

Chapter 6 Money: How it Works; Who it Serves

Capitalism is the use of money to make money for those who have money
David Korten

Money is one of the most marginalised issues of our time. Most people never ask themselves or others questions about where money comes from, what it is, or who controls it. This is a shame, since money quite clearly lies plum at the centre of an economic system that is not called capitalism by coincidence.

This question has become even more pressing in the post-globalisation version of capitalism, where money no longer operates as a tool facilitating trade in products, but is used to make money directly by various confidence tricks in a system which is now commonly referred to as 'the casino economy'. The creation of money by banks was originally intended to facilitate the exchange of goods. However, from the start a range of financial scams have been perpetrated which remove this need to get your hands dirty making things.

It is no coincidence that globalisation as represented by the vast expansion of trade in goods occurred simultaneously with the liberalisation of financial markets. Countries which had once attempted to maintain political control over finance through setting interest rates, controlling the activities of banks, and through credit and exchange controls were persuaded that further capitalist progress required the market to take on these functions. Money can now be used merely to generate more money for those who have it, leaving not production but finance to play the central role in the global economy:

The finance industry lies at the heart of globalisation. Of the total international transactions of a trillion or so dollars each day, 95 per cent are purely financial. Globalisation is not about trade; it is about money.

'the financial system now completely dominates the real economy of goods and services.

Money is useful for the obvious reason that it enables you to pay for a luxurious lifestyle, but more importantly to those who control capital, money gives them a claim over future production so that over time they are enabled to accumulate an unfair share of a community's resources and power:

In reality, people who save and invest money do not save goods. They merely transfer their claim from the original commodities in existence to those produced and sold in a future period. Furthermore, they expect an increased share of them as a reward for investment. Crucially, the money which they use to spend or invest is constantly created and destroyed by the banking system for its own financial advantage.

There are few subjects in modern life about which so many lies are told and so many misunderstandings encouraged, both politically and personally, than about money. It is, in fact, neither the root of all evil nor what makes the world go around. It is a neat but deceitful political tool that enables those with power under a capitalist system to exercise that power to generate an unfair advantage for themselves. For readers who have not delved into the inner workings of the financial system before I should warn

you: you are in for an exhilarating but bumpy ride. You should not be surprised to find yourself thinking 'I just can't believe it'. I have frequently felt that way myself when embarking on a similar journey. The disbelief is similar to that experienced when watching a confidence trickster, but be assured that, just because the show is good and you have believed it for a long while, that does not mean that it is true.

Whence it came; where it went

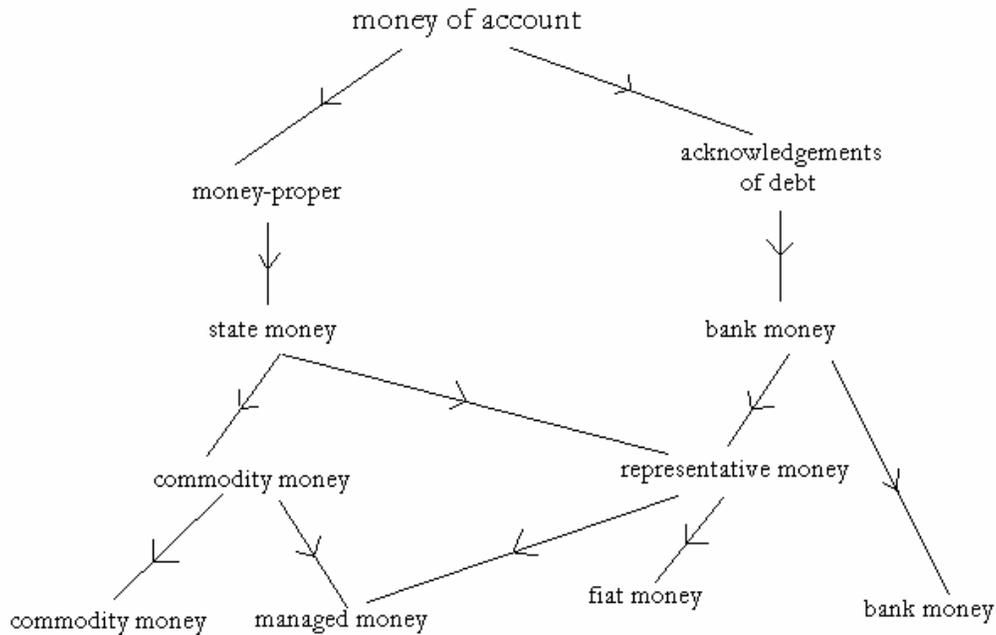
If you ask people where money comes from they will probably tell you from a bank. Dig deeper and you will find that people believe that the money they take out of the bank has been deposited there by somebody: by the person herself, in which case it is simply a withdrawal, or by somebody else, in which case it is a loan. This is the first big myth of money, because the truth is that all or nearly all (depending on your theorist of choice) the money you take from the bank has been created out of thin air by the bank itself.

When you begin teaching students about the economics of banking you teach a fiction known as 'fractional reserve banking' and many who have never taken economics as an academic discipline or worked in a bank have a hazy notion about this system. It is understood, because of Hollywood movies about 'runs on the bank', that the bank does not actually hold, or need to hold, as much money as it lends to people. Because it is highly unlikely that everybody will come and ask for all their money, all at the same time, the banks can consider themselves to be acting with probity if they retain only a proportion as 'reserves', this proportion being understood to be around 10 per cent. Let us for the time being take this story as a reasonable account of how banks create money; it is the one that is reproduced in most economics textbooks. The first stage is the deposit of some money by a punter, let us say £100. Because banks have learned from historical experience that only one in ten of such punters will want her or his money back at any given time, they feel quite secure in lending £900 on the basis of this deposit, effectively inflating its nominal value, and thus reducing its real value, tenfold.

The second myth about money that is universally believed is that it is, and needs to be, backed by something of real value. Governments create money and this money has credibility because the government has a sufficient store of gold in its vaults to support its value. Like the reserve banking story, according to this fiction governments can create more money than the gold they have, but only up to a certain limit. This story was true for some time, but it was found that the uncontrollable growth of the capitalist economy rapidly outstripped the gold available to support it and maintaining a 'gold standard' stifled economic growth.

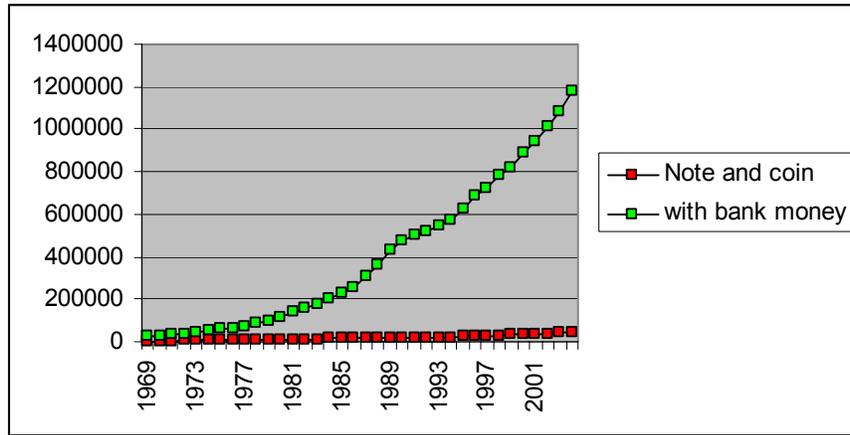
Eagle-eyed and sharp-minded readers will have noticed that there is an inconsistency between the two stories told so far, in that they disagree about who is responsible for creating the money. They have in common the idea that, while there should be something of real value backing up a currency at least in part, who owns this collateral and who therefore creates the money could be either the bank or the government. This was how things were, both banks and government were entitled to create money: governments created money as fiat issues, whereas banks created it in return for a debt. Some state money was backed by gold, some by confidence alone, generating the four kinds of recognizable money in a modern economy illustrated in Figure 6.1 (taken from Keynes's *A Treatise on Money*).

