold from England must tend to weaken the British war effort.) In January 1814, the Chancellor of the Exchequer authorized the Commissary-in-Chief, John Charles Herries, to 'employ that gentleman [Nathan] in the most secret and confidential manner to collect in Germany, France and Holland the largest quantity of French gold and silver coins, not exceeding in value £600,000, which he may be able to procure within two months from the present time.' These were then to be delivered to British vessels at the Dutch port of Helvoetsluys and sent on to Wellington, who had by now crossed the Pyrenees into France. It was an immense operation, which depended on the brothers' ability to tap their cross-Channel credit network and to manage large-scale bullion transfers. They executed their commission so well that Wellington was soon writing to express his gratitude for the 'ample . . . supplies of money'. As Herries put it: 'Rothschild of this place has executed the various services entrusted to him in this line admirably well, and though a Jew [*sic*], we place a good deal of confidence in him.' By May 1814 Nathan had advanced nearly £1.2 million to the government, double the amount envisaged in his original instructions.

Mobilizing such vast amounts of gold even at the tail end of a war was risky, no doubt. Yet from the Rothschilds' point of view, the hefty commissions they were able to charge more than justified the risks. What made them so well suited to the task was that the brothers had a ready-made banking network within the family – Nathan in London, Amschel in Frankfurt, James (the youngest) in Paris, Carl in Amsterdam and Salomon roving wherever Nathan saw fit. Spread out around Europe, the five Rothschilds were uniquely positioned to exploit price and exchange

rate differences between markets, the process known as arbitrage. If the price of gold was higher in, say, Paris than in London, James in Paris would sell gold for bills of exchange, then send these to London, where Nathan would use them to buy a larger quantity of gold. The fact that their own transactions on Herries's behalf were big enough to affect such price differentials only added to the profitability of the business. In addition, the Rothschilds also handled some of the large subsidies paid to Britain's continental allies. By June 1814, Herries calculated that they had effected payments of this sort to a value of 12.6 million francs. 'Mr Rothschild', remarked the Prime Minister, Lord Liverpool, had become 'a very useful friend'. As he told the Foreign Secretary Lord Castlereagh, 'I do not know what we should have done without him . . .'. By now his brothers had taken to calling Nathan the master of the Stock Exchange.

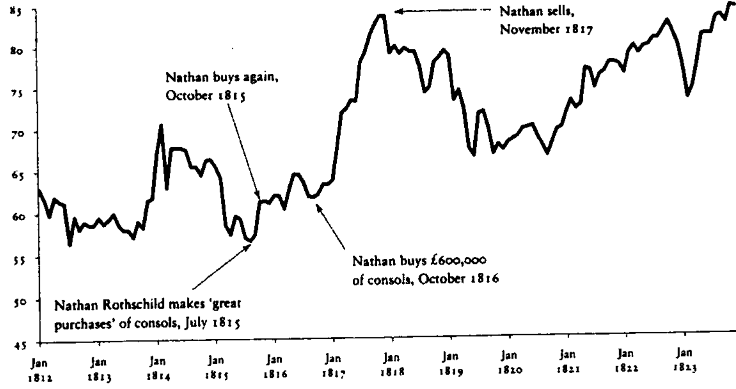
After his abdication in April 1814, Napoleon had been exiled to the small Italian island of Elba, which he proceeded to rule as an empire in miniature. It was too small to hold him. On 1 March 1815, to the consternation of the monarchs and ministers gathered to restore the old European order at the Congress of Vienna, he returned to France, determined to revive his Empire. Veterans of the *grande armée* rallied to his standard. Nathan Rothschild responded to this 'unpleasant news' by immediately resuming gold purchases, buying up all the bullion and coins he and his brothers could lay their hands on, and making it available to Herries for shipment to Wellington. In all, the Rothschilds provided gold coins worth more than £2 million – enough to fill 884 boxes and fifty-five casks. At the same time, Nathan offered to take care of a fresh round of subsidies to Britain's continental allies, bringing the total of his transactions with Herries in 1815 to just under £9.8 million. With commissions on all this business ranging from 2 to 6 per cent, Napoleon's return promised to

make the Rothschilds rich men. Yet there was a risk that Nathan had underestimated. In furiously buying up such a huge quantity of gold, he had assumed that, as with all Napoleon's wars, this would be a long one. It was a near fatal miscalculation.

Wellington famously called the Battle of Waterloo 'the nearest run thing you ever saw in your life'. After a day of brutal charges, countercharges and heroic defence, the belated arrival of the Prussian army finally proved decisive. For Wellington, it was a glorious victory. Not so for the Rothschilds. No doubt it was gratifying for Nathan Rothschild to receive the news of Napoleon's defeat first, thanks to the speed of his couriers, nearly forty-eight hours before Major Henry Percy delivered Wellington's official despatch to the Cabinet. No matter how early it reached him, however, the news was anything but good from Nathan's point of view. He had expected nothing as decisive so soon. Now he and his brothers were sitting on top of a pile of cash that nobody needed – to pay for a war that was over. With the coming of peace, the great armies that had fought Napoleon could be disbanded, the coalition of allies dissolved. That meant no more soldiers' wages and no more subsidies to Britain's wartime allies. The price of gold, which had soared during the war, would be bound to fall. Nathan was faced not with the immense profits of legend but with heavy and growing losses.

But there was one possible way out: the Rothschilds could use their gold to make a massive and hugely risky bet on the bond market. On 20 July 1815 the evening edition of the London *Courier* reported that Nathan had made 'great purchases of stock', meaning British government bonds. Nathan's gamble was that the British victory at Waterloo, and the prospect of a reduction in government borrowing, would send the price of British bonds soaring upwards. Nathan bought more and, as the price of consols duly began to rise, he kept on buying. Despite

The price of consols (UK perpetual bonds), 1812–1822



his brothers' desperate entreaties to realize profits, Nathan held his nerve for another year. Eventually, in late 1817, with bond prices up more than 40 per cent, he sold. Allowing for the effects on the purchasing power of sterling of inflation and economic growth, his profits were worth around £600 million today. It was one of the most audacious trades in financial history, one which snatched financial victory from the jaws of Napoleon's military defeat. The resemblance between victor and vanquished was not lost on contemporaries. In the words of one of the partners at Barings, the Rothschilds' great rivals, 'I must candidly confess that I have not the nerve for his operations. They are generally well planned, with great cleverness and adroitness in execution – but he is in money and funds what Bonaparte was in war.'[21] To the German writer Ludwig Boerne, the Rothschilds were simply *die Finanzbonaparten*.[22] Others went still further, though not without a hint of irony. 'Money is the god of our time,' declared the German poet Heinrich Heine in March 1841, 'and Rothschild is his prophet.'[23]

*

To an extent that even today remains astonishing, the Rothschilds went on to dominate international finance in the half century after Waterloo. So extraordinary did this achievement seem to contemporaries that they often sought to explain it in mystical terms. According to one account dating from the 1830s, the Rothschilds owed their fortune to the possession of a mysterious 'Hebrew talisman' that enabled Nathan Rothschild, the founder of the London house, to become 'the leviathan of the money markets of Europe'.[24] Similar stories were being told in the Pale of Settlement, to which Russian Jews were confined, as late as the 1890s.[25] As we have seen, the Nazis preferred to attribute the rise of the Rothschilds to the manipulation of stock market news and other sharp practice. Such myths are current even today. According to Song Hongbing's best-selling book *Currency Wars*, published in China in 2007, the Rothschilds continue to control the global monetary system through their alleged influence over the Federal Reserve System.[26]

