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The Global Curse of the Federal Reserve

Brendan Brown

How Investors Can Survive and Profit from Monetary Chaos

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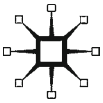

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To the memory of Irene Brown

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Foreword

Alex J. Pollock

The past four decades, from the 1970s to the 2010s, have been replete with financial and currency crises. These years have been, wrote the astute student of crises Robert Z. Aliber, 'the most tumultuous in monetary history'. Why is this?

As we know only too well, the young 21st century has featured massive bubbles in American mortgage finance and European government debt, with resulting crises. In reaction to these most recent financial crises, governments and regulators are intent on identifying and controlling 'systemically important financial institutions', or SIFIs. A SIFI is an institution influential and central enough that its mistakes can cause systemic financial instability.

No one can read this provocative book by Brendan Brown without concluding that a font of financial instability have been the mistakes of the Federal Reserve in its role as fiat currency central bank and financial manipulator to the world. In short, the Federal Reserve is the biggest SIFI of them all.

But who will control this SIFI? Who will guard these guardians? 'No one', answer the votaries of central bank independence. Since Dr. Brown observes, to the contrary, that central bank independence has become a global recipe for growing instability, his proposed answer is a new monetarist revolution.

The authors of the Federal Reserve Act of 1913 had as their principal object to create a provider of, as they called it, an 'elastic currency', which could expand in times of credit stringency or panic. In this they fully succeeded. They did not intend to create an institution which would attempt to manage the economy nor one which would print a fiat currency and, most assuredly, not one which would create a perpetual inflation. From their point of view, these are unintended results of their political achievement, results which developed over time as their creation grew dramatically in influence and power, including, as Dr. Brown insists we recognize, the power to cause financial instability.

It is often said that one of the mandates of the Federal Reserve is to preserve 'stable prices'. One prominent economic commentator even claimed that stable prices are 'a religion' of modern central banks. Nothing could be further from the truth. The Federal Reserve and all the other modern,

fiat currency-issuing central banks, in fact, have a religion of constant, never-ending, intentional worldwide inflation. If the rate of inflation or the rate of depreciation of the currency is fairly steady, they call this 'price stability' – a notable example of successful Orwellian 'newspeak'.

It is worthwhile to remind ourselves of the basic math here. In targeting a continuing 2 per cent inflation, which is now called low, the central bank intends to make prices quintuple in the course of a normal lifespan.

What causes acceptance of this inflationary religion? Dr. Brown argues convincingly that the Federal Reserve and other central banks suffer from 'deflation phobia'. He points out that actual long-term price stability entails intermediate times of both rising and falling price adjustments, which offset each other on average over long periods. He further argues for the reality of 'good deflation' as well as 'bad deflation', while understanding that this has become a revolutionary idea. If all deflation is bad and can never be allowed while inflation is not only allowed but intended, the only possible outcome is perpetual inflation. Is this consistent with financial stability?

Central banks did not always have the religion of inflation; they have been converted to it since 1971, when the United States reneged on its international commitment to redeem dollars with gold. Of course, by that point the United States was unable to honour its commitment at the established parity. Since then, central banks, led by the Federal Reserve, have engendered an unprecedented four-decade-long global inflationary experiment. That this has produced the best possible monetary and financial results would certainly be a hard case to make, since these same decades are notable for their frequent financial and currency crises. Dr. Brown proposes the prosecution's case: that monetary activism has been the source of periodic bubbles and busts in different parts of the globe.

A notable irony in this context, as discussed in the book, is that Arthur Burns, the Federal Reserve chairman who presided over creating the immensely destructive Great Inflation of the 1970s, had written a book in the 1950s about the 'evils' of inflation.

Review Dr. Brown's chronicle of big, destabilizing Federal Reserve mistakes – from the 1920s, when, as the book relates, it was unintentionally stoking up a massive global credit bubble, to our own times, when it intentionally stoked the housing boom, which became the fateful housing bubble. This will bring you to the so-called Shull Paradox (propounded by Bernard Shull in his history of the rise of the Federal Reserve): How can it be that the Federal Reserve, having throughout its institutional life made such large deflationary and inflationary blunders, nonetheless grows ever more powerful and influential with each cycle, regardless of the merits of its actions? In fact, the Federal Reserve's powers in the wake of its mistakes were just added to again by the Dodd-Frank Act of 2010. Professor Shull relates

the plaintive cry of a fellow economist: 'How is it that the Federal Reserve always wins?' How indeed?

To consider bringing its winning streak to an end, read on.

Alex J. Pollock is a resident fellow at the American Enterprise Institute, Washington DC, USA. He was President and CEO of the Federal Home Loan Bank of Chicago from 1991 to 2004 and is the author of *Boom and Bust* (2011).

Acknowledgements

In my writing about global credit bubbles and busts and the intimately related subjects of global capital flows and monetary disequilibrium, I have been deeply influenced by my lifelong teacher Professor Robert Z. Aliber of the University of Chicago.

As a graduate student at Chicago, I had the opportunity, provided by the great kindness and hospitality of Ethel Knight, to have dinner with Milton and Rose Friedman. For me at that time, Professor Friedman was my luminary, whose writings I had read and reread through the Keynesian darkness of my years as a student at Cambridge. I can still visualize the great humility and zest of Professor Friedman as he shared his knowledge with me. The personal insights I gained from Ethel Knight about the era when the great giants – Hayek, Knight and Friedman – taught in Chicago remain with me.

The blueprint developed here for a Second Monetarist Revolution stems in large part from an intense dialogue between myself and Robert Pringle during the spring and summer of 2010. Over many months, he both provoked my thinking on this and led me to much rethinking. Our joint work was published in the *Central Banking Journal*, of which he is the editor.

In preparing this book, Professor Steve Hanke gave me the huge opportunity of presenting ideas to the Cato Institute, in Washington, DC. He has also given me much encouragement and many useful references for further research.

I am greatly indebted to Alex Pollock for arranging a seminar around the topic of this book at the American Enterprise Institute under the title 'The Fed: Hero, Villain or Both?', where the ideas in *The Global Curse of the Federal Reserve* could be debated in full and alongside the persuasive criticism of the Fed from a monetarist standpoint by Allan Meltzer. Over the course of many years, Alex Pollock has fired my imagination and enthusiasm for a pursuing a practical, free market critique of the present US monetary and financial system.

Elizabeth V. Smith, a postgraduate economics student at University College London, and recently awarded a MSc, provided invaluable help in the toil of research and reading the manuscript at its various stages of preparation.

1
How Monetary Chaos Powers Irrational Exuberance

What is the global curse of the Federal Reserve?

At first blush many readers might think the answer is the collapse in the purchasing power of the US dollar during the hundred years of the Federal Reserve's history. In 2012 a dollar could buy only the equivalent of around 4 per cent of what it could in 1913. In the pursuit of alternative dubious aims the Federal Reserve has deprived mankind of an ideal stable store of value.

There is no denying the loss. Many apologists for the Federal Reserve would remonstrate that in several key episodes of inflation this institution was obeying political orders and did not bear the responsibility for its actions. Others would cite economic advantages that the Federal Reserve, through its monetary activism, has at times obtained for the USA and also for some other parts of the globe. It was too bad that these advantages have been at the cost of sacrificing stability in the long-run purchasing power of the dollar.

US monetary activism, however, has been the source of periodic bubbles and busts, both domestically and around the globe. The Federal Reserve has obtained vast discretionary power to determine monetary growth, to manipulate interest rates and to wage currency warfare. In exercising this power, albeit subject to shifting Congressional mandates, the Federal Reserve has created tremendous waves of irrational exuberance which have swept through the global financial marketplace. These waves have wrought much economic destruction.

Two forms of economic destruction

That destruction has taken two main forms. First, there has been huge malinvestment (a concept treated especially in the writings of Ludwig Lachman; see, e.g., Lachman 1977) – capital ploughed into particular types of industries, enterprises and buildings and into training or education,

on the basis of price signals in the capital market which were seriously distorted by monetary chaos, including related irrational exuberance. By the same token other more economically worthwhile end destinations were deprived of capital. The extent of malinvestment is discovered (if at all) only when the wave of irrational exuberance has dissipated.

For example, in the USA at the end of the 2000s a wide range of automobile factories, shopping malls and houses (especially those aimed at satisfying the 'dream of home ownership'), all built on the assumption of permanent high demand from an unsustainable credit bubble, had fallen sharply in value to reflect the sobered expectations of their income potential. They should not have been built in the first place. Finance-sector professionals and construction workers who had accumulated their human capital (training and skills) in false anticipation of the financial, real estate and mortgage boom conditions continuing found themselves part of the 'structurally' unemployed.

Second, waves of irrational exuberance, especially the rare giant ones, leave in their aftermath (after boom gives way to bust) a shrunken willingness amongst investors to assume equity risk. This shrinking does not take the form of a swift, painless decrease in the voracious appetite of the bubble period back to a 'normal healthy' appetite. Rather, the adjustment is, first, from voracious to anorexic. Alongside there might well be irrational depression. And the 'healthy norm' is likely to diminish in overall capacity where there has been a history of irrational exuberance and depression, unless radical treatment of the underlying malaise occurs.

Investors come to realize that in the monetary environment which allows such waves to develop, equity risk is greater than they previously assumed. They may also become alarmed by a series of scandals revealing huge failures of corporate governance which occurred during (and were aggravated by) the monetary boom and thus overestimate the likelihood of these recurring – an example of 'irrational depression' (see Munk, 2013). In the economic and financial bust which follows the wave of irrational exuberance, political forces hostile to capitalism might well become stronger and indeed triumph, justifying the perception of heightened equity risk. The pain of recent large losses (far beyond what would be normal under a stable monetary regime) explains at least part of the increase in equity risk aversion.

This perception of heightened equity risk and the inflamed aversion to bearing equity risk, if they persist, cause the motor of economic progress in the capitalist economy to slow down. A slower, shallower journey into the forest of investment opportunity – the consequence of a shrunken appetite for equity risk – means less growth in living standards over the long run. The good news is that the slowdown does not have to be long lived. In a new context of monetary stability accompanied by economic liberalism (in its classical sense), the appetite for equity risk should recover

well, meaning that appetites are still smaller than during the sickness of irrational exuberance but greater than during the sickness of anorexia accompanied by irrational depression. Without such monetary reform the appetite for equity risk would remain less robust, even when having recovered as far as possible under the revealed conditions of infernal monetary instability, than would be the case if the violent waves of irrational exuberance had become a dead phenomenon.

When equity risk appetites are voracious (during the period of irrational exuberance), investors may both underestimate the actual amount of risk they are bearing, looking at the world of investment opportunity through rose-coloured spectacles, and also be more willing than usual to assume the risks they perceive. When the equity risk appetites return to healthy condition, they estimate the risks in sober, rational fashion and exhibit normal caution about possible danger. The passage of an economy from voracious equity risk appetites back to healthy appetites, most likely through a period of anorexic appetites accompanied by depression, is costly. However, investment opportunity can blossom amidst the economic destruction left behind by the previous wave of irrational exuberance, with much of the existing capital stock now worthless. As we shall see later in this volume, such blossoming depends in particular on a combination of entrepreneurship, flexibility of prices, labour market flexibility and technological progress.

How a monetary virus can attack software controlling the invisible hands

So far the theorists who write about irrational exuberance in the burgeoning literature of behavioural finance have not laid emphasis on the role of the Federal Reserve or, more broadly, of monetary disorder in generating the phenomenon. When they read the famous lines of J. S. Mill that *'most of the time the machinery of money is unimportant, but when it gets out of control it becomes the monkey wrench in all the other machinery of the economy'*, they do not interpret them to mean that irrational exuberance stems chiefly from the work of that monkey.

In fact we could put the J. S. Mill quote in modern idiom by re-expressing it as *'most of the time the software of money is unimportant, but when it mutates it spreads a virus which attacks all the other software behind the price signals (including in particular those in the capital market) which guide the invisible hands of the capitalist economy'*. The virus attack results in malinvestment and ultimately in an impairment of equity risk appetite so crucial to prosperity in the capitalist economy. One element in that impairment of appetite is the extra reward which investors require for assuming equity risk due to their realization that again in the future a virus attack might get underway and yet remain long undetected, meaning that present market signals could become seriously distorted away from underlying economic reality.

A more recent factor in the impairment of equity risk appetite by the Federal Reserve's monetary activism has been the growing efforts by that institution to manipulate long-term interest rates. The brandishing of 'non-conventional' tools designed to force long-term rates down in response to any apparent setback to economic recovery or to any serious pullback in equity markets can set off its own cycle of irrational feedback loops. Market participants believe the tools are effective though they have hardly been tested. The resulting speculative lurch-downs in long-term rates appear to signal that indeed an economic depression could be looming.

Indeed, amidst the 'success' of the Federal Reserve in manipulating long-term interest rates down to record low levels during summer 2012, there was a string of commentaries in the marketplace to the effect that these hinted at investors now putting a significant probability on various economic disaster scenarios. Hence, far from the manipulations promoting economic expansion, the feedback loops which they trigger (the fanning of irrational expectations of great depression) may well have had the opposite effect.

Moreover, many investors have likely concluded that under such circumstances of pervasive manipulation by the Federal Reserve, long-term market interest rates are no longer a reliable market-generated best estimate of the so-called neutral level. The fact that a reliable best estimate is unavailable means the investor in appraising the size of the equity risk premium would sensibly substitute his or her own view as to where the neutral level of the long-term interest rate is most likely now situated. The calculation of the equity risk premium (on the basis of that view about neutral) should include a bonus item to reflect the investor's estimate about the present extent and likely duration of the manipulation by the central bank of long-term interest rates below neutral – all very hazy! Amidst such ambiguity in the calculation as to what extra returns are available for assuming risk, it would not be strange for investors to require a higher return on equity than if there were greater clarity, as under a regime of monetary stability.

Robert Shiller, the pioneer of behavioural finance, chooses to minimize the role of monetary disorder in explaining market irrationalities. He lists many factors responsible for the periodic emergence of irrational exuberance during the last two decades but puts monetary disorder fairly low down (see Shiller 2005). He makes the underwhelming charge that the Greenspan Fed convinced market participants that it would always take action to prevent a market rout (the so-called Greenspan put) and thereby stimulated excess optimism. Shiller agrees with the Fed apologists that monetary policy is too blunt an instrument to moderate swings of speculative temperature, repeating their point that if a central bank seeks to prevent bubbles, it risks triggering unnecessary recession.

This volume asserts, in contrast, that money's role in stimulating irrational exuberance is absolutely fundamental, towering above other

factors, which may nonetheless play a subsidiary role. The process of stimulation occurs over long periods of time. By the time the central bank (or any other more or less expert analyst) can diagnose fairly confidently the presence of irrational exuberance, money will have been seriously out of control (or equivalently, a 'monetary virus will have been attacking the software behind market price signals') already for some considerable time with much economic damage already predetermined. Most likely a monetary tightening at that late point in time would make the damage even greater. One is reminded of Milton Friedman's observation about the long and variable lags between monetary disequilibrium and the emergence of goods inflation. And so it is with irrational exuberance.

In order to describe the process of monetary fuelling of irrational exuberance, it is essential to step back and define some terms and concepts. In particular there is no one standard definition of irrational exuberance. One insight into that concept comes from viewing the future as a combination of different possible scenarios, each with a probability weighting. The phenomenon of irrational exuberance would be present if market prices were based on a widespread tendency of investors (actual and would-be) to overweight (relative to a sober estimation) the probability of highly optimistic scenarios whilst underweighting (relative to any sober assessment) the probability of other scenarios, especially pessimistic ones. (Conversely, irrational depression, such as emerges sometimes in consequence of the monetary contraction which accompanies the bursting of the monetary-fuelled credit and asset bubble, would feature a preponderance of investors overweighting highly pessimistic scenarios).

In less technical language, Shiller describes the phenomenon of irrational exuberance as follows (2005):

> Irrational exuberance is not that crazy. It is more like the kind of bad judgement we all remember having made at some points in our lives when our enthusiasm got the better of us. Irrational exuberance is a very descriptive term for what happens in markets when they get out of line. It is a kind of social phenomenon.

As a social phenomenon irrational exuberance, according to Shiller, lies behind those patterns of irrational behaviour which become growingly evident as a market journeys from 'normal state' to 'bubble state' (or equivalently, as the speculative temperature in marketplaces under consideration rises above normal level).

One such pattern of irrational behaviour is what psychologists describe as 'magical thinking'. If a given set of actions – including a type of news or data – precedes a big success, even though there is no causal link, people believe that a repeat of the same set of actions will produce a repeat success. For example, the first time the FOMC pointed to a probable early use of 'non-conventional monetary tools', the equity market may have jumped and

the US dollar plunged. So every time afterwards speculation that Professor Bernanke is about to make a similar new announcement could have the same market effect – even though it is unclear that there is any rationale for this. In fact, one theme to be developed in this volume is that the use of these non-conventional tools, by adding to actual and feared future monetary instability, causes the equity markets to follow a lower-than-otherwise path over the medium and long run.

A second pattern is 'mental compartmentalization' – a human tendency to place particular events into mental compartments based on superficial attributes and then to be influenced by these. For example, investors might think of interest or dividend income and how they spend out of it as distinct from capital gain; and so, for example, during the interest income famine of growing severity created by the Bernanke Fed in the aftermath of the panic of 2007/8 and the subsequent 'great recession', there was an endless sales pitch by the security houses that investors should favour 'dividend-paying stocks' and 'high-yield bonds'. Yet no rational investor would focus just on one subdivision of overall income (dividends or high yield) rather than considering these jointly with the probability distribution of possible capital gains or losses. The rational investor would not be fooled by the prospect of high dividends paid at the expense of capital gain.

A third pattern of irrationality is 'positive feedback loops': news of price increases spurs investor enthusiasm, which spreads by psychological contagion from person to person, in the process amplifying stories that might justify the price increases and bringing in a larger and larger class of investors who, despite doubts about the real value of the investment, are drawn to it partly through envy and partly through a gambler's excitement.

A rise in speculative temperature (meaning the growing presence of irrational exuberance, as described in the examples above and more broadly), when evident over a wide (but not total) range of asset and credit markets, driven by monetary disequilibrium as shortly to be described, is sometimes described in the economics literature (especially that drawing on the Austrian School) as 'asset price inflation'. The idea behind this term is that speculative fever drives prices above fundamental value, where this reflects a sober, rational appraisal of the present and future.

How does monetary disorder fuel a rise in speculative temperature?

The hypothesis here is that three key elements (not always present simultaneously) in monetary disorder lie behind the emergence of irrational exuberance and asset price inflation.

The first possible element is the pegging and forward guidance of short-term interest rates by the central bank causing medium- and even

long-term interest rates to be below their neutral level. In monetary economics the neutral level defined, say, for medium and long maturities, respectively, is that which would be consistent with overall equilibrium – long-run stability of the price level and no asset price inflation. (The modern Federal Reserve equates long-run price level stability to an annual average inflation rate of around 2 per cent per annum – a practice which is deeply flawed, as explained in Chapter 4 – and correspondingly in this world the 'neutral level' is defined with reference to the price level rising by, say, 20 per cent every ten years and a set of inflation expectations to match.) No one knows for sure what the neutral level is at any time, and ideally market forces drive actual market rates close to the neutral level if the monetary system is well designed and not subject to hijacking by 'policy activists'; this would be the case if the monetary base were at its pivot and its expansion subject to strict rules (see Chapter 4).

The second possible element is investor fatigue from an abnormally low real level of neutral interest rates (medium- and long-maturity) where there are no reserves (in the sense of the camel's hump) against this fatigue from an earlier period of 'good deflation', during which the real value of monetary assets would have risen.

The third possible element is a deep anxiety about a possible emergence, some years from now, of a high inflation – where the source of this anxiety is an ambiguity in the present stance of monetary policy making.

Let's explain these three elements in greater detail and in the context of both the US and the global economy.

In the case of the first element of monetary disorder, the manipulation of interest rates below the neutral level means that asset prices across a broad range of markets (not all!) are likely to be frothy, with a low discount rate relative to profitability driving the price to an abnormally high level. These gains in prices are likely to excite gambling excitement and trend following – especially if there is a floating theme out there about how the world has changed, meaning a prolonged period of supernormal returns (such a theme has been described as a 'speculative displacement' by students of bubbles, including Minsky, Kindleberger and Aliber; see Aliber, 2011). A positive feedback can develop in the form of the theme gaining credibility exactly because the price has been frothy. Asset classes where there is a credible theme enjoy the full heat of the monetary disorder. Others might find themselves in the cold.

Investors and analysts attribute their success in making gains to sometimes spurious factors which then gain significance in future price performance, despite there being no real connection. Investors who have not participated in the successful speculative runs to date may decide they should join the party and are frustrated at their opportunity lost. Financial institutions, whose cost of deposits is isolated from risk by deposit insurance and whose stakeholders (bondholders and equity holders) have no

easy way to determine how much risk is being borne (and in any case might share in the feeling that the prosperous times have arrived, in which much higher than normal returns could continue into the long run), join in the speculation. The equities of those institutions enjoy stellar performance in the market and become sought after on the basis of some new floating hypothesis about how the financial industry has discovered a new route to Eldorado.

In all of this it is possible that in some episodes, especially following a credit crunch in the US economy, the neutral level of the medium- and long-maturity interest rate is higher in the wider dollar area outside the USA than in the USA itself. (We mean here by the dollar area outside the USA not just those countries which peg their currencies to the dollar but also those which in effect run their monetary policies so as to moderate fluctuations between their own currencies and the dollar.) Moreover, in some countries a wide range of investors and businesses in effect use the dollar as their principal money. So even were the Federal Reserve not seeking to manipulate rates below neutral (as perceived within the Fed!), as defined hypothetically for the US economy on its own, speculative temperature could rise in a range of markets outside the USA. In turn, US investors could get drawn into the speculative excitement there.

When the actual level of market rates is below neutral, there is a buoyant supply of new paper (whether debt or equity) by borrowers who can find positive net present value from deployment of capital. So there is no rapid exhaustion of financial profit opportunity under the conditions of speculative fever described. Indeed, the slowness with which speculative opportunity becomes exhausted (explained by the supply of new paper keeping its price in check) is itself a measure of the amount of malinvestment taking place!

The marketplaces which become subject to speculative fever are in part determined by past history. As an example, if the last huge episode of monetary instability featured eventually a big rise of speculative temperature in the equity market followed by a bust, then this time round equities might be particularly slow in heating up (though possibly one or more individual sectors might catch speculative fever). In the next cycle investors still frightened by recent experience might get sucked into chasing opportunity in apparently 'safer areas' – in particular corporate bonds or mortgage-backed bonds or high interest rate currencies.

Let's turn to the second possible element in monetary disorder which fuels asset price inflation – investor fatigue at low rates (say, negative in real terms) which are in line with neutral.

The fatigue is explained in part by no preceding episode of good deflation during which investors enjoyed substantial real gains on monetary assets. This type of fatigue, as we analyze later in this volume (Chapter 3), is specific to fiat money systems, such as have become prevalent since the 1930s, in

which there are no episodes of deflation to balance the episodes of inflation (and so consistent with price level stability in the long run). Under the gold standard by contrast, periods of price level decline balanced periods of increase. Moreover, the periods of decline were often associated with the early phases of severe recession, in the aftermath of which the neutral level of interest rates would presumably remain low for some considerable period of time. Hence holders of monetary assets obtained a real income bonus right at the start, compensating for the paucity of real income (or negative real income) further ahead. Under paper money, where there is no relief ever from inflation (though sometimes lower than otherwise), desperation to obtain yield can set in.

Some of this desperation may have similar consequences, in terms of investor action, to what was observed in studying the previous possible element of monetary disorder (rates below neutral). There could be similar frustration amongst investors at the low actual level of real interest rates (as will usually be the case when the central bank is manipulating rates below neutral – except for the situation where neutral is abnormally high, as in the midst of such a technological revolution as the IT boom of the late 1990s or the electrification and chain production boom of the 1920s). In such circumstances (i.e., of low or even negative real interest rates) investors may tend to distort their assessment of risk in the pursuit of yield. So investors go further along the yield curve so as to pick up extra income whilst pretending that term risk is lower than it in fact is. In the same way they may take on credit risks whilst underrating the probability of default. Or they move funds into higher yielding currencies whilst playing down the extent of exchange risk. Or they may add to high dividend-paying equity holdings whilst wearing rose-coloured spectacles which filter possible dangers and magnify the size of likely returns.

These apparent opportunities to get extra yield become exhausted less quickly if there are operators on the other side who are not suffering from a distorted vision of risk. Astute corporate treasurers either issue high-risk debt and retire equity or issue long-maturity debt and retire short (public-sector borrowers may also do this). Risk arbitrageurs, in seeing a high-yield currency bid up to the sky by yield seekers, may issue debt in that currency for the purpose of converting the proceeds into the low-yield currency. These operations, though, are not without economic cost.

Companies may become overleveraged compared to the ratio which would be chosen under conditions of non-distorted investor vision (an overvaluation of corporate debt relative to equity would be the necessary condition), and this may mean an eventual rise in bankruptcy rates; financial institutions, whilst gaining high revenue from servicing clients desperate for yield amidst the famine of interest income and from trading in similar fashion (to their clients) whilst the dance music is still blaring, later experience sudden loss at some point when the music stops – and while the music was playing

their equities appeared attractive to many investors, who subsequently suffer in the bust. Malinvestment of resources, in the form of excess capital (including human capital) in the financial industry, takes place during the boom phase. And the speculative flow of capital into the high-coupon currencies most likely goes along with excess allocation of global capital to their issuing countries, with many of the investors and lenders there ultimately suffering loss.

In general, though, the overall scope of irrational exuberance should be less in the case of low (or negative) real interest rates in line with neutral than when these are below neutral (as in the first possible element of monetary disorder discussed above). For when rates are below neutral, there is greater potential froth in asset markets which encourages speculative fever to build. And as noted in the discussion of the first possible element, there is a huge supply of securities from capital issuers able to take advantage of the below-equilibrium interest rates to exploit apparent investment opportunities. Even so, in the case of this second element in monetary disorder, it is possible for the desperation of investors as described to power a 'high' in the economy with some degree of overshoot (and inefficient investment). The cost of equity capital, in particular, can fall below its equilibrium level. It is indeed the cost of pure equity (unleveraged) which plays a decisive role in investment spending decisions as explained later in this volume (see p. 216). In the context of overall monetary stability, however, interest rates would tend to rise transitorily above neutral under such conditions and snuff out the evolving irrational exuberance before any widespread malinvestment developed.

Finally, let's consider the third possible element in monetary disorder which fuels asset price inflation: deep anxiety about the possible emergence of high inflation in the future and in a way which cripples holders of monetary assets – specifically, the central bank would prevent nominal interest rates from rising in step with inflation. Such anxiety can be present though inflation in the present is low and though the central bank professes its adherence to an inflation target of, say, 2 per cent per annum. Investors might doubt that the monetary control framework is able to contain and break incipient inflation pressure should this develop; they might suspect that the central bank would become an agent of the finance ministry in levying inflation tax in a situation where the political system would fail to bring agreement on expenditure cuts or conventional tax increases; and they might believe that the central bank has a secret agenda, according to which should unemployment remain high, it would foster a rise in inflation and inflation expectations to a higher level so that zero short-term rates would become even more negative in real terms.

Investors anxious about the partial wipeout of the real value of their monetary holdings in the ways described could find themselves sucked into a path of irrational behaviour. They might be attracted to some so-called

real assets (real estate, precious metals, equities, commodities), becoming overimpressed by their power to protect against a big future jump in the price level whilst partially closing their eyes to many other attached risks. The sales message from the financial industry, seeking to make revenue from their anxiety, might entice them down the path of irrationality (for example, the Wall Street firms which market commodity index funds). And as regards investment in residential real estate, there is much evidence to suggest that many investors are not honest with themselves regarding the extent to which they are in fact engaging in extra consumption of space beyond what they would occupy were there no question of seeking a haven against potential inflation danger (see Chapter 8).

Moreover, the rise in the prices of such assets could generate the positive feedback loops and trend following, discussed earlier in this chapter. The combination of these irrational responses might well translate into serious malinvestment in the form of excess resources ploughed into the commodity extraction industry, into commodity hoarding, into construction and into the financial industry (where excess is measured relative to what would occur to the situation of totally rational behaviour in response to inflation anxiety).

There is a further route from this third possible element of monetary instability to irrational exuberance. This is where the engine behind the generation of inflation anxiety takes the form of so-called quantitative easing, in which the central bank creates massive excess reserves in the banking system. Banks finding themselves with a huge surplus of deposits relative to attractive commercial lending opportunities (which are viable at the prevailing level of loan rates, including credit margins) seek out speculative opportunity and in doing so may underrate the risks involved. For example, they may become careless in making full risk assessment. Such carelessness might be in part due to the comfort of deposit insurance or to equity shareholders who are dazzled by a short-run trend of rising profits and capital gains. In effect, those shareholders are prompted into some form of irrational exuberance by the monetary disorders described here.

In principle the banks might decide to impose negative interest rates (effectively zero interest plus a charge stipulated as a per cent of the outstanding deposit) so as to discourage a run-up of their deposit base and earn a wider margin on what loan business is available. The discouraged depositors would either accumulate cash in vaults or decide to put their funds, say, into short-maturity government bonds or similar paper. In practice, though, many actual banking systems' regulations would prevent the emergence of negative interest rates. In any case, under monetary systems where reserves pay interest (and this has remained at a tiny positive amount under quantitative easing as implemented by the Federal Reserve), bank managements may decide not to go down the negative interest rate route.

Moreover, perverse regulations may encourage them to run-up deposits and plough these into government bonds to earn the 'carry'. Bank equity markets might not demand any additional risk premium in line with this activity if indeed the types of monetary disorder described have created some degree of irrationality in the marketplace.

We shall see in the next chapter how the Federal Reserve, through its hundred-year history, has generated infernal cycles of irrational exuberance, sometimes massive and hugely destructive. Every time, the banking sector becomes fatally drawn into the process.

2
A 100-Year-Old Monetary Disorder

Curse is a strong word to use about the global influence of a 100-year-old institution headed throughout by officials dedicated to public service in the world's greatest economy and greatest democracy. Yet how else can we describe the infernal cycles of irrational exuberance, with their sequels of recession and depression, or the persistent and sometimes violent erosion in the real value of money which the Federal Reserve has generated in the USA and globally, occasionally with devastating geopolitical result?

Ever since the Federal Reserve opened its doors in 1914 (the Federal Reserve Act having been signed by President Wilson in December 1913), its actions have stirred great controversy and criticism. At the start, much of the controversy was deeply political (see Roberts, 1998). The Federal Reserve applied its authority to mobilizing massive financial support for the Entente Powers (principally Britain and France) during the long period of US neutrality in the First World War (August 1914–March 1917). Opponents both within the Federal Reserve and outside argued that such action was against the principles of neutrality.

The Federal Reserve was making it more likely that the USA would eventually be drawn into the war. The facilitating of loans reduced the force of financial exhaustion on the Entente Powers to lower their minimum demands (regarding territory, reparations, security) for entering peace talks with the Central Powers). These talks would have had, as their aim, an early negotiated end to the war. Germany had less to gain from impressing Washington (in its role as peace broker) by making concessions if there were no real prospect of the USA breaking its financial alliance with the Entente Powers.

Beyond that starting point in the First World War, a main stream of criticism has been about how the Federal Reserve has failed to achieve monetary stability. A more specific criticism has been that Federal Reserve policies have amplified the business cycle, including crucial fluctuations in the level of employment.

The main focus in this book is on the international consequences of Federal Reserve–induced monetary instability. The narrative includes a journey through history which starts with the global credit bubble of the 1920s and ends with the global credit bubble and bust of the 2000s. There are many destinations along the way (including the great inflation and collapse of the global dollar standard, the Latin American lending bubble, the South Asian dollar bloc bubble and the lending and real estate bubbles around the world in the late 1980s). The prospective journey into the future features a feared crisis destination where Bernanke-ite time bombs explode.

The book's purpose is more than to present a distinct historical narrative. Rather it is to uncover the meaning of US monetary instability in a global context, emphasizing and exploring the links between this and the phenomenon of irrational exuberance. Is there a pathway which the individual investor can find to financial survival in the world of monetary turmoil? And is there a route to less instability in the future?

The recommended way forward is radical. It proceeds via a second monetarist revolution evoking free market (rather than bureaucratic) determination of interest rates, monetary system reform (reverting to high non-interest-bearing reserves) and an anchoring in the form of a stipulated low rate of increase in the monetary base (consisting of cash in circulation and reserves) which learns from the failure of the First Monetarist Revolution.

In this chapter the narrative is largely historical, so as to set the scene for the later discussion of what has gone wrong and what reform should take place. Greater space is given to earlier rather than later events, as the latter are much more fully discussed in the course of subsequent chapters. Though the narrative is largely critical, it starts with a concession to the extreme difficulties which the Federal Reserve confronted in its early days of existence.

The golden start which never took place

When the Federal Reserve Act was signed, the USA was on the international gold standard. The piloting of the US economy as near as possible to ideal monetary stability was not a role that anyone imagined for the new institution. That piloting would surely continue as before, with the invisible hands doing their work under the gold standard. As Senator Aldrich and his invited elite from Wall Street (including Paul Warburg and Benjamin Strong, later to be such powerful influences within the Federal Reserve) assembled in total secrecy during November 1910 at the Jekyll Island Club (see Rothbard, 2002a) to draw up plans for a Federal Reserve System, no one put on the agenda the topic of monetary stability.

Rather, a driving political force, at least just below the surface, behind the journey towards the Federal Reserve was the zest for reform which marked the Progressive Era in the USA (1890s–1920). Belief was widespread amongst the reformists that technical experts could solve the country's problems and they should be given the authority to undercut political power, which was based in saloons and corruption. Reform in the case of the Federal Reserve meant providing greater protection for the US financial system from the type of liquidity seize-ups which had shown up most recently in the panic of 1907. The hope of powerful bankers on Wall Street was that they would be in a better position to compete with European, particularly British, banking centres.

If those experts behind the drawing up of the Federal Reserve had sought to delve into the subject of monetary stability, there was already to hand a literature stretching from J. S. Mill to the latest avant-garde writings from Vienna, most of which had been written on the assumption of a gold standard regime remaining firmly in place. For countries that belonged to the international gold standard (and in the decade before 1913 these had accounted for most of the world, with the notable exception of China, which was still on a silver standard), increases in the quantity of the aggregate monetary base were closely related to the mining of new gold supplies. Monetary base aggregated across the gold countries as a whole – let us call them 'the gold bloc' (this should not be confused with the brief actual bloc formed in the mid-1930s involving a small number of European countries determined to remain on gold) – consisted of currency and gold coins in circulation, plus the banks' holdings of vault cash (and gold) and reserve deposits. (In the USA there was no central bank in which to hold reserves, but there was a system of regional banks holding reserve deposits with national banks.) Each member currency was defined by a given weight of gold.

If costs and prices across the gold bloc as a whole fell substantially (perhaps under the influence of a technological revolution), meaning the cost of producing gold fell relative to its fixed price (in terms of the various monies), then that would spur gold production and cause the growth rate of monetary base to accelerate over the medium term. Eventually that would bring upward pressure on prices back in the direction of their long-run average level. Exchange rates between the participating currencies were fixed (though some small degree of fluctuation was possible within the gold export points determined by the costs of transporting gold). Fluctuations between price levels in different gold countries played an important role in achieving international economic equilibrium (with the average overall price level in common currency determined by the play of market forces subject to the anchor of base money growth across the gold bloc as a whole).

No one who thought about it would have interpreted monetary stability as meaning a stable price level over the short or medium term, either at a national level or at the level of the gold bloc as a whole. But there was an overriding long-run expectation that the price level would tend to return to a stable long-run average when considered over several decades or more.