Figure 6.1. Keynes's illustration of the classification of money



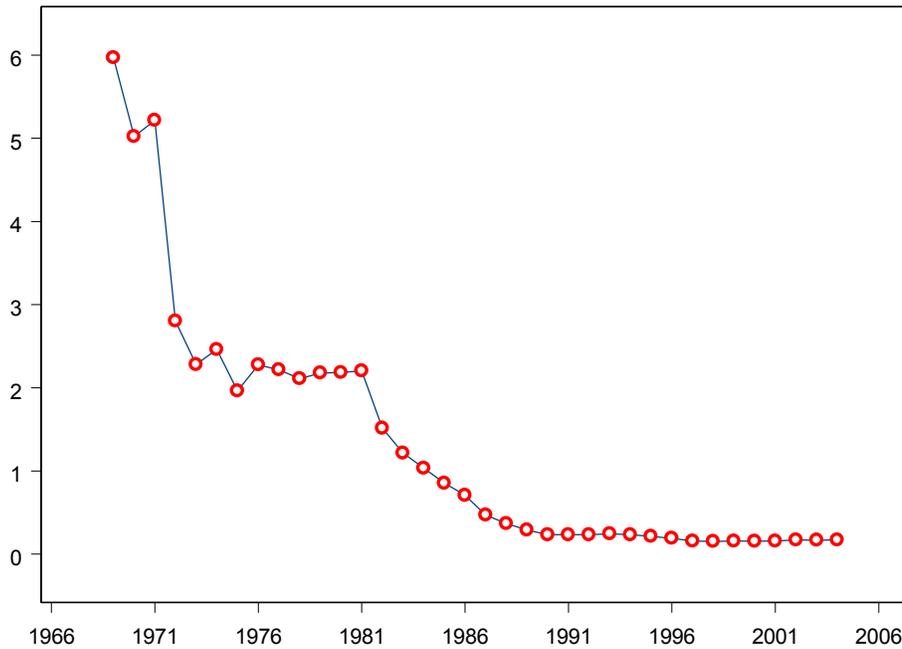
So there are several different types of money, distinguishable by the nature of their back-up and by who controls them. Banks can create money on the basis of deposits, as credit. Governments can create money by selling bonds, or just by making a decision to create currency. It may be efficient to leave the job of generating credit for economic activity to banks, so long as they operate within political controls, but it will also be necessary to have money created by government both as credit, to fund public works, and as currency, to facilitate economic activity without the creation of parallel debts. The balance between these different types of money is a political decision. As Figures 6.2 and 6.3 show, throughout recent history, and increasingly since the Second World War, government has relinquished its role in money creation in favour of banks. The recent economic history of the developed economies has been a shift in the balance towards debt-based bank money and away from public money. This has had the inevitable consequence of increasing the proportion of money paid to bank shareholders and producing a squeeze on the money available for public investment.

Figure 6.2. Government money compared with bank money, M0 and M4, 1969-2004



Source: Bank of England interactive database.

Figure 6.3. Ratio of M4 to M0, or debt money to government money, 1969-2004



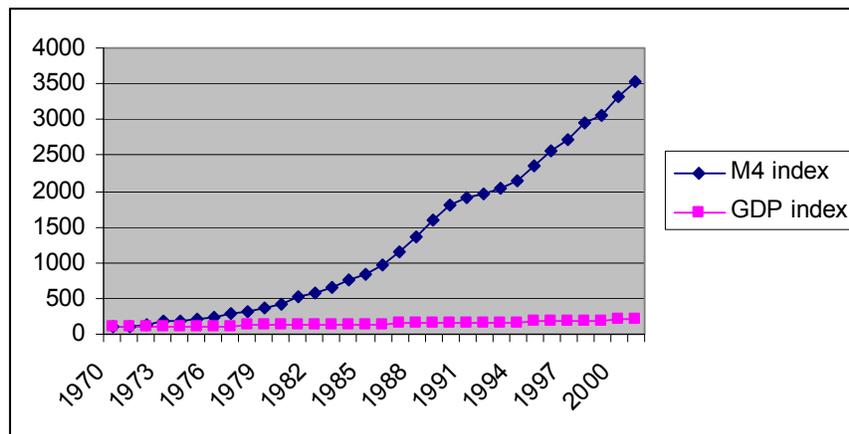
Source: Data from Bank of England interactive database.

A bank charter is literally a licence to print money. Since the system of requiring a certain proportion of assets to be kept on reserve has gradually been eroded the only control on banks' ability to produce money as credit is our willingness to borrow, hence the constant stream of junk mail and TV advertising offers of credit. When the banks lend us the money the

debt is listed and the money sought and retrieved but at that point it belongs to the bank. They have used our willingness to borrow as an opportunity to create a debt; when we repay the debt the money they have taken from us belongs to them. No wonder we are seeing record bank profits: they are simply creating their profits out of our debts.

No surprise also that we see spiralling levels of personal, business and public debt. Neoclassical economists see no problem with this. On their planet, the creation of money in this way will be balanced out by a corresponding amount of economic growth. Apart from the obvious fact that money supply is growing far more rapidly than economic activity (as shown in Figure 6.4) from a green perspective this growth itself is a problem. So the most important first step towards creating the steady state economy that will not put intolerable pressure on the carrying capacity of the planet is to change the system of money creation that generates the need for the growth.

Figure 6.4. Growth in broad money (M4) compared with growth in the economy (GDP), UK, 1970-2001



Note: 'broad money' includes all possible types of credit as well as hard cash.

The discussion so far has been in terms of a national currency, but currencies are also exchanged and used to pay for exchanges of goods and services between national economies. This role is now played primarily by the dollar, which has acquired the status of international reserve currency since the agreement establishing the financial structure to dominate global capitalism after World War II. Under the Bretton Woods Agreement, the USA also extracted the right to have its currency—the dollar—considered the equivalent in terms of economic weight of gold reserves. In the post-war exhaustion, low morale and financial desperation of the other world powers the USA pulled off this extraordinary confidence trick which has enabled their dominance for the past fifty years but left us all with a teetering economic system. The coda to the story is that the USA proved itself incapable of maintaining the value of the dollar and, in the face of the need for massive liquidity resulting from the costs of war in Vietnam, Nixon 'closed the gold window' on 15 August 1971. This meant that dollars were now themselves no longer linked to the reserves in Fort Knox but floating free, and foreign Central Banks could no longer exchange their dollars for gold.

Global capitalism relies on one country's currency to provide credibility for the system as a whole. Initially this role was undertaken by gold itself, as a commodity of real value, but the movement towards fiat money which went hand in hand with the capitalist expansion, meant that currencies rather than gold played this role. The reserve currencies—sterling, the dollar, the yen, and the euro—are all used to underwrite economic activity, but just as in banking there is a central bank so in the currency system there is a central currency and this is the currency of the most

Box. 6.1. Schemes and Dreams on the Mosquito Coast

The establishment of the Bank of England was the other side of the coin of the creation of the national debt called a 'fund for perpetual interest', rather like a perpetual motion machine. Initially the Bank was established privately by Scottish entrepreneur William Paterson who persuaded the government to raise £1,200,000 by selling the national debt to citizens who would redeem their share with interest in a fixed number of years. The scheme was accepted in 1694 and from then until the following year Paterson served as a director, when he fell out with the other members of the Court (or board) and was sacked. Paterson was an entrepreneur and the Bank of England was merely one of his many schemes to create money from thin air. He is probably most famous for the subsequent disastrous Darien project. In 1693 he set up the Company of Scotland Trading to Africa and the Indies, which sold shares of a proposed colony on Darien on the Panama isthmus. The Scots were keen to see their own advantage from expanding international trade and so there was no shortage of investors: about half a million, half Scotland's national capital, was invested. Darien was in fact the original Mosquito Coast and most of the settlers died within the year. The scheme was also sabotaged by English traders and the English governor of Jamaica who did not want any competition. Thanks to Paterson the Scottish economy was nearly bankrupted preventing Scottish entrepreneurs from competing with the 'British' empire, and we have lived with the national debt for the past 300 years and more.

Galbraith's conclusion on banking seems most apt:

Much discussion of money involves a heavy overlay of priestly incantation. Some of this is deliberate. Those who talk of money and teach about it and make their living by it gain prestige, esteem and pecuniary return, as does a doctor of witch doctor, from cultivating the belief that they are in a privileged association with the occult. (Galbraith's Money: Whence it Came, Where it Went, p. 5).

powerful player in the global economy—the global hegemon. It is mainly its own credibility and that of its economy and military structure that guarantees the functioning of the international economy, but it needs its own back-up in the form of gold reserves. During its days of empire the UK played the role of preferred currency. At that time US bankers supported the pound, a fact that alienated those outside the charmed circle who could not understand why US gold was being used to support a foreign competitive economy. Similar questions were raised when Chancellor Gordon Brown sold 415 tonnes of the UK's 715 tonnes of gold reserves in May 1999, reducing the official reserve percentage held in gold from 16.7 to 7 per cent, and substituting currency, a mixture of dollars, euros, and yen. This is a record

low level of gold holdings compared with the 2000-2500 tonnes held between 1958 and 1965, most of which were sold during Britain's financial crises of the late 1960s and early 1970s.

What we can learn from monetary disasters?

I understand that this sort of discussion is hard to take. As Galbraith so eloquently put it: 'The process by which banks create money is so simple that the mind is repelled. Where something so important is involved, a deeper mystery seems only decent.' But as is so often the case in economics, as well as home economics, the proof of the pudding is in the eating. So for those who are not yet convinced by this account of the nature and instability of the money-banking system some examples from history can be used to illustrate the theory in practice. Such periodic disasters are inevitable, indeed symptomatic of capitalism as an economic system. They are the boom-and-bust cycles that are generated because the capital that lies at the heart of the system is created in such an illogical and unstable way. In the words of Galbraith again: 'As banking developed from the seventeenth century on, so, with the support of other circumstance, did the cycles of euphoria and panic. Their length came to accord roughly with the time it took people to forget the last disaster'.