The more prosaic reality was that the Rothschilds were able to build on their successes during the final phase of the Napoleonic Wars to establish themselves as the dominant players in an increasingly international London bond market. They did this by establishing a capital base and an information network that were soon far superior to those of their nearest rivals, the Barings. Between 1815 and 1859, it has been estimated that the London house issued fourteen different sovereign bonds with a face value of nearly £43 million, more than half the total issued by all banks in London.[27] Although British government bonds were the principal security they marketed to investors, they also sold French, Prussian, Russian, Austrian, Neapolitan and Brazilian bonds.[28] In addition, they all but monopolized bond issuance by the Belgian government after 1830. Typically, the Rothschilds would buy a tranche of new bonds outright from a government,

charging a commission for distributing these to their network of brokers and investors throughout Europe, and remitting funds to the government only when all the instalments had been received from buyers. There would usually be a generous spread between the price the Rothschilds paid the sovereign borrower and the price they asked of investors (with room for an additional price 'run up' after the initial public offering). Of course, as we have seen, there had been large-scale international lending before, notably in Genoa, Antwerp and Amsterdam.[29] But a distinguishing feature of the London bond market after 1815 was the Rothschilds' insistence that most new borrowers issue bonds denominated in sterling, rather than their own currency, and make interest payments in London or one of the other markets where the Rothschilds had branches. A new standard was set by their 1818 initial public offering of Prussian 5 per cent bonds, which – after protracted and often fraught negotiations* – were issued not only in London, but also in Frankfurt, Berlin, Hamburg and Amsterdam.[30] In his book *On the Traffic in State Bonds* (1825), the German legal expert Johann Heinrich Bender singled out this as one of the Rothschilds' most important financial innovations :

* At one point, when the Director of the Prussian Treasury, Christian Rother, attempted to modify the terms after the loan contract had been signed, Nathan exploded: 'Dearest friend, I have now done my duty by God, your king and the Finance Minister von Rother, my money has all gone to you in Berlin . . . now it is your turn and duty to yours, to keep your word and not to come up with new things, and everything must remain as it was agreed between men like us, and that is what I expected, as you can see from my deliveries of money. The cabal there can do nothing against N. M. Rothschild, he has the money, the strength and the power, the cabal has only impotence and the King of Prussia, my Prince Hardenberg and Minister Rother should be well pleased and thank Rothschild, who is sending you so much money [and] raising Prussia's credit.' That a Jew born in the Frankfurt ghetto could write in these terms to a Prussian official speaks volumes about the social revolution Nathan Rothschild and his brothers personified.

'Any owner of government bonds . . . can collect the interest at his convenience in several different places without any effort.'[31] Bond issuance was by no means the only business the Rothschilds did, to be sure: they were also bond traders, currency arbitrageurs, bullion dealers and private bankers, as well as investors in insurance, mines and railways. Yet the bond market remained their core competence. Unlike their lesser competitors, the Rothschilds took pride in dealing only in what would now be called investment grade securities. No bond they issued in the 1820s was in default by 1829, despite a Latin American debt crisis in the middle of the decade (the first of many).

With success came ever greater wealth. When Nathan died in 1836, his personal fortune was equivalent to 0.62 per cent of British national income. Between 1818 and 1852, the combined capital of the five Rothschild 'houses' (Frankfurt, London, Naples, Paris and Vienna) rose from £1.8 million to £9.5 million. As early as 1825 their combined capital was nine times greater than that of Baring Brothers and the Banque de France. By 1899, at £41 million, it exceeded the capital of the five biggest German joint-stock banks put together. Increasingly the firm became a multinational asset manager for the wealth of the managers' extended family. As their numbers grew from generation to generation, familial unity was maintained by a combination of periodically revised contracts between the five houses and a high level of intermarriage between cousins or between uncles and nieces. Of twenty-one marriages involving descendants of Nathan's father Mayer Amschel Rothschild that were solemnized between 1824 and 1877, no fewer than fifteen were between his direct descendants. In addition, the family's collective fidelity to the Jewish faith, at a time when some other Jewish families were slipping into apostasy or mixed marriage, strengthened their sense of common identity and purpose as 'the Caucasian [Jewish] royal family'.

Old Mayer Amschel had repeatedly admonished his five sons: 'If you can't make yourself loved, make yourself feared.' As they bestrode the mid-nineteenth-century financial world as masters of the bond market, the Rothschilds were already more feared than loved. Reactionaries on the Right lamented the rise of a new form of wealth, higher-yielding and more liquid than the landed estates of Europe's aristocratic elites. As Heinrich Heine discerned, there was something profoundly revolutionary about the financial system the Rothschilds were creating:

> The system of paper securities frees . . . men to choose whatever place of residence they like; they can live anywhere, without working, from the interest on their bonds, their portable property, and so they gather together and constitute the true power of our capital cities. And we have long known what it portends when the most diverse energies can live side by side, when there is such centralization of the intellectual and of social authority.

In Heine's eyes, Rothschild could now be mentioned in the same breath as Richelieu and Robespierre as one of the 'three terroristic names that spell the gradual annihilation of the old aristocracy'. Richelieu had destroyed its power; Robespierre had decapitated its decadent remnant; now Rothschild was providing Europe with a new social elite by

> raising up the system of government bonds to supreme power . . . [and] endowing money with the former privileges of land. To be sure, he has thereby created a new aristocracy, but this is based on the most unreliable of elements, on money . . . [which] is more fluid than water and less steady than the air . . .[32]

Meanwhile, Radicals on the Left bemoaned the rise of a new power in the realm of politics, which wielded a veto power over government finance and hence over most policy. Following the

success of Rothschild bond issues for Austria, Prussia and Russia, Nathan was caricatured as the insurance broker to the 'Hollow Alliance', helping to protect Europe against liberal political fires.[33] In 1821 he even received a death threat because of 'his connexion with foreign powers, and particularly the assistance rendered to Austria, on account of the designs of that government against the liberties of Europe'.[34] The liberal historian Jules Michelet noted in his journal in 1842: 'M. Rothschild knows Europe prince by prince, and the bourse courtier by courtier. He has all their accounts in his head, that of the courtiers and that of the kings; he talks to them without even consulting his books. To one such he says: "Your account will go into the red if you appoint such a minister."'[35] Predictably, the fact that the Rothschilds were Jewish gave a new impetus to deep-rooted anti-Semitic prejudices. No sooner had the Rothschilds appeared on the American scene in the 1830s than the governor of Mississippi was denouncing 'Baron Rothschild' for having 'the blood of Judas and Shylock flow[ing] in his veins, and . . . unit[ing] the qualities of both his countrymen.' Later in the century, the Populist writer 'Coin' Harvey would depict the Rothschild bank as a vast, black octopus stretching its tentacles around the world.[36]

Yet it was the Rothschilds' seeming ability to permit or prohibit wars at will that seemed to arouse the most indignation. As early as 1828, Prince Pückler-Muskau referred to 'Rothschild . . . without whom no power in Europe today seems able to make war'.[37] One early-twentieth-century commentator* pointedly posed the question:

* This was J. A. Hobson, author of ***Imperialism: A Study*** (1902). Though still renowned as one of the earliest liberal critics of imperialism, Hobson articulated a classically anti-Semitic hostility towards finance: 'In handling large masses of stocks and shares, in floating companies, in manipulating fluctuations of values, the magnates of the Bourse find their gain. These

Does anyone seriously suppose that a great war could be undertaken by any European State, or any great State loan subscribed, if the house of Rothschild and its connexions set their face against it?[38]

It might, indeed, be assumed that the Rothschilds needed war. It was war, after all, that had generated Nathan Rothschild's biggest deal. Without wars, nineteenth-century states would have had little need to issue bonds. As we have seen, however, wars tended to hit the price of existing bonds by increasing the risk that (like sixteenth-century Venice) a debtor state would fail to meet its interest payments in the event of defeat and losses of territory. By the middle of the nineteenth century, the Rothschilds had evolved from traders into fund managers, carefully tending to their own vast portfolio of government bonds. Now, having made their money, they stood to lose more than they gained from conflict. It was for this reason that they were consistently hostile to strivings for national unity in both Italy and Germany. And it was for this reason that they viewed with unease the descent of the United States into internecine warfare. The Rothschilds had decided the outcome of the Napoleonic Wars by putting their financial weight behind Britain. Now they would help decide the outcome of the American Civil War – by choosing to sit on the sidelines.

great businesses – banking, broking, bill discounting, loan floating, company promoting – form the central ganglion of international capitalism. United by the strongest bonds of organisation, always in closest and quickest touch with one another, situated in the very heart of the business capital of every State, controlled, so far as Europe is concerned, chiefly by men of a single and peculiar race, who have behind them many centuries of financial experience, they are in a unique position to control the policy of nations.'

Driving Dixie Down

In May 1863, two years into the American Civil War, Major-General Ulysses S. Grant captured Jackson, the Mississippi state capital, and forced the Confederate army under Lieutenant-General John C. Pemberton to retreat westward to Vicksburg on the banks of the Mississippi River. Surrounded, with Union gunboats bombarding their positions from behind, Pemberton's army repulsed two Union assaults but they were finally starved into submission by a grinding siege. On 4 July, Independence Day, Pemberton surrendered. From now on, the Mississippi was firmly in the hands of the North. The South was literally split in two.

The fall of Vicksburg is always seen as one of the great turning points in the war. And yet, from a financial point of view, it was really not the decisive one. The key event had happened more than a year before, two hundred miles downstream from Vicksburg, where the Mississippi joins the Gulf of Mexico. On 29 April 1862 Flag Officer David Farragut had run the guns of Fort Jackson and Fort St Philip to seize control of New Orleans. This was a far less bloody and protracted clash than the siege of Vicksburg, but equally disastrous for the Southern cause.

The finances of the Confederacy are one of the great might-have-beens of American history.[39] For, in the final analysis, it was as much a lack of hard cash as a lack of industrial capacity or manpower that undercut what was, in military terms, an impressive effort by the Southern states. At the beginning of the war, in the absence of a pre-existing system of central taxation, the fledgling Confederate Treasury had paid for its army by selling bonds to its own citizens, in the form of two large loans for $15 million and $100 million. But there was a finite amount of liquid capital available in the South, with its many self-contained farms and

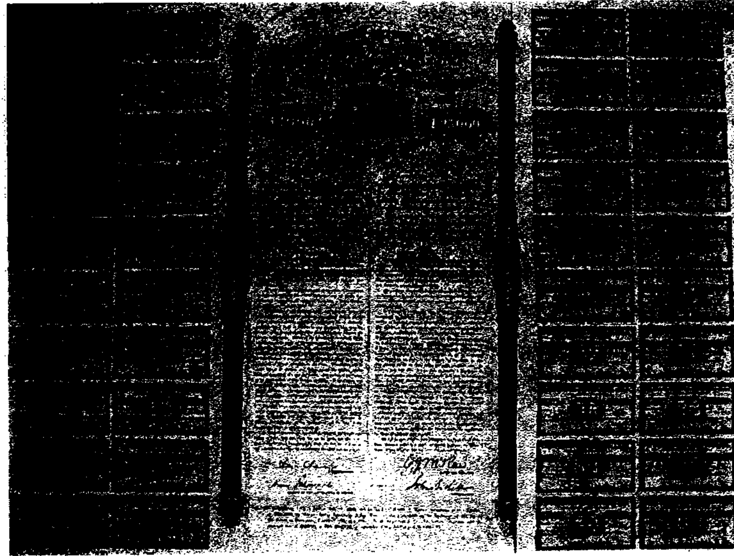
relatively small towns. To survive, it was later alleged, the Confederacy turned to the Rothschilds, in the hope that the world's greatest financial dynasty might help them beat the North as they had helped Wellington beat Napoleon at Waterloo.

The suggestion was not altogether fanciful. In New York, the Rothschild agent August Belmont had watched with horror as the United States slid into Civil War. As the Democratic Party's national chairman, he had been a leading supporter of Stephen A. Douglas, Abraham Lincoln's opponent in the presidential election of 1860. Belmont remained a vocal critic of what he called Lincoln's 'fatal policy of confiscation and forcible emancipation'.[40] Salomon de Rothschild, James's third son, had also expressed pro-Southern sympathies in his letters home before the war began.[41] Some Northern commentators drew the obvious inference: the Rothschilds were backing the South. 'Belmont, the Rothschilds, and the whole tribe of Jews . . . have been buying up Confederate bonds,' thundered the *Chicago Tribune* in 1864. One Lincoln supporter accused the 'Jews, Jeff Davis [the Confederate president] and the devil' of being an unholy trinity directed against the Union.[42] When he visited London in 1863, Belmont himself told Lionel de Rothschild that 'soon the North would be conquered'. (It merely stoked the fires of suspicion that the man charged with recruiting Britain to the South's cause, the Confederate Secretary of State Judah Benjamin, was himself a Jew.)

In reality, however, the Rothschilds opted not to back the South. Why? Perhaps it was because they felt a genuine distaste for the institution of slavery. But of at least equal importance was a sense that the Confederacy was not a good credit risk (after all, the Confederate president Jefferson Davis had openly advocated the repudiation of state debts when he was a US senator). That mistrust seemed to be widely shared in Europe. When the Confederacy tried to sell conventional bonds in

European markets, investors showed little enthusiasm. But the Southerners had an ingenious trick up their sleeves. The trick (like the sleeves themselves) was made of cotton, the key to the Confederate economy and by far the South's largest export. The idea was to use the South's cotton crop not just as a source of export earnings, but as collateral for a new kind of cotton-backed bond. When the obscure French firm of Emile Erlanger and Co. started issuing cotton-backed bonds on the South's behalf, the response in London and Amsterdam was more positive. The most appealing thing about these sterling bonds, which had a 7 per cent coupon and a maturity of twenty years, was that they could be converted into cotton at the pre-war price of six pence a pound. Despite the South's military setbacks, they retained their value for most of the war for the simple reason that the price of the underlying security, cotton, was rising as a consequence of increased wartime demand. Indeed, the price of the bonds actually doubled between December 1863 and September 1864, despite the Confederate defeats at Gettysburg and Vicksburg, because the price of cotton was soaring.[43] Moreover, the South was in the happy position of being able to raise that price still further – by restricting the cotton supply.