Overnight and other short-term interest rates in the money markets were determined broadly by supply and demand of cash (including gold coin). These rates could and did vary by considerable amounts across currency boundaries, reflecting pressures in the exchange markets. A currency experiencing gold outflows tended to have relatively high interest rates. The level of money rates across the gold bloc as a whole would be related to supply-and-demand conditions for monetary base (all constituents of which – gold coin, gold certificates, reserves – were non-interest-bearing) across the gold bloc. Central banks, insofar as they existed (by 1913 they had been instituted almost everywhere except in the USA), did not have committees deliberating for hours and days about where to peg short-term interest rates. Instead these were highly volatile, and to the extent that central banks played a day-to-day role in influencing short-term rates, it was via emergency lending that they undertook to relieve obvious acute shortages (in the money market). This lending occurred in the context of all the rules of the system being currently observed (especially related to gold convertibility). In line with the lack of any significant role of central bankers in determining interest rates or monetary conditions more generally, there were no great personalities. The Bank of England Governor, for example, served for a two-year term only, and his name was virtually unknown except to those in the money markets.

As central bankers played no significant role in determining money rates or influencing expectations of where these would be in the future, longer-term rates were determined, together with the cost of equity, wholly by the 'invisible hands' balancing the supply and demand for capital in its different forms (whether low-risk government bonds or high-risk equities). Of course, it would be possible for long-term rates (whether defined with reference to high- or low-risk instruments) to get out of line with equilibrium levels (what a few economists then unknown to most market practitioners described as 'neutral' or 'natural'), but these are always a matter of some mystery. Only estimates can be made of these unrevealed and continually fluctuating equilibrium values through time. Under the gold standard the estimation process was decentralized in the marketplace. And volatile short-term interest rates, together with confidence in long-term price level stability, tended to drive much commercial borrowing and lending into the long-maturity (fixed-rate) loan and capital markets, improving their information-gathering processes.

A lack of alignment between market rates and their neutral level could be caused simply by malestimations across the marketplace as a whole. For

example, business people and the equity investors backing them (by buying the risky securities which corporations issued) collectively might be over-optimistic in a particular period of time about returns over the long run to their new projects, in itself causing long-term fixed rates in the capital market to rise above a neutral level, where that is defined with reference to sustainable economic equilibrium. (Yes, excess optimism is possible without monetary fuel; but it is likely to be less wild and less enduring than when the monetary fuel is the key driver.) That type of misalignment, incidentally, may be no bad thing in the circumstances. Above-neutral long-term rates would help constrain the extent of overinvestment during the period of excess optimism. No such constraining mechanism exists where central banks peg money rates on the basis of incomplete economic models, run on a lack of information, and the pegging operations (including heralded changes in the peg) seriously influence long-term rates.

Indeed, these pegging operations, sometimes joined with explicit action to manipulate long-term interest rates, produce gaps with the underlying neutral level which are very troublesome for benign economic functioning. Monetary disequilibrium and accompanying wide gaps between market and neutral interest rates have been a big factor in speculative temperature swings across the span of credit and asset markets. ('Temperature' here means the extent of irrational exuberance in its various forms; see Brown, 2008). Such irrational exuberance, likely to be particularly great in some industrial sectors and asset markets, drives malinvestment.

In sum, the essential attributes of monetary stability for countries on the gold standard went well beyond long-run price level stability (defined with respect to the long run, not the short or medium term) and crucially included containment of disequilibrium episodes in the form of credit and asset market temperature swings with all the wasteful investment (malinvestment) of resources which resulted. These attributes stemmed from the collection of automatic mechanisms operating in a free market system with gold anchoring.

Crisis as the Great War erupts

As a matter of historical fact, as soon as the Federal Reserve opened its doors, the automatic mechanisms of the gold standard ceased to operate. The Great War, erupting in Europe at the start of August 1914, brought a suspension, at least in practical terms, of much of the substance of the gold standard.

During the crisis of late July 1914, it had been the dollar itself which was most under pressure, as US businesses, active in international trade, could not renew trade credits in the London market; thus they had to obtain funds from the USA and convert these into sterling for the purpose of repayment. Amidst a crisis of liquidity and gold loss, Treasury Secretary McAdoo, in close consultation with New York Federal Reserve President Benjamin

Strong, ordered the closing of the New York Stock Exchange (which lasted eventually for three months) and took emergency measures so as to prevent any formal suspension of gold convertibility of the US dollar (see Silber, 2007). McAdoo prevailed against the contrary opinion of Secretary of State Bryan (a powerful figure on the liberal wing of the Democratic Party who had long campaigned as an enemy of gold, banks and the railroad companies), who had argued in favour of an immediate suspension of the gold standard. (Bryan had critically swung his supporters behind the nomination of Wilson as presidential candidate at the 1912 Democratic Convention; in 1913 he had provided key support to the Federal Reserve Bill in its passage through Congress.)

McAdoo and Strong saw continued gold convertibility as essential to building up New York as a great financial capital in competition with London. It is one of the many ironies of financial history, as we shall discover below, that if Bryan – the long-time monetary populist – had got his way (about suspending the gold standard entirely) the USA might well have escaped the great inflation which then swept the country during the next two and a half years (prior to its entry into the war) due to the combination of the dollar 'remaining on gold' and huge gold inflows from the Entente Powers.

Benjamin Strong stemmed from the Morgan empire, having been the right-hand man of J. P. Morgan during the 1907 financial panic and later put at the head of Bankers Trust. Murray Rothbard (see Rothbard, 2002a) makes much of the importance of the 'Morgan club' as a factor in understanding Federal Reserve policy in its early years. Strong, in taking the position as head of the New York Federal Reserve, had confidently expected that in this role he would be the most powerful official in the new system, though there were some ambiguities about how power would be divided between New York and the Board in Washington. At the head of the Board was Charles Hamlin, also in the Morgan sphere, as was the Treasury Secretary McAdoo, whose railroad company had been bailed out personally by J. P. Morgan.

Under the initial organization of the Federal Reserve, the Treasury Secretary was an ex-officio member of its board, and McAdoo (now son-in-law of President Wilson) regularly attended its meetings. Indeed, key members of the Board resented the perceived attempt of McAdoo to dominate proceedings and felt 'degraded' (see Wueschner, 1999). The main counterweight to the Morgan empire within the Federal Reserve was Paul Warburg, who stemmed from the German banking family of that name and was close to, having married into, the New York banking house of Kuhn, Loeb.

Warburg has been seen by many historians as 'the father of the Fed' in the light of his powerful intellectual and political advocacy of a US central bank, derived from his experience and admiration of German banking

arrangements and his dismay at the 'primitive state' of monetary arrangements which he perceived on arrival in the USA. Benjamin Strong himself described the Federal Reserve as Warburg's 'baby' (see Ferguson, 2010).

Conflict within the Fed during the period of US neutrality

The importance of the Morgan connection was soon to play out in Federal Reserve policy debates and decisions about a whole range of key issues during the period of US neutrality (August 1914–early 1917). One theme through much of the literature about this period (see Roberts, 1998; Rothbard, 2002a) has been the huge business (and profit) that the Morgan empire derived through arranging finance for the Allies and how this may have swayed US policy at all levels. Even so, historians concede that Benjamin Strong had strong beliefs, which may have happily coincided with what turned out to be good for Morgan. He belonged to an East Coast upper class and Anglophile elite fully in tune with his view of the war as a 'global struggle between the forces of good and evil – Prussianism, Kaiserism, autocracy against freedom, civilization, and Christianity' (see Roberts, 2000).

Warburg, by contrast, in common with many other prominent figures on the political and economic scene in the USA at that time, believed that the best outcome from the dreadful war in Europe would be a negotiated settlement and this would be best achieved by the USA remaining strictly neutral. They warned that facilitating Entente war financing in forms which jarred with strictly legal interpretations of neutrality made a negotiated outcome less likely and increased the risk that the USA would eventually be drawn in as a protagonist on the Entente's side.

The arguments within the Federal Reserve about how far to facilitate allied financing turned on such issues as whether trade acceptance credits, which were obviously war financing bills (related to ammunitions and other war materials rather than to normal commercial trade), should be discountable. In practical terms, the question was whether the New York desk of the Federal Reserve could buy them in the market or lend against them as collateral. (Note that prior to the creation of the Federal Reserve, there was no official institution providing liquidity to the commercial bill market in this way. Hence the trade acceptance market in New York had remained narrow. In this sense, the new central bank's launch was timely for Entente war financing.)

The protagonists discussed the issue in terms of banking risks versus developing New York as a financial centre (and all the bankers, Morgan and Kuhn, Loeb, had supported the creation of the Federal Reserve in considerable part because of its potential to enhance their international business). But the real issues of war and peace were not far below the surface. Often Benjamin Strong used the independence of the New York

Fed to defy, in effect, rulings from the Board in Washington. On one occasion, in April 1915, the Board was able (due to skilful moves by Warburg and Miller and the absence of Treasury Secretary McAdoo caused by ill health) to get through a tough ruling against acceptance financing, which was camouflaged lending to belligerents (in practice the Entente Powers) – the so-called regulation J. But then Benjamin Strong struggled successfully to get this diluted with the support of McAdoo (see Roberts, 1998), who was concerned about the effect on potential export business. In general terms, Strong tended to get his way, and this was in the wider political context of the Wilson Administration drawing closer to the Entente.

Already in spring 1915, Wilson's chief political advisor, Edward House (known as 'Colonel' House), on a visit to Europe, had telegraphed that 'we can no longer remain neutral spectators'. This comment had been read out approvingly by Wilson to his Cabinet (see Bobbit, 2002). In June 1915, Secretary of State Bryan, the leading antiwar member of the Cabinet, had resigned in protest at the Wilson Administration's drift towards aggression (or away from strict neutrality).

There were setbacks for Strong, and notably in late 1916, the Wilson Administration did briefly rein back financing for the Entente Powers as part of its diplomatic efforts towards forcing a negotiated peace. It is doubtful, though, whether anyone in London saw this as more than an irritating temporary interruption in US financing or whether anyone in Berlin seriously saw this as a possible precursor to Washington abandoning its pro-Entente policies. According to Fischer (1967), President Wilson himself had intended to offer that the USA would throw its full 'financial might' behind whichever side made a genuine effort to reach peace, meaning the setting of realistic terms for negotiation, but he was dissuaded from doing this by Colonel House (who, as we have seen, was already by this point solidly with Great Britain, having an excellent relationship with its Foreign Secretary Grey, even though in summer 1914 he had warned Wilson about how Britain and France were fanning war risks). Indeed, the collapse in the New York stock market which the Wilson Peace Note provoked may well have added to scepticism in Berlin about whether Washington would seriously curb the booming wartime export trade with the Entente (see Baruch, 1962).

Fritz Fischer (see above), the controversial German historian who has documented aggressive aims amongst the imperial-militarist elites in Berlin before and during the war, casts doubt on whether a negotiated peace was at all possible in December 1916, even if Washington had been sincere in its 'even-handedness', drawing attention to the insistence (as revealed in papers) of Chancellor Bethmann-Hollweg in his 'peace diplomacy' on undiluted ambitions in eastern Europe (Poland) and western Europe (Belgium, Alsace). Critics of Fischer argue that the war aims before September 1914 were articulated only within the military high command and not by the

wider political leadership, including the chancellor and the Reichstag. The growing cooperation of Britain with Russia and France (in the years up to 1914) was creating huge anxiety in Berlin about Germany's vulnerability to attack (hence the military's emphasis on pre-emptive action). The evidence of peace terms put on the table by Berlin in late 1916 consisted of no more than opening gambits for a diplomatic process which inevitably would bring concessions. Fischer himself virtually concedes that President Wilson had scuttled any real possibility of acting as peace broker by the end of 1916 because of the close US financial alignment with the Entente Powers. The USA was viewed as a virtual ally of the Entente by even those few peace-leaning key officials in Berlin.

First monetary failure – the great inflation of 1915–16

The high rate of inflation which appeared in 1915–16 deeply concerned all the senior Federal Reserve System officials, whatever their stance on the war. The huge shipments of gold by the Entente Powers to the USA, against which they obtained dollar deposits at the official price of $20.65 per ounce, fuelled growth in the US monetary base. The Federal Reserve's role in the creation of the dollar deposits was at first circuitous, as the Treasury continued to conduct its fiscal operations via a network of deposits placed with the leading banks. Treasury Secretary McAdoo was in no hurry to transfer these operations to the Federal Reserve as provided for in the founding act, but once the country entered the war, the transfer became virtually complete (see Wueschner, 1999). Friedman and Schwartz (1963) maintain that this expansion of the monetary base would have been less (perhaps 20 per cent or so) if the Federal Reserve had not been created and that, moreover, the multiplier effect of the monetary base on wider money and credit supply would have been less (in that reserve requirements fell during this early period of the new system compared to what would have been the case under the old system).

As it was, the wholesale price level rose by 65 per cent between June 1914 and March 1917 (the date when the USA entered the war), with the stock of money rising by 46 per cent. Over the subsequent period to May 1920 (when the price level peaked), wholesale prices rose a further 55 per cent, and the money stock by 49 per cent. With or without the Federal Reserve, vast official purchases of gold would have generated an inflationary surge. Benjamin Strong used concern about inflation as an argument for extending war credits to the Entente Powers, in that they would in consequence ship less gold to the USA and there would be less monetary expansion. Strangely there is no evidence of any discussion within the Federal Reserve about suspending the official price of gold, albeit that such action ultimately would depend on Treasury consent. Similarly this is not an issue taken up by Friedman and Schwarz or other monetary historians. Essentially, under

suspension, the Entente Powers could have used their gold to acquire dollar funds only by selling this in a free market where its price (in dollars) might have plunged. In Europe, Switzerland, as a small, neutral country swamped by gold inflows as soon as 1915, had taken such action, and correspondingly the Swiss franc had risen far above its gold parity against the US dollar (see Brown, 2012).

The buyers of gold at its low wartime price in a US free market would have judged that the likely profit to be made from an eventual return of the price to its official level, some time after the end of the war, was greater than the loss of interest in the meantime. (Indeed, the suspension of official US gold buying, by arresting the growth of the monetary base, would have allowed interest rates to rise sharply, hence containing inflationary pressures.) Some US speculators (in a free gold market) might even have contemplated the possibility that the reincarnation of an official gold price in dollars after the war would be at a higher level as part of a general international scheme for returning the European powers to gold.

So why was there such silence on this obvious policy step? The most plausible explanation is that it was a total non-starter in terms of the politics both within and outside the Federal Reserve. Suspending the official gold purchases would have hit Entente financing hard. In fact, the Entente Powers were gathering inflation tax from the USA by courtesy of the gold monetization. And they were raising funds in the USA at a low interest rate due to the swamping of the monetary base by gold inflows. Benjamin Strong was hardly likely to put forward the suggestion of suspending official gold purchases in total contradiction of his war sympathies, of Morgan interests, of Strong's ambitions to make the New York Federal Reserve all powerful within the Federal Reserve System or of promoting New York as a world financial centre to compete with London.

Paul Warburg and his sometime ally on the Board, Professor Adolph Miller, might have seen some considerable advantages of suspension in terms of tackling inflation and constraining the amount of war finance for the Entente Powers – although there is absolutely no evidence on this point. Even so, Warburg shared Strong's enthusiasm for building up gold reserves within the Federal Reserve. Both had been concerned from the start that the Federal Reserve Act had opened the door to fiat money creation (in that Federal Reserve notes were the liability of the US government) and saw a strong gold backing (in terms of gold reserves within the Federal Reserve System being in excess of the legal minimum specified in relation to notes outstanding) as a bulwark (see Silber, 2007). Yet both Warburg and Strong would have been deluding themselves if they indeed viewed wartime floods of gold into the USA as providing a basis for monetary hardness, especially when viewed in a global context.

If a much bigger share of global gold reserves was now finding its way into the USA to permanently back (at an unchanged gold-dollar parity) an

inflated supply of Federal Reserve notes, matched by a permanently higher US price level, how could Europe ever return to a pre-war type of gold standard, where gold would be a modestly high proportion of the monetary base? If gold were to play a key role in post-war international arrangements under those conditions (with gold stocks concentrated in the USA and an unchanged official dollar price for gold), it could only be on the basis of the US dollar continuing to be convertible into gold coin on demand and the currencies of the European one-time belligerents effectively on a dollar standard (meaning that the Federal Reserve would set the growth of the monetary base in the USA autonomously) and not themselves convertible into gold coin. That would be a far cry from the pre–World War gold standard, in which the monetary base for the whole gold bloc was set by automatic forces operating globally.

There is no evidence that Strong or Warburg were looking ahead with any insight to the post-war order. Both shared ambitions for New York as a financial centre. Both saw the sustaining of global faith in the continuing gold convertibility of the dollar (at a fixed price throughout) as fundamental to realizing those ambitions. Perhaps they had some intuitive awareness that the gold sales by the English were corroding the foundations of Britain's financial hegemony in the pre-1914 world and implicitly welcomed that fact – but who knows for sure? In any case, they continued to worry about inflation without proposing any real solution.

From goods inflation to the great asset inflation of the 1920s

It is not clear how much or whether the episode of high inflation during the period of neutrality, supplemented by a further inflation surge in 1918–19 (with the Federal Reserve failing to take restrictive measures until early 1920, when a severe recession was already beginning to form, one which was accompanied by a big fall in the price level), had any lasting impact on general perceptions about US monetary stability under the newly created Federal Reserve System. As a matter of historical fact, wholesale prices in the USA had risen by 50 per cent during the years 1897–1914 in a long wave of inflation possible under the gold standard due to huge new discoveries of the yellow metal, which were highly profitable to mine (in part due to the development of the cyanide process), matched only in part by the long deflation of the previous twenty years (see Friedman and Schwartz, 1963). Consequently, for many contemporary investors at the start of the 1920s, there had been two decades of serious inflation.

An important point lost in some historical narratives is that the huge US monetary instability of the 1920s, with its denouement of global credit bubble and bust (most of all in the USA and Germany), did not emerge suddenly from a long preceding period of monetary stability. The instability

of the earlier period had been most evident in terms of goods and prices inflation, albeit that during the period of US neutrality in World War I, there had surely been some degree of asset price inflation in the US equity market, especially related to business making huge 'war profits'. (It is also possible to argue that the great stock market and land boom during the early years of the 20th century culminating in the panic of 1907 was in effect asset price inflation driven by monetary disequilibrium resulting from the gold supply revolution starting in the 1890s.) The instability which was now to emerge (in the 1920s) was wholly in the still largely undiagnosed form of speculative temperatures rising across a range of asset and credit markets, together with the accompanying malinvestment. (It is possible, though, if housing rents were calculated according to modern practice and inserted in the price level measure, there might then have been some underlying consumer price inflation in the 1920s' economic expansion rather than the slight fall revealed by the wholesale price data which has formed the basis of historical analysis for that period.)

In assessing the responsibility of the Federal Reserve for the serious monetary instability of the 1920s, we should concede that Benjamin Strong and his colleagues were operating in the wake of a shipwreck of the old monetary order they had known well. Yes, they might well have contributed in some respects to the totality of the shipwreck by their role in the setting of monetary policy (and gold policy) through the period of neutrality and beyond. Be that as it may, the virtual collapse of the gold standard during the war left the USA without any anchor to its monetary system. Benjamin Strong or Paul Warburg had never cast themselves as monetary experts who could in a moment devise the rules of monetary stability to restore order from chaos. No longer were there automatic rules determining the growth of the monetary base (at the level either of all countries participating in the gold standard or of the USA, where gold inflows or outflows would determine differences from the global rate of monetary base expansion). No current central banker had proposed any alternative anchor for the US monetary system.

When Benjamin Strong and his colleagues on the Federal Reserve Board thought about the return to monetary stability in the aftermath of the First World War, they had in mind the building of a truncated gold standard – meaning that other big countries would effectively peg their currencies to the US dollar without any simultaneous promise to convert these into gold coin on demand. The European countries had liquidated much of their gold reserves during the war and could not return to gold-backed currencies (in the sense of these being convertible on demand into gold coin) unless a way were found to rebalance gold holdings internationally.

Yes, a general agreement to raise the price of gold in dollars and set a realistic starting level of exchange rates (taking account of different cumulative amounts of inflation in each country since 1914) might have made a

return to a pre-war gold standard possible. Alongside this agreement, the UK government, for example, would have issued bonds in New York for the express purpose of buying gold to back its currency (inducing thereby a shrinkage of US gold reserves). And the UK government would have had to be convinced that such an expensive exercise towards regaining the gold reserves consumed during the war, essential to the resurrection of the international gold standard, was indeed worth the price. There is an element of doubt as to whether, given the huge Allied debts already outstanding, Britain could have raised funds in the New York market. In any case, none of these possibilities found their way on to the political or central bank agenda in the USA or Europe, though some did enter the technical discussion between experts.

Instead, by default the Federal Reserve was piloting the US monetary base growth (no contemporary official would have seen it this way!) – a job for which there was no guidebook or manual. At first it found itself responding as a reflex action to movement of the gold reserves.

Consequently, at the start of 1920, the Federal Reserve suddenly tightened monetary policy, having kept it exceptionally easy for a full year after the end of the war, catapulted by the coincident fall in the ratio of gold stocks (within the Federal Reserve) to outstanding deposits. Friedman and Schwartz (1963) blame this late action for the sharp recession which followed. The price level did indeed drop back (wholesale prices by 50 per cent between mid-1920 and mid-1921) – consistent with the view of Strong that some such correction was essential if the USA were to stay on gold as part of a reconstructed international monetary order (though he seems to have had in mind an international dollar standard based on gold convertibility in the USA rather than a return to the pre–World War international gold standard).

Strong's presumption was that Great Britain, the 'leader of the orchestra' in the world of the pre-1914 gold standard, would 'return to gold' at its pre-war parity (in fact, a return to the pre-war dollar-to-sterling parity with the pound no longer convertible into gold coin), even though in terms of purchasing power parity, that would mean that sterling would now be expensive versus the dollar. The hope was that a sharp decline in British prices would eliminate that overvaluation.

A tightening of UK monetary conditions on the scale required, however, never materialized. Instead the Governor of the Bank of England (Montagu Norman) came repeatedly to his good friend Benjamin Strong pleading for easier US monetary policy. Strong complied with the requests on two significant occasions (1923 and 1927) even though such compliance was totally inconsistent with monetary stability in the USA (defined in the broad sense of money not becoming the monkey wrench in the machinery of the economy either by driving the temperature away from the normal range in credit and asset markets – thereby triggering ultimately huge

malinvestment and violent business cycle formation – or by undermining confidence in price level stability over the very long run, even though considerable fluctuations up and down over the medium term should be expected).

US dollar and US rates too low, monetary base growth too high

Unstable US monetary policy, together with a pattern of foreign governments – led initially by Britain – repegging their currencies in the mid-1920s at pre-war parities against the dollar, even though this overvalued them in terms of purchasing power parity (France being the important exception), led to growing disequilibrium in the international economy. In principle the USA, now a huge international creditor (a huge debtor in 1914), the world leader in a technological revolution (electrification, mass production of autos, radio) with matching investment opportunity (high profits) and with a consumer credit revolution occurring, should have emerged as net capital importer (the UK and French governments' repayment of wartime debts to the USA would have been one form of capital import) from the rest of the world while running a matching trade deficit.

Correspondingly the level of the dollar on average against foreign currencies should have been well above its pre-war benchmark in real terms. Interest rates in the USA (and on average across the dollar bloc including Germany from 1924) should have been at an above-normal level in line with the huge investment opportunities in the USA (and with the reconstruction boom occurring particularly in Germany after war and hyperinflation). The spurt of productivity growth in the USA should have gone along with a tendency for the price level there to fall (though wage rates would be rising in nominal and even more so in real terms). That would have been the outcome under a well-functioning international monetary system.

The reconstituted and truncated 'global gold standard', however, was not well functioning. Under the pre-war gold standard the supply of monetary base to the aggregate of all 'gold countries' was determined by the supply of new metal (itself influenced by the movement of the price level across the bloc relative to the gold price). In the post-war imperfect reincarnation, the US Federal Reserve had considerable discretionary power, which it used, to affect substantially the US monetary base. It was able to do that because most other countries were now effectively pegging their currencies to the US dollar and were ready to follow the lead of US monetary policy.

In the pre-war gold bloc, gradual and continuous shifts in relative prices meant that real exchange rates were generally in line with domestic and international equilibrium. After the interruption of the Great War and highly divergent inflation experiences, who had the least idea about the equilibrium set of real exchange rates (consistent with an efficient distribution of

savings and investment across the globe, taking account of all such risk factors as might be relevant) especially the crucial reichsmark-dollar rate? There was every reason, though, to assume that the dollar was now fundamentally undervalued in terms of such a concept. This undervaluation was in part due to foreign governments (Britain especially) returning to gold at pre-war parities without any commitment to allow monetary forces to correct relative prices. But it also fitted with the monetary disequilibrium and credit policies being pursued by the Federal Reserve.

Rothbard (1972) details the periods of rapid monetary base expansion which the Federal Reserve induced in bursts of activity (buying bonds mostly), especially in late 1921 and 1922, the second half of 1924 and the second half of 1927. Meltzer (2003), in his epic history of the Federal Reserve, maintains that the growth of monetary base was fairly stable throughout, with spurts being later counterbalanced by slowdowns. Thus a four-quarter moving average of the monetary base was growing at 6 per cent per annum in early 1923, slowed to 2.5 per cent per annum in early 1924, blipped up to 4 per cent per annum in late 1924, decelerated to 2 per cent per annum in 1925–6, slowed further temporarily down to zero in late 1926, re-accelerated to 2 per cent per annum in 1927 and then decelerated to sub-zero rate from 1928 onwards. But this four-quarter moving average defence for the Federal Reserve against the charge of inducing monetary instability falls flat.

Even Friedman and Schwartz who, like Meltzer, have no place in their history for broader concepts of monetary stability to embrace swings in asset and credit market temperature, agree that Federal Reserve policy in the years 1921–5 was somewhat expansionary if viewed according to the metric of the monetary base. (However, Friedman and Schwartz argue that overall monetary policy was not expansionary, buttressing this claim by citing the only modest expansion of their chosen broader money supply aggregate and the absence of any goods inflation as measured by the wholesale price index. Indeed they describe the mid-1920s as a golden age for Federal Reserve monetary policy.) They point out that the advent of the Federal Reserve System was leading to an economization in demand for excess reserves (the development of a market in the early 1920s for Federal Funds encouraged this trend). And a shift in public demand away from sight deposits to time deposits (stimulated by the new differential reserve requirement on the two, much lower on the latter) lowered overall demand for reserves.

Furthermore (this is not a point made by Friedman and Schwartz), even if the four-quarter moving average total of monetary base had been on a steady path, big variations along the way could in themselves be disequilibrating, especially regarding their influence on the speculative temperature in asset markets. These big variations were in the main prompted by support action for the British pound (as organized by Benjamin Strong) or in response to perceived changes in the momentum of the US economy – the beginning of

'fine-tuning' operations, much later to be criticized by Milton Friedman and other leaders of the First Monetarist Revolution.

Without these big (and small) variations in the short-term pace of monetary base growth, short-term money rates would surely have pursued a much more volatile path similar in some respects to that under the pre–Federal Reserve monetary order. The blatant smoothing of money market rates at a low level by the New York Federal Reserve (in contrast to the actual high volatility of money rates under the pre-war gold standard or to the hypothetical high volatility which would have persisted if the Federal Reserve had focused on holding the pace of monetary base growth steady, even over short periods of time – as recommended in Chapter 4 of this volume, rather than on operations to peg short-term interest rates) meant that long-term interest rates got growingly out of line with their neutral level, helping to power irrational exuberance.

Investors and borrowers in the long-term rate markets took their cue from low and stable short-term rates, assuming that under the new monetary regime presided over by the Federal Reserve lowness and stability (of the short-term rates) would persist. Hence long-term rates did not rise substantially despite buoyant demand for capital and a growingly voracious appetite for equity risk (as irrational exuberance started to build-up). Under the pre-1914 US monetary system long-term rates would have jumped under similar circumstances, as there would have been no expectation of short-term rates remaining pinned down at low levels. Friedman and Schwartz ignore this point when they give such high marks to Federal Reserve policymakers in the mid-1920s, resting their case on the econometrics of the demand for their chosen broader money aggregate relative to its supply.

Austrian views of 1920s disequilibrium

The sharp decline to sub-zero in the growth of monetary base beyond 1927 does not contradict the 'Austrian' story about the Federal Reserve's responsibility for the credit bubble, which formed from the mid-1920s. That bubble was rooted in monetary disequilibrium in the early to mid-1920s. The Austrians agreed with Friedman that by the time the Federal Reserve did start to tighten policies sharply in late 1928 and into 1929, out of concern about the obvious symptoms of a stock market bubble, it was already too late. Endogenous factors (in the bubble process) would bring about a bursting which could only be made worse by tightening at that late stage. The Florida land bubble started to burst in early 1926. The real estate markets generally peaked in 1927, and the construction boom reached its peak a year later. (In any analysis of US real estate markets allowance must always be made for the high degree of regional heterogeneity.) Most of this had happened before the late deliberate raising of rates by the Federal Reserve to counter

stock market speculation. The stock market peak (October 1929) came well beyond these other peaks.

Indeed the whole experience is a cautionary tale for economists who believe that the way forward for monetary frameworks is for central banks to continue targeting price level stability or inflation over the 'medium term' (meaning around two years) whilst being 'ready' to discretionarily tighten policy (beyond the requirement of price level stability) if there are evident signs of asset and credit markets forming. By the time those signs were evident to the policymakers in the late 1920s, many parts of the credit and asset universe were already at or near their peak temperatures and most if not all of the malinvestment to match had already taken place.

Friedman and Schwartz suggest that if Benjamin Strong had still been alive in the final phase of the stock market bubble (from late 1928 onwards), he would have had better judgement than to tighten at that point, given the likelihood that endogenous forces (from within the bubble) would bring about a burst and that discretionary action could only make the inevitable bust worse. Perhaps; but they do not address square-on the long list of criticisms relating to earlier monetary misjudgements of Strong as related by the Austrian school economists (in particular Hayek, 2008; Robbins, 2007; Rothbard, 1972).

The backdrop to the credit bubble in the USA was the Federal Reserve targeting a low level of nominal interest rates in the money markets (despite strong growth and technological revolution), taking its cue from stable wholesale prices and influenced by the fashionable doctrine from Irving Fisher (1919) that monetary policy should be aimed at price level stability (implicitly defined over the medium term, meaning a few years). That was a departure from what would have occurred under the traditional gold standard. Under that regime long-maturity interest rates and the long-term average of volatile short-term interest rates throughout the gold bloc would have been higher and the price level in the USA would have been falling gently, reflecting big rises in productivity generated by the technological revolution. The interest rate policy of Benjamin Strong was also at odds with what would have occurred under a hypothetical regime of floating exchange rates and independent monetary policies around the globe, in which the Federal Reserve was pursuing monetary stability in its broad sense.

Benjamin Strong fuels credit bubble in the Weimar Republic

One aspect of the low interest rate policy practised by the Federal Reserve at this time (the early and mid-1920s) was its attempt to encourage (as during the period of neutrality) a rapid growth of New York as a financial centre and in particular business in international acceptances (many of which were now issued in trade with Europe and in particular with

Germany). Rothbard (1972) makes the cynical suggestion that the New York Federal Reserve's big support (via rediscounting and other liquidity operations which kept rates low and stable) of the foreign acceptance market may have been in line with the contemporary business interests of Paul Warburg.

Though Paul Warburg had resigned from the Federal Reserve Board in 1918, stung by President Wilson's delay in putting him forward for reappointment in view of congressional attacks on his German connections (see Ferguson, 2010) – including the high-up position of a brother in the German secret service – he continued to exert considerable influence (as its 'father') within that institution. He had now become head of the International Acceptance Council and chairman of the International Acceptance Bank of New York (an increasingly high proportion of business in acceptance paper in the New York markets was related to Germany). Warburg's support for the New York Fed's 'subsidization' of the trade acceptance market was also consistent with his long-held view that an overriding US foreign policy objective in terms of global peace should be a rebuilding of war-crippled central Europe and that this also made good economic sense.

Paul Warburg did not succumb to the irrational exuberance found in the USA with respect to investment in Germany, as generated under the glow of growing monetary disequilibrium created by the Federal Reserve, even though eventually the descent of the Weimar Republic into the economic and political abyss was to cost him dearly. When the Fed's monetary virus gets into the software determining market prices, high-yielding foreign asset markets, lit up by a speculative hypothesis which US investors accept uncritically, are vulnerable to the fever of irrational exuberance. That is a large part of the story of the US lending boom to Germany in the mid-1920s. US investors (including banks), in the climate of low interest rates and much apparent speculative opportunity, became attracted to the high yields and capital gains apparently available in Germany (with much froth there in turn stemming from the fact that interest rates on the Reichsmark, now pegged to the US dollar, were below the neutral level applicable to an economy enjoying a delayed reconstruction boom whilst also experiencing rapid growth in public spending).

Ferguson (2010) relates how Paul Warburg's nephew, Sigmund Warburg, working in the USA during the mid-1920s, wrote (in 1927) that he 'was well aware that American confidence in Germany was in part a function of ignorance. In New York I had been struck by how remarkably optimistic people were about the German currency; there was no real appreciation of the economy's underlying weaknesses. As I saw when back in Germany the tax burdens had grown so enormous that an accumulation of capital and thus of new means of production had become practically impossible; businessmen thought they were lucky if they could keep their heads just above water'.

Ironically Benjamin Strong was now the conservative force within the Federal Reserve advising caution with respect to rediscounting of these acceptances – quite a difference from his stance during the period of neutrality, when he had been the leading advocate of liberal treatment of risks related to the booming business in credits for the Entente Powers. The boom in US lending abroad, especially to Germany, promoted in part by the New York Federal Reserve's operations in the acceptance market as described but also more generally by overeasy monetary conditions, all fitted together with the contemporary undervaluation of the US dollar, in which Strong had played such a large role to bring about via his negotiations with the Bank of England Governor Norman (see Ahamed, 2009).

In fact we could say that the huge US trade surpluses, US foreign lending boom, undervalued dollar and high US private savings (especially retained income in the corporate sector where profits were bulging) were all part of the picture of global economic disequilibrium. The main counterparts outside the USA in this disequilibrium were Britain (in that the restoration of the pre-war US dollar-to-sterling parity meant that the British price level should have fallen substantially relative to the US price level, but the British authorities stood in the way of automatic monetary mechanisms operating in that direction) and Germany (the recipient of much of the foreign lending from the USA and by 1926–7 'enjoying' an almighty credit and real estate boom).

It is difficult in the case of Germany to argue whether or not the mark was fundamentally overvalued from a long-run perspective against the dollar at this time. The exchange rate between the mark and dollar had been fixed (first, informally, in November 1923) at the end of the hyperinflation, when there was really no domestic price level (all prices virtually were quoted in dollars in Germany at that point). But the flood of US loans into Germany (the international dimension of the US credit bubble) under the regime of a fixed dollar-to-mark rate (as established formally by the Dawes Plan of 1924) did contribute directly to monetary disequilibrium inside Germany, where a credit and real estate bubble formed. Real estate prices in Berlin multiplied by several times in five years amongst a frenzied nationwide construction boom. The only monetary recipe for that, on the German side, would have been a suspension of the fixed exchange rate, allowing the mark to float temporarily to a higher level and mark interest rates to rise sharply. But that was unthinkable under the regime established (where any break of the dollar parity would have been viewed as increasing danger of hyperinflation return and in any case was not consistent with Germany's international treaty commitments).

Instead, Reichsbank President Hjalmar Schacht (later to become infamous for his role in the Nazi regime), becoming alarmed at the extent of domestic bubble characteristics, took draconian direct action to cool speculation on the equity market in 1927 – a clumsy set of regulatory actions which many

contemporary and subsequent critics have blamed for adding to the turbulence of Germany's path into its subsequent bubble-bursting phase and deep recession. (The German economy business cycle reached its peak in winter 1928–9. This was well ahead of the US peak in summer 1929.) Growing suspicions about the insolvency of Germany's financial institutions in the aftermath of the bubble were to play a key role in the flight of capital out of Germany in 1929–31, deepening the economic downturn and adding fuel to the forces of political extremism there.