The role of a monetary system should be to facilitate an equitable exchange of products, money and work. At any point where this exchange becomes unbalanced the natural response should be to adjust the quantity or speed of circulation of money until the three come back into balance. But the owners of money are likely to resist this adjustment if they are using money as a store of value, since it may reduce their wealth. Other powerful vested interests operating within a capitalist economy can then prevent a rebalancing adjustment and inadvertently exacerbate the problem until what began as a monetary imbalance becomes an economic catastrophe. Three well-known accounts of such events follow.

The first is the Great Depression in the USA. The problem undoubtedly began in the stock market, where overvaluation of companies resulting from speculative trading caused a classic bubble in value and a subsequent collapse in the value of shares. In this case the trouble was exacerbated by trading in (or gambling on) the future value of stocks and by trading 'on the margin', i.e. buying stocks on credit using other shares as collateral. Once the bubble burst speculators needed to find the money to pay off the value of the loans they had taken on to pay for the worthless shares by either withdrawing savings or taking out loans from banks. This took the crisis beyond the markets and into the banking sector, leading to the collapse of many banks and a withdrawal of money from the real economy. Wages could not be paid, or inputs to production bought, or final goods bought. This was now a classic slump, where there are people wanting to work and people needing to buy the products of that work but no money to lubricate the process.

Roosevelt's response to the Depression which followed inevitably from the financially generated bust was to print the money to pay wages, and then to create work of social value and pay those wages in exchange for it. You might ask why he did not just pass the money on to those who needed it, but that would have broken the link, essential to capitalism, between money and work. It would have fundamentally undermined the ideology of capitalism that says if you want money you must work for it. Hence in the

illogical logic of this ideology it was better to build public works projects like the roads to nowhere constructed in rural Ireland during the potato famines.

The most famous monetary collapse in a developed industrial economy is that in Germany between the wars. This began as a drain of money from the economy through the system of reparations. As Germany's economy weakened, global capital began to speculate against the currency, driving its value lower still. The government responded by printing more of the currency, which only led to a spiralling decline in its value until Germany reached the situation we are so familiar with from contemporary newsreels of people taking prams-full of money to buy loaves of bread. The Mark had gone into WWI worth 1 gold mark and was worth half that much at the end of the War. By November 1923 it took one billion Marks to buy a gold mark, meaning that the Mark was only worth one-fivehundred-millionth of its former value. The disastrous consequences of this for the economic life of the nation are clear.

Once confidence in a currency is so severely damaged the only feasible response is to create a new currency, which was a process managed by the Finance Minister Hjalmar Schacht. In November 1923 he created a new parallel currency called the *Rentenmark*; to create confidence it was backed by land, in this case the most solid asset of the German economy. The *Rentenmarks* allowed economic transactions to take place within the economy, although they were not legal tender, had no fixed relation to the *Reichsmark* they replaced, and could not be used for international payments. This made the *Rentenmarks* speculation proof. Bizarrely, much of the speculation against the currency that had destroyed it had actually been funded by loans from German banks. In *The Magic of Money* Schacht explains how the *Reichsbank* made loans to support the speculation against the German currency. Thus the government, which has always been blamed for economic mismanagement and for printing too much paper money, was not primarily responsible for the inflation. By 1924 the *Rentenmark* and *Reichsmark* were being treated equally and the *Rentenmark* could be withdrawn. The lessons of the German hyperinflation are twofold: first, that financial speculators' only motive is to make profits and that they are unconcerned about the social and political consequences of their speculative activity; but, nonetheless, governments can use political power to control this speculation if they wish, exposing the myth of powerlessness.

A less well-known example is the financial collapse in Argentina in 2001/2. It is a slightly different story, because it takes place in the context of a vulnerable economy which is not at the top table of international capitalist planning. As in many non-reserve-currency economies, Argentina suffers from being under-monetised, in other words there is less money in that country relative to the level of economic activity than in the USA or UK. This makes it vulnerable to citizens' exchanging their pesos for foreign reserve currencies or sending them overseas. This vulnerability was exacerbated by the pegging of the currency to the dollar, which meant that once the dollar's value began to rise on the foreign exchanges from 1995 onwards, Argentina's exports became more expensive and less attractive than those of competitor countries whose currencies could devalue against the dollar. The financial crisis in Mexico in 1994, followed by those of the Asian Tigers, Russia and Brazil from 1997 to 1999 undermined confidence in Argentina's ability to pay her sizeable external debt.

In late 2001 members of Argentina's wealthy class began to take fright. The US was having difficulty repaying its own massive foreign debt because of an over-valued dollar; this was true of Argentina in spades. The peg that

had seemed to be Argentina's salvation was translated into the final nail in her coffin. Those who could withdrew their pesos, exchanged them for dollars and sent them overseas. This led to a classic bank failure on a national scale in December 2001. The government froze bank accounts leading to severe political instability, with five different presidents in a fortnight.

Before long Argentina was in exactly the situation of the US during its depression, with insufficient money circulating to allow economic transactions to take place and people wanting to work with nothing to pay them, while factories with their raw materials inside stood idle. While we have looked down our neo-imperialist noses at this economic mismanagement, we might be wiser to draw lessons about the instability of our own monetary system, as more than one economic commentator has noted:

So, the Argentinian economy has collapsed and social and financial chaos reigns. We shall read a great deal about it, but you can be sure very few analysts, if any, will mention the actual and fundamental cause of this disaster. To do so is too horrifying, for what has destroyed Argentina, is the same cause at work all over the world today. Argentina's fate is the world's fate—and that is too drastic a conclusion for any analyst who wants to be paid for his work.

Argentina's politicians appear to have learned from their bruising experience of the global financial markets. In January 2005 the country offered its foreign creditors 25 cents per dollar for the debts. This is effectively a default, but 700,000 bondholders may have to settle for it. The experience may offer a lesson to other indebted national economies around the world.

The conventional explanation for these disasters is the same in each case: such cyclical events are inevitable within capitalist economics but if the market is allowed to operate freely the economy will recover. In each of the cases reported here this account is inaccurate, since the disasters wrought by capitalist economics were solved politically. More to the point, we are quite at liberty to reject an economic system whose apologists advise us to take such cyclical disasters—along with the personal tragedies they bring in their wake—on the chin and make a decision to build our economies on more secure and stable foundations. It should be noted that the solution to the bust in each case was not to abandon the economic system which had created the problem—that would have gone against the interests of the powerful players within capitalism. So the system of working for wages and relying on the instability of the interaction between production, money and work was not brought into a state of balance, because to do that would have excluded the possibility of generating profits which are paid to those who have power and wealth without contributing work.

There are many other examples of the use of money to achieve political ends, primarily to gain control of resources and wipe out competitors. This was seen most clearly in the series of financial collapses that began in Thailand in 1997 and soon engulfed Indonesia, Malaysia and South Korea before spreading outwards to affect Russia, Brazil and Argentina. Thailand had led the way in liberalizing its financial markets and encouraging foreign investment. Its fellow 'Asian tigers' followed suit, leading to a financial boom in South-East Asia, where huge profits were made by foreign investors. The boom was inevitably followed by bust, as speculators grew concerned about over-valuation of their assets and took flight. These

were not economic collapses; it was clear that these countries were following classic neoliberal policies with great success: 'The 1997-99 contagion . . . spreading from Bangkok to Brazil, was financial in its transmission mechanism, unlike the trade-linked contagion of the earlier decades'. It is financial investors who used their political influence to bring about capital market liberalization and who now gain from speculating in one currency after another.

Box 6.2. John Law's Incredible Land Bank

John Law was a Scottish entrepreneur and financier, given this it seems almost superfluous to add that he was also addicted to gambling, as well as being a rake and a drunk. Law went to France in 1716 where he became adviser to the regent, the Duc D'Orleans, who was having to deal with the indebtedness left by his brother Louis XIV's lifetime of excess. The duke granted Law a Charter to establish a bank issuing notes backed initially by precious metals but later by shares in an ill-fated development scheme in the French American colonies, known as the Compagnie d'Occident. The shares boomed, as French investors competed to have their piece of the apparently gold-rich soil of Louisiana and Mississippi. But Law was not even investing the money received in the scheme, rather he was lending it to the Regent to pay expenses and debts. Many thus paid used the notes to buy more stock in the Compagnie, generating a classic bubble. The crash came when a French nobleman demanded, as was his right, to have his notes exchanged for gold. This led to a rush by others to do likewise and the collapse of the bank with massive losses by all investors. The Duc de Saint-Simon's epitaph on the scheme is a salutary lesson:

If to the solid merits of such a bank are added, as indeed they were, the mirage of a Mississippi scheme, a joint-stock company, a technical language, a trickster's method of extracting money from Peter in order to pay Paul, the entire establishment possessing neither gold-mines nor the philosopher's stone, must necessarily end in ruin, leaving a tiny minority enriched by the total ruin of all the rest of the people. That, in fact, is what actually happened. (Memoirs, trans. Lucy Norton (London: Hamish Hamilton, 1972), iii, p. 269; quoted in Galbraith.)