In 1860 the port of Liverpool was the main artery for the supply of imported cotton to the British textile industry, then the mainstay of the Victorian industrial economy. More than 80 per cent of these imports came from the southern United States. The Confederate leaders believed this gave them the leverage to bring Britain into the war on their side. To ratchet up the pressure, they decided to impose an embargo on all cotton exports to Liverpool. The effects were devastating. Cotton prices soared from 6¼d per pound to 27¼d. Imports from the South slumped from 2.6 million bales in 1860 to less than 72,000 in 1862. A typical English cotton mill like the one that has been preserved at Styal, south of



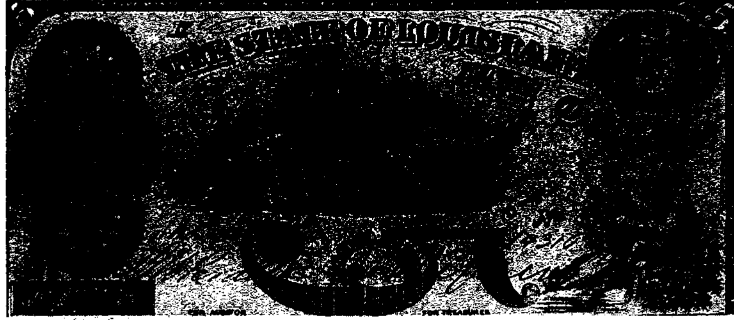
Confederate cotton bond with coupons, only the first four of which have been clipped

Manchester, employed around 400 workers, but that was just a fraction of the 300,000 people employed by King Cotton across Lancashire as a whole. Without cotton there was literally nothing for those workers to do. By late 1862 half the workforce had been laid off; around a quarter of the entire population of Lancashire was on poor relief.[44] They called it the cotton famine. This, however, was a man-made famine. And the men who made it seemed to be achieving their goal. Not only did the embargo cause unemployment, hunger and riots in the north of England; the shortage of cotton also drove up the price and hence the value of the South's cotton-backed bonds, making them an irresistibly attractive investment for key members of the British political elite. The future Prime Minister, William Ewart Gladstone, bought some, as did the editor of *The Times*, John Delane.[45]

Yet the South's ability to manipulate the bond market depended on one overriding condition: that investors should be able to take physical possession of the cotton which underpinned the bonds if the South failed to make its interest payments. Collateral is, after all, only good if a creditor can get his hands on it. And that is why the fall of New Orleans in April 1862 was the real turning point in the American Civil War. With the South's main port in Union hands, any investor who wanted to get hold of Southern cotton had to run the Union's naval blockade not once but twice, in and out. Given the North's growing naval power in and around the Mississippi, that was not an enticing prospect.

If the South had managed to hold on to New Orleans until the cotton harvest had been offloaded to Europe, they might have managed to sell more than £3 million of cotton bonds in London. Maybe even the risk-averse Rothschilds might have come off the financial fence. As it was, they dismissed the Erlanger loan as being 'of so speculative a nature that it was very likely to attract all wild speculators . . . we do not hear of any respectable people having anything to do with it'.[46] The Confederacy had overplayed its hand. They had turned off the cotton tap, but then lost the ability to turn it back on. By 1863 the mills of Lancashire had found new sources of cotton in China, Egypt and India. And now investors were rapidly losing faith in the South's cotton-backed bonds. The consequences for the Confederate economy were disastrous.

With its domestic bond market exhausted and only two paltry foreign loans, the Confederate government was forced to print unbacked paper dollars to pay for the war and its other expenses, 1.7 billion dollars' worth in all. Both sides in the Civil War had to print money, it is true. But by the end of the war the Union's 'greenback' dollars were still worth about 50 cents in gold,



A Confederate 'greyback' State of Louisiana five-dollar bill

whereas the Confederacy's 'greybacks' were worth just one cent, despite a vain attempt at currency reform in 1864.[47] The situation was worsened by the ability of Southern states and municipalities to print paper money of their own; and by rampant forgery, since Confederate notes were crudely made and easy to copy. With ever more paper money chasing ever fewer goods, inflation exploded. Prices in the South rose by around 4,000 per cent during the Civil War.[48] By contrast, prices in the North rose by just 60 per cent. Even before the surrender of the principal Confederate armies in April 1865, the economy of the South was collapsing, with hyperinflation as the sure harbinger of defeat.

The Rothschilds had been right. Those who had invested in Confederate bonds ended up losing everything, since the victorious North pledged not to honour the debts of the South. In the end, there had been no option but to finance the Southern war effort by printing money. It would not be the last time in history that an attempt to buck the bond market would end in ruinous inflation and military humiliation.

The Euthanasia of the Rentier

The fate of those who lost their shirts on Confederate bonds was not especially unusual in the nineteenth century. The Confederacy was far from the only state in the Americas to end up disappointing its bondholders; it was merely the northernmost delinquent. South of the Rio Grande, debt defaults and currency depreciations verged on the commonplace. The experience of Latin America in the nineteenth century in many ways foreshadowed problems that would become almost universal in the middle of the twentieth century. Partly this was because the social class that was most likely to invest in bonds – and therefore to have an interest in prompt interest payment in a sound currency – was weaker there than elsewhere. Partly it was because Latin American republics were among the first to discover that it was relatively painless to default when a substantial proportion of bondholders were foreign. It was no mere accident that the first great Latin American debt crisis happened as early as 1826–9, when Peru, Colombia, Chile, Mexico, Guatemala and Argentina all defaulted on loans issued in London just a few years before.[49]

In many ways, it was true that the bond market was powerful. By the later nineteenth century, countries that defaulted on their debts risked economic sanctions, the imposition of foreign control over their finances and even, in at least five cases, military intervention.[50] It is hard to believe that Gladstone would have ordered the invasion of Egypt in 1882 if the Egyptian government had not threatened to renege on its obligations to European bondholders, himself among them. Bringing an 'emerging market' under the aegis of the British Empire was the surest way to remove political risk from investors' concerns.[51] Even those outside the Empire risked a visit from a gunboat if they defaulted, as

Venezuela discovered in 1902, when a joint naval expedition by Britain, Germany and Italy temporarily blockaded the country's ports. The United States was especially energetic (and effective) in protecting bondholders' interests in Central America and the Caribbean.[52]

But in one crucial respect the bond market was potentially vulnerable. Investors in the City of London, the biggest international financial market in the world throughout the nineteenth century, were wealthy but not numerous. In the early nineteenth century the number of British bondholders may have been fewer than 250,000, barely 2 per cent of the population. Yet their wealth was more than double the entire national income of the United Kingdom; their income in the region of 7 per cent of national income. In 1822 this income – the interest on the national debt – amounted to roughly half of total public spending, yet more than two thirds of tax revenue was indirect and hence fell on consumption. Even as late as 1870 these proportions were still, respectively, a third and more than half. It would be quite hard to devise a more regressive fiscal system, with taxes imposed on the necessities of the many being used to finance interest payments to the very few. Small wonder Radicals like William Cobbett were incensed. 'A national debt, and all the taxation and gambling belonging to it,' Cobbett declared in his *Rural Rides* (1830), 'have a natural tendency to *draw wealth into great masses . . . for the gain of a few*.'[53] In the absence of political reform, he warned, the entire country would end up in the hands of 'those who have had borrowed from them the money to uphold this monster of a system . . . the loan-jobbers, stock-jobbers . . . Jews and the whole tribe of tax-eaters'.[54]

Such tirades did little to weaken the position of the class known in France as the *rentiers* – the recipients of interest on government bonds like the French *rente*. On the contrary, the decades after

1830 were a golden age for the *rentier* in Europe. Defaults became less and less frequent. Money, thanks to the gold standard, became more and more dependable.[55] This triumph of the *rentier*, despite the generalized widening of electoral franchises, was remarkable. True, the rise of savings banks (which were often mandated to hold government bonds as their principal assets) gave new segments of society indirect exposure to, and therefore stakes in, the bond market. But fundamentally the *rentiers* remained an elite of Rothschilds, Barings and Gladstones – socially, politically, but above all economically intertwined. What ended their dominance was not the rise of democracy or socialism, but a fiscal and monetary catastrophe for which the European elites were themselves responsible. That catastrophe was the First World War.