Consider the counterfactual case of how the German economy would have evolved in a hypothetical situation of US monetary stability (rather than Fed-induced instability) through those years. US money rates, say, would have been 2 to 3 percentage points higher. Sterling could not have returned to gold at its pre-war parity in 1925 (as the near-recessionary British economy could not have borne – in the then political climate – much higher interest rates). Speculative temperatures would have risen less (if at all) in Germany (where interest rates would have been higher in line with the USA). The business cycle in Germany, as globally, would have been much less violent with plausibly less adverse domestic political consequences. US and other foreign banks (including those in Holland and Britain) would have been running up less dubious loans to a German bubble economy – later to trigger a crisis in the international banking system.

A revisionist tale of Federal Reserve blunders in the Great Depression

In their monetary history of the USA, Friedman and Schwartz suggest that the Federal Reserve could have taken various actions to ameliorate the violence of the economic downturn through the period 1930–3. The analysis is in terms of the USA but can be extended to global consequences.

Their starting criticism relates to the failure of the Federal Reserve to act forcefully during the first banking crisis of late 1930, which they suggest was primarily a liquidity rather than solvency crisis stemming from a crop of bank suspensions in the farming states (and spreading to the failure of the Bank of the United States in December 1930, which in fact the authors suggest should have been salvaged and would have been under the pre-Federal Reserve System).

Their second of several criticisms relates to the Federal Reserve's failure to aggressively expand the monetary base during 1931–2 (other than a brief episode of high-volume open-market operations in spring 1932) so as to prevent a shrinking of the wider money supply. The authors suggest that the monetary policy paralysis was in part due to a shift of power from New York to Washington. Whereas Benjamin Strong had boosted monetary base aggressively following the severe recession of 1920–1 (see above) – too

aggressively according to Austrian school critics, such as Rothbard, who cite this as leading eventually to asset market inflation – no such action recurred in the Great Depression, due to the political battle for control between the Board in Washington and the New York Fed, as Benjamin Strong had died in 1928. And critically there was the savage monetary response (tightening) of autumn 1931 to the loss of gold in the wake of Germany's insolvency crisis and the UK's beggar-your-neighbour devaluation of sterling.

Yet there may well have been key factors (not mentioned in the Friedman and Schwartz history) beyond politics within the Federal Reserve and monetary base growth patterns to account for the differences between 1921–2 (strong economic recovery from great recession coupled with rebound of money supply and monetary base) and 1931–2. In the earlier episode (1921–2) a severe price fall had taken place in a very short time (during 1920). That fall, when coupled with expectations of a rebound of prices in the subsequent cyclical upturn (as had always occurred in previous cyclical history under the gold standard), helped to generate spending. With increased spending and economic activity came increased demand for bank loans and bank deposits.

This was not the situation in 1931–2. The Hoover Administration joined with business leaders and unions in an effort to hold up wages so as to 'prevent a fall in general purchasing power' (see Shlaes, 2007). The decline in prices, though large over the period as a whole (1929Q4–33Q1), was not as concentrated in time as in 1920. When Britain left the gold standard in September 1931, the Federal Reserve responded swiftly to a drain of gold (as investors sought safety against a possible break of the dollar with gold) by raising interest rates sharply, even though there was no immediate lack of 'free gold'. Federal Reserve notes still had ample gold backing relative to the minimum legal requirement – which in any case could have been suspended temporarily in an emergency according to the present law and lowered on a longer-term basis if the Federal Reserve had requested Congress to do so (see Meltzer, 2003; Butkiewicz, 2007). Researchers find that Federal Reserve President Meyer was particularly (and excessively) sensitive to warnings from Paris (Bank of France Governor Moret) about a potential flight out of the dollar and crash of the 'global monetary order'.

The failure of the Federal Reserve to stick to a policy of steady expansion of the monetary base during the autumn of 1931, coupled with the general state of anxiety about gold drains (and ultimately about a further seizing up of the 'global monetary system'), surely meant that the normal (as when the international gold standard had been well functioning) contracyclical mechanism of positive price level expectations (whereby a recovery of prices from the present low level in the depths of recession would have meant that low positive nominal interest rates would have translated into negative real rates) would have been in suspense. In fact, in the broken-down monetary framework of 1931, expectations may well have been widespread of much

further price falls to come, meaning that real rates would be abnormally high.

Whereas by 1922 growing evidence of a technology revolution was helping to stimulate the equity market (one factor was investment demand from Europe) and lead business spending forward, in late 1931 there were instead the grave new recessionary influences of Germany's descent into the economic and political abyss (especially following the banking freeze-up of July 1931, which led to a standstill on German debts) and sterling's devaluation. The importance of Germany, the second largest economy in the world, plunging into autarky, political extremism and economic downfall cannot be exaggerated as a factor stalling any natural rebound of the USA (where the banks had huge exposures to German loans and paper) or other economies. With risk-free rates (as for example T-bill rates) already stuck at zero in nominal terms, any action by the Federal Reserve to flood the monetary base (bringing about a sudden expansion) would not have quickly percolated to wider money growth or economic recovery. The price level would have to fall to a low level, from which expectations of a rebound eventually would be strong, meaning that real risk-free interest could be very negative even though nominal rates were still positive.

The suspension of the dollar's link to gold in March 1933 by the incoming Roosevelt Administration and subsequent direct action to lower the value of the dollar against the remaining gold bloc currencies (especially the French franc), with gold inflows into the USA then being monetized and so contributing to rapid monetary base growth, played a role in restoring confidence in price level recovery from depressed lows; correspondingly, real interest rates plunged into negative territory. (This is not to say that the dollar devaluation was essential to this purpose. As we shall argue in a subsequent chapter [see p. 104], a commitment to increase the monetary base at a steady gradual pace would also have nurtured expectations of a long-term price level recovery, but this could all have taken time in the extreme disequilibrium conditions of 1932.)

It was the turn in the global tide of capital towards the USA (in hope of economic recovery and away from risks of the gold bloc disintegrating) which caused the monetary base growth in the USA to accelerate (given the operating rule whereby gold purchases by the US Treasury to stabilize the gold price at its new official level of $35 – equivalent in principle to stabilizing the dollar against the French franc and other gold bloc currencies at the fixed exchange rate as derived from each money's gold parity – were monetized by the Federal Reserve). The explosion of the monetary base fuelled massive excess reserves in the US banking system, as banks (and their shareholders) crippled by the bursting of the credit bubble and depression had only a gradually rising appetite for new high-risk loans even at margins which superficially might have been attractive compared to previous norms.

Towards the asset price inflation of 1936–7 and the inevitable Roosevelt recession

From March 1933 to the business cycle peak of May 1937, money stock grew by 50 per cent, whereas the monetary base grew by 60 per cent. The growing 'excess reserve problem' preoccupied Federal Reserve officials, the fear being that this would trigger an inflation beyond the benign cyclical recovery of prices from the Depression low point. For example, in 1935, propelled by gold inflows, the monetary base rose at an 18 per cent annual rate for the first three quarters and at a 25 per cent per annum rate in the fourth quarter. Excess reserves tripled during that same period (Meltzer, 2003). Correspondingly, in 1936 and early 1937 the equity market and commodity markets boomed (an index of primary product prices monitored by the BIS rising by 50 per cent between mid-1936 and March 1937; US equity prices more than doubled between spring 1935 and early 1937).

This pattern of rapid monetary base growth, short-term rates pinned at zero and an explosion in commodity and equity prices could be viewed as asset price inflation – a symptom of severe monetary disequilibrium (which almost certainly started some considerable time before). In fact, officials within the Federal Reserve were concerned only with the metric of goods and services price inflation, and some confused the continuing cyclical rise in the price level from its Depression lows with actual monetary inflation. Others confused asset price inflation in the form of a commodity bubble with goods and services price inflation. In any case, in the summer of 1936 the Federal Reserve initiated a first rise in reserve requirements towards reducing excess reserves, but the effectiveness of that step is dubious, especially given that by the end of the year short-term and long-term government bond yields were pinned at record low levels and the temperature continued to rise in stock and commodity markets.

Then in early 1937 (on 1 March and 1 May) came two further increases in reserve requirements. Friedman in particular judges this sudden tightening step crucially responsible for the severe recession which started in May 1937. This recession, more precipitous at first than the one starting in 1929, was led by a 40% stock market fall from May to November (1937).

Friedman's account of how the Federal Reserve precipitated the recession of 1937–8 begs two issues. First, was the real problem not the monetary instability which the Federal Reserve fostered through 1935–6 by generating a massive increase in monetary base (matching gold inflows) and pinning short-term rates at zero? The speculative temperature rise in commodity and equity markets was a consequence. If the Federal Reserve had not created so much excess (reserves) to start with and had allowed market forces to drive up interest rates sooner, there may not have been the sequence of asset price inflation followed by asset price deflation which culminated in such a steep fall of the economy. There would have been no bubble in the

commodity and equity markets to puncture. Arguably the build-up of irrational exuberance caused economic growth to be substantially faster than otherwise in 1936, but the sequel of asset price deflation contributed to the severity of the subsequent slowdown.

Second, investors had ignored or underestimated several ominous developments when subject to irrational exuberance through 1936 and early 1937. In particular, geopolitical risk was rising (the remilitarization of the Rhineland, Japan's military assault on China); the break-up of the gold bloc in summer 1936 went along with a sudden rise of the US dollar, in itself likely to cause some fall in expectations regarding the future price level in the USA (and thereby real interest rates becoming less negative). All of this surely could bring a sharp decline in the equity market as speculative temperatures fell back from their previous monetarily induced highs. In turn the crash fortified the recession.

A new global dollar standard (1953–71) and still no US monetary stability

The failure of officials within the Federal Reserve – or of the congressional committees which oversee it and most mainstream economists outside – to adopt a concept of monetary stability, one which meant more than stable prices or low inflation as measured over periods of a few years, has continued almost without intermission into modern times. In fact during the Second World War – both during the period of US neutrality to the end of 1941 and beyond – and its immediate aftermath, the Federal Reserve was not pursuing monetary stability under any guise but became subservient to the US Treasury in carrying out the policy of pegging government bond prices (so as to keep long-term yields in nominal terms at around 2.5 per cent), never mind the consequences in terms of inflation. In 1946–7 – in total contrast to the period after the First World War, when in late 1919 Benjamin Strong (albeit belatedly) sharply tightened policy with the objective of reversing the rise in the price level during the first year of peace – the Federal Reserve pursued a policy of monetary inflation without interruption. This post-war policy went well beyond allowing suppressed inflation to come to the surface as wartime rationing ended. The Federal Reserve, under the tutelage of the US Treasury, was still pegging short- and long-term interest rates at 1 per cent and 2.5 per cent, respectively, in 1947, despite an annualized rate of inflation rising above 10 per cent per annum.

The return of active monetary policy (independence from the Treasury came with the accord of March 1951 but unofficial support for the bond market continued for a further two years) came fully by early 1953. William McChesney Martin, the Federal Reserve's newly appointed chairman (he held the office from April 1951 to January 1970) was intent on following

'independence within government' (Meltzer, 2009a). As in the period of Federal Reserve independence before the war, there was no broad, guiding concept of monetary stability. There were some new legal benchmarks, however, for Federal Reserve policy.

First, there was the pivotal role of the USA in the international dollar standard, as established by the Bretton Woods Treaty (to which the USA was a signatory; it was ratified subsequently by the US Senate). Second, Congress, taking its cue from Keynesian economics, had passed the Employment Act (1946), which exhorted the Federal government and its agencies (including the Federal Reserve) to pursue 'maximum employment, production and purchasing power' through cooperation with private enterprise. This act was superseded by the Humphrey-Hawkins Full Employment Act (1978), which established the much quoted 'dual mandate', whereby the Federal Reserve was to 'promote effectively the goals of maximum employment, stable prices and moderate long-term interest rates'.

The congressional acts could not be seen as prescribing or promoting any vision of monetary stability in its broad sense (as defined above in line with the J. S. Mill concept of money not becoming the monkey wrench in the machinery of the economy – see p. 3). The obviously Keynesian background thinking behind legal texts might have made problems for any Federal Reserve Board fully determined to follow the J. S. Mill concept, in that this is consistent with a considerable short- and medium-term fluctuation of the price level whilst eschewing altogether fine-tuning in response to an immediate business cycle outlook. Yet it would be naive to suppose that a charismatic and articulate Federal Reserve chair fully steeped in the classical monetary tradition could not have wound a way around clumsy legal texts in conversations with Congress.

In any case, as Meltzer points out, the Federal Reserve faced an inherent contradiction in following both the Bretton Woods Treaty and the Employment Act. Essentially under the international dollar standard (as established by the treaty) countries pegged their currency to the US dollar on the (implicit) understanding that the USA would run a monetary policy such that on (weighted) average across the dollar bloc, there would be virtually price level stability (interpreted implicitly over a period of many years but not as long as under the gold standard). The treaty commitment of the USA to convert dollars into gold for the accounts of any non-residents at the official price of $35 per ounce was surely meant to bolster confidence globally in the Federal Reserve, following policies to match. For if the dollar bloc average price level (in dollars) rose even very gradually, then the sustainability of the $35 price would come into question.

If the Federal Reserve had pursued policies strictly in line with the US treaty obligation (as described) and also with monetary stability inside the USA, then during the 1960s and 1970s there should have been some periods

of overall price level decline. The price levels of Japan and of those big countries in Europe which were growing much more rapidly than the USA (with particularly high rates of productivity increase in their export sectors) would have tended to rise (in dollar terms) relative to that in the USA consistent with overall equilibrium in the international economy. (This equilibrium tendency is in line with the famous Balassa-Samuelson hypothesis, which states that rapidly growing economies characterized by productivity rising relatively fast in the traded-goods sector experience a real appreciation of their currency.) Hence with broad stability of prices across the dollar bloc, the US price level should have drifted downwards.

In any case, according to the broad concept of monetary stability, a period of especially high productivity growth (relative to the long-run historical trend), such as what the USA enjoyed in the 1950s and 1960s, should have been characterized by the price level falling to some extent (so-called good deflation). Such price declines during a decade-long spurt of productivity growth would balance a subsequent price level increase during a less favourable decade and still be consistent with price level stability in the very long run (defined over several decades). The spurt of productivity growth puts some downward pressure on the path of prices (all the more so where these are measured so as to take account of improvements in product quality). If the central bank tried to resist this price level decline by monetary stimulus, it could trigger speculative temperature rises in asset and credit markets. That is what happened during the 1920s. The danger was present during the mid and late 1950s and onwards into the early 1960s. With the policies of the Martin Federal Reserve, as we shall see, this danger materialized.

According to the historical accounts (see Meltzer, 2009a), Federal Reserve Chairman Martin had no grand vision of monetary stability at all. Before being appointed to the chair of the Federal Reserve in 1951 by President Truman, his career had included episodes as a top securities regulator, as President of the Export–Import Bank and as top monetary official in the Treasury under the Truman Administration. Meltzer describes Martin as having an intuitive and practical sense to 'lean against the wind'. This meant tightening monetary policy when inflation rose or a balance of payments crisis threatened (meaning a loss of gold). As Martin put it, the art of the central banker was to take away the punchbowl just when the party was going well. It is not evident at all that Martin was referring here to asset markets.

Some contemporaries, including notably Richard Nixon (following his defeat by John Kennedy in the 1960 presidential election), pointed the finger at Martin for his responsibility in generating a stop-go mode for the US economy, marked by three serious cyclical downturns in the 1950s. In turn the stop-go experience brought to the fore the Keynesian populists who surrounded the new President (Kennedy) and promised that, by fiscal and monetary fine-tuning and by accepting a 'modest pace of inflation',

they could avoid the stops and raise the overall level of employment and well-being. There was no preacher yet for the alternative view – that the problem of repeated sharp recessions through the 1950s was the absence of a monetary framework based on a comprehensive concept of monetary stability rather than seat-of-the-pants judgements by the Fed Chair about when to take away the punchbowl. According to this alternative view Martin erred by stimulating a low average inflation rate during a period of rapid productivity growth, a practice inconsistent with internal or external monetary stability. Indeed Arthur Burns, as a contemporary critic in his book 'Prosperity without Inflation' (1957), came nearest to that viewpoint in attacking the Martin Fed for permitting inflation, arguing instead for price level stability.

Martin, who had been closely aligned with the Democrats when ascending the ladder in Washington, was ready to work within the climate of the new economics embraced by the Kennedy and Johnson administrations, lacking any clear intellectual or ideological basis on which to challenge the proposition that unemployment could be reduced by raising the overall pressure of demand (albeit meaning a somewhat higher average inflation rate). Martin saw the Federal Reserve as still playing a role in government financing; under the new economics, Federal budget deficits started to widen. With the passage of time Martin found himself surrounded by a growing number of Keynesian economists at the board table, as these were appointed in turn by President Johnson. As the government deficits expanded further under the influence of the Vietnam War and new social programmes, Martin delayed 'aggressive' action on the promise that a tax rise would soon be implemented. When the tax rise was finally introduced, its temporary nature contributed towards its having much less effect on demand pressures than had been forecast. Belated efforts by the Martin Fed to tighten policy in the midst of the war brought a public rebuke from President Johnson.

Eventually the Federal Reserve went ahead with fairly aggressive tightening (less than Martin imagined because of his failure to distinguish nominal interest rates from real interest rates; see Meltzer), with the Federal funds rate reaching almost 10 per cent in summer/autumn 1969. Boom gave way to recession starting at the end of 1969, taking the prevailing Keynesian optimists by surprise. As Martin hung up his coat in early 1970, he admitted failure in that inflation had risen so far (with CPI inflation peaking at over 5 per cent; see Meltzer, 2009a).

The Martin-Burns Federal Reserve destroys the global dollar standard

The history books do not suggest that Martin thought overmuch about the international dimension of the Federal Reserve's failure. Already in the early

to mid years (the late 1950s and the start of the 60s) of his reign, there was a first fracture in the international dollar standard, culminating in Germany's revaluing the mark. The miracle of Germany's economic renaissance through the 1950s had spawned an export boom and huge trade surplus. Arguably if the price level had been trending down in the USA to a slight extent, German policymakers might have put up with some mild degree of inflation for the sake of external stability of the Deutschemark. But given the cumulative rise in the US price level, the choice was between an uncomfortably high rate of inflation in Germany coupled with external stability of the mark or a revaluation of the currency together with a greater degree of internal stability (less inflation). The German government opted in March 1961 for a revaluation of the Deutschemark.

Japan, by contrast, also experiencing an economic miracle (which continued throughout the 1960s, unlike Germany's miracle, which faded earlier), opted for less internal stability, with its price level rising persistently and significantly faster than in the USA through the first half of the 1960s (see Brown, 2002). As the US inflation rate accelerated through the second half of the 1960s, Japanese inflation rose partly in step; that is, the real value of the yen against the dollar continued to appreciate but more slowly. Germany was not ready to follow this path – external stability matched by accelerated internal depreciation – and so in 1969 there was a further revaluation of the Deutschemark. Then, as Arthur Burns, Martin's successor at the helm of the Federal Reserve, unleashed a bigger-than-ever inflationary storm, Germany again buckled in May 1971 and floated the DM, thus effectively leaving the international dollar standard.

However, we are jumping ahead in the historical narrative. Another theme playing out in international monetary dialogue through the 1960s, prompted in part by the course of US inflation (upwards), was possible revision in the role of gold. France in particular was pushing for a revaluation of gold (in terms of the dollar and all currencies pegged to the dollar) and for gold to have an enhanced monetary role (which was never spelt out but seemed to mean that countries would hold a larger share of their reserves in gold and less in dollars). In turn, the IMF, led for much of the period by French chiefs, took its cue from the academic discussion about the non-sustainability of the present official gold price in view of dollar inflation and rapid rise of dollar incomes (in aggregate) around the world. IMF reserves of liquidity, much of which was in gold, were falling behind global real incomes, and as a consequence the IMF became a constant critic of the insufficiency of international reserves. All such concerns stoked considerable flows of speculative funds out of dollars into gold. In 1968 the gold price had been set free in response to such pressures except in respect of official transactions between the central banks. In August 1971, when the French and some other European governments stepped up their demand for gold from the USA, the Nixon Administration closed the gold window, signifying that all transactions now took place at the free rate.

The gold issue and the tensions in the gold market were a sideshow to the main drama in the currency markets. This drama stemmed from the growing monetary disequilibrium created by the Federal Reserve. It is possible that the gold price could have been set completely free (the official market closed) and the international dollar standard sustained if the USA had belatedly been willing to conduct a monetary policy such that Germany and Japan in particular would no longer have to accept inflation rates well beyond their own domestic political tolerance. In Japan that political tolerance was higher than in Germany. Yet in view of the underlying upward pressures on the equilibrium real exchange rate of the yen from the continuing Japanese export miracle, the required premium of Japanese inflation above already high US inflation was especially large. Understandably the Japanese government was reluctant to now embrace a higher inflation rate than what had been accepted as normal up until the mid-1960s.

The arrival of Arthur Burns at the head of the Fed (in early 1970), with instructions from President Nixon to pave the way for his re-election by overcoming the present recession, spread the final curse over the international dollar standard. The aggressively easy monetary policy pursued by Burns, despite inflation having barely fallen from the level at the peak of the previous boom, terrified the Bundesbank. A fixed dollar-to-mark rate meant that floods of money entered Germany; these were intensified by a speculative inflow in anticipation that the Deutschemark would indeed be set free to float, as occurred in May 1971.

At the fateful Camp David Summit of early August 1971, President Nixon and his assembled senior officials (including Treasury Secretary John Connolly and the Treasury Undersecretary in charge of international affairs, Paul Volcker) decided to launch an attack on Japan's trade surplus, seeing this issue as critical in gaining enhanced voter support. But rather than open a direct bilateral trade and currency war on Japan, which would have jarred with international treaty commitments and the spirit of free trade, the Nixon Administration struck on the idea of calling for a general renegotiation of exchange rate parities around the world against the dollar, of which the biggest would be for the yen. Meanwhile a stick was to be used – a temporary surcharge to be levied on imports into the USA – until a set of exchange rate parities acceptable to Washington had been negotiated.

In sum, if the Burns Fed had been ready to commit itself to less inflationary monetary policies, the dollar standard could have continued, subject to an agreed economic programme between Japan and the USA, which would have involved Tokyo opening up its markets more fully to imports and committing itself to monetizing the inflow of funds into Japan through the trade surplus (and so giving rise to a steady further real appreciation of the yen). Instead, in the aftermath of the brief Smithsonian 'fix' of December 1971 (fixed exchange rates re-established at revalued parities – and with wider bands of permitted fluctuation – between the US dollar and the other major currencies), US monetary disequilibrium increased until

Germany, Switzerland and Japan all finally floated free of the dollar in early spring 1973.

In Germany and Switzerland the exodus from the international dollar standard was coupled with the launching of a new monetary order in these two countries described as 'monetary base control'. This was the start of the First Monetarist Revolution, explained in Chapter 4. In the USA, grave monetary disorder was to continue for several years more before a short period of temporary remission in the early 1980s.

From the Great Asset Price Inflation of 1957–68 to the crashes of 1969 and 1973–4

The big symptom of virtually continuous US monetary disorder, which looms large in mainstream financial histories of the 1960s and 1970s, has been the great inflation (which refers to the prices of goods and services). But alongside and indeed preceding that was a Great Asset Price Inflation. In the seven-year period 1962–9, the S&P 500 rose by around 250 per cent (in fact there had been asset price inflation for some years before then). Earnings yields came down below 6 per cent and stayed there. This was an age of periodic financial scandal – for example, the one surrounding Bernie Cornfeld's mutual stock selling enterprise (see Aliber, 2001). This was the glorious period for the 'nifty fifty' (the 50 blue-chip US stocks which seemed to rise inexorably and formed part of everyone's stock portfolio). The late 1950s to the late 1960s was the age which made the legends of Warren Buffett and the commercial real estate titans.

The abrupt monetary tightening in the dying days of the Martin Fed had brought a near 35 per cent collapse in the US equity market during 1969 and the first half of 1970. But then there had been a rebound to new heights (in nominal dollar terms; hardly at all in real terms) during the monetary explosion of 1971–2 (some 15 per cent in late 1972 above its late 1968 peak). This latest monetary explosion brought asset price inflation in the form of a huge rise of speculative temperature in the commodity markets during 1972–3. The sharp monetary tightening by the Burns Fed during 1973, in its belated struggle to undo vast inflationary disequilibrium, triggered a 50 per cent collapse of equity prices (in nominal terms; substantially larger in real terms) between the end of 1972 and mid-1974. The commodity bubble turned to bust but not before the newly powerful OPEC cartel had taken advantage of the monetary situation to ramp up the oil price further, inflicting an oil shock on the global economy. The stock market crash ranks alongside similar crashes with an origin in previous great monetary disequilibrium, whether 1907, 1929 or 1937 (see p. 24 for a description of the monetary background to the 1907 crash).

After the equity market crash of 1973–4 followed a decade in which there was little evidence of temperature rise in domestic US credit and asset markets, apart from a bubble (and bust) in agricultural land. Instead,

the new giant monetary disequilibrium which the Burns Federal Reserve allowed to form during 1976–8 showed up first in the symptom of a gathering speculative lending boom to the developing countries (most of all in Latin America) and later (alongside) in the symptom of a new run-up of goods and services inflation. Low or even negative real costs of dollar loans to the developing countries offered an apparently painless path to financing huge trade deficits, which had been due in the first place to soaring energy prices and later to domestic spending booms made possible by cheap credit.

Investors around the world, desperate for real returns on their dollar funds (as against the low or negative real rates available on monetary assets) and having suffered already real loss during recent years of high inflation, were willing to plough these into floating rate capital notes issues (some in the form of perpetuities) by the leading money centre banks without asking fundamental questions about what protection they had in the event of the underlying loan portfolios of the banks going bad. In similar mode, equity investors looking for yield and strong earnings growth were captivated by bank stocks whose current reported earnings were booming in reflection of the international lending boom. According to the fashionable hypothesis of this epoch, the recycling of giant cash surpluses from the OPEC countries to governments and state agencies in the non-oil-developing countries was a benign and safe process blessed of the IMF. At the end of the 1970s, however, the OPEC surpluses had virtually evaporated, and yet the lending continued unabated (most of all towards Latin America).

Towards the Volcker credit and asset bubble

The monetary tightening in the early years of the Volcker Fed (1979–82) is legendary. This was the brief period when the First Monetarist Revolution (already noted above in Germany and Switzerland) and its advocated tool, monetary base control, arrived in the USA. Unkind commentators could point out that Paul Volcker, as Undersecretary of the Treasury, had been a main player in generating the great monetary disequilibrium of 1971–3 in that he had led the negotiations with foreign governments leading up to the 'agreed' devaluations of the US dollar in autumn 1971 and spring 1973. Available evidence suggests that he shared the view that the US trade deficit was a 'big problem' to be solved rather than see the key source of disequilibrium as the monetary policy of the Arthur Burns Federal Reserve (see Wells, 1994). Indeed, Volcker had also been one of the designers of the so-called Nixon Shock at Camp David. But he was not the lead player – perhaps just a loyal and able second in command. So analogies with the person who caused the inflationary fire being called in to put the fire out – a feat at which he proved remarkably successful using much skill – fall a little, albeit not very far, wide of the mark.

The word 'little' is used here because the subsequent record of Paul Volcker, from his renouncing of the monetarist revolution in late 1982 (the abandonment of monetary base control, discussed in much greater detail later) onwards, shows scant consideration for wider aspects of monetary stability. His focus was on goods and services inflation. He also kept an eye on the US trade balance as a factor in monetary decision making (a hangover from the Camp David meeting where the Japanese-US trade imbalance was a key factor in the monetary decisions). Volcker was quite comfortable with the Federal Reserve playing its part in implementing strong-arm exchange rate policy, whether the Nixon Shock or the much more polite Plaza Accord (autumn 1985), towards prodding the dollar down so as to reduce an 'unsustainable US trade deficit' (see Federal Reserve transcripts for this period) or the Louvre Accord (of spring 1987, which sought to prevent a further sharp fall of the dollar and stabilize it within its current range). In the job of managing exchange rates, it was all part of the process to get on the phone to the Bundesbank chief to suggest that he should cut interest rates in tandem with a similar move by the Federal Reserve (rather than risk a sharper decline of the dollar).

At least, in retrospect, we could say that the Volcker Fed, in the years following its abandonment of the monetarist revolution, became overconcerned about fine-tuning the economy (as during the extended growth-recession of 1985–6), overimpressed by the short-term path of inflation (as when it dipped far under the weight of crashing oil prices in the mid-1980s), and underimpressed by symptoms of monetary instability in the form of speculative temperature rising in credit and asset markets. And so the Volcker Fed in its late years did not view such phenomena as the junk bond bubble (as pioneered by Michael Milken), the plunge of the US dollar, the global real estate and credit booms (fuelled in considerable part by foreign central banks limiting the rise in their currencies against the dollar), the S&L bubble or the growingly feverish speculation in equity markets as symptomatic of monetary disequilibrium.

Of course, Paul Volcker could argue that central bankers had no special insight into whether bubbles existed or not (the term was not as much in use then as now). Arguably, however, if a strict monetary base control regime had still been in place, where long-term interest rates were freer of influence from the money rate peggers, there would have been less danger of such temperature rises occurring (even if difficult to perceive in their early or intermediate stages). In conversation well after these events, Paul Volcker mentions an interest in Austrian economics as a student (see Volcker, 2001), but the key connection that teachers of that school would make between monetary stability and absence of irrational exuberance in asset or credit markets appears not to have been made by the Volcker Federal Reserve in the mid-1980s.

The monetary instability generated by the Federal Reserve in the mid-1980s (not showing up as higher inflation at first but as an unperceived rising temperature across a range of credit and asset markets) fed directly into the currency markets, bringing a sharp overall decline of the US dollar. The extent of the decline went far beyond anything discussed at the famous (or infamous) Plaza Meeting of September 1985. There the USA had hectored its leading G-7 partners – principally Japan – into direct action to raise the value of their currencies against the dollar. Direct action meant essentially a burst of foreign exchange market intervention and, in the case of Japan, a perverse rise in short-term interest rates. But beyond these immediate fireworks the dollar fell relentlessly throughout 1986 and early 1987, most spectacularly against the yen.

It was in response to this drama in the currency markets – and its potentially crippling impact on the export sector of the Japanese economy – that the Japanese government and central bank took the series of steps which ended up producing a far more grave monetary disequilibrium in Japan than in the USA (see Brown, 2002). These steps included accelerated deregulation of the banking system in Japan and pinning interest rates at far below the neutral level (which had surely risen in consequence of the overall liberalization of the financial system). The Bank of Japan at that time was even further away than the Federal Reserve from grappling with any Austrian concept in which monetary stability included the key dimension of not allowing money to become the monkey wrench in the machinery of the economy via stimulating temperature rises in credit and asset markets. Instead, the Bank of Japan's excessively short-term focus was on just one dimension of monetary stability – inflation – and this was very low under the influence of the superstrong yen and the sharp rise of productivity which accompanied the capital spending boom.

Greenspan heresy fuels bubble and bust in Mexico, Asia –and the USA

The successor to Paul Volcker, appointed by President Reagan in summer 1987, Alan Greenspan, was even more distant than his predecessor from any concept of monetary stability which embraced anything other than the behaviour of inflation. Even though he had been a protégé of Ayn Rand (whose political views were in line with radical laissez-faire) and had written an early article advocating the gold standard, he never demonstrated any awareness of the Austrian school ideas (according to one biographer, he attended, with Ayn Rand, one lecture by von Mises; see Sechrest, 2005). Rather, the Greenspan era brought a throwback to the Arthur Burns era in its concentration on fine-tuning of the business cycle. Like Arthur Burns, Greenspan had an encyclopaedic knowledge of all current indicators about

the state of the economy (plus full access to a huge arena of contacts for assembling anecdotal information).

The composition, however, of the giant monetary disequilibrium which was to develop ultimately under Alan Greenspan was different from that under Arthur Burns (though less different if we also take account of the long asset price inflation, peaking first in 1968, under the Martin Fed, which preceded the Burns Fed). This time it was somewhat more 'Austrian' in nature (asset and credit market temperature rise and fall with all the related cyclical violence and waste) and less dominated by goods and services inflation (which remained fairly low).

In some respects the monetary disequilibrium under Greenspan (like that under the early Martin Fed) was a throwback to the disequilibrium generated by Strong in the 1920s, but the analogies are far from complete. Then as in the mid/late 1990s, there were downward pressures on the price level in consequence of a spurt in productivity growth driven by a technology revolution. These lulled the Federal Reserve into driving market interest rates inadvertently (via its pegging of short-term money rates) well below the neutral level, in consequence generating a sequence of temperature rises in asset and credit markets. (The neutral level is unknown, but market rates, especially in capital markets, are likely to gravitate over time closer towards that level if there occurs no manipulation of interest rates by the central bank and this operates within a stable monetary order. In the 1990s the temperature rise occurred principally in the 'new economy' sector of the equity market; malinvestment later became apparent especially in telecommunications.) There was not, as yet, within the USA a broader credit and real estate bubble such as developed in the 1920s, though there was already some degree of temperature rise in some credit markets, including loans to the telecommunications sector. This culminated in some notorious bankruptcies at the end of the 1990s and beginning of the 2000s, including WorldCom, Global Crossing and Enron.

Correspondingly, the global implications of monetary disequilibrium during the 1990s in the USA were less disturbing overall than they had been in the more severe situation of the 1920s. Yet it is plausible that the below-neutral level of rates in the USA, stemming from money interest rate manipulation (within the context of overall monetary disequilibrium), played a significant role in the germination of, first, the Mexico bubble and bust (1992–5) and, second, the South and South East Asian credit and asset bubbles, which finally burst in summer 1997. As regards Mexico, the Greenspan Fed's manipulation of short- and medium-term interest rates through 1992–3, so as to promote faster recovery out of the bust of the Volcker bubble, in turn powered a wave of irrational exuberance into high-yielding Mexican bonds at a time when there was much excitement about Mexico's economic renaissance. As regards the South East Asian bubble and bust, with many of the economies there part of an

Asian dollar bloc, below-neutral rates in the USA would very likely put them into disequilibrium, too, unless their investment opportunities were limited and their excess savings flowed into hotter territory elsewhere.

In fact this was a period (the mid-1990s) when the prospects for the Tiger and Cub economies in the region had improved suddenly, in part related to the simultaneous huge appreciation of the Japanese yen but also to the rapid globalization of production processes made possible in part by the IT revolution. Several of those economies were also becoming key parts of the production chain in the manufacture of IT hardware and software. The neutral level of interest rates in the Tiger and Cub economies was at this time arguably higher than in the USA (though that judgement has to be qualified by recognition of the high savings propensity in those countries).

The great monetary disequilibrium which developed under the Greenspan Federal Reserve beyond the recession of 2001 (which followed the NASDAQ bubble's burst) and particularly during 2003–5 was driven by extraordinary impatience with the potentially slow recovery process from the excesses of the IT spending boom. It would take time for the combination of entrepreneurship, discovery of new opportunities in whatever form to make profit, relative price and wage adjustment, new technology and risk appetite of investors to reroute the US economy onto a new path to prosperity. The newly arrived (2002) Governor in the FOMC from Princeton University, Ben Bernanke, had an extraordinary influence on policymaking through raising the spectre of potential 'deflation' and a Japanese-style 'lost decade'.

The misdiagnosis and impatience of the Federal Reserve during those years is examined in later chapters. The key point for development of monetary disequilibrium was that the Greenspan Fed cut rates in early 2003 to the then extraordinarily low level of 1 per cent per annum and then only started to raise them at a glacial pace after an almost two-year lag despite a powerful growth cycle upturn under way. Its heralding of only a glacial pace of short-term rate rises ahead meant that it exerted a large influence on longer-term interest rates; thus these were manipulated in effect far below-neutral level.