Source: Galbraith, Money: Where it Came; Whence it Went.

One might go a step further and argue that such speculation is also intended to reduce the value of the assets of these countries, whether businesses or national resources, making them more available for expropriation at a lower price. Corporations have already been found to have used foreign debt to force poor countries to sell valuable assets like water. Speculating against these economies reduces the price of these assets to the global investment sharks.

The power of international finance is also used to achieve direct political aims, particularly the annihilation of regimes hostile to global capitalism. The US used its economic muscle to undermine Cuba by imposing a trade embargo. During the Cold War Castro could use his support from the Soviet bloc and the Comecon deal over Cuban sugar to

earn foreign exchange for trade, but following the collapse of the Soviet Union Cuba was increasingly vulnerable and had to introduce the dollar as legal tender in 1993. Castro introduced a 10% commission on the transfer of dollars into pesos for Cuban citizens in autumn 2004, presumably as part of a policy to switch to the Euro as the reserve currency of choice.

During the Spanish Civil War the global financial community used its power to work against the democratically elected government of Spain which was considered hostile to capitalism as a result of its commitment to worker control at the local level. There was a massive flight of capital out of the country, some \$250m. dollars at 1931 value, which was exported in contravention of exchange controls. Multi-millionaire and Falangist supporter Juan March worked against the peseta on the foreign exchanges as well as bankrolling Franco's coup. During the war finance was used to undermine the democratic forces, including an unofficial trade embargo arranged by the pro-Falange governors of the Bank of Spain. The forces of capital were threatened in Spain and in the face of this the democratic government had no chance, although the price of capitalist support was 40 years of dictatorship for Spain and the six years of world war with its millions of lost lives.

The Politics of Money

If this account of money creation and control is correct, as I believe it to be, there is one obvious question raised: why should governments allow themselves to be controlled by banks and financial speculators? Why has government relinquished its power in such an important area so that, instead of creating money to pay for what we need, we have to, as individuals and as government, keep borrowing it back from banks and paying their shareholders for the privilege? Capitalism is a system for the transfer of wealth from poor to rich, and this is achieved most efficiently through the financial system, including the public finances. The rich and powerful make sure that they maintain power over those systems, making any suggestion that we live in democracy a farce. Governments are afraid to implement policies that prevent this siphoning away of our wealth because of the likely retaliation from the financial markets. The lessons of Black Monday have been well learned by politicians the world over. In an era of financial deregulation the democratic power of politicians is virtually non-existent.

The conjuror must create a feint to keep our attention away from the deception. In the case of the public finances this feint is the taxation system. The most resounding debate in recent years is about the precise rate of just one tax: that on incomes. This is a classic example of divide and conquer amongst the not-rich, because the rich do not need to pay taxes. This perennial political argument creates a situation where we resent each other because of our slightly lower or slightly higher contributions to tax or needs from the welfare system. Meanwhile the rich, whose assets, especially land, are virtually exempt from taxation, use the services paid for from taxation but employ accountants to prevent them paying any themselves.

Another negative result of the money system is that we are losing the value of our work, as well as the satisfaction in our work, because the system of production is outside our control. I cover this in more detail in the following chapter but it is worth pointing out here that if we are working and other people are not working then our work is subsidising their lifestyle. Capitalism is the system that enables them to do this. Entrepreneurs, or

wealth creators, are lauded by society, yet those whose work they benefit from are much less well rewarded. Imagine a man walking down the street sees another man with £100 in his hand. He hits him over the head and takes the money. He is a criminal and must be put in gaol. But now imagine that he gives the man a job, pays him £100 and makes another £100 profit from his work. He is now a wealth creator and lauded by society. The moral situation is the same. This is how the system of work enables a transfer of money from poor to rich. The transfer is not justified morally or because of a differential in effort; it is facilitated because one person has more power, by virtue of their control of enough money to establish a business.

The third and most subtle way that the money system works to the benefit of the rich is through the public debt. Criticism of the national debt is a common thread in radical economics. For poor countries national debts force them to engage with an unfair trading system to generate enough foreign currency earnings to pay the interest. They are tied into a system of debt-bondage with which the rich countries replaced their more unsightly imperialist policies. The national debts of rich countries are less immediately troubling, since if you have a reserve currency at your disposal you can accrue as much debt as you need. In this setting the debts are rather a pump that operates to transfer money from the poor to the rich. If you have money to spare you can invest it in the national debt by buying government bonds, the mechanism by which governments sell debt in themselves to generate money for public spending. The earnings on these bonds are paid for by the government through taxation of those who have to work because they do not have enough money to live by making investments, including in bonds. Since, the rich do not pay taxes this is another mechanism for transferring our money to them. Hence the national debt of the UK is making the rich richer and the poor poorer just as the national debt of Tanzania or Peru is.

This is not a just or satisfactory system. The obvious answer is to return to a system of state-created money to pay for works of national importance. Here we enter less marginal territory, because there have been two Early Day Motions in the House of Commons in recent years calling for just this to be done, and receiving upwards of 30 votes. Here is the text of EDM 323, submitted by Austin Mitchell in 2003:

That this House notes with concern the contrast between the enormous expansion of private credit and the growing debt burden that this imposes on society;
further notes that public credit, as measured by the proportion of publicly created money in circulation, has fallen from 20 per cent. of the money supply in 1964 to three per cent. today;
believes that using public credit and increasing the proportion of publicly created money should be used to cut the costs of, and to boost the quantity of, public investment and to allow the Chancellor to fulfil his golden rule without further borrowing;
further believes that this can be done without any impact on inflation;
and, therefore, urges the Treasury to commission an independent review of the benefits of using the public credit and increasing the proportion of publicly created money.

A common response to the suggestion that the government should print money is that this would cause inflation. We have seen huge monetary inflation in recent years, as credit controls have ended and people have

taken on increasing levels of debt, yet price inflation has been virtually eliminated. What we are suggesting, at minimum, is the substitution of money created for the public by the government for money created as debt by banks. So long as government reclaims its right to control the amount of private credit in the economy there is no need for an increase in the quantity of money in circulation, just the nature of its ownership.

Box 6.3. The South Sea Bubble

In 1719 the South Sea Company offered to take over the government debt (then standing at £31m.) in return for trading concessions, offering an official £3m. lump sum as a sweetener, as well as substantial unofficial bribes. It outbid the Bank of England and acquired the debt in 1720. These costs were met by share issues, and although the company had virtually no value, a policy of talking up its prospects and the speculative fever this caused led to an increase in their value from the initial £120 to £950 in July of the same year. Directors of the company increased share values by purchasing their own shares. Once word seeped out that the directors had sold all their stock there was panic selling by investors, most of whom, including Sir Isaac Newton and Jonathan Swift, lost sizeable fortunes.

The South Sea Bubble set off trading frenzy amongst all classes in London and founding a joint-stock company by selling new shares became a very profitable business. Shares could be sold in vague projects such as the improvement of the Greenland fishery and the importation of walnut trees from Virginia. Not only were the proposed projects intangible, to put it politely, the value of the shares relative to the actual assets of the company were grossly overvalued. This is a pattern which was evident prior to the 1929 Wall Street Crash, before the dot.com bubble burst, and is exemplified perfectly in current stock-market values which are overvalued by such techniques as counting unbilled receivables as assets, the Anderson trick used by Enron.

Source: Garber, P.M., Famous First Bubbles: The Fundamentals of Early Manias. MIT Press, 2000.

There are plenty of historical examples of the creation of money either by national governments or local authorities. Hundreds of such notes issued in Liverpool during the financial crisis following the French Revolution recently turned up in a bank vault in Liverpool. The notes had a face value of £250,000 and were part of an issue that was legal tender between 1793 and 1796. Following the end of the Napoleonic Wars a similar financial crisis occurred in Guernsey, whose government printed £1 state notes to cover the cost of necessary public works. The most famous and successful example of state issued money was the Colonial Scrip of the newly established USA. Benjamin Franklin arrived in the UK to spread the news of this easy solution to the country's appalling poverty, but a parliamentary act prevented this solution being applied in the UK, the heart of global capital. The understanding of the importance of credit creation by state authority was not lost on later US leaders, as the following quotation from Abraham Lincoln demonstrates:

Government possessing the power to create and issue currency and credit as money and enjoying the right to withdraw both currency and credit from circulation by taxation and otherwise, need not and should not borrow capital at interest as a means of financing Governmental work and public enterprise. The Government should create, issue and circulate all the currency and credit needed to satisfy the spending power of the Government and the buying power of the consumers. The privilege of creating and issuing money is not only the supreme prerogative of Government, but is the Government's greatest creative opportunity.

As well as huge popular movements for taking the power to create money from banks and back to the people, there have also been some well-placed supporters. Dr William Temple, Archbishop of Canterbury during the war (1942-4) wrote that:

It cannot be justified in modern conditions that the Banks should, in order to meet national needs, create credit which earns interest for themselves. The State must resume the right to the control and issue and cancellation of every kind of money. Till that is done, a body within the community will control what is vital to the community, and that is a false principle.