'Inflation', wrote Milton Friedman in a famous definition, 'is always and everywhere a monetary phenomenon, in the sense that it cannot occur without a more rapid increase in the quantity of money than in output.' What happened in all the combatant states during and after the First World War illustrates this pretty well. There were essentially five steps to high inflation:

1. War led not only to shortages of goods but also to
2. short-term government borrowing from the central bank,
3. which effectively turned debt into cash, thereby expanding the money supply,
4. causing public expectations of inflation to shift and the demand for cash balances to fall
5. and prices of goods to rise.*

* In the language of economics the relationships can be simplified as $MV = PQ$ where M is the quantity of money in circulation, V is the velocity of money (frequency of transactions), P is the price level and Q is the real value of total transactions.

Pure monetary theory, however, cannot explain why in one country the inflationary process proceeds so much further or faster than in another. Nor can it explain why the consequences of inflation vary so much from case to case. If one adds together the total public expenditures of the major combatant powers between 1914 and 1918, Britain spent rather more than Germany and France much more than Russia. Expressed in terms of dollars, the public debts of Britain, France and the United States increased much more between April 1914 and March 1918 than that of Germany.[56] True, the volume of banknotes in circulation rose by more in Germany between 1913 and 1918 (1,040 per cent) than in Britain (708 per cent) or France (386 per cent), but for Bulgaria the figure was 1,116 per cent and for Romania 961 per cent.[57] Relative to 1913, wholesale prices had risen further by 1918 in Italy, France and Britain than in Germany. The cost-of-living index for Berlin in 1918 was 2.3 times higher than its pre-war level; for London it was little different (2.1 times higher).[58] Why, then, was it Germany that plunged into hyperinflation after the First World War? Why was it the mark that collapsed into worthlessness? The key lies in the role of the bond market in war and post-war finance.

All the warring countries went on war bonds sales-drives during the war, persuading thousands of small savers who had never previously purchased government bonds that it was their patriotic duty to do so. Unlike Britain, France, Italy and Russia, however, Germany did not have access to the international bond market during the war (having initially spurned the New York market and then been shut out of it). While the Entente powers could sell bonds in the United States or throughout the capital-rich British Empire, the Central powers (Germany, Austria-Hungary and Turkey) were thrown back on their own resources. Berlin and Vienna were important financial centres, but they lacked the

depth of London, Paris and New York. As a result, the sale of war bonds grew gradually more difficult for the Germans and their allies, as the appetite of domestic investors became sated. Much sooner, and to a much greater extent than in Britain, the German and Austrian authorities had to turn to their central banks for short-term funding. The growth of the volume of Treasury bills in the central bank's hands was a harbinger of inflation because, unlike the sale of bonds to the public, exchanging these bills for banknotes increased the money supply. By the end of the war, roughly a third of the Reich debt was 'floating' or unfunded, and a substantial monetary overhang had been created, which only wartime price controls prevented from manifesting itself in higher inflation.

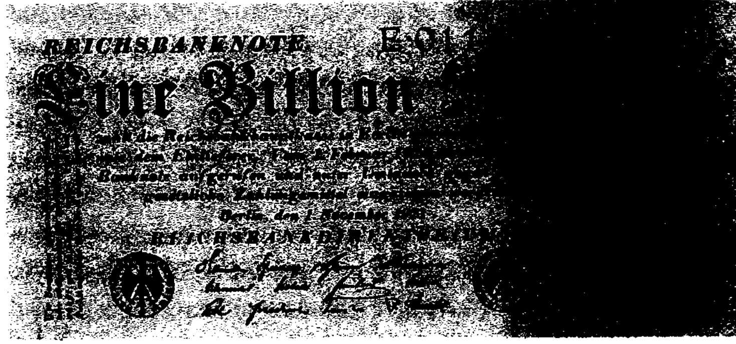
Defeat itself had a high price. All sides had reassured taxpayers and bondholders that the enemy would pay for the war. Now the bills fell due in Berlin. One way of understanding the post-war hyperinflation is therefore as a form of state bankruptcy. Those who had bought war bonds had invested in a promise of victory; defeat and revolution represented a national insolvency, the brunt of which necessarily had to be borne by the Reich's creditors. Quite apart from defeat, the revolutionary events between November 1918 and January 1919 were scarcely calculated to reassure investors. Nor was the peace conference at Versailles, which imposed an unspecified reparations liability on the fledgling Weimar Republic. When the total indemnity was finally fixed in 1921, the Germans found themselves saddled with a huge new external debt with a nominal capital value of 132 billion 'gold marks' (pre-war marks), equivalent to more than three times national income. Although not all this new debt was immediately interest-bearing, the scheduled reparations payments accounted for more than a third of all Reich expenditure in 1921 and 1922. No investor who contemplated

Germany's position in the summer of 1921 could have felt optimistic, and such foreign capital as did flow into the country after the war was speculative or 'hot' money, which soon departed when the going got tough.

Yet it would be wrong to see the hyperinflation of 1923 as a simple consequence of the Versailles Treaty. That was how the Germans liked to see it, of course. Their claim throughout the post-war period was that the reparations burden created an unsustainable current account deficit; that there was no alternative but to print yet more paper marks in order to finance it; that the inflation was a direct consequence of the resulting depreciation of the mark. All of this was to overlook the domestic political roots of the monetary crisis. The Weimar tax system was feeble, not least because the new regime lacked legitimacy among higher income groups who declined to pay the taxes imposed on them. At the same time, public money was spent recklessly, particularly on generous wage settlements for public sector unions. The combination of insufficient taxation and excessive spending created enormous deficits in 1919 and 1920 (in excess of 10 per cent of net national product), before the victors had even presented their reparations bill. The deficit in 1923, when Germany had suspended reparations payments, was even larger. Moreover, those in charge of Weimar economic policy in the early 1920s felt they had little incentive to stabilize German fiscal and monetary policy, even when an opportunity presented itself in the middle of 1920.[59] A common calculation among Germany's financial elites was that runaway currency depreciation would force the Allied powers into revising the reparations settlement, since the effect would be to cheapen German exports relative to American, British and French manufactures. It was true, as far as it went, that the downward slide of the mark boosted German exports. What the Germans overlooked was that the

inflation-induced boom of 1920–22, at a time when the US and UK economies were in the depths of a post-war recession, caused an even bigger surge in imports, thus negating the economic pressure they had hoped to exert. At the heart of the German hyperinflation was a miscalculation. When the French cottoned on to the insincerity of official German pledges to fulfil their reparations commitments, they drew the conclusion that reparations would have to be collected by force and invaded the industrial Ruhr region. The Germans reacted by proclaiming a general strike ('passive resistance'), which they financed with yet more paper money. The hyperinflationary endgame had now arrived.