How the Fed failed to spot the symptoms of monetary disequilibrium (2003–6)

Monetary disequilibrium does not inevitably produce immediate symptoms; when these do begin to appear, there may be much uncertainty for a prolonged period about their seriousness. By the time that a reasonably confident diagnosis can be made, the economy may be well off the track of sustainable healthy growth. This is all especially relevant to the situation where the symptoms are mainly in the form of an asset and credit market

temperature rise, about which there is much more subjectivity in appraisal than in the simpler case of goods and services price inflation.

In this episode (2003–6), monetary disequilibrium showed up first in the suspected symptom of a rise in the real estate and credit market temperature. The Federal Reserve was sceptical of market commentaries warning about this symptom. With the high amount of excess capacity, high unemployment and the continuing productivity bonus from a wider exploitation of already installed IT equipment, there was no accompanying symptom in the form of an acceleration in goods and services inflation. By the time any Fed official could be tentatively confident in diagnosing asset price inflation, much malinvestment in the economy (capital and labour pouring into bubble sectors with no long-run future) had already taken place. The lost decade ultimately became apparent through the rear-view mirror.

In tracking the global implications of the monetary disequilibrium created by the Greenspan Federal Reserve in the years 2003–6, we have to realize that leading central banks in Europe were treading similar paths of disequilibrium, partly out of identical concern about perils of 'Japanese-style deflation' and partly due to anxiety about their currencies rising against the weak US dollar. Investors outside the USA, in many cases out of desperation at low rates and awed by various speculative opportunities, poured funds (sometimes on a currency-hedged basis) into the warming US asset and credit markets. Markets in the equities of European banks were hot; they applauded the apparently high returns which these banks could make from their participation in the 'dynamic and innovatory' US credit markets, alongside their aggressive strategies in the newly integrated European credit markets and elsewhere.

As in some past episodes, monetary disequilibrium in the USA also prompted US investors and banks in particular to become leading participants in simultaneously produced high-temperature asset and credit markets abroad. But this time there was some considerable degree of circularity. For example, US investors seeking higher yields poured capital into US money market funds, which in turn were putting a large share of their liquidity into high-yielding dollar loans (on a secured basis against collateral of so-called triple-A assets) to European financial institutions, which in turn on-lent this either to emerging market countries in eastern Europe and East Asia or back into the US mortgage and leveraged corporate credit market.

East Asia did not cause the global credit bubble!

The US economic boom of late 2003 to mid-2006 went along with soaring US demand for imports from East Asia, especially China. The Chinese corporate sector ploughed huge amounts of savings out of ballooning export revenues into state banking institutions, and the government in turn ploughed them into US Treasuries or agency bonds. Insofar as the

Asian governments bought agencies (as issued by the federally sponsored housing finance corporations), they were tangentially participating in the US bubble (it was by no means certain that the US Federal Government fully guaranteed agencies, though this turned out to be the case in hindsight when the Bush Administration subsequently assumed responsibility for their liabilities).

Listening to the stream of apologies from Federal Reserve officials in the years that followed the bubble and bust, one dominant theme is that the curse of the global economy was East Asian savers, not disequilibrium monetary policies pursued in the USA, Europe and Japan. Alan Greenspan and Ben Bernanke have repeatedly laid the blame at the door of ultralow interest rates (especially long-term) induced by high East Asian savings, in that these encouraged wild speculation in real estate markets and imprudent lending. This strand in the blame game fails to make the key distinction between interest rates which are ultralow but in line with an ultralow neutral level and interest rates which are ultralow but significantly under neutral levels.

The first situation (actual rates and neutral rates both very low) cannot be the source of a mega credit bubble within a stable monetary order, although they may spawn some degree of irrational exuberance (see Chapter 1, p. 7). Yes, Greenspan and Bernanke might have a point that the Asian savings surplus depressed the average global level of neutral risk-free interest rates in real terms by even as much as 50 basis points – allowing for the risk aversion of the official Asian savers – and some investors globally may have responded irrationally by choosing to wear rose-coloured spectacles which magnified expected yields on some risky assets whilst filtering the rays from possible dangers. But the outbreak of such irrationality in a well-functioning monetary framework would have endogenously produced self-correcting forces in the form of a transitory rise of interest rates – especially long-term rates – to an above-neutral level as demand for capital rose in line with the (falsely) apparent new prosperity and opportunity. This would have occurred well before speculative fever reached a dangerous point in various key credit and asset markets. Instead, the obsessive money interest rate–pegging and inflation-targeting practices of the Federal Reserve prevented those self-correcting forces from emerging.

The Federal Reserve did eventually take more vigorous policy action when the second symptom of monetary disequilibrium, goods and services inflation, became troublesome in the mid-2000s. By that time endogenous forces that would turn the asset and credit market inflation into deflation were already strengthening, but the Fed continued to attack goods and services inflation, even though this could be seen as a lagging symptom of past rather than present monetary excess. A fantastic rise in oil prices through early 2008 meant that the Federal Reserve was remarkably slow in easing policy, even though there had already been a series of credit market quakes.

In fact, monetary policy, by this point bizarrely contractionary (even though nominal money market rates had fallen considerably from their peak), contributed to the severity of the asset price deflation and recession now under way.

The mistakes of the Federal Reserve through the end stage of the business cycle upturn (which peaked in autumn 2007) and into the severe stage of the subsequent recession and beyond are treated in subsequent chapters, especially Chapters 3 and 6.

3
Phobia of Deflation

It is hard to believe that once upon a time – in fact as recently as the 1920s and 1930s – periods of price level rises were just as frequent as those of price level falls. Some of these periods were short, others were long. Sometimes the cumulative price fall would be large, at other times small. Over the very long run (meaning several decades) the price level was stable. (If the price level were measured as of today to take account of continuing quality improvements – for example, a constant quoted price for a computer treated under 'hedonic' accounting as a fall in price to reflect an increase in computing power – then there would have been some long-run downward drift). That was the situation for the group of countries which were on the gold standard. (It was only for around 40 years before the First World War that the gold standard could be described as almost global.)

Yet in the modern era – say, since the US dollar's full convertibility into gold was broken in March 1933 – any actual or potential period of price level fall has triggered fear. Monetary policymakers, in fighting the 'evils of deflation', appear to win popular support. Central bankers only have to mention, during a period of business cycle downturn, the deflation of the Great Depression or the 'perils of Japanese deflation' in the long aftermath of the 1986–90 bubble economy to win over audiences to their platforms of interventionism. At the front of the scaremongers has been the Federal Reserve, especially in the personification of its present chair, Professor Bernanke.

As a point of fact, however, the perils of Japanese deflation belong to the world of fiction. Japan's price level (CPI) continued to rise by more than 1 per cent per annum from 1991 to 1994 and, ignoring indirect tax increases, fell only by a cumulative 2 per cent in the subsequent 15 years (to 2010). The first episode of price-level decline, remarkably gentle, was from 1998 to 2003 (the dominant downward influences on prices were, initially, a spurt in productivity attributable to the IT revolution and rapid economic integration with China and, later, the recession

of 2001–2). Subsequently, a cyclical rebound of prices occurred during 2006–7, followed by a cyclical fall.

Yet in spring 2003 both the Federal Reserve and ECB, taking their cues from the Japanese experience, set out revised frameworks for monetary policy which had as a central component the 'avoiding of deflation'; in other words, a fall of inflation to below 2 per cent per annum was sufficient to trigger a monetary counter-attack. What lies behind this horror of deflation?

Deflation mythology of the Great Depression

This historical association of deflation with the Great Depression is evidently one explanation for the phobia about this condition. But association is not a rational basis for fear. The Great Depression was not a phenomenon which occurred in a well-functioning monetary order. The international gold standard had collapsed in the First World War. The combination of a US domestic gold standard with a global dollar standard, in which the Federal Reserve had almost total discretionary control of the US monetary base alongside a disequilibrium structure of fixed exchange rates, permitted vast monetary disorder to form. The severe deflation and economic collapse of the early 1930s were a consequence of severe monetary disequilibrium in the previous decade, though the severity could have been less if monetary policy actions in the years that followed the boom had been better designed. Critically, by the time of the second severe phase of US recession – autumn 1931 to summer 1932 – US and global monetary disorder was so intense that there was no basis for rational expectation of a price rebound any time soon.

In particular, after Britain's departure from the gold standard (September 1931), the Federal Reserve's vehement response to gold loss – a big hike in interest rates – (explained by a sudden loss of confidence in the US dollar remaining convertible into gold) meant that economic agents were looking at the prospect of a new plunge in the price level rather than a rebound. The gold standard's in-built stability mechanism, which generated an increase in monetary base at times of low prices by stimulating production of gold, was largely broken in the context of a new monetary 'order' (as after the First World War), where gold supplies had little, if any, relation to monetary base growth (for the gold countries as a whole; see Chapter 4). The shock of German political and economic collapse occurring through 1931 and the massive US monetary contraction surely explained a plunge in equity markets. In the 'good cyclical deflations' of textbook theory, by contrast, the deflation phase is accompanied by a rebound of equity markets which leads the economy forward, as investors anticipate the recovery of profits further ahead in a continuing climate of negative real risk-free rates (expectations of price recovery mean that low or zero nominal rates are negative in real terms).

It is useful, before proceeding in this discussion of deflation phobia, to backtrack first to key definitions. Clarity on these can help deal with the horror, which is, in fact, phobic rather than rationally based.

Definitions of deflation – popular, Austrian school and monetarist

The most popular definition of deflation is a period, generally understood to last for at least several quarters, of a falling price level.

A less popular definition found in older economic textbooks, most particularly associated with the Austrian school (see Bagus, 2003), describes deflation as a sustained monetary disequilibrium in which a 'shortage of money' drives 'the price level' downwards. (Note, however, that Austrian school economists are adverse to using aggregates such as 'price level', stressing instead the huge heterogeneity of economic life). In particular, Mises defines deflation, not as declining prices per se, but as 'a diminution of the quantity of money (in the broader sense), which is not offset by a corresponding diminution of the demand for money (in the broader sense) so that an increase in the objective exchange value must occur' (Mises, 1981). Money shortage in the Austrian definition's sense would go along with market rates of interest rising far above so-called natural or neutral level. Deflation on the Austrian definition would not include episodes of a falling price level due to, say, accelerated productivity growth or business cycle fluctuations where there was no accompanying monetary shortage.

Deflation in its full Mises context, of actually meaning a fall in the price level driven by monetary disequilibrium, did occur on a sustained basis on several occasions in the decades before 1914. In the era of the international gold standard, episodes (of Mises-type deflation) for the gold bloc as a whole were characterized by a contraction in new gold supplies or by a sudden rise in demand for physical gold (as occurred after the Franco-Prussian War, when the newly formed German Empire adopted the gold standard). Otherwise one or more countries within the gold bloc might have experienced deflationary monetary disequilibrium as a consequence of deterioration in their balance of payments. In the hybrid US domestic gold standard and global dollar standard of the interwar years, episodes of monetary deflation included the attempts of various central banks in succession to defend their gold or dollar parities by shrinking the supply of monetary base.

In the decades since the end of the Second World War, episodes of deflationary disequilibrium in the Mises sense (of actual decline in the price level against the background of monetary disequilibrium) have been found in the case of countries defending fixed exchange rates. For example, Hong Kong's actions to defend its dollar parity in the wake of the Asian debt crisis of 1997 led on to a powerful deflation.

In terms of modern monetary analysis (to fit the world of fiat monies), it is useful to focus on the broader concept of *deflationary monetary disequilibrium*, which includes a Mises deflation as one special case. Deflationary monetary disequilibrium is characterized by a significant shortage of money, which has the effect of driving market interest rates (especially those quoted in the capital markets) above neutral on a sustained basis. In the context, however, of normally ingrained expectations of inflation, such monetary disequilibrium only rarely displays the features of a Mises deflation. Rather, the evident symptoms include 'disinflation' and asset price 'deflation'. Disinflation refers to the situation where the monetary authorities are seeking to roll back inflation from unacceptably high levels by keeping money in short supply relative to demand.

In general terms, episodes of monetary deflation (where money is in short supply) might indeed have, as a symptom, a sustained fall in the price level, but that is not always the case. Deflationary monetary disequilibrium might be reflected primarily in the asset markets, where a process of irrational depression (symmetric to irrational exuberance) could develop. We could describe this process as *asset price deflation*. The price level for goods and services could be stable or even rising. As an example of that juxtaposition, consider a sudden disruption in the supply of real resources – for example, by natural disaster or war. With the supply of money on an unchanged path, there would be monetary disequilibrium (as the demand for money rose in line with the nominal transactions volume). Weakness in the asset markets would stem from the above-neutral level of interest rates reflecting monetary disequilibrium and the general economic hardship provoked by the shortage of resources. Irrational feedback loops could form where falls in asset prices appeared to justify putting an unrealistically high probability on future bad scenarios. Speculative fever might develop as short-sellers followed the trend.

Alternatively, deflationary monetary disequilibrium might come about in a situation where there are strong in-built expectations of prices rising over time, based on extrapolation from recent history and on the perceived long-run stance of monetary policy (sufficient monetary growth to validate those extrapolations). A sudden shift upwards in the demand for money (as might happen during a period of financial distress) or drop in the supply of money (with the central bank trying to restore absolute price level stability rather than live with perpetual inflation) would bring a fall in inflation (*disinflation* as defined above) in the context of money shortage but no fall in the price level.

Conversely, it is possible to observe a sustained fall in prices (deflation according to the most popular definition) which is not symptomatic at all of deflationary monetary disequilibrium either in the Mises sense or according to any other interpretation of the concept. This could be the case where there is a sudden large jump in the rate of productivity growth or a suddenly

improving trend in the terms of trade (meaning a fall, for example, in the price of imports on a sustained basis). Such so-called good deflation occurs with the money supply following a path virtually in line with demand for real money balances, signifying no overall monetary shortage.

Other examples of false-positive diagnoses of deflationary monetary disequilibrium based on the popular measure of deflation (falling prices) include benign cyclical price declines (prices falling to a lower level during recessions coupled with expectations of an eventual rebound into economic recovery), a fall in prices to a lower level (from which a rebound would be expected in the long run) driven by a secular rise in savings, or a process of price decline wholly in line with stable, firmly held expectations across the economy (about a long-run trend fall in prices) and ratified by an appropriate monetary course.

Benign cyclical price decline (one good form of deflation in its popular sense, which does not correspond with a Mises deflation) is driven by weak demand in a business recession. Businesses in many sectors of the economy cut prices to lift sales. Also featuring as part of that same phenomenon could be price declines related to inventory liquidation and labour accepting temporary pay cuts (especially in cyclical industries). Much of this price discounting may occur secretly (and thus not be registered in the data collection which underpins official estimates of the price level). In a revealing article about prices in depression, Morgenstern (1931) draws attention to the extent to which businesses grant unofficial discounts to their consumers and business customers and how these are withdrawn when business improves.

All of this is benign in that a decline in prices to a lower level now, coupled with expectations of a future rebound when the economic cycle turns upwards, provide a stimulus to present spending (by both businesses and households). It may be that the benign process in fact runs into the 'headwinds' of monetary disequilibrium, as would occur if for some reason money supply is not keeping up with real demand for money. But such headwinds are not inevitable, and indeed the cyclical fall in prices in itself would boost the supply of money in real terms.

A false-positive diagnosis of deflationary disequilibrium is also possible in the case of a secular rise in savings. It could be that the propensity to save rises to such a degree (perhaps under demographic influences or in line with a big increase in uncertainty about future economic prosperity) that the neutral rate of interest (as measured, say, with respect to medium-maturity, default-free debt paper) becomes negative in real terms. The process by which the invisible hands of market forces generate negative real rates might well involve, first, a fall of the price level. The initial fall coupled with expectations of a subsequent rise would produce a negative real rate. Moreover, in the context of the gold standard world, the fall in prices in the immediate term would mean a lower cost of mining the

yellow metal, which together with its constant price in money terms would produce some increase in gold supplies, favouring some recovery of the general price level over the long run.

In history it is possible that the so-called Great Deflation, which spanned much of the 1870s and 1880s and was a global phenomenon, could be partly explained by such a process of a rising savings rate. Savings were increasing as the populations in western Europe and the USA started to provide for their retirement, in some cases through national pension schemes. Britain and France swung into a huge savings surplus as domestic investment opportunity fell behind savings (with lending or investment abroad booming). From the lower level of prices reached at the end of the 1880s, price recovery had surely become more likely than further price decline. Underpinning such a probability calculus would have been the outlook for revived monetary growth. Lower costs of mining (in part reflecting the fall of prices of inputs generally) played some role, together with new discoveries in driving gold production higher. The decade or more before the outbreak of the First World War was essentially one of significantly negative risk-free rates in real terms.

The final example here of false positives (on deflationary disequilibrium), as signalled by falling prices, is found in a situation where there are already built-in expectations of price level decline. These (expectations) might have formed over a long period of time, and the central bank might be seen as piloting a monetary course which would be consistent with this steady-state decline continuing. Indeed in one essay, Milton Friedman (see Friedman, 2006) hypothesizes that such a steady state of deflation might be ideal in terms of economic welfare. Non-interest-bearing banknotes and sight deposits would provide a low real return. The public would not seek to reduce their holdings of these out of concern at their opportunity cost and so give up convenience yield, when in fact the marginal cost of producing fiat money is zero.

Such a steady-state falling trend in prices, wholly in line with long-run monetary trends, should be described as a non-monetary deflation. Friedman does not consider, however, the need for variations in the pace of price decline, including sometimes a rise in prices (within a long-run declining trend), so as to generate negative real interest rates in line with fluctuations of the neutral level, as described here, for various hypothetical situations (including business recession and a rise in savings surplus). Providing for a period of price level rise within a long-run trend decline in prices means most likely that there would be episodes of severe price decline. Non-monetary deflation in the Friedman sense should be contemplated as an aim only for the very long run, not over short- and medium-term periods. In any case, providing a real yield on cash over the long run on average could clash with the need to strengthen the pivotal role of monetary base in the construction of a stable money order, as we shall discover in Chapter 4.

Bad deflation stems from bad monetary systems

Many economists (especially those drawn along by the popular current of Bernanke-ism, which will be defined in Chapter 6) would argue that inflationary monetary disequilibrium (where an overabundance of money supply relative to demand is pressing market interest rates below neutral level and likely giving eventual rise to symptoms of either temperature rise in asset and credit markets or goods and services price inflation or both) is a better occurrence than deflationary monetary disequilibrium.

Such arguments are sometimes based on the hypothesis that, in the time until the inflationary disequilibrium is widely recognized, there could be some positive effects on real economic activity. This hypothesis was most popular in the heyday of Keynesian economics allied to the 'pro-growth' agenda of the Kennedy and Johnson administrations. But it was discredited to a considerable degree by the experience of the Great Inflation.

Another argument as to why deflationary disequilibrium is so serious (relative to inflationary disequilibrium) relates to the residue of obstacles it may leave behind in the path of returning to overall economic equilibrium. Yes, there may be no difficulty in increasing the supply of money so as to eventually relieve any shortage. If, however, expectations of price declines have meanwhile become prevalent and the neutral risk-free rate of interest for, say, medium maturities is very low or even negative in real terms, then the normal processes by which the capital market estimates this and positions market rates around the estimated level might seize up. Instead, the risk-free interest rate in, for example, medium-maturity bond markets would remain fixed above the level consistent with overall equilibrium.

This situation of interest rates trapped at above-equilibrium levels under deflationary or near-deflationary conditions has come to be known as the 'problem of the zero-rate boundary'. This problem arises where the equilibrium interest rate (in nominal terms) for maturities up to a few years into the future has become negative (as in deep recession) and yet money interest rates cannot fall below zero in a conventional monetary system (as, if they did, depositors would withdraw their funds from banks and hold banknotes instead).

In fact, the zero-rate boundary problem was not a focus of complaint or attention by mainstream contemporaries writing during the heyday of the gold standard. One reason for this could have been a healthier appetite for equity risk. In the recession stage investors were readier to buy equities in anticipation of recovery, as they were not plagued by fears about monetary or fiscal cliffs ahead (the reversal of present monetary and fiscal stimuli). A lower cost of equity capital goes along with a higher equilibrium level of real interest rates, meaning less likelihood of encountering the zero-rate trap. Another reason for less focus on the zero-rate boundary problem was that

expectations of how the price level would fluctuate moved in such a way as to provide an automatic solution. The overriding implicit assumption of economic agents was that periods of deflationary monetary disequilibrium would be short lived and self-limiting.

This assumption was founded on two key aspects of the gold standard order. First, any sustained fall in the price level would bring a rise in gold production and thereby in the monetary base of the gold bloc countries in aggregate. And second, monetary base had a stable long-run relationship to nominal incomes and price. An increase in the monetary base would eventually go along with a reversal of the price decline. Expectations of price level recovery meant that low nominal interest rates could be substantially negative in real terms.

As we will see in the next chapter, a revamped system of monetary base control, borrowing key features from the gold standard world, might well re-create those two aspects which provided safety valves against deflation turning sinister (in the sense of driving the economy away from equilibrium rather than towards it). But the possibility of such revamping is far away from the attention of modern central banks, including critically the Federal Reserve, and of the political or constitutional authorities to which they are answerable. These same central banks have no inclination to examine the stabilizing function (for the economy, both nationally and internationally) of so-called good deflation.

A long-run secular fall in the price level (alongside expectations of price level decline to match) with no highly likely end or episodes of reversal does become a source of concern, as at some stage there will be a cyclical downturn. And even in normal non-recessionary periods the equilibrium risk-free interest rate in real terms defined, say, for a medium maturity may fall to below the expected rate of price deflation (for example, 2 per cent per annum deflation coupled with a 1 per cent per annum neutral rate in real terms). Then well-informed capital markets cannot generate an equilibrium capital cost (across all asset classes) consistent with economic equilibrium.

The origins of deflation phobia

The predilection of all economists against non-reversing serious deflation (for reasons just described) does not mean there is a consensus opinion regarding the desirability or not of absolute price level stability as measured over the long run (allowing for episodes of price falls and price rises). For example, perma-pessimists regarding economic progress argue in favour of long-run inflation on the basis that the equilibrium real interest rate for, say, medium maturities is normally negative (as would be the case if investment opportunities were continually scanty relative to an abundant supply of savings), and so the zero-rate boundary problem could be present for much

of the time. But it is surely unlikely in a well-functioning capitalist economy (with robust entrepreneurship, a healthy appetite for equity risk and technological progress at a normal rate) that the risk-free real neutral rate would be below zero for long periods; much more likely would be 1 per cent per annum plus. To understand the aversion of many modern central bankers to 'good deflation' (deflation which reverses itself), we have to look at a collection of prejudices which have come to the fore in the Federal Reserve under Professor Bernanke but which have long been a feature of the analysis dominant in that institution's economic modelling.

One source of the antipathy towards pro-cyclical price fluctuation (price level falls to a lower level during recession and higher level during the recovery or expansion phase of the business cycle) is the Keynesian hypothesis that wage reductions during recession just make matters worse. The wage earners have less to spend and so aggregate demand falls. This analysis proceeds as if the next period to the one under consideration does not exist. So there is by definition no role for price-rebound expectations (meaning real interest rates would fall into negative territory). Wage earners who now have their pay cut would not spend out of the expected rebound of their wages further ahead (as the period ahead does not exist). In the world of Keynesian economists there is no heterogeneity. It is beyond the IS-LM model popularized by Hicks to consider such sophistications as whether a wage cut in a highly cyclical industry might in fact be wholly normal (and fully in line with the expectations of all those working in the industry, in the same way as the subsequent bounce-back of wages would be expected in the recovery) and consistent with a lower-than-otherwise cost of equity capital there (in that wage earners in fact assume some of the business risks). A willingness of labour to assume some element of cyclical risk (in their pay) is helpful to sustaining a healthy appetite amongst investors for equity risk especially in the highly cyclical industries. In turn a healthier appetite for equity risk means less likelihood of the 'zero-rate trap' emerging (as the neutral level of interest rates is higher than otherwise) and a higher long-run growth of investment and output.

Moreover, it may well be that during the period of economic boom many of the new jobs created were in the most 'bubbly' areas of the economy – construction, finance, automobile production – where enterprises obtained capital from investors wearing rose-coloured spectacles (in viewing future likely returns) and did not spot such dangers as oversupply and overleverage. In effect, the raised level of speculative temperatures in asset and credit markets produced by monetary disequilibrium lay behind malinvestment and malemployment. The shake-out of labour from those dead-end sectors once the temperature falls (and perhaps post-bubble reality sinks in) would most likely go along with some fall in observed wage rates in some areas of the economy as part of the process whereby the invisible hands (entrepreneurship, technological change, relative price and wage changes) bring

about new profit and employment opportunity – including those parts of the labour force where human capital destruction (obsolescence of training) was especially great.

Another source of antipathy towards pro-cyclical price fluctuation during the good deflation phase is the observation that prices (and sometimes wages) on average often continue falling for some considerable time. Hence it could be that over short periods of time good deflation goes along with perversely high real interest rates – insofar as economic agents are discounting a succession of price falls. Rather than economic agents focusing on low prices now compared to higher prices in the cyclical rebound and thereby bringing forward spending, they may be looking at the likelihood of further price cuts which might emerge first during the current recession and so delay spending.

Official price level statistics may exaggerate the potential problem of drawn-out price cuts during recession in that they do not reflect the secret discounts which might in some cases pre-date list-price reductions or which might be bunched at the severest point of the recession (see p. 55). But even leaving this statistical point to one side, the problem with this model of how good deflation might generate perverse saving during a recession is that it fails to acknowledge the key uncertainties of the learning process found so often in market action.

Businesses recognize that demand for their product has weakened and that some type of business cycle slowdown has emerged. So some businesses cut prices in line with the perceived weakness. Perhaps in another quarter or so, they will perceive a further deterioration in demand and cut prices again. But that is far from inevitable. The appearance of a run of price cuts with the benefit of hindsight does not mean that economic agents would have forecast these rationally to start with. It is the same phenomenon in asset markets, where learning about a continuing background change relevant to valuation (where learning could mean either further appreciation of what is already there or what was already there has become stronger in shape) can produce a pattern of price runs without implying any inefficiency or ex ante profits opportunity.

This pattern of price runs downwards is clearly evident during severe recessions. In spring 1930 few economic agents were putting a high probability, if any, on the recession turning into a Great Depression. As one down wave of recession followed another – triggered by a sequence of policy blunders coupled with new outside events – prices came under further downward pressure. But already in spring 1931, just before the German credit crisis erupted in its fullest and most sinister form and set off a new phase of intense deflationary disequilibrium in the USA, it could have been rational for business people and consumers with cash to take advantage of already low prices (by comparison to long-run hypothesized norms) even though they could not be sure that this would be the bottom of the cycle. As history

turned out, still lower prices, which could still be taken advantage of through a process of averaging, were to follow.

One further point of caution applies to the observation of trend decline in prices during a recession. What is true for the overall price index is not true for each price of each good or service. It may be that one-off large price cuts occur at different points in the economic downturn for different sectors of the economy. Once the price cuts have occurred in sector A there is no point in consumers holding back for another price cut there – rather, attention would be on the eventual rescinding of the price cut – even though further price cuts might yet emerge in other sectors of the economy.

Virulent Bernanke-ite strain of deflation phobia

Even those 'anti-deflationists' who accept all the points so far (about the benefits of good deflation, whether in the context of a business cycle recession or a period of spectacular productivity growth, and the irrelevance of ex post trends in the context of a learning process) may still have concerns based on so-called unfavourable balance sheet effects. These were first analyzed by Irving Fisher in the context of the Great Depression and have been made much of by some inflation target proponents, including Bernanke (2000). The concern is that the fall in the price level brings an increase in the real indebtedness of businesses, which would hinder their prospects of weathering the recession and moving forward to take advantage of new investment opportunities.

The antidote to this concern is the realization that the recovery of the price level further ahead (that is, beyond the present fall related to recession or productivity spurt) will go along with a decline in the real value of debt (or equivalently there will be a period of substantially negative interest rates) offsetting the rise in real value during the good deflation. Hence, in the context of long-run price level stability, good cyclical deflation would not 'permanently' redistribute wealth between shareholders and bondholders (and other creditors) or affect financial risk (of the corporation). Even in the short run, the equity shareholders should not suffer if the prospective fall of, say, medium-maturity real interest rates into negative territory also goes along with a fall in equity capital costs (equivalently a rise in price/earnings ratios to above where they would otherwise be and thereby an increase in equity price). Note that the fall of real interest rates to negative levels (as price recovery prospects emerge) does not necessarily bring capital gain for bondholders, as rates in nominal terms can remain well above zero.

In sum, the harmful balance sheet effects of deflation (rising real indebtedness) only appear where markets fail to put any significant weight on a possible later price level recovery – meaning substantially negative real

interest rates do not emerge. Even in that case, there is the potential for companies to lower their leverage ratio back to a more comfortable level (in terms of bankruptcy risks) by issuing equity to retire debt. The problem with such a deleverage strategy could be that it involves driving up the price of now risky debt (in that higher leverage due to price level fall means that the same bonds, outstanding as before, become riskier) and thereby handing a windfall gain to the bondholders (at the expense of equity holders). In some situations this problem can be solved, in part, by direct negotiation between bondholders and equity holders so that the gains from deleverage can be more equally shared.

Deflation and social justice

The issue of balance sheet effects of deflation is tangential to a wider 'social justice' question sometimes raised in the literature. The charge is that deflation favours the rentier (an investor whose income mainly comes in the form of interest rate payments on low-risk nominal debt securities or their equivalent) and the salary earner in 'safe employment' (especially government), where nominal wage rates are fixed, and disfavours the risk taker, whether the equity owner or the worker in risky employment (where wage rates may be cut in nominal terms). Surely this type of redistribution is 'undesirable', especially at a time of economic hardship, as would be the case during a severe recession? In particular Keynes, who wished for the 'euthanasia of the rentier', would have had no liking for good deflation, even if he had been persuaded of the economic rationale.

In fact, as has been explained here, the rentier does not do well in any long-run sense out of good deflation during a business cycle downturn where long-term price level stability still reins. His or her gains during the period of price level fall are subsequently eroded. It is different with respect to persons in safe employment whose wages are fixed in nominal terms (not subject to any possible wage cuts such as those occurring in other parts of the labour market). In principle, however, the safety of nominal wage income in some employments should be reflected in lesser upward potential during good economic times and a lower level of income overall than otherwise (to reflect an implicit premium for safety). In practice this may not happen if public sector unions exert great power over the wage determination process.

Some economists have pinpointed the fleeting gains which good cyclical deflation might bring to holders of money (and bonds where the principal and interest are fixed in nominal terms) as one key source of recovery. (They do not point out that the gains are fleeting, as they do not describe a process of subsequent price level rebound). This is the basis of the so-called Pigou effect, which also features importantly in the work of Patinkin (1989). The idea is that the fall in prices boosts the real spending power of

holders of money and bonds. (The Pigou theorists admit some offset via the real loss suffered by equity holders in the businesses or by the households which have issued bonds or borrowed from the banks and focus instead on 'outside' money and bonds which are matched by the government on the other side). But these authors do not consider the likely negative real income to materialize (taking account of still very low or zero nominal interest rates) once the price level starts to recover. More important to the economic upturn process than the initial 'real balance effect' are the negative real rates that go along with price level recovery and the lowered cost of equity capital which accompany these. The most important benefit, in fact, of the initial 'real balance effect' is that it provides the investor with a 'cushion' against a subsequent period of negative real returns on money and safe bonds, making him or her less prone to irrational yield-seeking behaviour (as discussed in the first chapter of this volume).

A final retort of the 'anti-deflationists' relates to the difficulty of cutting wages. They argue that it is just so difficult for an employer to reduce nominal pay rates – not least in terms of bad feelings created, work relationships and incentives. In the unionized segments of the labour market, wage cuts might be out of the question due to the huge possible costs of strike action. A first point to make here is that good deflation during a business cycle downturn does not necessarily involve widespread wage rate cuts. Rather, what may be at stake is reduced or foregone bonuses – especially in cyclical industries where such bonus payments related to the state of the cycle could be prevalent. Second, wage cuts in a situation where prices have fallen might mean no loss in real standard of living even for those affected. Third, the record over recent decades in Europe and the USA shows that unions in the private sector are ready to accept wage flexibility in a downward direction.

The good deflations which did not occur – in the United States, Japan and Switzerland

Counterfactual history is full of hazards. Nonetheless, a historical look at good deflations which might have occurred and did not is an enterprise which could well yield insights. The discovery of a better outcome if deflation-phobic central banks had not got in the way would help not just in the understanding of good deflation but also in the search for a cure to deflation phobia. Such a counterfactual exercise is by no means confined to the USA; it extends also to good deflations which did not occur in Europe and Japan.

The second chapter of this book has already included some discussion of the good deflations which did not take place in the USA and with what detrimental consequences. One key instance was the good deflation which did not occur in the 1920s under the influence of the then productivity

spurt (related to a technological revolution embracing radio, electrification, the telephone and the assembly line for automobiles). If the Federal Reserve had kept the growth of monetary base on a path consistent with long-run price stability (at a normal productivity growth trend), then prices would have fallen as productivity spurted ahead (see p. 27). Instead, the Federal Reserve allowed the monetary base to run ahead of demand (and demand was depressed by a changed pattern of reserve requirements) – with big monetary injections at three points – and so a natural tendency for price falls was resisted. That same monetary excess produced the rise of temperature in credit and asset markets.

A second instance was the good deflation which the Martin Federal Reserve did not allow to occur through the post-war economic renaissance period of the mid-to-late 1950s and the early-to-mid-1960s, when economic miracles were appearing in Japan and parts of western Europe (see p. 38). Some tendency towards US price level fall and tighter monetary conditions would have moderated the eventual temperature rise in asset markets (followed by the burst of 1969) whilst securing the global dollar standard.

The third instance was the good deflation which did not happen in the USA during the IT revolution of the mid-to-late 1990s (see p. 46), the result being an IT bubble in the equity market (NASDAQ) together with the malinvestment (excess capacity created at the time) in telecommunications and other 'new economy' areas. The fourth instance was the good cyclical deflation which the Greenspan Federal Reserve did so much to prevent in 2002–3, including the embracing of a revolutionary policy of 'breathing back inflation'.

The fifth instance could be the good deflation pre-empted in late 2008 and into 2009/10. Suppose the Bernanke Federal Reserve had not planted its massive monetary time bombs, called quantitative easing, on the rails of the US economy first during winter 2008/9 and into spring 2009, later in winter 2010/11. Then most likely the plunge of the US dollar and jump to the sky in the price of global commodities would not have taken place. (The influence of US monetary disequilibrium on global commodity prices was magnified by the simultaneous actual explosion of a monetary bomb by the People's Bank of China.) Prices most likely would have fallen across many sectors of the US economy, carrying forward a process already evident, as businesses liquidated excess inventories. Some wage rates would also have fallen. In principle this good deflation coupled with expectations of eventual price level rebound as economic recovery emerged, would have meant negative real interest rates (for, say, two- to five-year maturities). These would have been less transitory and subjective in nature than what the Bernanke Fed could manufacture by, first, stimulating speculative fever in global commodity and currency markets (including a steep fall of the US dollar) and, second, by ever wider manipulation of the bond markets. Indeed, there would have been no pretext for the eventual resort to blatant

manipulation of the medium and long-term rates introduced in summer 2011 and strengthened subsequently.

The policy of directly fanning expectations of inflation decided upon by the Bernanke Fed in 2009–10, with the adoption of two successive programmes of massive 'quantitative easing' (QE), involved a contradiction. The Federal Reserve was at the same time telling everyone that it intended to exit QE and remove all the excess reserves created as economic conditions improved and yet relying on those excess reserves to frighten economic agents into believing that inflation would rise substantially and so bring forward their spending.