This high-level political pressure led to the establishment of the Radcliffe Committee on Credit and Currency, which finally reported in 1959. The evidence collected had the advantage of forcing the Bank of England to confirm the nature of its money creation, purely as credit in its own books, but no attempt was made to change this.

Instead we have an economy whose money is almost all created as debt, which must then be borne either as public debt or as private debt. For many in the UK, constant and growing debt has become a fact of life. This habit is learned early, with students now being encouraged to take on substantial and long-term debts when they are barely out of school. The average student now owes £12,000 when leaving college. Debt amongst the UK population as a whole is also growing at a record rate. Total lending rose by £9.4bn in December 2002, the highest monthly increase since records began in 1993.

In a managed monetary system the primary question must be, how much money should we have in circulation in a steady-state economy? It seems right to relate the quantity of money to something explanatory about the economy it relates to, to prevent an excess of money or a deficiency. The correct amount would clearly relate to the economic activity in that economy. Another perennial question in the debate about money is whether it should be linked to something of ultimate value or created by faith alone. The confusion over this question appears to derive from a confusion of the scientific thinking required to solve a purely technical problem with the spiritual unease created by the notion of faith-based money. This may explain the Islamic proposal for a gold-backed dinar as a competitor to corrupt Western currencies for global trade. It may also explain why Jesus told his followers that they could not worship both God and Mammon. In the present capitalist economy money is created as 'credit' by the banks and, since there is no backing for this creation in terms of gold, it is appropriate that the word has the same root as 'credibility' or belief. The money exists because we believe it does. We do not need gold to back up this belief, in fact that would only achieve the limitation of economic activity, mediated by

money, to the amount of the gold that had been discovered, which makes no sense:

the credit structure was historically based upon gold, the existence of which bears no relation to human requirements for goods and services. In the past, gold production, quite illogically, exerted a disproportionate effect on the mechanism of prices and credit.

To conclude this section we need to determine the qualities we would require of a money system in a sustainable and just economy operating within a steady state paradigm. First, money should be created by and controlled by the citizens in that economy; all should have equal power over this most important tool of an economy. An exploration of the work of Major Douglas puts this point very well:

Real credit is 'the effective reserve of energy belonging to the community'. Its administration has fallen to the banking system and financial institutions generally. Consequently the 'creative energy of mankind' becomes subject to artificial restrictions which bear no relationship to the realities of everyday existence. The potential real wealth of society is communal in origin and should therefore be subject to the control of the entire community. Financial credit is administered by the banking system 'primarily for the purpose of private profit'. It is more accurate to view financial credit as communal property, rather than a focus for vested interests, the financial institutions.

Secondly, we need to break the link between money and growth by ending the system of creation of money by banks as debt, and the payment of interest for those debts, since both of these force the expansion of the economy beyond planetary limits:

The effect of this method of creating money is that the economy has to grow in order to avoid collapsing . . . the growth imperative imposed by the debt-money system is a positive feedback mechanism—a vicious spiral.

Thirdly, money should be created by fiat, without being linked in any way to the existence of some valuable commodity. As a principle this is sound, since it is illogical to relate the amount of money in circulation, and hence the amount of economic activity that can take place, to the random discovery of a rare resource. However, since money does have the power to control economic activity in this way it may be possible to use that to the benefit of mankind by linking the most powerful type of money—that used for trade between national economies—to the most precious human resource: the climate. Ideas for such a linkage are presented in a later section. Since money is created by fiat it follows that the quantity of money can be determined by the creating body. Taking into account the velocity of circulation in any given economy the quantity of money should be tailored to reflect the optimum level of economic activity within the steady state of that economy.

DIY Solutions to the Money Problem

For many the first response to understanding the negative role that conventional money plays in local economic development was to establish a

LETS system. LETS received huge interest and energy when it first emerged, but in practice it has suffered from various limitations. First, a LETS currency can never compete with a national currency in an economy where there is sufficient of the latter. Secondly, the relationships within LETS schemes are different from those in the market, and members have found it difficult to find a cultural middle path between favours for free and work for money. Thirdly, those who have skills have still tended to prefer to sell them in the market where they can, leaving the LETS scheme often short of solicitors or plumbers but with plenty of aromatherapists and dog-walkers. This is not to undermine the importance of LETS. In many areas they have hugely increased the well-being of members, and perhaps most importantly, have forced people to reconsider what money is, which is the necessary first step to building support for a radical change in our financial system.

The rest of this section gives you examples of creative ways people around the world are responding to the problems with money. The only limitation is your own imagination and your ability to work together as a community.

Make your own money in Argentina

Following the collapse of the Argentinian financial system described above the country suffered a money vacuum. The rich had sent their money to their Swiss bank accounts, while foreign creditors had sucked out everything else. Argentinians responded as creative human beings would have done the world over: they made their own money. This was the so-called 'barter clubs', first set up by three ecological activists in 1989. The *Red Global de Trueque* (RGT: global barter network) aimed to 'utilise resources and knowledge according to principles of sustainability' and promote 'the exchange of goods and services without being restricted by access to money'. It began as a LETS scheme but reluctantly moved to the creation of *arboles* (trees) as a form of paper currency for the purposes of flexibility and convenience. For the pioneers of this and similar systems of local complementary currency the principles of locality and membership were important in maintaining control over the currency and ensuring its benefit for the local economy. The systems ceased to be 'barter' once the currency was produced and are now fully-fledged alternative money systems.

Argentina's provincial governments had an independently powerful role and did not support the monetary restrictions imposed by the centre. They began both to engage with the community currencies and to create state-level currencies of their own. Practitioners in the field of economic regeneration will recognise the process of political takeover in the example of Eduardo Hekker, Secretary of Economic Development for Buenos Aires city government, who 'argued that the state should support [the network] with technical assistance including credit and training which would allow it to become a large scale incubator of small enterprises seeking an insertion in the formal market and transforming themselves into successful competitive businesses.' This is a starkly patronising position to adopt towards a grassroots organisation that has functioned effectively for five years, undermining the suggestion that any technical assistance is required. It also imposes a certain view of the path of economic development—towards larger scale and greater profits—which may well be in opposition to the values of those involved in the scheme. The state involvement was consolidated with the signing of an agreement by the Secretary of Small and Medium

Industries of the national government to offer training, technical advice and funding in December 2000.

Box 6.4. Speculation in the mining sector

From end-1995 until early-1996 a Canadian mining company called Bre-X Minerals experienced a spectacular rise in its share price. The share price went from little more than a few C\$ cents to more than C\$ 25 per share. The reason was that the company had announced a large find of gold reserves in Indonesia (promising to be the largest new find of gold in the 20th century). Estimates of the gold reserves increased over time and subsequent reports of mining consultants and the Indonesian Mines Ministry indeed confirmed the existence of the gold reserves. Financial firms such as Lehman Brothers and J.P. Morgan strongly recommended to buy the shares of Bre-X. The share price increased accordingly. Trouble started when the chief geologist of Bre-X went missing and was presumed dead. It turned out that the mining reports were based on 'salted' samples and the gold reserves non-existent. The share price of Bre-X Minerals collapsed in the early months of 1997. Using the benefit of hindsight, some 'experts' may label the Bre-X Minerals case a typical example of irrational investor behavior in the stockmarket. However, the fact remains that ex ante, based on what appeared to be qualified and independent reports, rational stockmarket investors had valid reasons to expect large future profits from this proposed mining operation. They therefore increased the share price of Bre-X, which, according to fundamental finance theory, should currently reflect the expected discounted value of future cash flows.

This sort of stockmarket speculation explains why Shell persistently overvalued its reserves, since these were virtually the corporation's only tangible assets and any downgrading would cause a collapse in the share price.

Source: Erasmus School of Economics, Erasmus University, Rotterdam

Making Love in Japan

Japan is an example of a society which appears to have been successfully capitalist without ever being convinced by the culture that is necessary to support the economic system. Neoclassical economists have long bewailed the Japanese penchant for saving rather than spending, risk-averse behaviour that leads to insufficient demand. Worse still, Japanese citizens are refusing to borrow, a dangerous decision in a financial system that relies on debt for money to be created. Horrified US economists watch debts being repaid despite rock-bottom interest rates. Outstanding bank loans have fallen year-on-year in Japan for 45 months in a row, 'sucking \$741 billion in credit out of the system'. Perhaps the explanation might be that Japan is tired of being involved in a capitalist system in which it was always adding more value to the lives of US citizens than those of its own and where it would always be more vulnerable in the times of bust than its trans-Pacific neighbour.

What economists would call a 'failure of demand' occurred in Japan leading to the capitalist nightmare of a failure of growth, with historically low

rates of return on Japanese bonds. But greens who have visited the country say that well-being still appears high in Japan and that it may indeed be moving towards being a prototype of a steady state economy. One way that well-being is being maintained is through the desertion of the global financial system and the creation instead of locally based money systems. Japan is now the world leader in the creation of community currencies, to provide liquidity in economies that are being abandoned by the global financial system.