Inflation is a monetary phenomenon, as Milton Friedman said. But hyperinflation is always and everywhere a *political* phenomenon, in the sense that it cannot occur without a fundamental malfunction of a country's political economy. There surely were less catastrophic ways to settle the conflicting claims of domestic and foreign creditors on the diminished national income of post-war Germany. But a combination of internal gridlock and external defiance – rooted in the refusal of many Germans to accept that their empire had been fairly beaten – led to the worst of all possible outcomes: a complete collapse of the currency and of the economy itself. By the end of 1923 there were approximately 4.97×10^{20} marks in circulation. Twenty-billion mark notes were in everyday use. The annual inflation rate reached a peak of 182 billion per cent. Prices were on average 1.26 *trillion* times higher than they had been in 1913. True, there had been some short-term benefits. By discouraging saving and encouraging consumption, accelerating inflation had stimulated output and employment until the last quarter of 1922. The depreciating mark, as we have seen, had boosted German exports. Yet the collapse of 1923 was all the more severe for having been postponed. Industrial production dropped to half its 1913 level.



The price of hyperinflation: a German billion mark note from November 1923. In fact this is a trillion mark note, since the German term 'milliard' is equivent to an American billion.

Unemployment soared to, at its peak, a quarter of trade union members, with another quarter working short time. Worst of all was the social and psychological trauma caused by the crisis. 'Inflation is a crowd phenomenon in the strictest and most concrete sense of the word,' Elias Canetti later wrote of his experiences as a young man in inflation-stricken Frankfurt. '[It is] a witches' sabbath of devaluation where men and the units of their money have the strongest effects on each other. The one stands for the other, men feeling themselves as "bad" as their money; and this becomes worse and worse. Together they are all at its mercy and all feel equally worthless.'[60]

Worthlessness was the hyperinflation's principal product. Not only was money rendered worthless; so too were all the forms of wealth and income fixed in terms of that money. That included bonds. The hyperinflation could not wipe out Germany's external debt, which had been fixed in pre-war currency. But it could and did wipe out all the internal debt that had been accumulated during and after the war, levelling the debt mountain like some devastating economic earthquake. The effect was akin to a tax: a

tax not only on bondholders but also on anyone living on a fixed cash income. This amounted to a great levelling, since it affected primarily the upper middle classes: *rentiers*, senior civil servants, professionals. Only entrepreneurs were in a position to insulate themselves by adjusting prices upwards, hoarding dollars, investing in 'real assets' (such as houses or factories) and paying off debts in depreciating banknotes. The enduring economic legacy of the hyperinflation was bad enough: weakened banks and chronically high interest rates, which now incorporated a substantial inflation risk premium. But it was the social and political consequences of the German hyperinflation that were the most grievous. The English economist John Maynard Keynes had theorized in 1923 that the 'euthanasia of the *rentier*' through inflation was preferable to mass unemployment through deflation – 'because it is worse in an impoverished world to provoke unemployment than to disappoint the rentier'.[61] Yet four years earlier, he himself had given a vivid account of the negative consequences of inflation:

By a continuing process of inflation, governments can confiscate, secretly and unobserved, an important part of the wealth of their citizens. By this method, they not only confiscate, but they confiscate *arbitrarily*; and, while the process impoverishes many, it actually enriches some. The sight of this arbitrary rearrangement of riches strikes not only at security, but at confidence in the equity of the existing distribution of wealth. Those to whom the system brings windfalls . . . become 'profiteers', who are the object of the hatred of the bourgeoisie, whom the inflationism has impoverished not less than of the proletariat. As the inflation proceeds . . . all permanent relations between debtors and creditors, which form the ultimate foundation of capitalism, become so utterly disordered as to be almost meaningless . . .[62]

It was to Lenin that Keynes attributed the insight that 'There is no subtler, no surer means of overturning the existing basis of society than to debauch the currency.' No record survives of Lenin saying any such thing, but his fellow Bolshevik Yevgeni Preobrazhensky* did describe the banknote-printing press as 'that machine-gun of the Commissariat of Finance which poured fire into the rear of the bourgeois system'.[63]

The Russian example is a reminder that Germany was not the only vanquished country to suffer hyperinflation after the First World War. Austria – as well as the newly independent Hungary and Poland – also suffered comparably bad currency collapses between 1917 and 1924. In the Russian case, hyperinflation came after the Bolsheviks had defaulted outright on the entire Tsarist debt. Bondholders would suffer similar fates in the aftermath of the Second World War, when Germany, Hungary and Greece all saw their currencies and bond markets collapse.†

If hyperinflation were exclusively associated with the costs of losing world wars, it would be relatively easy to understand. Yet there is a puzzle. In more recent times, a number of countries have been driven to default on their debts – either directly by suspending interest payments, or indirectly by debasing the currency in which the debts are denominated – as a result of far less serious disasters. Why is it that the spectre of hyperinflation has not been banished along with the spectre of global conflict?

PIMCO boss Bill Gross began his money-making career as a blackjack player in Las Vegas. To his eyes, there is always an

* Murder rather than euthanasia was Preobrazhensky's forte; he was of all the Bolshevik leaders the one most directly implicated in the execution of Nicholas II and his family.

† The highest recorded inflation rate in history was in Hungary in July 1946, when prices increased by 4.19 quintillion per cent (419 followed by sixteen zeros).

element of gambling involved when an investor buys a bond. Part of that gamble is that an upsurge in inflation will not consume the value of the bond's annual interest payments. As Gross explains it, 'If inflation goes up to ten per cent and the value of a fixed rate interest is only five, then that basically means that the bond holder is falling behind inflation by five per cent.' As we have seen, the danger that rising inflation poses is that it erodes the purchasing power of both the capital sum invested and the interest payments due. And that is why, at the first whiff of higher inflation, bond prices tend to fall. Even as recently as the 1970s, as inflation soared around the world, the bond market made a Nevada casino look like a pretty safe place to invest your money. Gross vividly recalls the time when US inflation was surging into double digits, peaking at just under 15 per cent in April 1980. As he puts it, 'that was very bond-unfriendly, and it produced . . . perhaps the worst bond bear market not just in memory but in history.' To be precise, real annual returns on US government bonds in the 1970s were minus 3 per cent, almost as bad as during the inflationary years of the world wars. Today, only a handful of countries have inflation rates above 10 per cent and only one, Zimbabwe, is afflicted with hyperinflation.* But back in 1979 at least seven countries had an annual inflation rate above 50 per cent and more than sixty countries, including Britain and the United States, had inflation in double digits. Among the countries worst affected, none suffered more severe long-term damage than Argentina.