Even if the Bernanke Fed had desisted from planting its QE time bombs and there had not been the simultaneous giant monetary bomb exploded by China, there was a potential obstacle in the way of good deflation emerging in the circumstances of the 2008–9 recession. This was the absence of any monetary framework which would generate, with a high degree of certainty, a rebound (from the recession low point) of the price level into the subsequent recovery and expansion phase of the business. In the gold standard world, the growing expansionary forces operating on the monetary base (for the gold bloc as a whole) as prices fell (see p. 58) justified a high degree of certainty about a price level rebound further ahead. But in the USA (and indeed throughout the global economy) monetary base had been removed from the pivot of the monetary system by the time of the Great Recession (2008–9). (The two requirements for staying at the pivot – high reserve requirements and zero interest payment on reserves – had been scrapped.) The future path of the price level depended entirely on discretionary decision making by the central bankers. Even so, there was much reason to expect the Federal Reserve to use its discretionary powers to successfully promote a rebound of the price level in the long run, though when that rebound would take place and by what process of fits and starts was almost impossible to predict.

Of course, it is far from certain that a fall in the US price level would have occurred in late 2008 and 2009 even if the Bernanke Fed and the People's Bank of China had not got in the way, though positive evidence for this hypothesis includes the anecdotal evidence of widespread price cutting related to clearance of huge piles of excess inventories which built up, at both a retail and wholesale level. (The Bank of China, by its policy of massive monetary explosion starting in early 2009, became a key catalyst to a wave of speculation in global commodity markets which sucked in yield-hungry, irrationally exuberant investors anxious about the real losses being imposed on them by the Bernanke Fed. The wave pushed commodity prices up to the sky, with ripple effects into recorded inflation for the advanced economies.)

Vigorous cyclical deflation (coupled with robust expectations of price level rebound into a recovery) depends in part on widespread skilful practice

amongst firms and other sellers of goods and services. Businesses learn from previous recessions the advantages of prompt and bold action on prices and so do wage earners, with respect to recognizing that wage cuts are not as bad as they might seem at first sight, given that prices are falling and that income prospects further ahead should improve.

There has been such a long period of history during which good deflation has been in suspense that contemporary economic agents would have to relearn what was well known to their forebears under a gold standard environment. This problem of relearning is not in itself justification for the Federal Reserve or any other central bank to refuse treatment for their deflation phobia. In practice, though, that treatment would go along with some withdrawal symptoms in the economy (during a recessionary phase) until new learning had taken place. Realistically the treatment would have to be prescribed by the political democratic forces to which the central bankers are answerable. (We return to the political economics of monetary reform in later chapters.)

Moving outside the USA, a prime counterfactual case of a good cyclical deflation which did not take place is Japan in the aftermath of the gigantic credit and asset bubble which started to burst in early 1990 (see Brown, 2002). In fact, the overall price level as measured by the CPI continued to rise (by 1–2 per cent per annum) through 1990–2, followed by broad price level stability (as described at the start of this chapter). The absence of good deflation in Japan during those early years following the burst of the bubble is indeed extraordinary. Good deflation would have been a benign development in terms of both spurring a business cycle recovery and facilitating (reducing frictions along the way) a secular shift of the Japanese economy towards a higher level of savings. A cyclical recovery and secular renaissance would require a prolonged period of significantly negative real interest rates (defined with respect to zero-risk assets), and to generate these, the price level would have to fall first to a level well below its long-run expected average level. (A negative real interest rate – insofar as equilibrium real rates were not being similarly depressed elsewhere – would go along in principle with a low real exchange rate value of the yen. The real cheapening of the yen against foreign currencies would moderate the extent to which a steep fall of real interest rates into negative territory would be necessary given the stimulus to the traded goods sector.)

The failure of good deflation to emerge in Japan during 1990–3 cannot be blamed on monetary policy. Indeed, the universal criticism of the Bank of Japan during that period is that it maintained too tight a monetary stance, in part out of a misplaced effort to exorcise speculation (in the land market particularly) and in part out of a bizarre enthusiasm for a strong currency (which coincided with Washington's pressing for measures to reduce Japan's trade surplus, of which yen appreciation could be one; see Brown, 2002). The perverse jump of the yen could have at least given some impetus to good deflation.

Plausibly, megafiscal stimulus programmes played some role in thwarting a downward move of the Japanese price level. Also playing a role was the extension of new credits to zombie companies (effectively insolvent but kept going by rolling over loans at virtually no interest) by a banking system which was effectively insolvent. The lenders would not stomach bold price cutting by their zombie clients, nor would they enter into debt-equity swaps at an immediate loss so as to allow them to emerge as solvent entities able to price their goods and services downwards to market conditions. It is also highly plausible that the Japanese private sector was just not flexible enough or attuned to making the ideal market responses to a sharp post-bubble decline in demand across much of the economy.

All these impediments to the free play of market forces would have limited the scope for the potentially powerful mechanism of good deflation (where prices in the recession fall far below their level expected in the long run, meaning that real interest rates become highly negative) to drive the Japanese economy back to the path of prosperity. Instead, business upturns occurred erratically, sometimes led by massive fiscal expansion, sometimes by robust export demand (stemming from booming economies abroad), sometimes through endogenous power sources such as technological progress together with real income gains resulting from an improvement in the terms of trade (as occurred in the rapid integration with China in the mid-to-late 1990s).

It is to the credit of the dynamism and good fortune of the Japanese economy that bouts of economic recovery unrelated to fiscal spending did indeed occur on a powerful scale. But the counterfactual historian still has a strong case to argue how much better the outcome would have been (in terms of overall economic prosperity) if good deflation at the start had replaced years of fiscal profligacy financed via the leviathan under the name of the Japanese postal savings system. The combination of highly negative real rates (and correspondingly lower cost of equity capital) in Japan through the mid-1990s and a correspondingly lower real value of the yen would have ignited a powerful rise in investment and exports sufficient to replace the government spending on projects with negative return driven so often by specific local patronage and similar non-economic motives.

One insight to be gained from the counterfactual Japanese good deflation which never occurred is the role that domestic price level falls can play in offsetting apparently perverse and indeed debilitating exchange rate fluctuations. The bizarre attachment of Bank of Japan Governor Mieno to a 'hard currency' as boom turned to bust, coupled with Washington's campaign to reduce Japan's trade surplus, contributed to a big overshoot of the yen. The yen's rise was characterized by upward spirals starting in late 1990 and finishing in spring 1995. A prompt fall of prices and wages in nominal terms across much of the traded goods and services sector of the Japanese economy would have both mitigated the real overshoot of the yen at that time and also prepared the way for the remedy of a prolonged period

of negative real interest rates (on the basis of price recovery prospects). That did not happen.

That counterfactual case of Japan leads on to another episode of currency overshoot, this time in Switzerland, where good deflation did not occur. The distinct point to demonstrate in the Swiss example is that a deflation (later to be reversed by price rebound) can be intrinsic to the equilibrium process of an economy's adjusting to a shift in international popularity of its currency. In that sense the deflation could be described as 'good'. For this reason, consider the situation in late 2009 and into 2010/11 as a wave of pessimism developed about the future of the euro and its likely long-time decline as an international currency. The counterpart to this was a surge in demand (relative to size) for the Swiss franc. This was likely to be, not just a fleeting development, but one backed by long-run changes in portfolio weightings (away from the euro) across the investor universe, including Swiss and non-Swiss. So how would the Swiss economy adjust to this increased global demand for its currency?

The Swiss economy would have to go through a prolonged period of substantially negative real interest rates for francs. These negative real rates (on risk-free assets) coupled with a general lowering of the Swiss cost of capital would drive up consumer and investment spending inside Switzerland, offsetting the drag from expanding imports and falling exports (brought about by the strength of the Swiss franc). In turn the widening of the trade deficit (or fall in trade surplus) would accommodate an increased flow of international capital into the franc.

The negative real rates would be produced by the combination of many nominal wages and prices falling in the immediate (as the counterpart to skyrocketing of the franc in the foreign exchange markets) coupled with an expectation that these would recover in the longer term (consistent, for example, with long-run continued monetary growth at an unchanged pace). The immediate climb of the franc (together with a fall in Swiss prices) would play a key role in the adjustment process by triggering increased demand (as part of a rebalancing process) for foreign currency assets by Swiss-based investors, in that the exchange rate change would have caused the foreign share in their portfolios to fall. Similarly, foreign investors would find the share of francs in their portfolios rising without having to make new transactions (buying francs in the foreign exchange market). The fall in the Swiss price level could create some real wealth effects (via gains in the Swiss purchasing power of franc money and bonds) inside Switzerland, whereby residents would increase their purchases of goods, services and foreign assets (beyond portfolio rebalancing).

The Swiss National Bank in its reaction to the surge in demand for its currency revealed absolutely no acknowledgement of the potentially benign role which a period of good deflation could play in such circumstances nor of the shock-absorbing effect of a temporary decline of prices (and most

plausibly wages) in the traded goods and services sectors under the impact of franc shock (the sudden surge of the currency). Instead, it justified massive intervention in the foreign exchange markets on the basis of 'avoiding any deflation'. After some remission, massive intervention started again in autumn 2011, as speculation on various scenarios of EMU break-up gathered new strength. The Swiss National Bank promised to do all that could be necessary to defeat deflation, even if that meant surpassing the People's Bank of China in the amassing of foreign exchange reserves (measured relative to economic size).

Critics argued that the SNB had no business intervening on such a massive scale and that its foreign investment policies in any case were woefully inefficient. The huge expansion of its monetary base and signalling that interest rates would remain near zero for a long time to come could set off a process of asset price inflation in the Swiss economy (especially with respect to real estate), and many commentators suspected already such a development by 2011–12. Whereas a free float up of the franc coupled with good deflation would have set Switzerland on a course of domestic demand growth with no asset price inflation (or other eventual symptom of monetary disequilibrium) and efficient international portfolio diversification – with Swiss residents induced to buy a range of foreign assets, especially equities and corporate acquisitions or direct investment, at cheap prices in francs – the Swiss National Bank instead became an even larger holder of foreign government bonds. In the marketplace there was talk of the SNB becoming, for example, an important buyer of the relatively high-yielding Australian dollar, never mind its high leverage on the Chinese economy and on the future of the mega mining boom in Australia. Some described the SNB foreign exchange managers as 'the Bank of China on the Bahnhoffstrasse'. In sum, the Swiss National Bank provides an extreme, if small, example of intense deflation phobia leading on to a train of avoidable malconsequences

No doubt some SNB officials would answer that charge by raising doubts as to flexibility of wages and prices in a downward direction (and if not flexible, the rise of the franc might cause a bout of high unemployment amidst general demand weakness) and the extent of the price recovery which would be widely forecast. Deflation might produce perverse expectations of further deflation. The answer to that last point is the building of a credible monetary framework which would reinforce long-run expectations of price stability, a subject to which we return in the next chapter.

Fantasies of the money helicopter

The remainder of this chapter turns to a discussion of the second-best (compared to best) case of an economy refinding equilibrium via a process of good deflation in a context where downward rigidity of prices or lack

of a stable and trusted monetary framework means no confidence exists in long-run price level stability. In such a situation there is little possibility of a good deflation getting under way with the characteristic of price recovery expectations (from an initially sunken level) producing a spell of negative medium-maturity real interest rates as required for a return of the economy to equilibrium. The starting position of disequilibrium in which negative real interest rates would be one key force driving the economy back to equilibrium could be a cyclical recession characterized by a bulge in private-sector savings and an inflamed aversion to equity risk. Or the starting point could be a long episode transcending the business cycle in which investment opportunity has narrowed and savings increased such as to mean that the neutral real rate has become negative even with respect to long maturities. An alternative starting point could be the immediate aftermath of a sharp upward move in the equilibrium value of the national currency under the influence of global monetary demand (as in the Swiss example above).

The puzzle of the second best is to devise the least bad solution to getting the risk-free real interest rate well down into negative territory where the invisible hands of market forces are not working well, either because they lack strength or because the monetary environment is unstable, or some combination of the two. One possible solution which has long been discussed in economic textbooks has been to send out the monetary helicopters. This has its origins in the writings of Milton Friedman (see Friedman, 2006). The starkest example is that helicopters would spray banknotes over the towns and countryside, individuals would pick them up and spend, and so the economy would move forward from a starting position of paralysis (characterized by excess savings, where equilibrium interest rates for medium maturities are negative in real terms, but because inflation expectations are so low or even negative, nominal rates cannot fall sufficiently given the zero-rate boundary to nominal rates).

This sortie of the monetary helicopters, however, does nothing towards jump-starting the process of business cycle recovery or economic renaissance in any fundamental sense. Those processes require the combination of healthy equity risk appetites, ample supply of savings, entrepreneurship, technological progress and flexibility (both in absolute and relative terms) of prices and wages, as outlined for example in Schumpeter (1939) and summarized under his concept of 'creative destruction'. Rather, the monetary helicopters would trigger a mad rush by holders of money (whether newly distributed or old) to spend it before its real value collapsed. This would be largely a zero-sum game, with those quick off the mark able to gain at the advantage of their slower fellow humans. After the mad rush to spend was over, there would be a period of great withdrawal and business slump in the wake of a potentially or actually revolutionary redistribution of wealth.

Note further that the monetary helicopter mission occurs on the basis of there being no subsequent attempt to mop up the newly created money. The government debt on the books of the central bank which matches the new banknotes used in the helicopter missions must be non-interest-bearing and with no fixed maturity (in fact perpetual debt) so that there is no restraining influence (on immediate spending intentions) of concern amongst citizens about higher taxes in the future.

In practice it was no such helicopter mission that Federal Reserve Chairman Bernanke intended when he launched his quantitative easing (QE) time bombs in early spring 2009 or the subsequent QE-2 time bombs in autumn 2010 (albeit his helicopter speech in 2002 had gained widespread notoriety). Rather, the evidence, from speeches and testimony, suggests Bernanke was acting on the hypothesis that a huge quantity of excess reserves in the banking system (and these pay interest – at around the market level – under the Bernanke-ite system) would impress everyone that the Federal Reserve intended to long manipulate interest rates below their neutral level (with the focus of the manipulators on medium-maturity interest rates). Later the intention to manipulate interest rates became much more explicit. In summer 2011 the Bernanke Fed committed itself to holding short-term rates at near zero until 2013, and in early 2012 the commitment was extended to late 2014. Long-maturity Treasury bond markets seemed to assume that paler versions of this commitment would extend for many years beyond then.

Cynics could say that there was a deliberate element of causing anxiety (albeit an irrational type according to Bernanke-ism) about long-term inflation so as to trigger an immediate fall of the dollar and speculative rise in commodity and US equity prices. Such anxiety could stem from the realization that the Federal Reserve would be in command and control of short-term rates outside any rules-based system of monetary control for a long time to come and could set off high inflation either by mistake or in part due to political calculation. Even so, there was nothing in any of this to provide rationalization for a sustained near-term rise in the price level (beyond the impact effects of a fall in the US dollar or a bubble in commodity prices) or for durable economic recovery. Rather, there were now grounds for increased fear regarding a far-off strong rise in the price level, most likely many years into the future.

Negative interest rate regimes as second best to good deflations

So what other second-best routes are there to negative real rates where there is some combination of price inflexibility and absent a long-run anchor to the price level, yet where the zero-rate boundary is effective – meaning that at prevailing low or zero inflation expectations, nominal rates cannot fall to

a negative real level? Here we come to the various proposals for emergency negative interest rates (see Brown, 2008, 2010; Mankiw, 2009; Woodford, 2003; Buiter, 2009). All of these include some device for suspending the normal 1:1 convertibility of bank deposits into banknotes. For without this, if rates became negative on deposits, there would be huge withdrawals of funds from banks to simply hoard instead.

The proposal made by this author over the years (from the late 1990s onwards; see Brown, 2002) has been to announce a conversion for banknotes at a fixed date in the future – for example, 100 old banknotes equals 90 new – and in the interim there is a sliding scale for converting banknotes into deposits or conversely. In the retail economy there would be two-tier pricing – one set of prices for payment in cash (banknotes) and one for payment by any other means (with cash prices progressively higher relative to cheque payments the closer we get to the conversion date). ATM machines would dispense cash at a rising premium to deposit values.

An alternative device for solving the problem of cash hoarding under a negative interest rate regime is for the central bank to ration the supply of new banknotes as soon as interest rates are driven into negative territory (see Pollock, 2009). Hence banknotes jump to a premium value over bank deposits. The size of that premium reflects a combination of expectations regarding the length of time and extent of negative rates and also the convenience yield of banknotes to a wide variety of users (especially in the grey or black economy). An obvious big advantage of this proposed device is avoiding a conversion process for banknotes with all its associated costs. A disadvantage could be the day-to-day floating 'exchange rate' between banknotes and deposits, reflecting supply and demand (as against the crawling peg adjustment under the conversion proposal, where the central bank stands ready to convert deposits with itself into banknotes – and banknotes into deposits – at the pre-announced exchange rate for the given week or month) and the frequent shortages of cash which retail users would encounter. There could be a social justice issue about a big windfall profit for black economy hoarders of banknotes. Another drawback (with respect to limiting the supply of banknotes and thereby driving these up to a premium price) could be the engendering of perverse expectations.

In order to appreciate this drawback, let's examine first the possible expectation effects engendered by the alternative note-conversion method (outlined above) of driving interest rates into negative territory. Specifically, if at any point in the future rumours emerged about a possible shift to negative interest rates, including a banknote conversion plan (for a fixed date, say, two years into the future) that would cause term interest rates to fall sharply and probably into negative territory (for example, three-month interest rate futures for delivery, say, six months to two years from now might plummet to well below zero). But there would be no effect in terms of triggering cash hoarding (the spot three-month and short-maturity money

rates would remain positive), and the rumours would in no way force the authorities' hands.

By contrast, if rumours started to form about a negative interest rate scheme twinned with rationing banknote supply, there could still be a fall of term rates to negative levels, but short-term rates would soar as depositors rushed to exchange deposits into cash on speculation that this would go to a big premium. This could force immediate (rationing) action by the authorities. Moreover, once there had been any episode of negative interest rates coupled with cash rationing, there could be recurrent speculation on another episode. So in any future recession, for example, a cash drain causing upward pressure on interest rates might perversely develop.

Beyond the technical problems associated with breaking the 1:1 link between currency and deposits during episodes of negative interest rates, there is a whole range of overall weightier concerns. In particular, a negative interest rate regime requires a large dose of discretionary policymaking – when to suspend the 1:1 convertibility of deposits into banknotes and how far to drive short-term rates into negative territory, when to ultimately fix the conversion date (this can be continually postponed with correspondingly new schedules published for the crawling peg), and how to overrule a fixed rule for the expansion of monetary base (if indeed a fixed rule combined with monetary base control is normally in operation; see the next chapter). If negative interest rate regimes indeed require the awarding of unusual policy discretion to central banks rather than reliance on automatic rules, that is a weighty disadvantage.

Then there is the potentially perverse wealth effect associated with the introduction of negative interest rates. Whereas good deflation brings overall net positive real balance effects at the beginning (albeit diluted later by negative real interest rates as price recovery expectations form), the introduction of negative interest rates (as also the case for QE) produces no such bonus. In fact, they mean a cumulative real income loss for money holders (a substantial period of negative income in real terms with no initial jump in the real value of money to offset against these), which might stimulate a desperate search for yield and increase the danger of future rises in speculative temperature rise (irrational exuberance) across many asset markets. Negative rates, however, should bring wealth gains immediately for equity and real estate owners rather than these being delayed until an initial fall of the price level can generate expectations of price level recovery and so negative real interest rates. These gains are likely to be more striking than under good deflation.

As illustration, an immediate fall of the price level by, for instance, 5 per cent over one year coupled with negative real interest rates of 1.25 per cent per annum over four years with nominal interest rates at zero (as under good deflation in the context of a severe business cycle recession and the emergence of price recovery expectations) would leave investors in

monetary claims and the issuers of these in broadly an unchanged position at the end, assuming nominal interest rates were around zero throughout. Investors (in monetary assets) would be in a bonus position, however, at the end of year one.

By contrast if, as under a negative interest rate regime, nominal interest rates averaged –1 per cent per annum over the five-year period as a whole (with no initial good deflation) and the price level was flat, holders of monetary claims would have lost around 5 per cent in real terms by the end, whilst borrowers would have gained about the same amount. In this latter case, however, there would be corresponding gains for holders of equity in leveraged corporations (at the expense of the debt holders). Taxpayers as a whole could look forward to reduced real burden of government debt servicing in the future. (Some taxpayers would lose, however, in their role of investor in government debt.)

Hence the distinctions between wealth effects of good deflation and negative interest rates turn more on distributional questions (and related issues of social justice) than aggregation. In principle the fall of real interest rates to negative levels under good deflation (as price recovery expectations develop) and a related fall in equity cost of capital should bring an initial bonus to equity and real estate holders, but this is likely to form less abruptly than under the introduction of a negative interest rate regime and dissipate gradually (whilst some of the equity gains associated with the negative interest rate regime persist).

Undoubtedly negative interest rates, even in acute economic distress, are a hard sell politically and much of the difficulty stems from their 'penalization' of the small saver whose portfolio is almost entirely in the form of bank deposits. Another difficulty is the popular concern that once this particular monetary device has been used, it opens the door to the same or other forms of monetary radicalism further down the road, undermining confidence in long-run monetary stability. There is a fully understandable distrust of giving further powerful weapons to the managers of fiat money.

In principle the problem of the small saver is not intractable. The negative interest rate regime goes along with a bonus for the government (as a large net debtor it can roll over maturing debt at negative rates). This bonus can be channelled to target groups, to small savers in particular. (Large savers with a high proportion of their wealth in equities should find that windfall gains on these more than compensate for the cumulative negative income on floating rate monetary or near-monetary assets). For example, small savers could be invited to subscribe to special retail-targeted issues of government savings bonds paying slightly positive rates for short maturities. Note that in any case long-term maturity interest rates would remain positive in that they discounted positive short-term rates beyond, say, a two- or three-year horizon.

There is a concern that negative interest rates might produce credit and asset bubbles. A danger here is that the central bank, armed with its new weapon of negativity, will continue to use it well beyond the time when it should be put back in the bunker. And so what should only be applied in an economic emergency towards lessening acute monetary disequilibrium becomes a driver of temperature rise across credit and asset markets. The best antidote to this danger is to accompany negative interest rates with a firm legal commitment to rules-based monetary control beyond the emergency and, in particular, the system of monetary base control, to be outlined in the next chapter. It should be spelt out why the present emergency, which justified a negative interest rate regime, is unlikely to ever be repeated. In particular, given the implementation of a stable monetary framework, another credit bubble which lay behind the present emergency should not recur. Certainly, mild temperature swings would likely persist, and the equilibrium short-term interest rate in real terms may in the future fall below zero, but a modest amount of two-way price flexibility (allowing for good deflation) should be able to cope with that.

Public spending is a poor alternative to good deflation or negative rates

The reply of some economists to proposals for negative interest rates is, why go to all the trouble when the government could simply issue bonds and step up its spending, so 'injecting stimulus' much more 'efficiently' into the economy? But what is it about the nature of the severe business recession which justifies a stepping up of public spending or of a transfer from taxpayers of the future to those of today? It is not obvious that there is a whole range of shovel-ready projects at hand in the public sector which suddenly become of positive net present value when similarly already rejected (and shovel-ready) projects in the private sector remain of negative net present value.

True, risk-free interest rates typically fall relative to risky rates (equity cost of capital) during at least the severe phase of an economic downturn, but who could claim that projects in the public sector are of low risk? Potential benefits of public sector projects are likely to be depressed in the short run as much as those in the private sector by the negative effects of recession (meaning less demand for services produced by the investment). Moreover, the political process may well bring an overvaluation of such 'microbenefits' as redistribution of income towards public sector unions and generation of votes in critical electoral constituencies. As regards the redistribution of taxes over time (less to pay now, more to pay in the future), the danger is that this will translate into much higher future tax rates on risk capital and entrepreneurship as part of a political compromise. That danger translates

into a higher cost of equity capital in the present with a negative influence on the restoration of economic prosperity.

It is a sad reflection on the Federal Reserve that, neither following the bursting of the IT bubble in 2000 nor the much more serious credit and real estate bubble in 2007–8, its top policymaking committee gave absolutely no consideration to the possibility of good deflation or the second-best option, introducing an emergency negative interest rate regime instead of using its authority to lend political support to fiscal stimulus. It is possible the Federal Reserve lacked the power to proceed in the latter direction (suspension of 1:1 convertibility of banknotes into reserve deposits may have been in contradiction of its legal mandate), and in practice any such policy departure would have been unthinkable without congressional consent. Any overt consideration of such a policy would have fed through to the floor of Congress.

Chairman Greenspan in 2001 and Chairman Bernanke in 2008 endorsed Keynesian policies of fiscal deficit expansion. In 2001 the fiscal stimulus included 'permanent' tax cuts (in fact, subject to review at the end of ten years) aimed at improving the supply side of the private-sector economy with no matching plans to cut public spending. In 2008 the stimulus was heavily weighted towards public spending increases and temporary tax cuts for the 'middle classes'. In both cases there was a Faustian pact between the Keynesians and the political ideologues. In 2001 the Bush Administration and its allies saw 'economic stimulus' as the banner under which to lighten the tax burden on entrepreneurship and risk taking more generally whilst setting a time bomb which would later force public spending reductions. The time bomb did not go off in the way they imagined. In 2009 conservative critics claimed that the Obama Administration saw stimulus as the way in which to permanently step up public spending (especially on entitlements) to be paid for eventually by 'share the wealth' taxation.

In practice it would have been harder for any opponent of fiscal stimulus to make the case that negative rates should be introduced in 2001 than 2008–9. Arguably, during the immediate aftermath of the terrorist attacks on New York (September 2001), there may have been so much risk aversion as to push the equilibrium path of short-term interest rates into negative territory. But the likely period of that diversion (into sub-zero territory) was so short lived as not to justify such massive interference with the monetary order. After all, the Greenspan Fed had got way behind the curve in its failure to cut short-term rates sharply already in summer 2000, as the NASDAQ bubble started to burst, and it was not until the terrorist attacks that the key Fed funds rate came below 3 per cent per annum. How different the cycle would have been (less serious a recession), even without any 'fiscal stimulus' spending, if risk-free rates had been allowed to fall sharply in autumn 2000 following the NASDAQ crash. Instead, the Fed was focusing still on the somewhat higher-than-unofficial-target inflation rate.

A similar but more extreme comment applies to the Bernanke Federal Reserve getting behind the curve in 2007–8 as to the Greenspan Federal Reserve in 2001. As financial market panic set in amidst the credit market quakes of late summer 2007, the Federal Reserve was hyperactive in shoring up risk-free rates at around 4 per cent per annum rather than let them fall immediately to zero.

In autumn 2008 Professor Bernanke got Congress to give the Federal Reserve immediate power to raise interest rates on banks' holdings of reserves (required and excess) from the normal zero level to near market rates so as to strengthen the Federal Reserve's ability to peg interest rates. (Under the Financial Services Regulatory Relief Act signed into law in October 2006, the Fed was to get this power in 2011.) Even more remarkably, Congress awarded him this immediate power with virtually no questions asked, even though, as we shall discover in the next chapter, these would remove high-powered money (made up of reserves and currency in circulation) from the pivot of the monetary system, so opening the door to an era of monetary authoritarianism (defined by command and control of short-term interest rates outside any 'constitutional framework' of monetary rule).

In summer 2008, with the US economy already in recession since late 2007 (albeit unknown to contemporary chroniclers of the economic indicators), Professor Bernanke and his colleagues around the FOMC table were trying to convince markets that rates could well rise from the level then – around 2 per cent. The purpose was to combat the 'inflation threat' posed by the bubble in the oil markets, where prices exploded through the first half of 2008. The Bernanke Fed failed to see that the spike in commodity prices (oil and non-oil) of spring and summer 2008 was a late symptom of severe monetary excess in the past (in particular 2003–5), now superseded by the powerful recessionary forces stemming from a bursting of the credit bubble.

Counterfactual history of 2008–9 with emergency negative rates and no QE

In sum, the Federal Reserve itself was a main agent of the economic situation becoming so grave by late autumn 2008 – and we have not repeated here the role of the Federal Reserve in generating the credit and real estate bubbles in the first place, in so doing creating the subsequent inevitable bursting process and all its associated economic pain. Could it have redeemed its historical reputation by putting forward the topic of an emergency negative interest rate regime for consideration by its own policy board and by Congress? And could such a scheme being put forward have stymied the drive in Congress under the new administration towards fiscal stimulus?

The answers to these questions lie in the world of the counterfactual. But it is painfully clear from the history of the Federal Reserve's actions, from the first big credit quakes of late summer 2007 onwards throughout the financial crisis, that the leading policymakers there had no comprehensive or immediate grasp of the joint concept that the equilibrium level of medium-term real rates had fallen into negative territory (meaning that nominal rates should also be sub-zero if there were no pronounced inflation or price recovery expectations) and that the equilibrium spread of yields on (or cost of) risk capital (including equity and debt) above risk-free (now in principle negative) rates had widened. There was also absolutely no consideration given to welcoming (let alone fostering) a period of good deflation coupled with a revamped monetary framework which would increase confidence in long-run price level stability (with prices rising back to normal level in the long run after the immediate bout of good deflation).

Instead, the Bernanke Fed continued at first with its massive programme of sterilized credit market interventions (essentially designed to keep credit spreads down on bank and mortgage-related papers) and subsequently with its programme of quantitative easing. The available evidence suggest that both programmes (the first including all those acronyms given to the huge subsidized lending to the banks against increasingly dubious collateral) were introduced in moments of bureaucratic panic around the FOMC table and especially in the chairman's office.

In summer 2007 there was the panic about the potential collapse of Citibank. (Evidence includes the log of those phone calls unearthed by Professor Thomas under Freedom of Information action; see Torres, 2007.) And so the Federal Reserve embarked on its massive 'liquidity injections' and 'credit spread suppression', when in fact the real issue already was possible insolvency of some big institutions, which at best could be rescued by new equity issuance on the basis of widened margins (above risk-free rates) on risky loans. But the Federal Reserve was now determined to suppress those margins by shoring up risk-free rates and making risky loans itself at below market rates. In spring 2009 the panic centred on the impasse which had developed between the new Treasury Secretary (Timothy Geithner) and Congress about his planned salvage plans for the large US banks.

The long-run negative consequences for economic and monetary stability of the QE time bombs could prove to be much greater than anything which would have followed a limited experiment with a negative interest rate regime, and the latter might well have offered much greater stimulus (whilst holding at bay the forces of massive fiscal expansion with all its future burdens). It is a matter of counterfactual conjecture whether an episode of good deflation along the exit route from the Great Panic (of 2008) would have been better than the course actually steered by the Obama economics team (including Federal Reserve Chairman Bernanke) or than the hypothetical outcome from a limited period of negative interest rates. The direction

of the argument in this chapter has been that good deflation would have been best.

That counterfactual conjecture will have to take account of all the eventual actual malinvestment under such influence as strong flows of global capital into emerging market equities, commodity equities and commodities. High temperatures in these, emanating from QE time bombing by the Federal Reserve against the background of already massive Chinese monetary disequilibrium, coupled with the speculative hypothesis of a new era of emerging market economic supremacy, were already suspected by many market contrarians as soon as late 2010. By early 2012 evidence was starting to accumulate that temperatures had peaked and were falling.

Feverish speculation in commodities during 2010–11 spilled over into higher prices for goods and services. These squeezed real incomes in the commodity-importing countries, including the USA, and were thereby a threat to continuing good economic expansion. Further, when the commodity bubble burst, there could be a period during which expectations of a rising price level gave way to expectations of a falling price level, meaning that even very low nominal interest rates would become substantially positive in real terms, fuelling economic contraction. If asset price deflation across the emerging market universe followed in the wake of asset price inflation, there would be negative contagion on business and investor confidence in the advanced economies. (Such a scenario had become mainstream by mid-2012.) If these high temperatures had not formed in the first place, surely there would have been better-founded hopes for the eventual renaissance of the US economy led by benign Schumpeterian forces of creative capitalism? Instead, these forces had been weakened by a drain of risk capital to illusory profit opportunities based on transiently high speculative temperatures, whether in the commodity and emerging equity space or in other asset markets, such as high-yield emerging market corporate bonds.

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Manifesto for a Second Monetarist Revolution

The long-playing drama of US monetary instability through its various distinct acts since 1914 has had only few intermissions, all of brief duration. The actors and the plot change over time. Some acts are epic and global in scale. Others are monotonous and largely uneventful. There is no script but perpetual improvisation. And from early on (though not right at the beginning) a wide array of critics have been passing comments, some from the vantage point of live spectators, others as researchers of the historical record. Some of the critics have identified themselves strongly with particular schools of monetary economics. They take issue with the false doctrines or lack of doctrine on the part of Federal Reserve policymakers responsible for the given (actual or historic) monetary turbulence.

The founding officials of the Federal Reserve (Benjamin Strong, Paul Warburg and Adolph Miller, in particular) realized that they were improvising. They had arrived at their posts expecting that monetary control would remain on automatic pilot under the international gold standard. Instead, within a few months the automatic pilot system broke down as the outbreak of war destroyed the gold-based international monetary order. In fact, as we saw in Chapter 2, these Federal Reserve officials carried on at first much as if the still functioning dials on the otherwise broken automatic pilot system had their old meaning, allowing the monetary base thereby to explode in line with massive wartime gold sales in the USA by the Entente Powers. After the war, as the Federal Reserve improvised monetary policy with most of the automatic control mechanisms of the pre-war international gold standard no longer operating (or if operating at all it was in new, untried ways), the monetary machine rapidly got out of control, becoming the proverbial monkey wrench in all the other machinery of the US and global economy.

In an ideal world the US Congress would have set up a panel to determine what should be the way ahead for the Federal Reserve and for US monetary control, now that the situation was so different from that envisaged

by the founders back in 1913. Unfortunately that is a task that Congress has never taken on, deferring instead to the experts in the Federal Reserve, albeit subjecting them to ill-defined broad mandates which make sense only within the context of, in fact, highly controversial Keynesian economics. Perhaps the complexity of designing ideal monetary control systems beyond the demise of the international gold standard has been too daunting. In any case the highly unpredictable political pay-off (in itself notoriously hard to identify) for good work done would be potentially well beyond the immediate electoral cycle.

In particular, the contention (put forward especially by critics sympathetic to the so-called Austrian school) that monetary instability can reveal itself ultimately in asset (including commodity) and credit market temperature swings – together with the related spurts of malinvestment – not just in broadly defined goods and services price inflation or deflation, is controversial amongst economists and has not become common sense farther afield. Congressmen looking for culprits find easier and more effective targets in the financial institutions, which periodically go wild, than in the central bankers who lay the essential monetary seeds to ensuing financial and economic turbulence.

Moreover, the work of monetary system design occurs in a climate of contemporary academic opinion. Certainly, a congressional committee in the 1920s could have called on the leading US monetary economist at the time, Irving Fisher, but he would have advocated money interest rate pegging and short-term price level stabilization with all its pitfalls. Alternatively the committee could have commissioned a leading Austrian economist. But Hayek or Mises would surely not, as a matter of principle, have helped redesign a central bank, something they saw as anathema to monetary stability. In any case, they had no blueprint to hand for establishing monetary stability in the USA or globally in the context of a dollar standard world, with a new institution, the Federal Reserve, having discretionary control over the growth of the monetary base. Rather, they looked back to the golden Garden of Eden and wished for a return.

How a Keynesian virus infects congressional control of the Fed

Beyond the early 1930s the virus of Keynesianism, with its soft populist messages, infiltrated the US political arena and had also made a good sweep of US economic academia. Consequently, insofar as Congress took a new look at its original creation (the Federal Reserve System), it was to bring it into line with the Keynesian teaching that there exists a trade-off between inflation and unemployment. And so the dual mandate gradually took legislative form, according to which the Federal Reserve should follow policies to lead to full employment and 'price stability'.