An example is a project run in Yamato, Kanagawa, using a local electronic currency based on credit cards. Cards were given to 73,000 residents, each with 10,000 monetary units called 'love' already encoded. The loves can be used in exchange for discount at local shops or to buy second-hand goods advertised on the city government's website. Participants in the scheme were able to increase their love credit through engaging in voluntary social welfare activities, advertised on the website. The idea of the scheme is to find a way to match up needs and abilities of local people to increase well-being. It is based in Japan's strong culture of community and mutual support, backed up by its advanced internet capacity.

German Currency Solutions

One of the few advantages for Germany in the disastrous intra-war inflation discussed above was a deep and, it seems, lasting, scepticism about the reliability of conventional money. So it is unsurprising that some of the most interesting experiments in community currencies are arising in Germany, especially in response to the inadequacy of the euro to lubricate economic activity efficiently given its corporate and monetarist bias. Germany has around 50 local currencies initiatives: by being geographically limited they increase the value of the local multiplier and thus strengthen the local economy.

The Chiemgauer was launched in the Salzburg town of Chiemgau in 2003 and is accepted by around 150 shops and service providers including the optician and pizzeria. Chiemgauers to the value of 60,000 euros were spent in the first year of the scheme, which was started by a local economics teacher. To add credibility the currency is backed one-for-one by euros, which are deposited in a local bank before Chiemgauers are issued. They can be exchanged back but for a 5% fee. The Chiemgauer uses Silvio Gesell's concept of demurrage to increase its velocity of circulation. Gesell observed that part of the reason for the German deflation was that money was not circulating rapidly enough because people believed it would increase in value if they held on to because of its role as a store of value as well as a circulating medium. His concept of demurrage is like negative interest, so that money slowly loses its value over time, increasing the number of times it is spent in a fixed period of time. This is achieved by effecting a staged reduction in its face value over time. It has initially validity of three months, after which its value can only be extended by purchasing a stamp costing 2% of its value. Since it earns no interest there is no incentive to hoard or invest, meaning that the currency will instead be spent, increasing economic activity. Money generated from the extension and exchange charges is used to fund local social projects.

Michael Linton's open money system

In the distant realms of money engineering there is a distinct split between those who are working for complementary currencies, and those who would regain political control of our national money. Further out still is a thinker who is questioning the whole concept of money that is politically controlled—Michael Linton. Although he lives in London, I met Michael in Canada, which is appropriate because it was in that country that he began designing currency systems as part of the boom in new economy ideas that flourished on Vancouver Island on the west coast in the 1970s. The best known is the LETS system for which Michael is most famous.

Michael told me all about his grand new designs in a Thai restaurant in Montreal, after we'd shared a few beers and a joke about the fact that the Canadian 20-dollar bill has a picture of the common loon on one side and the Queen on the other. Money works because a community of individuals wishing to exchange place confidence in it. In the case of the dollar or yen that confidence derives from a state imprimatur. In the case of a LETS system it grows out of confidence in each other. In Michael's new open money system this confidence will extend progressively outwards towards the region and eventually the globe.

As Michael points out, where you live is an important part of who you are, so your local LETS will continue to represent a large share of your trading. But it is only part of who you are. We all have other interests, skills and networks. Each one of these needs a currency to facilitate interaction between its members. I have experience working as a copy-editor for academic books but I do not use this skill in the formal economy. I may, however, consider taking on similar work for the new medium of exchange, lets call them 'pubs'. So I will have ceased to be an Aberystwyth-based editor but will have become an international publishing worker with contacts in Japan, India and Namibia. I will exchange with other writers and publishers across the globe. Perhaps I will also join the opera-lovers currency system, buying accommodation in Kiev or Sydney (for Pavs, perhaps?), or the cooperative activists' currency, swapping skills with others in Canada or Kuala Lumpur. We will all build up new systems of overlapping global identities to replace the threatening identities of nation and consumption we use as shields against the alienating force of the globalised economy.

It may help to grasp this idea by thinking of it by analogy with the internet. The present money system operates more like telephone calls: an exchange between a limited network which is controlled by an outside agency who profit from the exchange. Open money will operate more like the internet. People are free to trade with whomever they choose on a global basis. They will create their own currencies to suit their own needs without control from any authority. A currency Darwinism will decide which currencies flourish on the basis of their popularity, just as the internet does with websites.

There are two obvious questions such a scheme needs to answer. First, how would traders be sure they could trust the person they wished to exchange with? In a LETS system you tend to know the people you trade with, and word usually gets around in the community about who does not provide an adequate service. With open money a similar system of reputation would be likely to build up, and perhaps this could be facilitated via the operation of on-line feedback along the lines of the Amazon book review system. Michael points out that it is not really a question of trust but rather of performance. If the trading partner delivers, then I pay. My partner has to decide whether he has enough comfort or confidence in the value of the currency, not in me personally. So what about the odd occasion when we

wanted to trade in a market whose currency we do not trade in regularly, such as when I need to find a builder but have only Pavs, pubs or Owens? This situation requires the possibility of trade between the currencies, which Michael sees as being facilitated by an Ebay-style online trading system. Currencies themselves could be swapped at a rate of exchange agreed between the traders.

Like many a good idea when I first thought about all this I decided Michael was completely mad. My mind was, in Galbraith's famous words, repelled. But I have been thinking on the fringe long enough to know that rational minds often treat the best ideas this way, so I let this one swirl around my jet-lagged head for a while. This led me on to consider the many collateral advantages that open money might generate, as most creative human developments have a tendency to. I can already imagine its impact on our identities, which will at once become more diffuse and more defined, counteracting the alienating effect of globalisation. It will have other unforeseen psychological consequences for those who are attributed little value by the conventional market; and its political impact in terms of major withdrawals from the banking system can only be dreamed of.

For those of you with a respectable job, a monthly cash income in a state currency paid into a bank account, all of this may seem like economics for Zogons. But many people in the green movement carry out valuable work for no reward because it is not valued by the conventional economy. Open money could facilitate these exchanges, reducing the risk of disillusion and activist burnout. With open money currencies will be created by us to meet our needs; the only limit is your imagination.

A Mutual Response to Banking: Sweden's JAK Bank

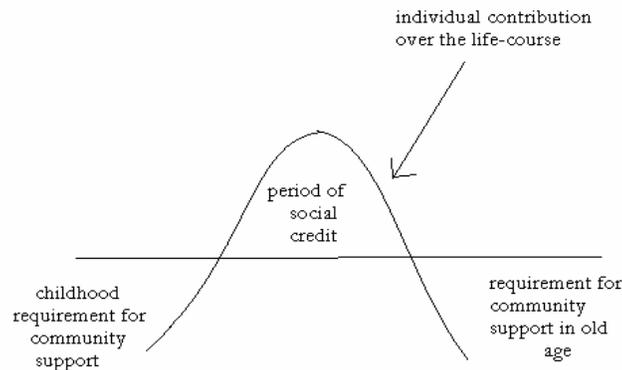
The system of interest that is an inevitable part of the capitalist banking system is a danger to the planet because it requires growth in the real economy to keep pace leading to a constant expansion of money, which needs to be matched by a constant expansion in physical economic activity. In other words money is one of the key blocks to achieving the steady state, since as the nominal value of money increases the real value of products has to increase too, and this increase is bought at the expense of a wasteful and damaging use of the planet's resources.

From Sweden, that utopian source of solutions to so many of our social and economic problems, comes an approach to banking that addresses this problem: interest-free banking that is internally balanced and so not requiring trespass on the planet's resources. JAK bank represents a mutual approach to the need to borrow money that is reminiscent of the early building societies and to savings schemes that people in poor communities continue to use to this day, whether we think of the tontines of West Africa or the early building societies. All these systems rely on the principle that there is strength in numbers. One person may never be able to afford to raise the capital to buy a house or even a car, but by pooling their resources they can ensure that each person can raise such a large lump sum in turn. These schemes have the enormous advantage that no money is lost from the system. In contrast, interest-based systems rely on the lure of a certain percentage per year to attract depositors, who are people who have spare money. This interest must be paid by the borrowers, and often amounts to more than the value of the initial loan. Hence, any interest-based system results in the transfer of resources from poor to rich; this is the reason that, until about 400 years ago, Christians considered the

charging of interest morally unacceptable, a position still held by the Islamic community.

In the JAK system saving and borrowing is seen as a way of balancing your needs across your own life, with support from other members. This is illustrated in Figure 6.5, which centres around a single person's lifetime income generation, illustrated as an inverted U-shaped curve. As a child you are below the self-sufficiency line, reliant on others' earnings, and you return to this state in old age. During the middle phase, when you are healthy and productive, you have more income than you need and this needs to be saved for later use. In the JAK system you need to imagine other curves overlapping horizontally with this basic curve, since these represent people at other stages of their lives who can supplement your income, and whose income you supplement during your middle years.