Once, Argentina was a byword for prosperity. The country's very name means the land of silver. The river on whose banks the capital Buenos Aires stands is the Rio de la Plata – in English

* At the time of writing (March 2008), a funeral in Zimbabwe costs 1 billion Zimbabwean dollars. The annual inflation rate is 100,000 per cent.

the Silver River – a reference not to its colour, which is muddy brown, but to the silver deposits supposed to lie upstream. In 1913, according to recent estimates, Argentina was one of the ten richest countries in the world. Outside the English-speaking world, per capita gross domestic product was higher in only Switzerland, Belgium, the Netherlands and Denmark. Between 1870 and 1913, Argentina's economy had grown faster than those of both the United States and Germany. There was almost as much foreign capital invested there as in Canada. It is no coincidence that there were once two Harrods stores in the world: one in Knightsbridge, in London, the other on the Avenida Florida, in the heart of Buenos Aires. Argentina could credibly aspire to be the United Kingdom, if not the United States, of the southern hemisphere. In February 1946, when the newly elected president General Juan Domingo Perón visited the central bank in Buenos Aires, he was astonished at what he saw. 'There is so much gold,' he marvelled, 'you can hardly walk through the corridors.'

The economic history of Argentina in the twentieth century is an object lesson that all the resources in the world can be set at nought by financial mismanagement. Particularly after the Second World War the country consistently underperformed its neighbours and most of the rest of the world. So miserably did it fare in the 1960s and 1970s, for example, that its per capita GDP was the same in 1988 as it had been in 1959. By 1998 it had sunk to 34 per cent of the US level, compared with 72 per cent in 1913. It had been overtaken by, among others, Singapore, Japan, Taiwan and South Korea – not forgetting, most painful of all, the country next door, Chile. What went wrong? One possible answer is inflation, which was in double digits between 1945 and 1952, between 1956 and 1968 and between 1970 and 1974; and in treble (or quadruple) digits between 1975 and 1990, peaking

at an annual rate of 5,000 per cent in 1989. Another answer is debt default: Argentina let down foreign creditors in 1982, 1989, 2002 and 2004. Yet these answers will not quite suffice. Argentina had suffered double-digit inflation in at least eight years between 1870 and 1914. It had defaulted on its debts at least twice in the same period. To understand Argentina's economic decline, it is once again necessary to see that inflation was a political as much as a monetary phenomenon.

An oligarchy of landowners had sought to base the country's economy on agricultural exports to the English-speaking world, a model that failed comprehensively in the Depression. Large-scale immigration without (as in North America) the freeing of agricultural land for settlement had created a disproportionately large urban working class that was highly susceptible to populist mobilization. Repeated military interventions in politics, beginning with the coup that installed José F. Uriburu in 1930, paved the way for a new kind of quasi-fascistic politics under Perón, who seemed to offer something for everyone: better wages and conditions for workers and protective tariffs for industrialists. The anti-labour alternative to Péron, which was attempted between 1955 (when he was deposed) and 1966, relied on currency devaluation to try to reconcile the interests of agriculture and industry. Another military coup in 1966 promised technological modernization but instead delivered more devaluation, and higher inflation. Perón's return in 1973 was a fiasco, coinciding as it did with the onset of a global upsurge in inflation. Annual inflation surged to 444 per cent. Yet another military coup plunged Argentina into violence as the *Proceso de Reorganización Nacional* (National Reorganization Process) condemned thousands to arbitrary detention and 'disappearance'. In economic terms, the junta achieved precisely nothing other than to saddle Argentina with a rapidly growing external debt, which by 1984 exceeded 60 per

cent of GDP (though this was less than half the peak level of indebtedness attained in the early 1900s). As so often in inflationary crises, war played a part: internally against supposed subversives, externally against Britain over the Falkland Islands. Yet it would be wrong to see this as yet another case of a defeated regime liquidating its debts through inflation. What made Argentina's inflation so unmanageable was not war, but the constellation of social forces: the oligarchs, the *caudillos*, the producers' interest groups and the trade unions – not forgetting the impoverished underclass or *descamizados* (literally the shirtless). To put it simply, there was no significant group with an interest in price stability. Owners of capital were attracted to deficits and devaluation; sellers of labour grew accustomed to a wage–price spiral. The gradual shift from financing government deficits domestically to financing them externally meant that bondholding was outsourced.[64] It is against this background that the failure of successive plans for Argentine currency stabilization must be understood.

In his short story 'The Garden of Forking Paths', Argentina's greatest writer Jorge Luis Borges imagined the writing of a Chinese sage, Ts'ui Pên:

> In all fictional works, each time a man is confronted with several alternatives, he chooses one and eliminates the others; in the fiction of Ts'ui Pên, he chooses – simultaneously – all of them. *He creates*, in this way, diverse futures; diverse times which themselves also proliferate and fork . . . In the work of Ts'ui Pên, all possible outcomes occur; each one is the point of departure for other forkings . . . [Ts'ui Pên] did not believe in a uniform, absolute time. He believed in an infinite series of times, in a growing, dizzying net of divergent, convergent and parallel times.[65]

This is not a bad metaphor for Argentine financial history in the past thirty years. Where Bernardo Grinspun attempted debt

rescheduling and Keynesian demand management, Juan Sourrouille tried currency reform (the Austral Plan) along with wage and price controls. Neither was able to lead the critical interest groups down his own forking path. Public expenditure continued to exceed tax revenue; arguments for a premature end to wage and price controls prevailed; inflation resumed after only the most fleeting of stabilizations. The forking paths finally and calamitously reconverged in 1989: the *annus mirabilis* in Eastern Europe; the *annus horribilis* in Argentina.

In February 1989 Argentina was suffering one of the hottest summers on record. The electricity system in Buenos Aires struggled to cope. People grew accustomed to five-hour power cuts. Banks and foreign exchange houses were ordered to close as the government tried to prevent the currency's exchange rate from collapsing. It failed: in the space of just a month the austral fell 64 per cent against the dollar. At the same time, the World Bank froze lending to Argentina, saying that the government had failed to tackle its bloated public sector deficit. Private sector lenders were no more enthusiastic. Investors were hardly likely to buy bonds with the prospect that inflation would wipe out their real value within days. As fears grew that the central bank's reserves were running out, bond prices plunged. There was only one option left for a desperate government: the printing press. But even that failed. On Friday 28 April Argentina literally ran out of money. 'It's a physical problem,' Central Bank Vice-President Roberto Eilbaum told a news conference. The mint had literally run out of paper and the printers had gone on strike. 'I don't know how we're going to do it, but the money has got to be there on Monday,' he confessed.

By June, with the *monthly* inflation rate rising above 100 per cent, popular frustration was close to boiling point. Already in April customers in one Buenos Aires supermarket had overturned

trolleys full of goods after the management announced over a loudspeaker that all prices would immediately be raised by 30 per cent. For two days in June crowds in Argentina's second largest city, Rosario, ran amok in an eruption of rioting and looting that left at least fourteen people dead. As in the Weimar Republic, however, the principal losers of Argentina's hyperinflation were not ordinary workers, who stood a better chance of matching price hikes with pay rises, but those reliant on incomes fixed in cash terms, like civil servants or academics on inflexible salaries, or pensioners living off the interest on their savings. And, as in 1920s Germany, the principal beneficiaries were those with large debts, which were effectively wiped out by inflation. Among those beneficiaries was the government itself, in so far as the money it owed was denominated in australes.