The ravages of the Great Inflation (late 1960s and 1970s) did stir popular and congressional opinion in the direction of holding monetary disorder created by the Federal Reserve as largely responsible for that phenomenon. The 'monetarist revolution' led by Milton Friedman played an important part in drawing attention to the culpability of the Federal Reserve. In line with that awareness but in contradiction to Friedman's repudiation of Keynesian-style trade-offs between employment and inflation, Congress passed legislation (the Humphrey-Hawkins Act [1978]) which stipulated that the Federal Reserve should pursue a dual mandate of stable prices and economic growth (full employment), together with a requirement that the chair should testify regularly on progress in meeting these objectives.

At first, a formal presentation of money supply targets formed a key part of those testimonies (and reports) to Congress. After many years of lower inflation and apparently haywire behaviour of the monetary aggregates, congressional interest in monetary targets waned. The routine of semi-annual testimony by the Federal Reserve Chair continued, but the FOMC now enjoyed huge discretionary power to set policies so long as these were seen as consistent with the 'dual mandate' (a fuzzy concept at best).

Perhaps the full enormity of the monetary instability behind the mega credit and asset bubble and bust of the first decade in the 21st century, followed soon by violent new fluctuations in global asset markets, will lead eventually to an overhaul of the US monetary system. The president or Congress could take the lead in setting the train in motion. As yet, however, there is no consensus, let alone majority view, in the US political system that the underlying cause of the financial and economic turmoil has been monetary instability generated by the Federal Reserve.

Of course, there are well-known congressmen and ex-congressmen who have pronounced that view, including Ron Paul, Jim Bunning, Paul Ryan and Jim DeMint, but they have not attained any dominance in mainstream opinion about monetary policy, even though the Republican victory in the House elections of November 2010 did bring Ron Paul and Paul Ryan into new positions of prominence. Ron Paul did achieve some passing prominence as a candidate in the 2012 Republican presidential primaries, but his isolationist rhetoric concerning the Iranian nuclear menace amongst other non-monetary matters tended to marginalize him, and on the Federal Reserve he largely stuck to advocating a return to gold.

In early 2012 Republican Representative Kevin Brady introduced a Sound Dollar Act, under which the dual mandate for the Federal Reserve would have been replaced by a single focus on price stability and the power of the Washington governors on the FOMC would have been reduced by giving every regional Fed president a permanent vote. This attempt got nowhere. In any case the act contained no well-designed framework of rules for providing monetary stability, though it did mention the

avoidance of asset price inflation as one aim. In the Republican primaries of spring 2012 there was some debate between the candidates about the need to 'fire Bernanke' and reform the Federal Reserve, but again no well-designed proposals emerged. The eventually successful candidate (in the Republican primaries), Governor Romney, had as his chief economic advisers exactly the same high-up officials in the Bush Administration who had been instrumental in the ascent to power of Professor Bernanke (see Chapter 6).

Meanwhile, however, there continues to be a whole list of more easily identifiable culprits for financial turmoil, albeit in minor roles, whilst key Federal Reserve officials who were lead actors in the bubble and bust have no interest in exploring possible faults in their monetary framework. There is no consensus of academic opinion or a renowned and charismatic teacher of laissez-faire economics that would indict the Federal Reserve as the main culprit. All this can change.

First monetarist revolution and its flaws

Public, political and academic revulsion against the monetary instability created by the Federal Reserve could grow with the passage of time amidst new reflection on the monetary essence of the most recent global credit bubble and bust. Mounting assessments of the economic destruction involved (including, in particular, malinvestment of human and physical capital) could play a role. Also important will be the eventually perceived consequences of the Bernanke Fed's planting of monetary time bombs (quantitative expansion, or QE) during the Great Recession and its aftermath and of its extraordinary efforts to manipulate (downwards) long-term interest rates. A bad outcome – perhaps in the form of a global bubble and bust in commodities, emerging market equities, global high-risk debt, and financial equities geared on all these, together with related malinvestment ultimately at the cost of economic renaissance in the USA (measured by efficient rebuilding of the capital stock to take advantage of real economic opportunity) from the waste ground of the last decade; perhaps in the form of anaesthetizing the markets to huge fiscal deficits at the cost of weakening political forces which could have curbed public spending – would be a potential catalyst to a second monetarist revolution.

The first monetarist revolution describes the partial overturn of the previous monetary order, which occurred in several countries around the globe in the 1970s. The ideas behind the revolution were associated with such economists as Milton Friedman and Karl Brunner (see Kohli and Rich, 1986). These could be summed up under the simplistic banner that 'inflation is always and everywhere a monetary phenomenon' (see Friedman, 2006). The guiding principle was that the re-establishment of monetary order should be based as much as possible on automatic mechanisms of control

('rules') rather than on discretion and that the anchor to stability should be a stipulated path for the designated monetary aggregate, one which ideally was almost entirely under the control of the central bank.

Anna Schwartz, joint author with Milton Friedman of *A Monetary History of the United States* (1963), summed up the objective of the first monetarist revolution as follows (see Schwartz, 2005):

> Monetarists 40 years ago had a double objective. They sought to persuade the economics profession that (i) monetary policy, not fiscal policy, was the key to economic stability and (ii) the control of inflation required limiting money balances, not incomes policies and wage controls.

Note that 'economic stability' for Anna Schwartz (and her fellow revolutionaries) does not closely fit (though there are undoubtedly overlaps) the notion of monetary stability in its wide sense as formulated by J. S. Mill and taken up later by the Austrian school economists to include lack of temperature rise in asset and credit markets and the absence of related malinvestment. Rather, economic stability for Friedman and Schwartz has meant avoidance of great cyclical turbulence (not through 'fine-tuning', which both rejected but through the firm setting of long-term monetary rules) and of inflation. (The Austrian school would be somewhat more ready than the first revolution monetarists to embrace the idea that considerable fluctuations in economic activity could emerge in the process of economic progress through time even within a stable monetary order – though the great booms and busts associated with the money monkey wrench getting into the machinery of the economy would be eliminated.)

Monetarist revolutions occurred first in Germany and Switzerland (see Rich, 1987; Bordo, 2007). In those two countries the revolutionaries remained in control until at least the mid-1980s (see Schmid, 1998). The monetarist revolution in the USA was much briefer (1980–2), and the faith of the lead revolutionary (Paul Volcker) is seriously in doubt (see Benjamin Friedman, 2005).

It was a deep flaw in this first monetarist revolution that the notion of monetary stability was excessively narrow – limited to the absence of 'high inflation' over the long run, with no extension to the realms of asset and credit market temperature. The revolutionaries did not identify or stress the essential role which price level fluctuations play, in the short or medium term, in achieving economic equilibrium and how such fluctuations can be reconciled (not continuously) with monetary stability in its full sense, including price level stability over the very long run. Indeed, Friedman's quote above about inflation signally does not make room for the distinction between 'good inflation' (related, for instance, to an episode of resource shortage) and 'monetary inflation', though almost certainly he had in mind persistent inflation over the long run (which could not be 'good inflation').

These first revolutionaries did not sufficiently warn that high reserve requirements and non-payment of interest on reserves are critical, though they were undoubtedly aware of their significance, in constructing a stable monetary order.

Counter-revolution of the monetary authoritarians

When US inflation fell back in the early 1980s (in the wake of the brief monetarist radicalism of 1980–2), it seemed reasonable to many in the corridors of US monetary power and to the public at large that there could be some relaxation in the strictures of monetarism. Surely it was a good idea to stabilize short-term interest rates rather than leave these to the vagaries of market forces? And wasn't it better to aim directly for a low and stable inflation rate than allow the inflation rate to oscillate considerably in the short and medium term – even into negative territory sometimes – whilst pursuing a fixed target for monetary base or narrow money? And anyhow, why go on penalizing the banks with high reserve requirements and no interest on reserves when there was no longer any point in blindly following a money supply target, especially as the monetary aggregates seemed to be behaving in abnormal ways?

The banking lobbies had a field day. There were also those central bankers who had never been persuaded by the faith of the leading monetarist luminaries within their institutions and welcomed a dismantling of monetary rules and a return of their discretionary powers to set rates and many other matters. And for the record, in October 1982 the FOMC abandoned targeting a version of high-powered money.

We could summarize what followed the monetarist revolution as the counter-revolution of the monetary authoritarians. The message they chose to distil from the Great Inflation and its 'defeat' was that independent central bankers with full discretionary power to peg interest rates free of political interference would be the best bulwark against such trauma ever repeating itself. That was totally at odds with the teaching of the monetarist revolutionaries, who had put more emphasis on constitutional-style monetary rules rather than central bank independence and who advocated a free market determination of interest rates. If there was a link between the two, it was that several prominent central bankers based in largely independent central banks (the Deutsche Bundesbank and the Swiss National Bank) had taken up the advocacy of monetary rules (even though these would limit their discretionary power in some respects). They may not have been able to implement the rules if politicians had had greater power over the central banks.

As illustration, such a link between central bank independence and embracing of monetarism is plausible for Germany, even though in principle the government could always set limits via its ultimate responsibility

for exchange rate policy. The legendary Professor Emminger campaigned successfully (within the Bundesbank and vis-à-vis the German government) for a hard Deutschemark set free from, first, the Chesney Martin and, later, the Arthur Burns US dollar and founded on monetarist principle. But once Emminger and his fellow monetarists retired or were replaced at the helm by the next generation of political appointees, who abandoned the monetarist principles, central bank independence became a global recipe for growing instability. In the German context, of course, that must all be seen against the background of, first, political union (of East and West Germany) and then the journey towards the European Monetary Union. Pools of monetarist conviction within the Bundesbank policymaking committees were overridden by presidents in tune (not totally) with the Chancellor's political programme.

Central bank independence became the vital condition of progress towards the European Monetary Union. French President Mitterrand saw the institution of a central bankers' committee to write the blueprint for monetary union (the Delors Report) as the way to bypass the objections of the Finance Ministers. ('If you want to get an agricultural treaty you don't invite the agricultural ministers; and a monetary treaty depends on not involving the finance ministers!'). The central bankers could agree on giving themselves huge power in the new monetary union to be created (see Brown, 2004). These powers were defended by the false claim that central bank independence had been the key to ending the Great Inflation and would continue to be essential to preventing another Great Inflation. Moreover, President Mitterrand sought to hide how much independence would indeed be handed to the central bankers in the new union. He declared on TV, in the course of the referendum campaign on the Maastricht Treaty, that final monetary decisions would rest with the EU Council of Ministers.

Towards a second monetarist revolution

If there is to be a second monetarist revolution to overturn the power of central bankers and replace them with a constitutional set of rules designed to produce monetary stability, then the driving force must come from the political system. In the case of the Eurozone, there is the huge barrier to revolution posed by the fact that ECB monetary policymaking (but not credit bail-out operations) is enshrined outside the political system. Revolution would be possible only with the heads of state agreeing to put forward a change in the Maastricht Treaty, which would then have to be ratified, or with revolutionary fervour coming from within the ECB itself – virtually impossible to contemplate. Perhaps revolution could break out as part of the process of European monetary disintegration. If ultimately Germany and a few other countries were to salvage a smaller monetary union from the disaster of the Maastricht union, they could design a new treaty based on

the ideas of the second monetarist revolution. As of 2013, however, there is no significant pointer to such a development.

Most plausibly the second monetarist revolution would erupt in the United States. A president set on bringing an end to the episodes of huge monetary instability (including credit bubbles and busts) and in tune with classical liberal principles could hand-pick a candidate for the head of the Federal Reserve who would pursue monetary reform to that end. Success would critically depend on support for this purpose in Congress (to get past the first hurdle of the nominee being appointed and then of his or her proposals obtaining required legislative authority) and on there, indeed, being an individual candidate suitable and available to the task. The mission would depend for its success on an academic climate where ideas about monetary stability had moved on considerably from the starting point of the first monetarist revolution to embrace much more than 'low inflation and taming (not fine-tuning) the business cycle'.

There is no need for the academic advocates of a rule-based reform aimed at monetary stability in its widest sense to have made a sweep of US academia similar to what the Keynesians achieved in the 1940s or 1950s. But blueprints for reform should be ready on the shelf, and there must be one or more leading academic establishments (and very helpfully, charismatic professors) preaching the revolutionary creed.

The limited purpose in this chapter is to draft such a blueprint, showing how it differs in key respects from the blueprints of the first monetarist revolution. No doubt by the time the second monetarist revolution erupts, there will be many more elegant blueprints available.

Austrian school revolutionaries must stir popular anger!

The starting point of the blueprint is the growing awareness that monetary policies determined by inflation-targeting regimes were responsible for breeding the vast monetary disequilibrium which was the essential condition for the global credit bubble and bust of the last decade. This 'growing awareness', however, is far from being the dominant or even majority view (however that is determined) among monetary economists. The present and previous head of the Federal Reserve (Ben Bernanke and Alan Greenspan, respectively) strenuously deny that their policies were responsible for the credit bubble and bust. They would blame all on the massive Asian saving surpluses, claiming that these drove interest rates so low in the USA (and Europe) as to set off a credit and asset bubble. This assertion is returned to fully in the next chapter.

At this point it suffices to call into question, first, whether the size of underlying surpluses (most of all in China) was actually so overwhelming in terms of the global economy and, second, whether they could in themselves be the source of monetary disequilibrium. In the most extreme case

of all these, Chinese excess savings being routed into risk-free government bonds in the USA and Europe, this might put some upward pressure on the equilibrium level of risk premium and downward pressure on equilibrium risk-free rates for, say, medium and long maturities. If the equilibrium medium-maturity interest rate had fallen below zero in real terms, then in a stable monetary order (with long-run price level stability) some good deflation might have occurred so as to bring present prices down below future expected prices, meaning that very low positive nominal interest rates would be significantly negative in real terms. None of this would have fuelled a credit or asset bubble – except that persistent low or negative real rates in line with neutral can fuel some modest degree of economic overheating until reversed by a transitory rise in interest rates, as would indeed emerge under a stable monetary order (see Chapter 1, p. 10). The high degree of irrational exuberance (high temperature of speculative fever) that actually emerged during the great asset and credit bubbles of the 1990s and 2000s stemmed from monetary excess caused by central banks piloting medium-maturity interest rates (via present and trumpeted future official rate pegging operations) to far below equilibrium level.

A similar spirit of denial runs through the ECB (concerning its culpability for credit bubble and bust within the Eurozone, whether in the area of sovereign debts, real estate, financial institutions, of other asset classes) with an additional subtheme that policymakers there had never adopted officially an inflation-targeting regime in the first place (a claim which is rejected in an earlier volume by this author; see Brown, 2010). Central bankers in Japan and Switzerland claim that there were no domestic credit bubbles in their countries and so escape blame; furthermore, the Bank of Japan never fully embraced an inflation-targeting regime. They do not acknowledge that the carry trade bubbles in their currencies stemmed in part from monetary disequilibrium. They missed the symptoms of this due to excessive focus on price level movements. Those carry trade bubbles went along, in the middle years of the 2000s, with vastly excessive real depreciation of the respective currencies (the yen and Swiss franc) and matching malinvestment (excessive expansion of the respective traded good sectors followed by the discovery of huge economic waste once the real exchange rate jumped).

Outside the central banks and in the academic world, the main redoubt for attack on the central banks has been the Austrian school (with writings collected, for example, on the Mises Institute website). The underlying theme is that considerable fluctuations of the price level, sometimes downwards, must occur over short- or medium-term periods of time if overall monetary stability in its widest sense – including asset and credit markets remaining in a temperate zone – is to be achieved as well as possible. Modern writers close to this school refine the notions of 'asset and credit market inflation' or 'malinvestment' found in the original texts (whether Mises or

Hayek, for example). There, the malinvestment which resulted from monetary disequilibrium (characterized by a monetary authority driving rates far below neutral for an extended period) was wholly in the form of 'overinvestment' (excess production of capital goods relative to consumer goods). Production processes would become more capital intensive (or 'time intensive'), and consumer goods production would be curtailed relative to what would occur under conditions of monetary equilibrium. All of these distortions have to be reversed in the ensuing economic downturn.

The more relevant (and quantitatively much more important) concept of malinvestment of which today's Austrians write starts with a tale of temperature rise (irrational exuberance) in various credit and related asset markets stirred by monetary disequilibrium. This (the temperature rise) stimulates an excess build-up of capital stock in certain sectors of the economy, which subsequently becomes obsolescent in economic terms when the bubble bursts (or the temperature falls), with the result that vast stocks of physical and human capital waste away. The process of renaissance from these devastating experiences requires much new capital (savings), risk appetite, entrepreneurship, technological progress (bringing new investment opportunity) and overall economic flexibility (including of prices and wages).

All monetarist revolutionaries agree on rules and reject discretionary control

In drawing up a blueprint for a second monetarist revolution, which takes account of key Austrian school insights related to monetary stability, it is important not to lose sight of the rich heritage left behind by the blueprints of the first monetarist revolution even though these were defective in ignoring monetary stability in a wide sense (beyond goods inflation and economic stabilization). One such key insight was the desirability of rules versus discretion.

Reformist central bankers today who advocate sophisticated versions of inflation targeting to take account of wider aspects of financial stability – what Robert Pringle (Brown and Pringle, 2010) has described as 'inflation-targeting plus' – ignore the Austrian school insights. By the time the well-intentioned policymakers at the central bank developed a consensus that the temperature had indeed risen substantially across a broad span of credit and asset markets, there would have already developed huge monetary disequilibrium, together with related malinvestment. By contrast, a rule-based system of monetary control would have allowed, indeed stimulated, a set of forces to gather, which would rein back the temperature rise at a much earlier point.

Austrian school advocacy of monetary rules as against policymaker discretion does not extend to the well-known Taylor rule. This latter

prescribes how the central bank policy committee should optimally adjust, through time, the peg for the short-term interest rate so as to achieve a given inflation target on the basis of apparently robust econometric evidence from the past. Any such procedural rule is deeply flawed.

The Taylor rule is based on an equation in which the dependent variables include the output gap (the amount by which economic output is estimated to be below or above potential), the neutral level of medium-term interest rates (which somehow the benign central banker knows!) and actual inflation relative to target. But which central banker, even the sharpest and smartest, can estimate, consistently better than the decentralized process of market pricing, what the neutral path of short-, medium- and long-maturity interest rates through time is? And the conventional central banker pegging short-term interest rates so as to steer money supply in line with target does not seek to influence medium- and long-maturity interest rates, which are in any case crucial to much business and investor decision making.

History is strewn with examples of wrong estimations by the best economists of the output gap – which in any case is a concept rooted in Keynesianism or neo-Keynesianism. And besides, why should the central bank committee be aiming for a stable inflation rate over the short or medium term when in fact the inflation rate or price level should be fluctuating (and only be stable in the very long run) so as to be consistent with economic equilibrium through time?

Second monetarist revolution distils some lessons from gold and Chicago

A good starting point in the search for an ideal set of rules in the blueprint for the second monetarist revolution is to relook at the rules which operated under the gold standard, whilst also taking advantage of Milton Friedman's intuition in advising on the blueprint for the first revolution. The test is whether the proposed set of rules would promote a greater degree of monetary equilibrium over time than the alternative of discretionary rate pegging (or Taylor rule-based rate pegging) by a central bank policy committee pursuing some version of inflation targeting.

Monetary equilibrium in this context means, **first**, ensuring that money does not become a monkey wrench in the machinery of the economy, in the sense described by John Stuart Mill (and this extends to asset and credit market temperature rises together with related malinvestment), and **second**, delivering stable prices over the very long run. (A practical definition of the latter concept of long-run price level stability might be that the 10-year moving average price level should move within a range of plus or minus 10 per cent of the base price level; by contrast a 30-year moving average should move within a range of, say, plus or minus 5 per cent.) It is essential

to take a long-term perspective – unlike that of the current generation of policymakers, which is conditioned to achieve short-term results.

Defining monetary stability and its inherent trade-offs

The two objectives of monetary stability – money not becoming the monkey wrench in the machinery of the economy (in J. S. Mill's sense) and stability of prices over the very long run – may come into conflict with each other. Then there has to be some trade-off – in the sense of some tolerance with respect to missing the target of price stability over the long run so as to limit the degree to which the money machine gets out of control, and the converse. It is best if these trade-offs are self-regulating within a system of rules (and overall limited in scope) rather than determined by monetary officials, however well meaning, exercising discretion.

As illustrations of where a trade-off might emerge, consider first sustained and contiguous bouts of productivity growth (at a faster pace than normal). With a fixed money rule these could mean an extended period of price level falls (good deflation), which might in turn go along with a gathering climate of deflationary expectations (that is, people come to expect that the new norm is a steady fall in prices rather than long-run stability). To dissipate those deflationary expectations and maintain price stability over the long run, the central bank might find that it has to override the normal fixed money rules – even if by doing so it induces a patch of monetary instability in the J. S. Mill sense (characterized by some temperature rise in credit and asset markets).

Apologists of the Federal Reserve in 2003–5 or the Bank of Japan a little later might argue that both were implicitly aware of the need to make a trade-off along the lines just outlined in the pursuance of monetary stability. The Greenspan/Bernanke Federal Reserve (Greenspan the chair, Bernanke the leading academician from his appointment to the Board in late 2002) became concerned that inflationary expectations were falling 'too far' and so was ready to accept meanwhile the danger of a subsequent (after a potentially long and variable lag) emerging credit and asset market temperature rise. The Bank of Japan was trying to counter 'deflationary psychology' and so tolerated suspected symptoms of monetary disequilibrium in the form of speculative fever in the yen carry trade.

Both apologies are implausible, particularly so for the Federal Reserve. In spring 2003, on all measures, US inflation expectations were still around 2 per cent per annum or more with respect to the long run and even actual core inflation in a weak cyclical situation was at 1–2 per cent per annum. For Japan in 2003–5 the price level was barely 1 per cent below its average level for the previous ten years. So surely the aim of price stability in the long run did not justify the Bank of Japan's being so slow in withdrawing the excess reserves and in allowing rates to rise into substantially positive territory.

A similar criticism could be made of the Swiss National Bank's ignoring a rise of speculative temperature in the Swiss franc carry trade and the related real weakness of the Swiss franc in the currency markets out of concern that inflation was somewhat undershooting its long-run target. The malinvestment in the export sectors – both in Switzerland and Japan – was to emerge as a big problem later when their currencies jumped in value as the carry trade bubble burst.

Even in an economy with the best monetary rules, some episodes of disequilibrium are still inevitable. There is no automatic mechanism keeping actual interest rates perfectly in alignment with the natural or neutral level, which is unknown and best estimated by the market. (The natural interest rate is a real concept, defined with respect, say, to a medium-term time horizon; as an illustration it could be the five-year real rate of return on a risk-free asset which would be consistent with general equilibrium. The neutral interest rate is defined as the natural interest rate plus the expected rate of inflation over the same given time interval.)

The gap, however, between market rates (for medium and long maturities) and neutral level is likely to be smaller on average over time where the former are free to reflect the (often heterogeneous) estimates of market participants – reflecting a decentralized process of information gathering and learning – than when heavily influenced by the hectoring and rate-pegging practices (with respect to rates in the money market) of a central bank policy committee. Under the gold standard, interest rates on average across countries belonging to the gold bloc were indeed determined by such a market process without any substantial rate pegging or rate jawboning by monetary officials.

Lesson from 1907 and tulip bulbs

The challenge in drawing up the blueprint for a second monetarist revolution is to get as close as we can to distilling this market-led process from the gold standard world and replicating it in the contemporary context of fiat monies. Lessons can be drawn from the episodes of credit and asset bubbles which did in fact occur under the gold standard world of 1871–1914 – most notably the 1907 world financial crisis, which was concentrated in the USA.

These episodes were associated with disregard for or interference with the rules of the gold standard, usually by governments. Also, however, natural disturbances or other exogenous shocks or sudden endogenous discontinuities played a role. Sometimes in the gold standard world there could be monetary disturbances, as, for example, in the case of vast new discoveries of the yellow metal or of sudden shifts in the demand for base money (of which gold was a large component).

For example, Murray Rothbard (2002a) criticizes the US Treasury for manipulating the supply of reserves in 1905–6 and so fuelling monetary

disequilibrium, which lay behind the credit and asset bubble which burst in 1907. But other authors have also stressed the importance of new gold supplies (see p. 24) and the San Francisco earthquake of April 1906. This latter may have contributed to a rise in the natural level of interest rates, which was inadequately detected by markets (meaning that a capital spending boom went to excess given that long-term rates in particular stuck below equilibrium level before eventually adjusting). Plausibly both factors worked together in producing the bubble and bust of 1905–7, in that stable monetary conditions might have gone along with an earlier adjustment upwards of the long-term rate (instead of what occurred in practice).

Further back in history (before 1870), some episodes of bubble and bust can be traced to sudden changes in the demand for gold money (for example, downward shifts stimulated to rapid growth in fractional reserve banking systems). Even the notorious tulip bulb bubble in Holland (1634–7) has been linked to such a development – the emergence of the Bank of Amsterdam and its then revolutionary innovation of quasi-fractional reserve banking (see French, 2009).

Monetary base control under the gold standard

The set of monetary rules, which ideally (albeit not continuously in practice) delivered monetary stability under the gold standard, determined indirectly the growth of monetary base for the gold countries as a whole. Growth in the supply of monetary base (circulating gold coin, plus gold coin and national banknotes backed by gold in the vaults of the banks, plus deposits of the banks with the clearing house and convertible 1:1 into national banknotes or gold) was tightly related to the mining of new gold and the amount of seepage of gold from non-monetary uses (jewellery) into monetary uses. The fixed price of gold in terms of money was central to the mechanisms which determined those magnitudes (new mining and jewellery consumption).

Specifically the fixed price of gold amounted to the obligation of government (or its agent) to redeem its own banknotes in the national gold coin (whilst maintaining the legal gold purity of these coins) and to freely mint gold bullion into the national gold coin. One gold coin had a specified weight and purity: in effect there was a fixed nominal money price for gold. Exchange rates between monies in the gold bloc could only fluctuate within small limits determined by the costs of shipping gold from one financial centre to another. In many countries there were no legal reserve requirements, but banks held large cash reserves (coin and banknotes) against their deposit liabilities. In the USA, the National Banking Act imposed fairly high mandatory reserve requirements.

In the fiat monetary systems found now, there is no set of automatic mechanisms centred on a fixed price between the money and the yellow metal to determine the overall growth in supply of monetary base (sometimes

described as high-powered money), which is defined to include circulating banknotes (and coin), cash in bank vaults, plus deposits which banks hold with the central bank. For sovereign monies (issued by one political jurisdiction), monetary base is a national concept. For a monetary union (for example, the European Monetary Union) it applies to all member countries in aggregate. And so an alternative set of mechanisms has to be established to determine the growth of monetary base through time.

In devising this set of rules, the designers of a framework aiming to achieve monetary stability can learn from how the automatic mechanisms under the gold standard operated. For example, when the price level entered an extended period of being below its long-run average (where price level is defined for the gold bloc as a whole), a related fall in the cost of mining would help trigger an increase in gold production. So the designers of a monetary framework for fiat money could stipulate an automatic rule which would provide for an acceleration of base money growth when the price level is depressed for an extended period. Critically the designers could borrow from Milton Friedman's advice to eschew short-term cyclical fine-tuning and instead set a low x per cent per annum expansion of the monetary base subject to various 'constitutional' overrides set by rules, as described more fully below.

How to revive monetary base control?

The essence of monetary base control (MBC), designed to anchor fiat monetary systems with the purpose of delivering monetary stability, is the stipulation that monetary base should grow in the long term at a rate consistent with the growth of the economy's productive potential, plus an allowance for a low or zero inflation rate (see Brown and Pringle, 2010). It is not of the essence of MBC systems that there should be targets for wider money supply aggregates (to include various types of bank deposits and money market certificates) or that there should be a highly predictable multiplier between base money and broad money over the short or medium term. The central bank has complete control over the supply of monetary base but not over these wider monetary aggregates.

In practice, the central bank operating under MBC would determine, by its interventions, the path of bank reserves but would adjust this continually so as to be consistent with the target for overall monetary base growth taking account of unforecast changes in the public's demand for cash and banknotes (also part of monetary base). Bank reserves (under MBC systems) pay no interest, whether these are at or above the legally required minimum level. Legally required reserves are set at a modestly high ratio of stipulated outstanding deposits in the banking system (see further details below).

The central bank changes the quantity of reserves through a combination of open market operations and repo operations, normally in government bonds (but also sometimes in foreign exchange). The change in reserves consistent with an x per cent annual growth in monetary base would be determined most plausibly on a monthly average basis, giving some flexibility to the central bank to moderate day-to-day swings in overnight interest rates, which would otherwise be driven by random fluctuations in demand for reserves. Interest rates, both in the money markets and more broadly, are left wholly to market determination. Fluctuations in demand for reserves may lead to possibly big changes in overnight and other very short-maturity interest rates so as to balance supply (fixed in line with the target) and demand.

As reserves pay no interest (under MBC) a rise in money rates generally brings a decrease in demand for these, as banks seek harder to economize on excess reserves (even though this might end up in increased penalties for occasionally falling below minimum legal reserves and call for increased skilled monitoring of their cash positions on a continuous basis) and as the public tries to economize further on their holdings of cash relative to deposits (so as to gain the benefit of higher interest) even though this might mean some increased inconvenience. (As cash holdings decrease, the central bank can increase its operating target for bank reserve growth consistent with a given monetary base growth target.) At the same time, a widening in the spread of yields on deposits subject to reserve requirements below yields on similar maturity instruments (for example, commercial paper or short-maturity government bonds) not subject to these, as occurs when interest rates generally increase, encourages some disintermediation, with investors switching away from bank deposits (to, for example, commercial paper and bonds, whilst borrowers switch from bank loans to commercial paper issuance). Such switching induced by the rise in interest rates corresponds to a decrease in demand for reserves.

The elasticity in demand for reserves with respect to changes in the absolute level of short-term interest rates, as generated by the operations just described, helps to keep the extent of volatility in money market rates within bounds under MBC systems. This elasticity of demand (proportionate shift provoked by a given absolute change in interest rate level) is greater at a modestly high level of reserve requirements than at a low level of reserve requirements (as the change in rate spread between instruments subject to reserve requirements and those not subject is correspondingly larger).

Another key reason for stipulating modestly high reserve requirements is to constrain changes in demand for reserves to be closely related to movement of aggregate incomes and the price level. If reserve requirements are set very low the observed shift in observed demand for reserves might be dominated for months at a time by random fluctuations (white noise)

and by non-macrovariables rather than by underlying changes in equilibrium demand as determined by macrovariables (see Feinman, 1993). Then MBC, at least as exercised over short or medium periods of time, could be less successful in steering the given economy along the path of monetary stability.

If, however, reserve requirements are set at very high levels, then the banking industry, which depends on reserve-liable deposits, would shrink relative to the amount of intermediation going through non-bank markets. Consequently, demand for monetary base could become less closely related to just two or three key macroeconomic variables than in the case of modestly high reserve requirements, undermining MBC as the means of achieving overall monetary stability. Moreover, a very high level of non-interest-bearing reserve requirements could mean considerable economic inefficiency, in that it necessitates a high tax on bank intermediation, leading to less efficient forms of intermediation taking place.

Modestly high reserve requirements, along with a considerable elasticity of demand for reserves in response to variations in the absolute level of money rates, also have an important advantage in the form of moderating fluctuations in speculative temperature. A very small amount of elasticity (as for low reserve requirements) would mean that in recessions a slowdown or decline in demand for reserves would signify a prompt fall of money rates to zero, at which level they could remain stuck for a considerable period of time, even well into the subsequent economic recovery (until demand for reserves had picked up sufficiently to exceed the only slowly growing supply at a continuing zero interest rate). Extended periods of zero rates continuing into recovery have the disadvantage of possibly inducing various forms of irrational exuberance (temperature rise) in some asset markets in a climate of what market commentators describe as 'desperation for yield'. Putting some hurdle in the way of money rates falling to zero does mean that it is even more important for the given economy to exhibit price flexibility, with good deflation emerging during cyclical downturns so as to generate the expectation of price level recovery in the future – all of which suggests that low nominal rates could be negative in real terms.

In drawing up the details of MBC, the designers of the blueprint have to consider over what range of instruments reserve requirements should apply and whether they should apply at variable amounts (different ratios for different assets). Historically under the Federal Reserve System there has usually been (except at the very beginning) a much higher level of reserve requirements on so-called sight deposits than on time deposits (see Feinman, 1993). That differentiation has added to the elasticity of demand for reserves with respect to interest rate changes (in that rises induce shifts from sight deposits into time deposits and conversely) but (in so far as differentiation has gone along with a lower level overall of required reserves) at the cost of reducing the strength of the link between demand for reserves and

the key macroeconomic variables. In principle it would be best – in terms of strengthening that link – to apply the moderately high level of reserve requirements to all bank deposits (including certificates of deposit) and of any size (excluding deposit taking between banks which are members of the Federal Reserve) but excluding all non-deposit liabilities (for example, capital notes).

There is also a good case for extending such reserve requirements to non-banks in the US issuing 'deposit-like' liabilities. Deposit-like features include ready use for transaction purposes and the benefit of guarantees provided by equity shareholders and bondholders (in the given financial institution) as regards repayment in full. Hence money market funds, as presently constituted, would be subject to reserve requirements. However, if the money market funds changed form – from being rather than money-like into being essentially investment vehicles (ETFs, for example) which are backed by portfolios of mostly short-maturity debt assets and whose valuation fluctuates in line with market prices (where holdings are liquidated by sale in the market rather than repayment directly by the fund administrator) – then they would be exempt from reserve requirements. And of course banks themselves would be able to set up such ETFs free from reserve requirements to sell to the public.

Any full review of reserve requirements would also have to consider such issues as whether these should be applied to non-resident holdings of deposits in US banks and whether international cooperation should be sought to impose these on US resident holdings of deposits offshore. In principle, the answer to both questions might well be yes, even though imposing reserve requirements on foreign deposits could detract from the competitiveness of New York in international money markets. In practice some exemptions might be granted in the case of large wholesale foreign deposits which may have less of a close relationship to US domestic macroeconomic variables. Imposing reserve requirements on US resident deposits with banks outside the USA might only be feasible with respect to branches and subsidiaries of US banks offshore. In principle the inclusion of those would mean there was a closer fit between growth in demand for monetary base and growth in nominal incomes and so reduce rogue responses of money rates to shifts in random variables unrelated to monetary stability. But there would be the 'noise' of US deposits switching between US and non-US banks offshore.

There is a further argument in favour of extending reserve requirements fully across the deposit base of banks and money market funds (sharing deposit-like qualities). These wider aggregates tend to move ahead of income during periods of temperature rise in credit and asset markets. Consequently, as demand for monetary base rose in step with the wider aggregates, there would be some preprogrammed tendency for money rates to rise even though no symptom of inflation for goods and services existed.

Rebutting the criticisms of MBC

Several criticisms have been raised of monetary base control (MBC) as practised by one country and not a part of the automatic functioning of an international gold standard.

MBC was tried before and failed

For example, there is a widespread view that MBC was tried around the world in the late 1970s or early 80s and failed. According to some versions of economic folklore, there was a grand debate between academic warriors in which the advocates of MBC were defeated. In fact, nothing of the sort took place. In the USA, a type of MBC was practised for just three years (1979–82). Introducing it not as a long-run change but as a temporary expedient made it politically easier for the Volcker Federal Reserve to sell very high interest rates in the money markets – rates that it viewed as essential to overcoming the Great Inflation.

Volker's later abandonment of MBC was not attributable to a sober review of experience and principle, which should have included careful analysis of its record in both Germany and Switzerland. Rather, the hasty return to discretionary control of short-term rates reveals most about Volcker's lack of conviction of its merits (other than as a cover for draconian high rates) at any point during MBC's US life. Indeed, what followed the end of MBC (discretionary pegging of interest rates by the FOMC) was a dramatic rise in temperature across many credit and real estate markets through the mid and late 1980s, a rise which percolated through the global economy.