Figure 6.5. Illustration of the ability to provide for one's individual needs over the productive life-course



The plea by the government for us to invest our earnings for our future needs is based on just such an understanding of life-cycle earnings. The problem is that we have learned to our cost the insecurity of investing in the interest-driven investment market. In addition to our well-founded fears of losing a significant portion of our hard-earned cash, we also feel it is wrong that our very basic needs can be subject to fluctuations in the global casino the international financial market has become. There is no surprise that people are ignoring the threats and entreaties and spending their money while they have the chance.

A savings bank without interest but with after-savings building up a nest-egg for retirement would make saving for one's retirement considerably more attractive for three main reasons: there would be no leakages of value from the system to shareholders; savings would not be invested in the international market and hence subject to speculative fluctuations; the system of borrowing would result in a lump sum payment once the loan is repaid because of a clever system of after-saving. It is the after-savings that keep the system in balance and remove the need to use interest to attract depositors. Members of the bank are effectively borrowing each other's money. Those who have a need first borrow first, but they must ensure that there is money in the fund to meet others' needs to borrow by paying back

extra money as they pay back their loan. Without these after-savings the fund would very soon find itself over-extended and have to refuse future loans.

The table gives a comparison of banking costs under the JAK system and under a conventional banking model with an average interest rate of 7 per cent. The figures are based on a loan of £200,000 over 30 years. This is larger than loans actually made by the JAK bank, which are smaller than this. But in principle, once the bank had been running for long enough for sufficient savings to be built up, combining a mortgage arrangement with a pension arrangement could be possible. The problem in the UK is not the lack of money for savings but the fact that it has all accumulated in the hands of those who have no present need for it.

Table 6.1 *Comparison of payments under conventional banking and JAK systems*

	Conventional bank	JAK bank
Cost of loan	Compound interest 7% per year, quarterly payment	One-off 33.5% fee, 1,1167 % per year, quarterly payment
Total cost (excl. repayment of lump sum)	279,836.02	67,000.00
Repayment costs		
Monthly repayment of capital, average	555.56	555.56
After-savings	0.00	555.56
Interest, average	777.32	0.00
Cost of fees	0.00	186.11
Total monthly cost	1,332.88	1,297.23
Receive back at end of term of loan	0.00	200,000.00

Borrowing from JAK bank is not free: a fee of one-third the value of the loan is charged to cover bad risks and administration costs (3.5 % + 1 % x years to repay the loan). Once this cost is added to the after-savings the monthly cost of the loan is only slightly less than the cost with a conventional bank. The real difference comes at the end of the term, when the JAK borrower receives a lump-sum equivalent to the value of the loan. In a practical example a person might have paid off her student loan and then have an equivalent amount of value. This value is approximately the same as the quantity of money that, under a conventional banking system, she would have paid to the banks and its investors as interest. We could theoretically extend this so that a house loan generated enough after-savings over the period of the loan to provide income in old age.

Box 6.5. Tulip Mania

The tulip madness that took over the Netherlands as finance capitalism was cutting its teeth there can be traced back to the import of the first tulip bulbs from Turkey in 1559. The Dutch were mad for these beautiful flowers, which rapidly became status symbols, the more unusual the colour or pattern the more valuable the bulb. Throughout the first decades of the 17th century their value rose exponentially. By the height of the mania in 1635 a single tulip bulb was worth the equivalent today of £35,000. Tulips were exchanged on the stock exchange and again ordinary people were sucked into the speculative madness, allowing the wealthy to extract their money from them. In February 1637 the bubble burst, when confidence was destroyed by some investors drawing the obvious conclusion that these values could not be sustained.

Source: Mackay, C., Extraordinary Popular Delusions and the Madness of Crowds (New York: Faber, 1986).

Basic to any mutual loan system is the need to save before you can borrow and in the JAK system this began by being organised according to a complex system of points, to ensure that there were sufficient funds in the bank. The borrowing limit was sixteen times the number of accumulated savings points. However, such large amounts of money are now with the bank that this requirement is being abolished. However, the balance between prior savings and after-savings will continue. The more you save before you borrow the less you need to contribute in after-savings. The system in Sweden is frequently used by students for paying their fees. If they face a problem with accumulating savings points these can be contributed by grandparents or a group of family members and friends. Such a group could also transfer savings points to support the borrowing of money by a young couple with children. In this way the savings system itself encourages a feeling of self-help and community spirit, in direct contrast to the bad feelings and competitive ethos generated by the interest-based banking system.

Although it is important to note that this is a response to the rapaciousness of the banking system, not a solution to the creation and control of money, thinking about banking in this way is liberating. After recovering from the initial disorientation of imagining a world without interest, you begin to see that relying on one another feels considerably safer than relying on the international money system. You also begin to see how the system of interest itself creates the insecurity of that system as surely as it is driving the planet towards destruction.

And now for the big idea

The big idea is the creation of the EBCU (environment-backed currency unit) to replace the dollar as the world's trading and reserve currency. It will be established as a neutral international currency along the lines of the 'bancor' proposed by Keynes at Bretton Woods, but with the added advantage of being based on the right to produce carbon dioxide. It will simultaneously

sew up the problems of global poverty and climate change and solve them at a stroke.

The poverty of the South can be explained in terms of their inadequate consumption of the global economy's energy; the over-consumption of the rich, developed countries can be explained in the same way. Table 6.2 shows how the shares of carbon dioxide of poor countries do not match their shares of world population. The comparison of India and the USA is the most striking: a direct swap of carbon dioxide would resolve around a fifth of the inequality at a stroke. India is responsible for 5% of the global output of CO₂ but has nearly 20% of the world's population; the USA, by contrast, is responsible for 25% of emissions but with only 5% of world population.

Table 6.2. *Shares of population and shares of carbon dioxide emissions, a sample of rich/poor countries*

Country	% population	%age CO ₂
USA	4.77	24.4
Sweden	0.15	0.21
UK	0.99	2.39
Malawi	0.19	0.003
Malaysia	0.38	0.55
India	17.08	4.78

Source: CO₂ emissions data are from Oakridge National Laboratory for 1999; population figures from the UN for 2000.

The IPCC (Intergovernmental Panel on Climate Change) is a UN panel of experts who have exhaustively analysed available data about the consequences of carbon dioxide emissions to estimate the 'carrying capacity' of the planet, that is how much CO₂ it is reasonably safe for us to emit. The Global Commons Institute (GCI) in London has developed a model for sharing this total amount fairly between the world's people on a per capita basis, and then for reducing this amount rapidly over time, called Contraction and Convergence (C&C). If we work with the year 2000 the sums work out rather neatly, since the model suggests around 6 billion tonnes of carbon can be produced, and the planet had around 6 billion people, which allows us 1 tonne each. Table 6.3 compares the amount of carbon dioxide we produce now with the amount we would be able to produce in a C&C framework.

Again it is clear from the table how the poorer the country is the less of its share of carbon dioxide it is producing and the more it needs an input of energy from the richer nations. At present we measure economic energy in terms of money, usually dollars. In an economy that respected planetary limits we would measure activity in terms of energy, since this is the scarcest planetary resource. As green economists we need to move towards an economy which uses energy as both a way of measuring the economy and, ultimately, the basis for its means of exchange or money.

Table 6.3. CO₂ entitlement under a per capita regime and actual emissions, a sample of rich/poor countries (CO₂ measured as MTC)

Country	CO ₂ entitlement	Actual CO ₂ emissions in 1999	CO ₂ per capita
Algeria	31.59	24.76	0.80
Cameroon	15.57	1.28	0.08
Denmark	5.46	13.55	2.54
India	1050.13	293.94	0.29
Jamaica	17.31	2.79	0.16
Kuwait	2.63	13.09	5.10
Senegal	9.90	1.02	0.11
UK	60.99	147.20	2.47
USA	292.90	1499.85	5.26

Note: There are two possible ways to measure CO₂, either as a gas or in terms of the solid carbon. We have used the latter unit because of the neatness of the 6 billion tonnes and 6 billion people of the C&C model. The ratio between the two units is simply the ratio of their molecular weights, i.e. 44/12, so that 1 tonne of carbon is equivalent to 3.67 tonnes of CO₂.

Source: Emissions data from Oakridge National Research Laboratory, USA for 1999; population data from UN for 2000.

So what we need is a mechanism for facilitating these carbon dioxide exchanges between rich and poor countries. It is obvious that if we just created the market today, the USA would be able to purchase all the licences it wanted and nothing would change. This is because the US dollar is the main global trade and reserve currency. To enable fair trade in carbon dioxide we would need to create a new global currency: the EBCU. The idea was proposed by Richard Douthwaite in his 1999 book *The Ecology of Money*. In the book he writes:

The GCI has devised a plan under which an international organization such as the International Monetary Fund (IMF) would assign Special Emission Rights (SERs)—the right to emit a specified amount of greenhouse gases and hence to burn fossil fuel—to national governments every month according to the C&C formula. Besides the SERs, the IMF would issue governments with energy-backed currency units (EBCUs) on the same per capita basis, and hold itself ready to supply additional SERs to whoever presented it with a specific amount of EBCUs. This would fix the value of the EBCU in relation to a certain amount of greenhouse emissions, and subsequently to the use of fossil energy.