Yet not all Argentina's debts could be got rid of so easily. By 1983 the country's external debt, which was denominated in US dollars, stood at $46 billion, equivalent to around 40 per cent of national output. No matter what happened to the Argentine currency, this dollar-denominated debt stayed the same. Indeed, it tended to grow as desperate governments borrowed yet more dollars. By 1989 the country's external debt was over $65 billion. Over the next decade it would continue to grow until it reached $155 billion. Domestic creditors had already been mulcted by inflation. But only default could rid Argentina of its foreign debt burden. As we have seen, Argentina had gone down this road more than once before. In 1890 Baring Brothers had been brought to the brink of bankruptcy by its investments in Argentine securities (notably a failed issue of bonds for the Buenos Aires Water Supply and Drainage Company) when the Argentine government defaulted on its external debt. It was the Barings' old rivals the Rothschilds who persuaded the British government to contribute £1 million towards what became a £17 million bailout fund, on

the principle that the collapse of Barings would be 'a terrific calamity for English commerce all over the world'.[66] And it was also the first Lord Rothschild who chaired a committee of bankers set up to impose reform on the wayward Argentines. Future loans would be conditional on a currency reform that pegged the peso to gold by means of an independent and inflexible currency board.[67] A century later, however, the Rothschilds were more interested in Argentine vineyards than in Argentine debt. It was the International Monetary Fund that had to perform the thankless task of trying to avert (or at least mitigate the effects of) an Argentine default. Once again the remedy was a currency board, this time pegging the currency to the dollar.

When the new *peso convertible* was introduced by Finance Minister Domingo Cavallo in 1991, it was the sixth Argentine currency in the space of a century. Yet this remedy, too, ended in failure. True, by 1996 inflation had been brought down to zero; indeed, it turned negative in 1999. But unemployment stood at 15 per cent and income inequality was only marginally better than in Nigeria. Moreover, monetary stricture was never accompanied by fiscal stricture; public debt rose from 35 per cent of GDP at the end of 1994 to 64 per cent at the end of 2001 as central and provincial governments alike tapped the international bond market rather than balance their budgets. In short, despite pegging the currency and even slashing inflation, Cavallo had failed to change the underlying social and institutional drivers that had caused so many monetary crises in the past. The stage was set for yet another Argentine default, and yet another currency. After two bailouts in January ($15 billion) and May ($8 billion), the IMF declined to throw a third lifeline. On 23 December 2001, at the end of a year in which per capita GDP had declined by an agonizing 12 per cent, the government announced a moratorium on the entirety of its foreign debt,

including bonds worth $81 billion: in nominal terms the biggest debt default in history.

The history of Argentina illustrates that the bond market is less powerful than it might first appear. The average 295 basis point spread between Argentine and British bonds in the 1880s scarcely compensated investors like the Barings for the risks they were running by investing in Argentina. In the same way, the average 664 basis point spread between Argentine and US bonds from 1998 to 2000 significantly underpriced the risk of default as the Cavallo currency peg began to crumble. When the default was announced, the spread rose to 5,500; by March 2002 it exceeded 7,000 basis points. After painfully protracted negotiations (there were 152 varieties of paper involved, denominated in six different currencies and governed by eight jurisdictions) the majority of approximately 500,000 creditors agreed to accept new bonds worth roughly 35 cents on the dollar, one of the most drastic 'haircuts' in the history of the bond market.[68] So successful did Argentina's default prove (economic growth has since surged while bond spreads are back in the 300–500 basis point range) that many economists were left to ponder why any sovereign debtor ever honours its commitments to foreign bondholders.[69]

The Resurrection of the Rentier

In the 1920s, as we have seen, Keynes had predicted the 'euthanasia of the *rentier*', anticipating that inflation would eventually eat up all the paper wealth of those who had put their money in government bonds. In our time, however, we have seen a miraculous resurrection of the bondholder. After the Great Inflation of the 1970s, the past thirty years have seen one country after another reduce inflation to single digits.[70] (Even in Argentina, the

official inflation rate is below 10 per cent, though unofficial estimates compiled by the provinces of Mendoza and San Luis put it above 20 per cent.) And, as inflation has fallen, so bonds have rallied in what has been one of the great bond bull markets of modern history. Even more remarkably, despite the spectacular Argentine default – not to mention Russia's in 1998 – the spreads on emerging market bonds have trended steadily downwards, reaching lows in early 2007 that had not been seen since before the First World War, implying an almost unshakeable confidence in the economic future. Rumours of the death of Mr Bond have clearly proved to be exaggerated.

Inflation has come down partly because many of the items we buy, from clothes to computers, have got cheaper as a result of technological innovation and the relocation of production to low-wage economies in Asia. It has also been reduced because of a worldwide transformation in monetary policy, which began with the monetarist-inspired increases in short-term rates implemented by the Bank of England and the Federal Reserve in the late 1970s and early 1980s, and continued with the spread of central bank independence and explicit targets in the 1990s. Just as importantly, as the Argentine case shows, some of the structural drivers of inflation have also weakened. Trade unions have become less powerful. Loss-making state industries have been privatized. But, perhaps most importantly of all, the social constituency with an interest in positive real returns on bonds has grown. In the developed world a rising share of wealth is held in the form of private pension funds and other savings institutions that are required, or at least expected, to hold a high proportion of their assets in the form of government bonds and other fixed income securities. In 2007 a survey of pension funds in eleven major economies revealed that bonds accounted for more than a quarter of their assets, substantially lower than in past decades,

but still a substantial share.[71] With every passing year, the proportion of the population living off the income from such funds goes up, as the share of retirees increases.

Which brings us back to Italy, the land where the bond market was born. In 1965, on the eve of the Great Inflation, just 10 per cent of Italians were aged 65 or over. Today the proportion is twice that: around a fifth. And by 2050 it is projected by the United Nations to be just under a third. In such a greying society, there is a huge and growing need for fixed income securities, and for low inflation to ensure that the interest they pay retains its purchasing power. As more and more people leave the workforce, recurrent public sector deficits ensure that the bond market will never be short of new bonds to sell. And the fact that Italy has surrendered its monetary sovereignty to the European Central Bank means that there should never be another opportunity for Italian politicians to print money and set off the inflationary spiral.

That does not mean, however, that the bond market rules the world in the sense that James Carville meant. Indeed, the kind of discipline he associated with the bond market in the 1990s has been conspicuous by its absence under President Clinton's successor, George W. Bush. Just months before President Bush's election, on 7 September 2000, the National Debt Clock in New York's Times Square was shut down. On that day it read as follows: 'Our national debt: $5,676,989,904,887. Your family share: $73,733.' After three years of budget surpluses, both candidates for the presidency were talking as if paying off the national debt was a viable project. According to CNN

> Democratic presidential nominee Al Gore has outlined a plan that he says would eliminate the debt by 2012. Senior economic advisers to Texas Governor and Republican presidential candidate George W. Bush agree with the principle of paying down the debt but have not committed to a specific date for eliminating it.[72]

That lack of commitment on the latter candidate's part was by way of being a hint. During Bush's time in the White House, his administration ran a budget deficit in seven out of eight years. The federal debt increased from $5 trillion to more than $9 trillion. In 2008 the Congressional Budget Office forecast a continued rise to more than $12 trillion by 2017. Yet, far from punishing this profligacy, the bond market positively rewarded it. Between December 2000 and November 2008, the yield on ten-year Treasury bonds *declined* from 5.24 per cent to 3.53 per cent.

It is, however, impossible to make sense of this 'conundrum' – as Alan Greenspan called this failure of bond yields to respond to short-term interest rate rises[73] – by studying the bond market in isolation. We therefore turn now from the market for government debt to its younger and in many ways more dynamic sibling: the market for shares in corporate equity, known colloquially as the stock market.