In Germany, a hybrid type of MBC, practised by the Bundesbank for around 15 years from 1973 onwards, met with considerable success in terms of monetary stability (low inflation, absence of big temperature swings in asset markets; see Schmid, 1998). Its abandonment was in part related to the transition to German Monetary Union and then to European Monetary Union. The legendary Bundesbankers who had defied the conventional monetary wisdom of their time and made the Deutschemark hard were replaced by a highly politicized generation of central bankers. This new generation was responsive to the growing chorus of complaints from the banking lobbies about the costs of reserve requirements.

In Switzerland there was a similar trial of MBC (in a rather purer form than in Germany); it again met with some success but one qualified by the difficulties this approach to monetary policy encounters in small open economies (see below). Also in the mid-1980s, amidst generational change, the banking lobbies were successful in getting big reductions in reserve requirements. This 'liberalization', together with the introduction of a new system of interbank clearing (which meant banks sought to economize to a much greater extent than previously on excess reserves), meant that MBC

no longer functioned to promote stability. A credit bubble and real estate bubble developed in the late 1980s, and MBC was mistakenly discredited. The fault was not with MBC, as ideally applied, but the corroded principles which now governed its application.

In the UK there was much talk about MBC for a brief period at the start of the Thatcher Administration, but talk never materialized into action (see Pepper and Oliver, 2001). Prime Minister Margaret Thatcher eventually repudiated the advice of Milton Friedman and Karl Brunner to introduce a version of MBC. The opposition from the Treasury establishment and City of London pressure groups proved too strong. The UK Treasury rejected MBC on the ground that it would take many years for estimates to be made of the various money multipliers under the new system and that the dangers in the meantime of adopting MBC (without those estimates to hand) were not worthwhile.

There is always, however, a leap of faith in embracing a new system – by definition the evidence cannot be available in advance. The multipliers are dependent on the system. It was a misunderstanding to say that MBC depended for its success on there being a stable relationship between the monetary base and broad money over the short or medium term (see below). Surely MBC could not have done as badly as the discretionary monetary policies which followed (the decision to reject MBC) and produced the Lawson boom and bubble of 1986–8? Opposition from the City largely stemmed from special interests which thrived under the cartel arrangements (including discount houses) that were so widespread under the existing practice of monetary control and which would have had to be abandoned under MBC.

Short-term interest rates fluctuate violently

A second criticism of MBC has been the potential for large fluctuations of short-term interest rates. This was observed particularly in the Swiss experience, less so in the German (where the Bundesbank did not rigorously pursue quantity targets over short periods of time but rather administered a flexible peg for short-term rates where changes were made wholly for the purpose of steering money base into its target range over the medium term).

The defenders of MBC reply that, under the gold standard, short-term money rates typically fluctuated widely, and yet this volatility did not feed forward into longer maturity rates. The capital market, in determining medium- and long-term rates, largely disregarded the volatile short-maturity rates as having no significant information with respect to the neutral or natural rate of interest and listened instead to the underlying rhythm and vibrancy of the economy.

Indeed, the extreme volatility was helpful in insulating the latter process from short-run monetary influences. The totally opposite situation occurs

under rate-pegging, inflation-targeting central banks, where the capital markets listen attentively to the rate-pegging and rate-jawboning intentions of the monetary bureaucrats and where a huge amount of lending occurs on a floating rate basis – the rate used as benchmark is closely related to the rate being pegged by the monetary authorities. In a context where short-term money rates were highly volatile (as under MBC), much of this borrowing and lending activity would switch to the medium-term and long-term fixed rate markets helping in the robust discovery of the neutral rate.

Of course, this does not mean that in all circumstances capital markets will ignore the pattern of rates which emerge over time in the money markets. For example, if demand for monetary base has shifted substantially upwards whilst the growth in its supply continues at an unchanged slow pace, there could be a prolonged period during which money rates are fairly high. Speculators would notice this fact and might bet on its continuation, so causing those high money rates to spill over into medium-maturity bond yields. But this spillover would be quite weak given the lack of any precise knowledge about how long the monetary tightness would persist and whether, indeed, at any point the monetary authority, following the constitutional rules (see below), might decide on an override and inject additional monetary base.

It is not practical for one country to practice MBC on its own

A third criticism of MBC is that it is difficult for a small or even medium-size country to practise it on its own. If, for example, the ECB and Federal Reserve are following inflation targets and managing adjustable pegs for short-term interest rates, what chance is there that an isolated MBC system in, for example, the UK, Switzerland or Israel would end up generating less monetary disequilibrium over time than a monetary policy committee using its best discretion to trade-off foreign and domestic sources of monetary disequilibrium?

As an illustration, suppose the ECB and Federal Reserve are creating huge inflationary disequilibrium (whether the symptoms appear in asset and credit markets, goods markets or both) and the BoE decided nonetheless to pursue a low rate of monetary base expansion (buttressed by high reserve requirements and no interest on reserves). The result could be that the domestic currency (pound) would jump to a level far above its long-run equilibrium value (in real terms). Although not itself a creator of monetary disequilibrium, the UK monetary order would become the trigger to a dislocating shift in the UK economy away from exports (shrinkage of those industries), which would subsequently (in the long run) have to be reversed. In sum, the UK economy, though not the source of monetary disequilibrium, could be drawn into widespread malinvestment.

The extent of such distortions in a small open economy, where the authorities are determined to follow a stable monetary path despite huge turbulence generated in the world outside, could be moderated by episodes of good deflation (prices and perhaps wages falling below the long-run stable path when the disequilibrium abroad is at its most intense, coupled with expectations of a return to normal further ahead). It is plausible that in the traded goods and services sector of the given small economy, wages and prices could fall considerably in domestic currency terms as both labour and entrepreneurs calculated the optimal path to pursue through a short-term monetary storm (from outside) and long-term survival of their jobs and firms. Benign central bankers in such circumstances, trying to navigate the ideal path between domestic and external equilibrium, may well end up doing a lot more harm than good – especially if they generate a domestic asset bubble and bust, most likely including credit and real estate markets.

In recent years Israel, as a small open economy where the chief of the central bank, Professor Stanley Fischer, had been the teacher of Ben Bernanke (and a strong supporter on US television shows of his QE-1 and QE-2 time bomb campaigns), demonstrates the potential pitfalls of well-intended monetary manipulation. Fischer, in the face of considerable criticism from the OECD (of which Israel became a member in September 2010), pursued a policy of aggressive foreign exchange intervention and monetary expansion so as to shelter Israel, especially its key export sector, from the Bernanke Fed's 'unconventional monetary policy' (QE time-bombing), which was driving down the US dollar. The sad reality may turn out to be that Fischer's good intentions generated such a bubble in domestic residential real estate that the long-run damage of good intentions turns out to be much greater than sticking to monetary stability and allowing domestic price flexibility (especially prices and wages in the export sector) to do its work (in a downward direction) within the context of a freely floating shekel. There is much room for debate, however, in the case of Israel as to how much the speculative fever in real estate stemmed from domestic monetary influences and how much from other factors, including US and European monetary instability. As we have seen though, monetary disequilibrium tends to fuel irrational exuberance exactly in those markets where there is a pre-existing good story (in this case buoyant demand from wealthy foreigners for the best residential space and restrictions on new supply) to excite investors.

Some overspill, however, of monetary instability, from the largest countries into smaller countries pursuing monetary stability, is inevitable. If many asset markets and credit markets in the USA and, perhaps, the Euro-area were to heat up under the influence of monetary disequilibrium, this high temperature would surely spread to the UK, Switzerland and Israel (and of course many other small or medium-sized open economies), even if there was no source of monetary disorder there. In particular, if many

investors around the globe have donned (under US and Euromonetary impulse) rose-coloured spectacles in assessing risk and return in equity and credit and real estate markets, they would also see UK, Swiss and Israeli risks under the same influence (regardless of whether the currency risks are hedged). Hence MBC, in the context of the UK only, would not mean UK asset and credit markets were unaffected (in temperature) by monetary disequilibrium elsewhere. But under MBC the amount of any such contagious overheating might be limited by a triggered rise of interest rates (both in the capital markets and money market) in the small country. This would go along with a big transitory appreciation of the national currency, which would have a dampening influence on irrational exuberance in the traded goods and services sector of the economy.

Despite these dangers of contagion, it may still be that MBC allows less monetary disequilibrium to form than well-intentioned attempts by the central bank of the small or medium-sized economy (the UK in the above example) to skilfully navigate in the tempestuous conditions created by large, powerful, foreign central banks. Again, the decision one way or another involves a leap of faith rather than the detailed application of econometric testing. As a practical matter, no small- or medium-size central bank defied the monetary disequilibrium generated through the first decade of the 21st century by persevering with MBC.

Switzerland, which in the 1970s and early-to-mid-1980s had largely followed MBC, embarked on its own version of inflation targeting by the beginning of the 21st century. Although there was no domestic credit bubble, Switzerland became vulnerable to all the malinvestment and financial disequilibrium related to the bubble of the carry trade in the Swiss franc. The UK followed a version of disequilibrium monetary policy even more extreme than that pursued by the Federal Reserve or ECB.

In deep recessions, MBC cannot prevent massive monetary disequilibrium

A fourth criticism of MBC has been the observation that in deep recessions, demand for reserves might shift far (upwards) from its normal relationship to wider economic aggregates, meaning that targeting an unchanged path for overall monetary base would not be in line with monetary equilibrium. This criticism has been applied, in particular, to situations such as the Great Depression of the early 1930s and the Great Recession of late 2007 to mid-2009, when the equilibrium risk-free rate of interest on US dollars for short and medium maturities most probably fell to significantly negative levels in real terms. Then the impossibility of nominal rates falling below zero (without emergency steps to break the one-to-one convertibility of deposits into banknotes; see Chapter 3) meant some period of monetary disequilibrium (unless good deflation occurred).

If nominal risk-free rates had fallen to, say, –5 per cent per annum at such times of Great Recession, with rates on risky corporate loans at 5 per cent per annum, then there would have been bank lending growth and nominal money supply growth. But in a conventional monetary system the lower limit to nominal rates is zero (if rates fell below that, households and businesses would hoard banknotes rather than hold bank deposits). With nominal risk-free rates stuck at zero and no expectation of price rises, there is not the scope for risk premiums to widen, as in the above illustration, for few borrowers could afford to pay 10 per cent (which would provide the bank with a 10 percentage point risk premium). The compression of risk spreads below equilibrium level in consequence of the zero lower limit to the nominal risk-free rate would mean that money supply and banks loans could fall in nominal terms despite steady growth of monetary base.

As already highlighted in Chapter 3, good deflation is a (non-instant) way out of such episodes of monetary disequilibrium. Prices (and most likely some wages) fall in the short term, whilst the outlined steady path of monetary base expansion reinforces expectations that the price level will rebound in the future. Hence very low nominal interest rates become equivalent to negative real rates. Banks should be able to find ready takers for risky loans at still high nominal rates (for these would be less in real terms). At this stage the wider monetary aggregates and incomes start to return to their normal relationship to monetary base. The more flexible are wages and prices (in a downward direction), and the more stable are long-run expectations of price level stability, the shorter is the dislocation.

In their *Monetary History of the United States*, Friedman and Schwartz (1963) suggested (implicitly) that a powerful discretionary expansion of monetary base early on in such severe recessions could short-circuit the need for good deflation (which they do not mention explicitly) and drive the wider monetary aggregates and incomes on to a faster recovery path. The transmission mechanism, however, between a boost to monetary base and the faster recovery in such an initially depressed situation is left unspecified or, in technical jargon, remains in the 'black box'. In the decades since publication of their work, various authors have stressed a transmission mechanism which involves spreading anxiety about an eventual spurt of inflation well beyond the present, together with still low nominal interest rates and the accompaniment of currency devaluation (see Bernanke, 2002).

Yet that anxiety about future inflation would surely be limited were the central bank taken seriously in its commitment to remove excess reserves promptly as economic recovery emerged. So the success of this anxiety-provoking strategy would depend on maintaining 'strategic ambiguity' about whether the monetary base will or will not be brought back to its long-run trend line (as mapped out before the recession) or left far above. Even with this strategic ambiguity, it is not clear why any economic agent

would be in a hurry to bring forward spending, given that the outbreak of inflation could be a long way off.

In practice, any implicit argument by Friedman and Schwartz to depart from a fixed quantity expansion rule for monetary base during severe recession in favour of a discretionary big boost belongs to the world of the counterfactual. It has not had any success in practice. True, in the years 1934–6, well beyond the summer 1932 trough of the business cycle, there was a powerful expansion of the monetary base (the counterpart to massive gold purchases to stabilize the US dollar after its huge devaluation by the Roosevelt Administration) running far ahead of money supply and coinciding with an emerging strong economic upturn. But of course there had been a big deflation through the years 1930–2 (albeit heavily resisted by wage-support measures sponsored by the Hoover Administration), and this had set the stage for strong expectations for price level rebound (which indeed occurred). The continuing rapid monetary base expansion, together with interest rates being held down at zero, very likely contributed to the temperature rise in equity and commodity markets increasingly evident in 1936 (see p. 35).

A final point in rebutting the criticism of MBC under severe recessionary conditions (in the sense of continuing with an unchanged quantity rule subject to possible override by constitutional rules, as outlined below) is that if this rule had indeed been adhered to in the first place, there most likely would not have been the severe recession The severity of the recession – or rather double recession – in the US economy from 1929 through 1932/3 was, in considerable degree, related to the great monetary excesses which had occurred earlier in the 1920s (they fuelled the temperature rise in asset and credit markets, subsequently culminating in a process of severe bubble bursting). Similarly the severity of the Great Recession of 2008–9 was in large part the consequence of the monetary disequilibrium created in the years before. An MBC regime would have spared the US and global economy the ultimate disaster of the Greenspan-Bernanke experiments.

The need for discretionary changes in the rules

A fifth criticism of MBC has been the need for discretionary changes, sometimes in the fixed quantity expansion rule for monetary base. Under the gold standard, the quantity of monetary base was largely self-regulating, with new impetus to gold production when the general price level (and thereby mining costs) fell by a large cumulative amount and yet with the gold price remaining fixed. In any case even the strongest advocates of the gold standard would not maintain that it continuously prevented any emergence of monetary disequilibrium. Rather, the claim is that the extent of disequilibrium was less than under any alternative monetary regime. Under an MBC divorced from gold, policymakers must sometimes override

a given rule of x per cent a year expansion, or else this could rise to serious monetary disequilibrium.

An obvious example of when an override would be needed, as was also indeed the case under the gold standard, is where demand for monetary base surges in the context of financial panic. As demand for cash and reserves suddenly bulges, the monetary authority must stand ready to increase their supply, or else a severe shortage of base money would drive the economy even further into the ground. Friedman and Schwartz demonstrate how elasticity in the supply of monetary base was boosted before the creation of the Federal Reserve by various emergency clearing house loan arrangements and by temporary suspension of convertibility of deposits into banknotes (so that these went to a premium above deposits).

In today's fiat monetary systems, the central bank could decide on an emergency boost to base money under such circumstances. This decision would be triggered by the emergence of ominous signs such as risk-free interest rates (as on T-bills) rising well above zero in the context of a general scramble for monetary base. It definitely is not part of the override to attempt to hold down the interest rate on risky loans, for example, to financial institutions under suspicion of insolvency. Credit spreads should be allowed to widen out under market forces.

The constitutional rules for override could more generally provide some trigger in the form of 'if the five-year moving average price level falls by more than y per cent below, say, the normal 30-year average price level, then supplementary monetary base growth (the usual above x per cent) should be targeted over the next five-year period, with the excess, Z, a given function of the extent of undershoot'. This boost would be withdrawn gradually if and when the moving average price level began to move in the appropriate direction.

The point of this wording would be to prevent any type of fine-tuning but to allow response to probabilistic evidence (raising a significant possibility of some permanent fall in the price level not likely to be reversed by subsequent cyclical or productivity developments, for example) that a change had occurred which would make following an unchanged rule inconsistent with price level stability in the long run. This trigger bears some resemblance to the automatic mechanisms which functioned under the gold standard when a fall in the price level to below the long-run norm gave some stimulus to gold mining (as costs fell relative to the fixed gold price) and to some decrease in demand for gold jewellery (such that more gold would enter the monetary base).

Should there be constitutional overrides when a long-run shift becomes suspected in the relation between the demand for monetary base on the one hand and nominal income and wealth, for instance, on the other? The case for suspicion could include observations about structural change (for example, increased use of credit cards related to technological innovation,

leading to slower growth in demand for banknotes than anticipated, or rapid disintermediation from a banking system driven by financial innovation, leading to slower growth in demand for reserves). Evidence for the suspicion proving correct could be a strange persistence of money rates (on average over approximately three months) at a level well below medium-term rates as determined in the capital market and by more than would normally be consistent with this particular phase of the business cycle.

At issue is whether there should be a once-and-for-all subtraction from the monetary base (phased over a period of time so that its growth would still be slightly positive but less than x per cent per annum) and whether the long-run target should be revised from x per cent per annum even after that adjustment. The problem is that the door is opened to discretionary monetary management; once it is opened, who can guarantee that large-scale abuse would not follow? Perhaps it would be better just to wait for the override from the price rule to kick in (as it would have under the gold standard). Alternatively, the challenge would be to devise constitutional safeguards against abuse and strict controls; they would specify how discretion would be used (only within the limits of best achieving monetary stability over time, subject to strict vetting – no reversion to dual mandates and cyclical fine-tuning) and where decision making is fully transparent and no maestros created (top monetary official replaced every two years, perhaps).

A tax on bank intermediation

A sixth criticism of MBC has been that it would be a tax on bank intermediation, one which would induce distortions and inefficiency in the financial industry. This criticism is levied in particular against proposals for a high level of reserve requirements and the non-payment of interest on reserves – both essential components of a well-functioning MBC. The response is that the efficiency loss from the partial sacrifice of a level playing field between bank and non-bank financial intermediation is a small price to pay for the benefits of a largely automatic set of mechanisms (MBC) which should better achieve monetary stability than any alternative system of control. In any event, was it ever a level playing field to start with? The banking system, with its deposit guarantees and heavy regulatory burdens, is already a far cry from being in ideal free market competition with non-bank intermediaries (who themselves may in some cases be subject to restrictive legislation).

Price level instability

A seventh criticism of MBC is that it could mean extended periods of a rising or falling price level; there could be significant fluctuations year to year in

the rate of price fall or rise, and they could be unsettling to households and businesses. As already stressed, however, price level fluctuations through time (sometimes positive, sometimes negative and uneven) are essential to the benign functioning of a capitalist system enjoying monetary stability in its broadest sense. Certainly, the population in various countries, having lived for so long under distorted monetary regimes where the top officials preach the mantra of stable low inflation, may not be used to such fluctuations. It is a challenge for the leaders of the second monetarist revolution to communicate this point. Stable inflation should be regarded with the same mistrust an investor would feel towards an investment fund which produced stable high returns year after year.

A return to monetary base control has never been easier!

The huge increase in the size of the Federal Reserve's balance sheet and the matching increase in excess reserves which has occurred under the leadership of Professor Bernanke contain one good news item for monetarist revolutionaries. The increase has removed many practical objections (including political ones) to introducing a regime of high reserve requirements. The monetary base is already large; it is now a question of raising legal reserve requirements in line with actual reserves. The objections from the banking lobbies to the reversion to non-payment of interest on reserves might be correspondingly low at a time of virtually zero interest rates.

Meanwhile the rise in the legal reserve requirements means that the vast holdings of government or quasi-government debt in the Federal Reserve System are removed altogether from the marketplace. The interest burden on that debt would be matched in principle by a new tax on holders of bank deposits (and similar deposits at other financial intermediaries) who forgo a full market rate of return as a consequence of the high non-interest-paying reserves which the banks (or other financial institutions) must now hold at the Federal Reserve. So the launch of the new monetary system would go along with a big cut in the amount of government debt to be financed in the market and a levying of a tax on deposits (the tax rises with interest rates). That tax would not be large if indeed the second monetarist revolution is successful in delivering price level stability (accompanied by money market rates which are low on average).

Of course, there would be objections. The Keynesians and the Bernankeites (they overlap) would warn about a repeat of 1937, when a big rise in reserve requirements tripped the US economy, according to their analysis, into the Roosevelt recession. In this volume a repudiation of that claim has been presented (see p. 35). The banking industry would list grounds for concern. In particular a tax, even if low, on their deposits, could contribute to an overall shrinkage of profitable business, with this moving into new

channels. On the other hand the banks may be able to gain a share of such business – for example, an important presence in the ETF industry with respect to funds specializing in short maturity bonds, commercial paper, and other such instruments. Potentially New York might lose some market share in the global dollar deposit business. As against that loss, though, if the second monetarist revolution means a big increase in dollar hegemony, that should surely bring more than offsetting gains.

5
US Currency War Machine

If the second monetarist revolution were to occur in the USA, then the world would find itself at the dawn of a new age of dollar hegemony. No longer would international investors have to fear that their dollar assets could suddenly erode in value due to the Federal Reserve taking big gambles with monetary stability so as pursue a shorter-term objective such as to accelerate the pace of economic expansion (and hopefully employment growth). These monetary gambles have often occurred as an essential component of a currency war strategy forged in a decentralized fashion within the US government (including the Federal Reserve as a semi-independent agency). With such war danger no longer present, much of the currency diversification of recent decades, as investors globally have sought safety by introducing monies other than the US dollar into their portfolios, would go into reverse.

The dollar would jump in value. That is what occurred when the Volcker Fed in the early 1980s suspended the policy framework of the Burns Fed and for a short time embraced monetarist principles. The Volcker Fed did not have the belief, courage, insight or political backing to pursue monetary stability into the fairly modest growth cycle downturn (growth still positive but below trend) which became evident in spring 1985 and which continued through most of the following year. If it had done so, there would have been no megadollar devaluation (as occurred from 1985 to 1987) and the USA might well have achieved virtual long-run price level stability. In addition, there would have been no serious rise of speculative temperature in US stock, credit and real estate markets (mostly commercial but also some regional residential) as occurred in the second half of the 1980s (culminating in the Wall Street crash of October 1987, the later episodes of crisis in the savings and loans, the bursting of the leveraged buyout mania and of the related junk bond bubble, and the commercial real estate bust). And most probably there would have been no Japanese bubble economy.

The description of the counterfactual world (for the case of Paul Volcker not having abandoned monetary stability) could continue much further.

But that is not the purpose here, and in any case many readers would object, understandably, as counterfactual histories are of limited interest due to their inherent non-testability. In contrast to the often barren nature of the counterfactual history, scenario building to improve a probabilistic vision of the future is potentially fruitful. In that spirit, we could study the potential aftermath of a big change in the US monetary framework (such as success for a second monetarist revolution).

It is plausible that the leaders of a second monetarist revolution in the USA, implementing the blueprint of the previous chapter, would almost certainly soon confront counter-revolutionary forces when the first recession arrived (under the new order). These would emanate from the familiar nest of support for a soft dollar – including the neomercantilists and those permanently pessimistic on the ability of the invisible hand of market forces to generate economic recovery. Moreover, the USA would still be living in a world where foreign governments might follow monetary and exchange rate policies hostile to a liberal global economic order. Hence the monetarist revolutionaries would face the challenge of joining the new monetary regime to a well-designed defence system against a currency war launched by a foreign power against the USA (and other countries).

The plan of this chapter is, first, we review how in fact the old and the present monetary regimes in the USA gradually came to aid and abet currency warfare (as promoted by the US administration) at the cost of monetary stability. Second, we examine the damaging effect of such currency warfare in both the USA and the outside world. Third, we outline how a second monetarist revolution in the USA could usher in permanent currency peace. Finally, we stress the need for an efficient system of US defence against foreign governments manipulating their currencies at the expense of other nations' well-being.

Currency wars in the 1920s and 1930s

What do we mean by currency war?

The origin of this concept lies in the interwar period, when governments resorted to large devaluations (30 per cent plus) of their currencies to accelerate the pace of economic recovery from slump or recession. Yet such strategies were essentially dependent on the country which devalued gaining a kick-start at the cost of pushing other countries (which had not promptly devalued) further back in the economic cycle. However, before long, some of these would respond by devaluing their own currencies.

Just as in military wars, each government launching a currency war justified its action by an accusation that the existing situation was unfair due to past manipulation on the part of other governments. The cycles of devaluation were worse than a zero-sum game, and the experience

was important in driving an international consensus in favour of setting up the Bretton Woods System with its strict safeguards against such behaviour.

The USA had been a main belligerent in the currency wars of the 1930s but not the initial aggressor (except insofar as Benjamin Strong, the leading official within the Federal Reserve, deliberately encouraged Britain to return to gold in 1925 at an unchanged pre-war parity so as to derive certain short-term advantages for the USA and especially for New York, as global financial centre, from an ailing pound; see Ahamed, 2009). Indeed, it could be argued that the Weimar Republic started the currency wars of the interwar period with its deliberate ambivalence towards the collapse of the mark in 1920–1. At that stage the mark was falling sharply in real terms against the dollar (the fall in the mark was much more than what would have been sufficient to keep the dollar price of German goods unchanged despite rampant inflation) as markets discounted the implausibility of the German government, still in the midst of huge political and social turmoil, raising huge new taxes or pursuing monetary stability in a climate where the big German export companies were profiting hugely and where indeed the collapse of the currency could be put forward as proof that reparations were beyond Germany's capacity to pay. Then in the mid-1920s came the decision of the French government to stabilize the franc at a level which gave its industry a distinct competitive advantage.

In September 1931, there was the bombshell British decision to break the link of the pound to the dollar (and gold). The implicit justification of officials (and politicians) in London included reference to the flawed currency diplomacy of the early 1920s, when Britain had been encouraged by the USA to repeg sterling at its pre-war parity even though this was then surely far above its then equilibrium value (taking account of the UK's loss of competitiveness and overseas investments). Imperial Japan took similar and even more dramatic action in the same direction, leaving the gold standard in December 1931 and then following a policy of deliberate currency devaluation. Japanese governments had previously allowed the yen to weaken sharply in the years following the great earthquake in Tokyo (1923), only reintroducing gold convertibility in January 1930 (see Brown, 2002). Subsequently, in 1933–4 there was the megadevaluation of the US dollar, organized in stages by the incoming Roosevelt administration (at first a free float, with the link to gold broken, then a restored but severely truncated gold link coupled with action to steer the dollar price of gold higher day by day or week by week). This was followed in 1936 by the collapse of the gold bloc (of which the largest member was France) and the big devaluation of the French franc.

The founders of the Bretton Woods international monetary order had many divergent views on many issues, but they could agree that the best way of preventing a return to a currency war was to write an international

treaty enshrining fixed exchange rates and requiring that any proposed change in the parity be approved collectively by the signatories. This fixed exchange rate system would not be based on automatic mechanisms within the context of total freedom of capital flows, as under the international gold standard, but on a general pegging of currencies to the US dollar, with the Federal Reserve essentially guardian of the monetary anchor for the whole world. The unwritten understanding, partially backed up by the commitment of the USA to sell gold to non-US residents (official and private) at a fixed price of $35 per ounce, was that the Federal Reserve would pursue price level stability over the long run.

Richard Nixon's avoidable currency war

We have already seen in Chapter 2 that the Federal Reserve, through the 1950s and 1960s, gradually lost sight of the implicit commitment of the USA under the Bretton Woods Treaty to long-run price level stability. Indeed, it is plausible that Chairman Martin was never fully aware that the international fixed exchange rate system constructed at Bretton Woods depended crucially on such a commitment. He had no vision of overall monetary stability, whether at a US or global level, but relied instead on an intuitive sense of 'taking the punchbowl away just when the party was beginning to get rowdy' – always waiting to jump into action until substantial monetary disequilibrium had already been allowed to form over a considerable period of time before the partying had begun. Perhaps Martin's intuitive sense weakened with time, but in any event, in the 1960s he found that a growing number of his colleagues around the FOMC table, appointed by the Kennedy and Johnson administrations, were Keynesian economists who advocated running the economy at a somewhat higher level of inflation so as to bring down the unemployment rate, which they believed could occur on a permanent basis.

In terms of historical guilt, in the long run-up to the currency war which the Nixon administration unleashed in August 1971, Martin cannot be viewed as a central conspirator. His historical failure was to underappreciate the risk that the FOMC's chosen monetary path under his leadership would empower forces in Washington which eventually might wage a currency war, with hugely damaging consequences for all. The balance of evidence suggests that he did not contemplate this possibility then recklessly ignore it. Rather, insofar as he thought about global monetary stability and its relation to US monetary stability, it was in terms of the punchbowl – deal with the tensions as they arise rather than pursue a grand vision (which would have included monetary rules whose automatic operation would limit the extent of monetary disequilibrium without the need for Federal Reserve officials to first make a confident diagnosis). Consequently, as episodes of gold loss, triggered by concerns about US inflation and what this meant for continuation of

the Bretton Woods System, occurred in the early to mid-1960s, Chairman Martin approved of some official rate rises, too little and too late.

When Arthur Burns took over as Federal Reserve chairman in February 1970, the USA had already entered its first full recession (as opposed to growth recession) since 1960/1. Midterm Congressional elections were looming in November (1970). His rapid easing of monetary policy, despite still high inflation (at around 5 per cent per annum at this time), was almost bound to create currency tensions with Germany and Japan. Germany was not in recession and the Bundesbank warned about the danger of importing further inflation from the USA. Already, just the year before, in 1969, there had been an upward float followed by a revaluation of the Deutschmark in late reaction to the monetary inflation imported into Germany during the mid-to-late 1960s.

For Japan, high US inflation in the mid-to-late 1960s had set off a chain of consequences which were now culminating in a huge persistent trade surplus. In the early 1960s, when US inflation had been very low, a steady real appreciation of the yen (matching the growing export prowess of Japan) had occurred via the Bank of Japan, effectively tolerating a domestic inflation rate some 2 to 3 percentage points higher than that in the USA. But when US inflation accelerated, the Bank of Japan did not allow inflation to rise in step (given the unpopularity of inflation around 7–10 per cent, which would now have been necessary to bring about continued substantial real appreciation of the yen). So the climb of the yen in real terms slowed to a crawl against the US dollar and Japan's export surplus began to grow. There was an evident danger that the emergence of a huge trade surplus in Japan at a time of US recession could be the trigger to economic and currency warfare. Congressional opinion was becoming dangerously hostile to the rapid penetration of the US economy by Japanese imports.

There were ways to avoid currency or trade warfare and arrive at an agreed plan of progress between the USA and Japan in which both countries would run monetary policies consistent with a return of each towards a path consistent with global economic equilibrium. Tokyo could reasonably ask for some time and patience in rectifying a situation of disequilibrium, which had not been its own original creation (it was a US creation, via inflationary monetary policy).

A plan for restoring balance, where the key countries would be in both internal and external equilibrium (not meaning trade balance) within the context of the US dollar standard, would have included Japan agreeing that all inflows of funds through its balance of payments would be monetized (meaning that Japanese inflation would reaccelerate relative to the USA and Japan would gradually lose its bonus competitive advantage, which had formed during the years of monetary disorder). Japan might also have taken actions to lower the equilibrium value in real terms of its currency in terms of the US dollar (compared with the level if no action were

taken) – in particular, removing all controls on the outflow of capital – and this would have been in line anyhow with a more efficient allocation of investment in the global economy. Stronger capital outflows from Japan would have meant a higher sustainable savings and trade surplus there consistent with domestic and global equilibrium. A higher propensity to save in Japan would have been consistent with the improved range of assets to buy once exchange restrictions had been lifted.

On the other side of the Pacific, the USA, finding itself with a steady flow of private capital inflow from Japan, would have been in equilibrium overall with some steady deficit on its current account (of balance of payments). A somewhat lower cost of capital in the USA, promoted by Japanese savings inflow, would have been positive for US investment spending in the long run.

Currency war guilt of the Arthur Burns Fed

By the time President Nixon appointed John Connally (former governor of Texas and a Democrat) as Treasury Secretary in early 1971 (making his notorious early comment to European diplomats that 'the dollar is our currency but your problem'), it must have been clear to Arthur Burns (by then at the Fed for a year) that the international dollar standard based on Bretton Woods was in mortal danger and that the administration would flex its muscles in pressing for a devaluation of the dollar against the yen. Trade protectionist pressures were growing by the day in Congress. John Connally complained vociferously that Japan had a 'controlled economy' and 'did not play by the rules' (see James, 2003).

Yet Chairman Burns took no monetary action to save the global dollar standard from evident danger but continued to administer the powerful dose of stimulus as agreed at the start with President Nixon. This did not mean that Arthur Burns viewed dollar devaluation as a particularly attractive tool of overall economic management. Indeed, he had written a book in the 1950s about the 'evils of inflation', then only at around 1 per cent per annum (see Burns, 1957). At that crucial Camp David Summit in early August 1971, which was effectively a council of currency war, Burns was a lone dissenter against breaking the dollar's link to gold. Paul Volcker, then undersecretary (and top US international finance official) to John Connolly, had no such qualms.

In sum, Burns may not have willed the currency war, but it did not scare him. Why should it have scared him? The predominant view amongst academics and commentators was that the Bretton Woods order needed deep reforms (Milton Friedman advocated a system of freely floating exchange rates).

In principle the final collapse of the dollar standard in early 1973 (when the system of pegged exchange rates against a devalued dollar put into

place by the Smithsonian agreement of December 1971 fell apart) freed US monetary policy from all external constraints (in the form of commitments between Washington and foreign governments) on unleashing dollar depreciation when expedient in pursuing its domestic or international objectives. In fact, though, the historical record does not reveal episodes where the Arthur Burns Federal Reserve deliberately triggered dollar declines. Markets on their own, however, tended to produce such bouts of dollar depreciation in weak phases of the business cycle (anticipating Washington would again open currency hostilities). The Burns Fed in no way tried to resist such tendencies (towards dollar decline) and did not recongize their implicit dangers for monetary stability.

As an illustration, when the US trade deficit widened sharply in late 1976 and early 1977, barely two years on from the cyclical trough and amidst some current impatience in Washington with the pace of recovery, the US dollar fell sharply. The Carter administration was warning that large and growing trade surpluses in Germany and Japan were unacceptable, and the IMF agreed. Markets understandably speculated whether a new currency war led by the USA was imminent. The Burns Fed was not ready to weigh in and make clear that it was adamantly committed to lowering inflation, reinforcing this commitment with a reduction in money supply targets. Instead it was notably hesitant in its monetary action, tolerant of a rise in inflation. In effect, the Arthur Burns Federal Reserve, by its inaction, became complicit in the story line that a still fragile US economic recovery was being held back by a widening trade deficit which should be counteracted by dollar depreciation.

One contemporary FOMC member, Henry Wallich, in dissenting from the lead of Arthur Burns and voting for tighter monetary policy, made the counter-case that a widening trade deficit was largely benign (in line with faster economic recovery in the USA than in Europe) and that a weak dollar should be viewed as symptomatic of monetary conditions being too easy (Meltzer, 2009a; Meade, 2006). Concerns about inflation in the USA were driving global funds into the safe havens of the Deutschmark and the Swiss franc. But Wallich's views did not dominate (the committee). Coincidentally Arthur Burns, by his benign neglect of dollar decline, made himself more popular with Congress and with the administration.

Arthur Burns was a renowned US business-cycle economist, not an international monetary theorist. He could not visualize a world in which a continuing US trade deficit combined with surpluses elsewhere (especially Japan) could be wholly consistent with international equilibrium and monetary stability – as might have been the case had secular investment opportunity in the USA been relatively high and domestic savings propensities relatively low. Under the Bretton Woods System there had been little, if any, experience of such an outcome, in large part due to widespread controls on capital flows.