The EBCUs would only be issued once; after that they would operate as a fixed amount of new currency, only being replaced when they physically wore out. Countries within the EBCU bloc (the aim would be eventually to work towards all countries joining, but initially it might be a limited bloc, say the EU and former colonies), would agree to buy SERs for all carbon dioxide emissions and would only use EBCUs for foreign trade. In this way the system would both limit the amount of international trade and shift an enormous amount of new money in the direction of the poorer countries.

At the Bretton Woods Conference in 1944 the British delegation, headed by J. M. Keynes, proposed a neutral currency for global trade. When

trade is based on a currency that is also the national currency of a state's economy the system inevitably gives that state considerable financial power, but also distorts its domestic economy. Keynes proposed that an international currency should be created to facilitate global trade, which he called the 'bancor', meaning 'bank gold'. Douthwaite's proposal is similar, but in this case the currency is based on the planet's scarcest resource: its ability to absorb carbon dioxide. The bancor was to be created and controlled by an International Clearing Union. This would ensure that a balance of international trade was established by fining countries which carried either trading deficits or trading surpluses. Thus countries with a surplus would have an incentive to trade with countries in deficit to create a balance of global trade and would allocate the new currency on a global per capita basis between all the people of the world.

Table 6.4. *Carbon dependence of trade for four countries*

Country	Exports	Export partners	Electricity generation
Austria	Machinery and equipment, paper and board, metal goods, chemicals, iron and steel, textiles, food	Germany (35.7%), Italy (8.7%), France (4.5%), Switzerland (5.9%), USA (4.5%), Hungary (3.9%)	59.28TWh (68% renewable)
Bahrain	Petrol and petrol products (61%), aluminium (7%)	India (14%), Saudi Arabia (5%), USA (5%), Japan (4%), S. Korea (4%)	6.185 TWh (0% renewable)
Bangladesh	Jute good, leather, frozen fish	USA (31.2%), Germany (10%), UK (8%), France (6%), Italy (4.5%)	12.0TWh (6.3% renewable)
Bhutan	Cardamom, gypsum, timber, handicrafts, cement, fruit, electricity, precious stones, spices	India (94%), Bangladesh	1.86TWh (99.95% renewable)

Note: A TWh (terawatt-hour) is a million, million watt-hours, or a billion Kilowatt-hours.

Source: Country profiles from CIA datafiles.

The exact details about how the currency and the licences would interact has still to be worked out, and would necessarily be adjusted over time. There are also a whole range of interesting political decisions about how the SERs would be shared out or sold within each national economy. These are political decisions that would be made at the lowest appropriate level. For the time being the research is focusing on what the economic impact would be of a world with a strict carbon limit. In such a world the energy intensity of one's products and the way one produces electricity become the most important decisions, as they should be if we are to counteract climate change. The distance that goods travel before they are sold is also important, since the carbon dioxide produced by the transport process would also need to be covered by SERs. Because of the complexity of measuring them and pressure from the global corporations, international air- and sea-transport emissions were excluded from the Kyoto limits, although domestic air and all road freight is counted. With the inexorable increase in goods transportation that globalisation brings with it, trade

represents the fastest growing source of CO₂ emissions as a consequence. Table 6.4 gives some details of how a range of national economies would fare in a carbon-limited world, by giving details of different aspects of their dependence on fossil fuels: for producing their export goods, for transporting them and for generating their electricity.

Austria is typical of a developed western economy with heavy use of fossil fuels and relatively energy-intensive products. It is well placed in having around 68 per cent of its energy generated from non-fossil-fuel (NFF) sources, in this case hydro. Bahrain, like all the oil-producing states, would lose out badly in the new scenario. It is heavily dependent on the export of petrol and petroleum products and has trade partners right across the world. Bangladesh is in a middle position, with relatively low-energy products but distant export markets and predominantly fossil fuel electricity generation. Finally, Bhutan represents the ideal carbon economy. Its products are mainly carbon neutral (with the exception of cement), its electricity is virtually 100 per cent NFF, and it trades almost exclusively with its neighbours India and Bangladesh. When you explore world trade figures you are struck by the huge distances that goods travel to market. It seems unbelievable that nearly a third of Bangladesh's exports go to the United States, half the world away. This is the insane logic of the dollar trade system. By contrast, an EBCU trade system would prioritise local and regional markets.

Table 6.5. *Excess of actual CO₂ emissions compared with C&C permitted levels and percentage reduction required, sample of rich/poor countries*

Country	Excess (x-fold)	% reduction
USA	13.0	92.2
Kuwait	13.1	92.0
Denmark	6.9	83.9
UK	6.2	83.4
Algeria	2.4	49.9
India	0.7	-42.9
Jamaica	0.4	-148.4
Senegal	0.3	287.7
Cameroon	0.2	-386.3

Source: Emissions data from Oakridge National Research Laboratory, USA for 1999; population data from UN for 2000.

This handles the convergence part of the Contraction and Convergence model. The second part is the contraction, i.e. reducing carbon dioxide emissions from the level of 2000 to a level which matches the planet's carrying capacity. Table 6.3 showed the per capita CO₂ for each country if the 2000 level had been shared fairly, which is equivalent to the level of excess for each country, given that the approximate rate per person at that date was around 1 tonne. The contraction level necessary is still being debated, since it relates to complex mechanisms of reabsorption and feedback which are scientifically unclear. However, a reasonable assumption is that, on a global scale we will need 60 per cent reductions in carbon dioxide emissions by the middle of this century, on a global basis. Because the UK is presently producing relatively more than other nations we need to achieve a reduction of around 80 to 85 per cent by 2045.

The encouraging news is that the changes needed for us to fit within the C&C framework are perfectly manageable, within this 40-year framework. Table 6.5 shows the percentage reductions in CO₂ output that would be required to fit in with both the contraction and the convergence. In the case of the UK the figures suggest that we need an 83 per cent reduction in emissions. With a move towards renewable energy and a large reduction in car usage this target could be reached. We should not panic about climate change; we should lobby for a strict limit on carbon dioxide and a fair mechanism for sharing it. The only workable mechanism would be a new trading currency, within a balanced trading framework.

Conclusion

This history of money is nothing like as dry and mathematical as you might have expected. It is a rollercoaster ride of hope, greed, expectation and disappointment. We see people selling virtually valueless items—such as tulip bulbs, or rights over foreign swamps, or pieces of paper legitimated by Kenny boy of Enron—for huge sums of money. More than any other aspect of the study of economics it gives the lie to the myth of rational economic man.

Overall we may conclude that this is not a very clever way to organize something as important to all of us as our money system. All the histories of money agree that the money system within capitalism is based on faith alone. Each guarantor of money has had its period of popularity until the money generated outstripped the confidence and it collapsed. It happened with tulips in Holland in 1637, when capitalism was just taking off, and then in England with the South Sea Bubble in 1720, when capitalism transferred its allegiance to the British rather than the Dutch East India company, then it happened in the USA in the 1920s, when the Fed. was foolishly trying to back up an unrealistic gold policy in the UK, and in the 1990s with the insane overvaluation of dot.com companies with nothing of real value except a few good ideas, and it will go on happening forever. Like all good cons, it is not the product that is important, hence the bizarre and worthless quality of the 'goods' which created these booms. It is the schmuck's belief in the conman that matters. While we continue to behave like schmucks we will continue to have a destructive and periodically catastrophic financial system.

The money that we use every day has been created in an inequitable and secretive way and is not subject to the democratic controls we would expect of something so important in a democratic society. For this reason I would recommend that those dedicating their lives to moving towards a humane and sustainable economy should extract themselves from the money system as far as this is possible. I am not suggesting a retreat to survivalist communities such as Tinker's Bubble for all of us, but it is worth replacing your current attitude towards money with a more questioning and suspicious one. It is at the point where you deal in money that you are allowing the pernicious economic system most to control you. Using mutual or ethical banking and mortgage services is some sort of response, but a more powerful one is undermining the power of money altogether by operating outside the money system as much as possible. Pointless acts of kindness and the gift economy are reserved for Chapter 8, but to conclude this chapter I would like to recommend a tactical compromise with the money system rather than slavish adherence.

Capitalism is a pyramid-selling scheme that is backed up by the financial system. Money will grow out of control. Economists may not be

honest enough to admit all of this (although Galbraith gets pretty close) but they do not deny that booms and slumps are symptomatic of capitalism. The powerful are happy to accept such an unstable system, because when the crash comes they will be the first to know and have the power to insulate themselves against it and be the first on board for the next bandwagon. But in terms of you and me such a money system is just a guarantee of future disaster for ourselves and those we love. It is not difficult to conceive of a stable and just financial structure. The only reason we do not have one is that the unfair and unstable one we are clinging on to by the skin of our teeth at present works to the benefit of those who have the power to change it.