The Volcker Fed wages war on its own hard dollar

The arrival of Paul Volcker at the head of the Federal Reserve in Autumn 1978 could have provoked some immediate anxiety with respect to the dangers of currency war in the future. After all, here at the pinnacle of US monetary power was the official who had been loyal undersecretary (and chief of international affairs) to John Connally, in which capacity he had hectored Japan and other countries into accepting large and immediate revaluations of their currencies (in summer 1971). He had justified his hectoring with the accusation that they were responsible for the alleged serious undervaluations of their currencies (indicating that US exports were suffering from unfair competition). At no point, did Volcker try to plead (within the Nixon administration) for a less belligerent approach or suggest that US monetary policy had been responsible for the international currency crisis at that time. Nor did he suggest any way forward, such as immediate Japanese foreign exchange control abolition (see p. 116). He had not revealed any understanding of the concept (discussed above) that in international equilibrium the USA could indeed be running a substantial trade deficit matched by long-run inflows of capital from countries in savings surplus. Instead his focus in international negotiations was on 'trade imbalance'.

The prospect of currency war at the start of Paul Volcker's monetary reign, however, was remote in the short term, given his overriding declared mission of bringing inflation down and his initial embrace of monetarism. Grounds for concern about whether Volcker's past as a member of the currency war council (of 1971) could haunt the present began to grow in early 1985 as the US economy started to slow, after rapid recovery in 1983–4 (from the great recession of 1981–2), and howls of pain could be heard from the 'rust belt' areas of the US economy. Much of the manufacturing sector was no longer competitive internationally now that the dollar had jumped in value to fully reflect the new monetary stability.

Indeed, currency market critics cite late 1984 and early 1985 as a brief period when a wave of speculation drove the dollar to well above the level it would have reached in conditions of sobriety. Their story is that global investors were chasing the extraordinarily high yields obtainable in the US dollar bond markets which resulted from lingering pessimism of domestic US investors regarding the US inflation outlook (with these investors taking considerable time to convince themselves that the Great Inflation was now over). This wave of speculation was indeed rationally based if the global investors were looking forward to big capital gains on their bonds which would compensate for an expected fallback in the US dollar. There was no speculative fever in the currency market; rather, the problem was a rare degree of heterogeneity in opinion between domestic and foreign investors regarding the outlook for the US bond market. The likelihood is that any

such overshoot of the dollar would have corrected itself as the abnormal amount of heterogeneity withered away without requiring any official intervention. That extraordinary heterogeneity could be seen as a phenomenon stemming from the huge monetary turbulence over the previous decade and more.

As the US trade deficit ballooned (to around 4 per cent of GDP at its peak), there was growing conviction amongst economists in or near the corridors of power in Washington that Japan in particular but also Germany had somehow (not specified how!) taken advantage of the years of disinflation (and a superstrong dollar) to make big inroads into US markets and jobs. With inflation now down and the economy slowing, the time was approaching for a counter-attack. The political background was ominous, in that opinion polls were suggesting that the Republicans could lose control of the Senate in the November 1986 elections (the Republicans did not control the House at any point between 1954 and 1994), leaving the Reagan administration as a lame duck. (In fact, that was to be the outcome).

Paul Volcker echoed in his public comments concern about the US trade deficit and the 'need' for this to come down over the long run. This need was based on shock geometric progressions showing how the payment of interest on foreign debt would grow exponentially – in the style of the famous (or infamous) warnings from the new International Economic Institute in Washington under Fred Bergsten, an Undersecretary of the Treasury in the Carter administration. The leopard, Connally's tough-minded undersecretary in the Nixon administration and now Federal Reserve chairman, had not changed his spots for those who cared to look.

The leopard had a blind spot regarding the possibility that, even in a world of freely floating exchange rates, large trade imbalances could be a feature of overall equilibrium consistent with monetary stability. (That possibility was not in doubt with respect to the gold standard world, where for four decades, up to 1914, Britain and France ran massive current account surpluses reflecting savings surpluses, with counterpart deficits being run in faster-growing parts of the world, especially the USA, that were structural importers of capital.) Japan had not been manipulating its exchange rate. The yen rate was freely determined in the market, and all exchange controls of the free flow of capital out of Japan had been lifted by the start of the decade (the 1980s). The Bank of Japan was following a stable monetary course (based on a medium-term target for a fairly wide money supply aggregate).

The emergence of a large Japanese trade surplus was wholly in line with an underlying savings surplus (the ratio of investment spending to GDP had fallen in the aftermath of the rapid-growth years, whilst private savings had remained high or risen as a more affluent ageing population made provision for the future). With capital controls lifted, it was 100 per cent normal that the surplus savings would flow in part into foreign (largely US) assets, which

up until then had been underrepresented (far below neutral weight) in the typical Japanese portfolio.

The USA was visibly gaining from such inflows from Japan, both in terms of business for its growing international financial sector and also in terms of keeping down the cost of capital, which would continue fuelling private sector investment as unleashed by the 'supply side' revolution at the core of Reaganomics. Yet in 1985 Paul Volcker was joining the chorus about unsustainable trade imbalances. And as a matter of economic principle, these geometric progressions showing an exponentially growing interest burden on US external debt were bogus as they failed totally to acknowledge the much higher rate of return made on US investment abroad (largely into enterprises) than what foreigners made on their investments in the USA (with a heavy weight of US money and bond market instruments). At the start of his second administration (January 1985), President Reagan turned to Jim Baker (another Texan lawyer, as was Connally before him in the Nixon administration) with the obvious intent of taking a new tough line on trade, especially with Japan. At the G-7 Plaza meeting of 22 September 1985, Paul Volcker signed on to the following joint statements (signed also by all other G-7 finance ministers and central bankers):

> The US current account deficit, together with other factors, is now contributing to protectionist pressures which, if not resisted, could lead to mutually destructive retaliation with serious damage to the world economy; (*author's note: this is an extraordinary statement, why should a US current account deficit, itself a benign outcome of unrestricted global capital flows under conditions of monetary environment, unleash protectionist pressures?*); world trade would shrink, real growth rates could even turn negative, unemployment would rise still higher, and debt-burdened developing countries would be unable to secure the export earnings they vitally need. … The Ministers and Central Bank Governors agreed that exchange rates should play a role in adjusting external imbalances. In order to do this, exchange rates should better reflect fundamental economic conditions than has been the case. They believe that agreed policy actions must be implemented and reinforced to improve the fundamentals further, and that in view of the present and prospective changes in fundamentals, some further orderly appreciation of the main non-dollar currencies against the dollar is desirable. They stand ready to cooperate more closely to encourage this when to do would be helpful.

And as regards US policy, the US delegation committed itself amongst other things to 'conducting monetary policy so as to provide a financial environment conducive to sustainable growth and continued progress toward price

stability'. (*Author's note: 'sustainable growth' presumably meant not accompanied by huge US current account deficit).* In effect, Paul Volcker, as Chairman of the Federal Reserve, had put his pen to a document which confirmed the implicit threat that the US would have embarked on protectionist measures if indeed its G-7 partners (most importantly Japan) had not agreed on a set of steps, which would mean a lower international value for the dollar. But given that, up until this point, exchange rates had been determined in freely floating exchange rate markets, and assuming that any short-run foreign exchange market intervention would be limited in scope, the aim of depreciating the dollar meant that the Federal Reserve would have to follow an easier-than-otherwise monetary policy. In fact the G-7 accord provided for an immediate tightening of Japanese monetary policy, but that was patently out of line with the current condition of the Japanese economy and was soon reversed, especially once the Bank of Japan became pre-occupied with the possible recessionary influence of the plummeting dollar on the Japanese economy.

The historic monetary significance of these events was not apparent to contemporaries. It was a return to currency warfare in which one country, the USA, would seek to obtain a devaluation of its currency with the aim of pulling its economy more rapidly out of a growth lull (sometimes described as a growth recession) which that country's government declared (without any supporting evidence) was in considerable part due to other countries (Japan in particular) having deliberately cheapened their currencies in the preceding years. Arguably, this bore some resemblance to the Nixon shock of August 1971.

The council of currency war at Camp David found a *causus bellum* (cause of war) in the failure of Japan, in particular, to apply for a currency revaluation in terms of the Bretton Woods Treaty. That was a flimsy accusation, in that the original cause of the problem had been US inflationary monetary policy. This time the *causus bellum* was even more tenuous – that free markets for currencies within a stable monetary order had produced a massive disequilibrium outcome which the well-meaning officials in the Reagan administration and Paul Volcker now demanded should be rectified, and at once!

This new episode of currency warfare was to include the active participation of the Federal Reserve, which would run monetary policy in such a way as to bear down on the dollar (in particular, making it substantially cheaper against the yen). In 1971–2, Arthur Burns had run monetary policy in order to bring a sharp rebound of the economy in time for the November 1972 elections, not to bring about a given outcome in the currency markets (though if he had thought about it he would surely have seen that the monetary course chosen would undo the Smithsonian Accord). The immediate intention of the currency war council at Camp David had been to seek

a change in parities so that a new system of fixed exchange rates for the dollar could be implemented – which is what occurred at the Smithsonian (December 1971). Those fixed rates became untenable when the Arthur Burns Fed continued to steer the USA into the Great Inflation, but that end result had not been intended by the Council of War.

At the Louvre Accord of spring 1987, Chairman Volcker and Treasury Secretary Baker responded to pleas from Tokyo and Bonn for an end to the US currency assault, 'agreeing' with their G-7 opposite numbers (critically, with Japan and Germany) that the US dollar had fallen 'sufficiently' (around 50 per cent against the yen since the Plaza Accord!) – and signed a cooperative deal in which monetary and other policies would be coordinated to prevent a further decline of the greenback. Volcker was by then concerned by the inflationary momentum rebuilding in the US economy (but there is no evidence to suggest that he was focusing on a possible rise of speculative temperature in credit, asset and real estate markets or ready to make the link between any such finding and his own misconduct of monetary policy).

Treasury Secretary Baker had different views from Fed Chairman Volcker's about the need for monetary tightening, not least as the congressional and presidential elections of 1988 were approaching. Amidst growing tension between the two officials, President Reagan did not reappoint Volcker to a further term as Federal Reserve Chair, nominating in his place Alan Greenspan, who had little expertise in international economic matters. Almost immediately the new chairman, assuming office in August 1987, indicated in a rare interview (with *Fortune* magazine), that he had no intention of being bound in his conduct of monetary policy by the Louvre Accord and hinted that a dollar fall would be welcome – the implication being that money interest rates which the Federal Reserve piloted could be lower than if he were to be bound by the Louvre Accord! (see Brown, 2002).

The ultimate blame for a breakdown of the Louvre Accord was subsequently put by Treasury Secretary Baker at the feet of the Bundesbank, which resisted his pleas to desist from a tightening of monetary policy planned for autumn 1987. In any event, the soon-to-follow October 1987 equity market crash suggested that a US monetary policy tightening in early autumn (1987) would have been badly timed. Excess monetary ease of the years 1985–7, together with the collapse of the US dollar against the Deutsche mark and the Japanese yen, had already created hot temperatures – otherwise described as 'asset price inflation' – in various US asset and credit markets, most evident at this point in the equity market. Asset price inflations burn themselves out even without monetary intervention due to the internal dynamics of the marketplace, which includes the feedback of evidence concerning grown malinvestment and threats to future profitability. The least irrationally exuberant investors, often with the

earliest entry points, decide, for whatever reason, to cash in their profits. The temperature fall (metamorphosis of asset price inflation into asset price deflation) exerts a recessionary influence, which on top of a late monetary tightening by the authorities can become the catalyst to a slump. In particular, a sharp decline in equity prices was already predetermined by spring 1987, and the late further tightening of monetary policy by the Volcker Federal Reserve just contributed to the likely severity of the looming asset price deflation.

The most solid monetary criticism of the early Greenspan Fed was its failure to allow monetary conditions to tighten promptly from spring 1988 once the fears of recession in the wake of the crash had dissipated. In fact, the extraordinary monetary easing of winter 1987/8 had fuelled a late further rise of speculative temperature in US real estate markets. This failure of monetary policy had nothing to do with currency policy (such as an intention to weaken the dollar further) but everything to do with fine-tuning (a failure to spot the extent of reacceleration in the economy).

Greenspan's non-defence of the dollar

The charge that the Greenspan Fed sometimes waged currency war (together with the administration) is mainly related to two episodes. The first spanned the years 1991–5, when two successive administrations (Bush senior, then Clinton) were pursuing their 'economic dialogue' with Tokyo (aimed primarily at reducing the Japanese trade surplus to the advantage of US exporters, whether by economic liberalization in Japan, Japanese fiscal stimulus, or yen appreciation and dollar decline). Currency dynamics worked in such a way that any 'recalcitrance' by Tokyo and a hint of breakdown in talks would lead to a yen spike which, in turn, would force Japan back to the negotiating table (or to take other actions, such as fiscal stimulus). Implicit in those dynamics was speculation that an impasse in negotiations would drive the USA side to raise the level of currency war threat – and that the Federal Reserve would apply its monetary power towards winning the currency war. Did Alan Greenspan encourage such fears, and if so, was this on purpose? That is a difficult question to answer with any certainty.

Greenspan was no fan of a strong dollar for the sake of a strong dollar. Currency hardness was not a 'good thing' in itself for Chairman Greenspan. Did the FOMC in cutting rates to abnormally low levels in 1993, during a short-lived growth cycle downturn, come under the influence of the currency war campaign being led by the new Clinton administration principally against Japan? The point cannot be proved, and Greenspan would have replied that the link, in fact, ran from fiscal tightening (with the new administration embracing fiscal tightening) to monetary ease. There could be a more robust link between the Greenspan Fed's sharp easing of policy during a fairly shallow US growth cycle downturn in the first half

of 1995 (which occurred against the background of the bursting in the Mexico bubble, whose formation in fact stemmed in part from extraordinary US monetary ease during 1992–3) and the simultaneous crescendo of Washington's brinkmanship in the currency and trade war campaign against Japan.

Outside the USA the Greenspan Fed's policies during 1992–5 of forcing the pace of recovery from the weak economic aftermath of the late 1980s credit boom and bust brought great monetary disorder. The brief intermission of sudden monetary tightening during 1994 in the face of a spurt in goods and services inflation does not mitigate that charge. An abnormally low level of US rates fuelled temperature rises in credit and real estate and equity markets across the Asian dollar bloc. A key source of that fuel was the large gap of market rates below any plausible estimate for neutral rates. Another source was the sky-high level of the yen against the Asian dollar bloc currencies (and the dollar), itself induced by US monetary policy and also by the almost continuous presence of a currency war threat against Japan from Washington (until the truce of summer 1995). The high yen was a direct stimulus to industrial sectors across East and South East Asia in competition with Japanese manufacturers.

The second episode where the Greenspan Fed may be charged with having co-waged currency war or co-threatened currency war (acting alongside actions, with the same purpose, by the administration) was 2003–4. In this case, the evidence is much stronger (than in the first episode) that the Greenspan Fed was an active co-warrior with the administration in pushing the dollar down. According to the perception in Washington during the spring and summer of 2003, the pace of economic recovery was inadequate and reminiscent of Japan's 'lost decade' following the Great Bubble of 1986–90 (even though the differences were in fact huge, not least in terms of actual size and breadth of market bubble). The chatter was about the 'deflationary' overhang from the bursting of the IT bubble and the enormous overinvestment in some parts of the IT sector – most of all related to telecommunications. The jobless and joyless recovery made the headlines.

Crucially, a new governor had been appointed to the board in autumn 2002, Professor Ben Bernanke, from Princeton University, who in his academic work had written about the benign role of dollar devaluation in stimulating a strong recovery from severe recession (see Bernanke, 2002). Bernanke had argued that the rest of the world had gained more from the income-generating effects of the 1934 devaluation (via stimulating US incomes and so, eventually, demand for foreign goods) than it had lost through an erosion of competitiveness. The devaluation had freed (so Bernanke argued) the USA from the constraints of the truncated gold standard (such as remained in limited and largely dysfunctional form) in order to now pursue a much more aggressive monetary expansion from which all countries would gain.

This doctrine of globally beneficial dollar devaluation in recession had got further embellishment in Bernanke's reading of the Japanese experience of the 1990s. Bernanke sympathized with the view that, where monetary policy became constrained (in bringing about recovery) by a zero-rate bound (inability of rates to fall below zero even though the equilibrium level of rates may indeed be negative), devaluation was the way out of this (partly through generating inflation expectations) and internationally acceptable (not beggar-your-neighbour), in that all would gain from the return route to equilibrium. Bernanke, a renowned monetary scholar and historian of the Great Depression, had reinforced this view in a notorious speech to the National Economists Club in Washington (November 2002) titled 'Deflation: Making Sure It Doesn't Happen Here'.

Bernanke's comments about printing money and distributing it from helicopters got the headlines at the time (and since). But in addition, the new governor reflected aloud on the benefits of currency war:

> Though a policy of intervening to affect the exchange value of the dollar is nowhere on the horizon today, it's worth noting that there have been times when exchange rate policy has been an effective weapon against deflation. A striking example from US history is Franklin Roosevelt's 40 per cent devaluation of the dollar against gold in 1933–4, enforced by a program of gold purchases and domestic money creation. The devaluation and the rapid increase in money supply it permitted ended the US deflation remarkably quickly. Indeed consumer price inflation in the US, year-on-year, went from –10.3 per cent in 1932 to –5.1 per cent in 1933 to 3.4 per cent in 1934. The economy grew strongly and by the way 1934 was one of the best years of the century for the stock market. If nothing else, the episode illustrates that monetary actions can have powerful effects on the economy, even when the nominal interest rate is at or near zero, as was the case at the time of Roosevelt's devaluation.

This statement of justification for dollar devaluation as a monetary tool to promote economic recovery and reduce the danger of deflation is both startling (coming from a then senior Federal Reserve official) and deeply controversial. Why was there no room in Bernanke's remarks for the idea that private market forces, if given a chance, could lift the economy out of the deep hole into which previous monetary disorder (during the preceding period of asset price inflation) had thrown it? In particular, why did Bernanke not recognize the possibility that a nurturing of equity risk back to health, the condition for a rebound in capital spending in the context of so much of the investment during the bubble years now being economically obsolescent, could be the key to future prosperity rather than again going down the dead-end road of monetary chaos (including devaluation)? Why did Bernanke fail to consider at all the issue of good deflation and how this

could become a powerful mechanism of rebound from severe recession so long as there was a stable monetary framework in which strong expectations of a subsequent price level recovery could exist (see p. 63)?

In the post-NASDAQ bubble recession of 2001–2 in the USA, surely good deflation could have developed given the evident flexibility of wages and prices (outside the unionized sector, largely concentrated in the public sector), especially if in one of his 'political moments' Fed Chairman Greenspan had not endorsed the lurch towards running megafiscal deficits by the incoming Bush administration? And in any case, why was Bernanke even describing the Japanese example as one of deflation when the price level had been overall stable? Also, in the same speech (November 2002) Bernanke had put much weight on the 'balance sheet problems' which deflation brings and how these might be swiftly dealt with by a devaluation-led monetary expansion. But in his analysis of these, he made no concession towards theorists who argued that these problems could be overcome by market mechanisms – the widening of profit margins in the financial sector, made possible as the real risk-free rate of interest falls to negative levels, and by debt-equity swaps, as described in Chapter 3. These are discussed further in the next chapter. But it is sufficient to note at this point that Bernanke's advocacy of dollar devaluation was bound to endear him to the many protectionists in Congress.

Professor Bernanke, immersed intellectually in the experience of Japanese 'deflation and lost decade' (alongside his much deeper interest in the Great Depression), argued that US monetary policy should be pre-emptive – breathing back in inflation (which had fallen to only 1 per cent per annum). And there was the implicit point, not put on record, that if this brought dollar depreciation, that would be helpful. Historians can debate in the future, as more evidence becomes available, about how far Bernanke influenced Greenspan. But the series of actions which the FOMC took – and their consequence for the dollar – were consistent with either such influence or some coincidental new thinking by Greenspan. Evidence from the Federal Reserve transcripts (published with a delay of six years after the relevant policy meeting) shows Bernanke as a powerful opinion leader within the FOMC deliberation on the subject of reflation (and avoiding deflation dangers), but with his enthusiasm for action (such as immediate quantitative easing) checked somewhat by Greenspan.

Greenspan was himself a direct participant in the G-7 meeting of Finance Ministers and Central Bank Governors at Dubai in autumn 2003, which demanded that the East Asian countries dismantle the Asian dollar bloc. That was effectively a direct call for currencies there to appreciate. There was some post-summit ambiguity about whether or not Japan was included in the target list (with the biggest target being China). Washington, including the Federal Reserve, made no clear exemption of Japan in their rhetoric about global imbalances and the need for Asian

surpluses to fall (in part via currency appreciation). It was wholly consistent with this rhetoric that the Federal Reserve would give a helping hand to the assault against Asian 'currency practices' via bending monetary policy in a super-easy direction. Greenspan's latest term as Federal Reserve Chair was ending in 2004, and he was hoping for reappointment (in fact, obtained in May 2004 for a further truncated term of a little over one-and-a-half years), so what better way than to demonstrate enthusiastic cooperation for the administration's currency policy (aided by 'breathing in inflation')?

Bernanke legitimizes currency warfare

The appointment of Professor Bernanke to succeed Greenspan as Fed Chair (on his retirement in January 2006) was wholly in line with his dollar devaluation rhetoric (devaluation as a means of fighting recessions) and bold talk about antirecessionary monetary stimulus having won a sympathetic audience in the Bush administration and Congress. And so an administration espousing conservative ideological principles, as regards supply-side economics, appointed a 'politically neutral' professor of monetary economics already notorious, amongst those who worried about issues of monetary stability, for his speech (2002) about how helicopters should be used to spray dollar bills if needed to get economies out of intractable recessions. Did no one advising on the appointment realize or care that supply-side economics depends for its success on monetary stability in its broadest sense?

The answer is evidently no. In exploring the factors behind that no, we must look at the powerful voices near to and within the Bush administration that advised on the appointment of Professor Bernanke to the top monetary office and, ultimately, look at what lay behind the president's acceptance of that advice (all of this is discussed more fully in the next chapter; see p. 165). It is not on the public record to what extent the decision takers in the Bush administration found appealing, first, the professor's willingness to bend all orthodoxies in combating a possible future slowdown (which some feared could start ahead of the key 2008 elections) and, second, his eagerness to join in the pursuit of a popular currency war with China. There can be little doubt that his speeches about excess trade and savings surpluses in East Asia (and more specific comments on the need for Chinese currency policy changes in the direction of big appreciation of the yuan) served Bernanke well in congressional nomination hearings, first for the post of Chairman of the Council of Economic Advisers (appointed in spring 2005) and subsequently as Chairman of the Federal Reserve (appointed in late 2005).

Governor Bernanke was the author of the 'global saving glut hypothesis', citing the huge savings and current account surpluses in East Asia

(especially China) as problematic for the USA as it forced that country into huge matching savings and current account deficits in ways that were likely to jeopardize future economic prosperity. (He prominently outlined the hypothesis in a speech in St. Louis, Missouri, on 10 March 2005, ahead of the hearings in the Senate on his nomination to head the Council of Economic Advisers.) And so the story told by Bernanke, which appealed to the protectionists or neomercantilists in Congress and the administration, was not based (mainly) on the old views about non-sustainability of massive US borrowing abroad – arguments which had been cited by Paul Volcker in his time as Federal Reserve president, for example – but on misallocation of investment both in the USA and abroad.

The essence of the savings glut hypothesis was that the emerging market economies in East Asia (including, critically, China) were in a fundamental sense saving 'too much'. This excess was due in part to governments in the region seeking to build up 'war chests' of foreign exchange reserves so that they would never again become vulnerable to financial shock, as happened during the 1997 Asian crisis. Other factors cited included underdevelopment of financial markets in the region causing households there to compensate for poor returns by saving even more. Bernanke argued that developing countries, with an abundance of labour and scarcity of capital stock (low capital-output ratios by comparison with the advanced economies), should be capital importers not exporters. And he pointed to the problems which the advanced economies, most of all the USA, were encountering in absorbing capital imports from East Asia. Whereas in the period 1998–2000 the capital had usefully added to the available savings in the USA to finance the boom in IT spending and had largely come into the USA in the form of equity capital; since then the transmission mechanism has changed.

Now, low real interest rates in the USA (and the lowness may have been in some part related to the bulge of Asians savings and their new concentration on low- or zero-risk US paper, mainly in the form of government bonds) rather than high stock prices became a principal factor driving down US savings (so as to match the Asian savings surplus). One aspect of the driving-down process was the expansion of housing wealth and the related explosion of consumer borrowing (and spending) collateralized to a considerable degree on real estate. Bernanke expressed concern about the transfer mechanism which he described. He worried about the rising external debt-servicing burdens on the US economy unmatched by a corresponding growth in its long-run productive potential.

Note, at this stage in 2005, Bernanke makes no mention of how the East Asian surplus might actually be contributing to a bubble in housing markets, even though this was to later become a main element in his and Greenspan's defence against critics who were to argue that Federal Reserve-created monetary instability was the cause of the bubble and bust. The seeds of that later defence, however, are present in the 2005 speech.

Evidence of Bernanke's political astuteness in progressing from the general hypothesis about excess savings in East Asia to playing the 'China card' to gain political support came within days of his appointment as Federal Reserve Chair (end of January 2006). A Bloomberg report on 17 February 2006 ran the following:

> Lawmakers frustrated over China's trade policies got something from Federal Reserve Chairman Ben S. Bernanke they seldom received from predecessor Alan Greenspan; sympathy. Bernanke told the Senate Banking Committee yesterday that he appreciates the 'frustration' of legislators trying to push China into allowing greater fluctuations in its currency. In response to a question from Democrat Charles Schumer, who is seeking tariffs against Chinese goods entering the US, he said China may be delaying change partly to benefit its exporters. It is important to make sure that trade that takes place is done on a fair and open basis. That's the sort of language lawmakers seldom heard from Greenspan, who had a consistent message during his tenure: unfettered capitalism and trade are good for the US, helping make the economy resilient to shocks, and policy makers need patience whilst China adopts a market-based currency.

The Bloomberg reporter had a point when it came to Bernanke's explicit comments on Chinese trade practices. And also Bernanke, in his analysis and speeches, failed to make the critical point, at least implicit in Greenspan's many commentaries on the issue (up until this point, the tone changed later when Greenspan came to defend his record), that the main problems with the Chinese balance of payments stemmed from Beijing's exchange controls and currency intervention practices, which prevented market forces from determining equilibrium outcomes for the size of the trade and savings surpluses and the real exchange value of the yuan, not the particular size of the trade surplus per se. Moreover, the exchange restrictions in effect were crucial to sustaining Beijing's model of huge overinvestment at low or negative returns by state enteprises in that these were financed by a banking system dependent on low-return deposits which otherwise would have flown into foreign assets. Hence putting pressure on Beijing to abandon exchange restrictions could accelerate economic and political reform in China from which the USA would surely gain. And indeed, that reform might simultaneously increase the attractiveness of Chinese assets and boost Chinese consumer spending (relative to investment), leading eventually to the Chinese economy following the more traditional development path characterized by net capital imports rather than exports.

The distinction in viewpoint (between Bernanke and Greenspan) at this time can be traced to Bernanke's overall 'new Keynesian' orientation. For a neoclassical economist there is no such thing, in the context of global free

market and unrestricted currencies and against the background of global monetary stability, as a global imbalances problem such as that outlined by Bernanke (where the US economy suffers from having to absorb huge savings surpluses in other parts of the world). In a general system of equilibrium, excess savings relative to investment opportunity in some parts of the world flow into other parts where savings are in scare supply relative to investment opportunity. The invisible hand of market forces distributes savings efficiently across the globe.

The invisible hands can operate to distribute savings efficiently around the globe both in the context of a global fixed exchange rate system (say, the dollar standard or gold standard) and of a freely floating exchange rate system (no intervention, no exchange controls). In the dollar standard, the central banks must play according to the rules of the game – first, the USA pursuing monetary stability, second, all other countries running dependent monetary policies and, third, no sterilization of balance of payments surpluses or deficits. (In the 'genuine' – as distinct from the sham version in the interwar period – international gold standard, there is no sterilization by definition).

In principle, the goal of efficient allocation of capital internationally may be better achieved under the fixed exchange rate system in that under the floating system exchange risk premiums could act as barriers to capital flow. But such barriers may be inevitable if there is no key country – one whose commitment to monetary stability inspires high confidence abroad – and therefore most countries decide in favour of monetary independence and a freely floating exchange rate.

Under conditions of pervasive monetary stability in the floating exchange rate world, real interest rates could indeed fall to negative levels in countries where savings are very large relative to investment opportunity and where exchange risk looms large. The negative real rates would emerge from the combination of prices having fallen well below the long-run normal level and long-run expectations of a return of these to a normal level (for instance, over a decade or more).

Arguably, there could be a Chinese or, more generally, an East Asian savings surplus problem (or rather a global imbalance problem related to these) if the equilibrium outcome included negative real rates there but flaws in the monetary frameworks prevented these from emerging. In particular, good deflation, with its key attribute of strong price recovery further ahead, might be blocked. In that impasse the problem may be solved by shedding independent monetary policy together with floating exchange rates and instead joining a larger monetary area (e.g., becoming a member of the US dollar zone). In such a regional system, without the existence of an exchange risk premium, the equilibrium real interest rate (in the country with large savings surplus) would be less negative (but may still be lower than elsewhere, consistent with inflation in the country concerned running

at a somewhat elevated pace whilst nominal interest rates everywhere in the regional system stay the same).

Keynesian warriors fight global imbalances

In sum, if the Asian savings surpluses had formed under an international regime of stable money and free capital movements, there could be no global imbalance problem and related detriment to the USA as described by Ben Bernanke. Monetary instability, such as that the Federal Reserve induced in spring 2003 (and on into the next few years) with the intention of 'breathing back inflation' and 'reducing the danger of deflation', coupled with currency belligerence (such as the assault on the Asian dollar bloc at Dubai) could create a 'global imbalance' problem in part by inflaming exchange risk perceptions (fear of a wild ride down for the US dollar) and in part by inducing severe malinvestment around the globe which would go along with an unsustainable pattern of global capital flows (e.g., a booming yen carry trade and massive speculative inflows to US paper generated by the growing credit bubble). The inflamed aversion to exchange risk could mean that the equilibrium level of real rates in East Asia could become very negative. Yet there were considerable frictions and inertias in the East Asian economies which might have blocked such negative real rates from emerging via an initial good deflation coupled with expectations of a price level rebound.

Most importantly, if the Federal Reserve were in fact inducing huge monetary instability (in the form here of rising temperature in credit and asset markets) with reverberations around global capital markets, this may indeed be bringing about such widespread malinvestment as to be inconsistent with the efficient allocation of resources described by neoclassical economists. The pattern of huge savings surpluses and mega US current account deficits which preoccupied Professor Bernanke was in fact the tip of an iceberg which was forming in consequence mainly of largely Fed-induced monetary chaos.

Ben Bernanke did not, and does not, have the neoclassical paradigm in mind. Rather, his view of potential global imbalances is close to the Keynesian tradition of concern about the so-called transfer problem. This was first raised by Keynes in his polemic against the Versailles Treaty, 'The Economic Consequences of the Peace'. Keynes sought to demonstrate how it was economically impossible for Germany to pay the reparations dictated by the Versailles Treaty.

In a pungent criticism of Keynes, University of Chicago Nobel Prize winner Roger Myerson (2004, 2010), using a game theoretic framework, accuses him of having authored the reparations disaster in that, as a Treasury adviser in 1916, he had persuaded his colleagues that, in the post-war settlement, reparations should be spread over decades. Keynes had been concerned to

avoid the 'absorption problems' which the German Empire had apparently 'suffered' due to the rapid receipt of huge reparations from France after the 1870–1 Franco-Prussian War. But Keynes had been entirely unaware of the imperative of providing incentives to pay. In 1872–3 France accelerated payment so as to get German troops off French soil. No such incentive could be provided for the payment of reparations stretched over many decades. Instead the reparations system devised provided incentives for the Weimar Republic to pursue disastrous economic mismanagement – in that Germany could request a suspension of or reduction of reparations on the grounds of severe economic hardship. And so German governments produced the hardship – first, in the direction of hyperinflation and then of a great depression.

Presumably Keynes's retort to this blistering attack by Myerson on his ignorance at an intuitive level of game theory and its critical bearing on reparations payments would have been to say that even with powerful incentives Germany just could not have paid the reparations. The transfer problem was insoluble. According to Keynes's polemic, the trade and savings surpluses which Germany would have had to generate as the counterpart to reparations were bound to impose intolerable hardship on its population (Keynes states that the Germans would have to stop drinking beer). The revving up of German export industries 'required' to generate the foreign exchange to pay the reparations bill would have destroyed many of the competitor industries in Britain (and its empire, at that time). A debate ensued in the economics literature about the so-called transfer problem – whether a huge savings and trade surplus emerging in one large economy (such as Germany) could be absorbed by the rest of the world in a benign fashion.

Opposing Keynes's pessimism were Bertil Ohlin and Jacques Rueff (see Chiwis, 2010), who stressed how robust were the invisible hands of market forces which could bring balance in the international economy and how these had functioned well during previous episodes of reparation payments (as after the Franco-Prussian War). The authors did not make the point explicitly that overall monetary stability was essential to the effective operation of market forces, and indeed, France had remained on the gold standard during its period of paying reparations. Further, as a point of fact, both Britain and France had continually run savings and current account surpluses of around 10 per cent of GDP in the period before the First World War, and yet no one raised the problem of global imbalances. So what could be the problem at an economic (not political) level of Germany generating extra savings to match reparations of a comparable amount (and indeed under the Dawes Plan of 1924 and subsequent Young Plan of 1929 the projected reparations were around half that amount relative to German GDP)?

Two big missing observations stand out when reviewing this reparations debate with the benefit of almost 100 years' hindsight. First, there was no

reference to the benign downward influence of huge savings and trade surpluses in one or more of the big economies on the global cost of capital. And second, the focus was almost entirely on the relationship between the payer and the payee, without taking into account crucial turntable economies which play a key role in the overall adjustments of trade and capital flows. These same omissions can be found in Bernanke's analysis of the 'East Asian savings surplus problem'. And like the earlier debaters, Bernanke failed to fully integrate the role of monetary stability (or instability) into his analysis.

In the 1920s, the reparations imposed on Germany should have driven up that country's national savings rate (including budget surplus before deduction of reparations) as the government amassed revenue (or borrowed capital in part from its own citizens) to transfer to the victors. The lowering of the global cost of capital (both debt and equity),which would have accompanied the bulge of savings in the world's second largest economy (Germany), should have promoted investment spending in the European 'victor nations' and the USA. Indeed the 1920s were an age of US-centric technological revolution. Strong demand for German exports from the rest of the world driven by global economic growth (as promoted by a lower cost of capital) would have facilitated that country's payment of reparations.

Contrary to Keynes's polemic, France and Britain – the main recipients of reparations – did not have to run big trade deficits to match German reparations. The US economy, as the centre of dynamic growth in that era and experiencing a consumer credit revolution in addition, could easily have become a large-scale absorber of European savings (running savings and current account deficits to match). France and Britain would have been turntables in the global flow of funds, re-exporting the reparations received from Germany into the US capital markets and thereby financing a huge US trade deficit (for simplicity we do not cover here the issue of wartime debts payable by the European allies to the USA). Weighing against such an outcome was the monetary disequilibrium being generated by the Federal Reserve and the related undervaluation of the US dollar (see Chapter 2, p. 26).

The Federal Reserve in the early and mid-1920s was stoking up (inadvertently) a massive global credit bubble via keeping interest rates far below the neutral level applicable to an age of immense technological opportunity – in part to support Britain's return to gold at an overvalued exchange rate and in part out of the misguided fixation on short-term price level behaviour (flat despite strong demand as costs were held down by rapid productivity growth). And so there were two aspects to the US generation of monetary disequilibrium. First, Federal Reserve monetary operations had the effect of driving market interest rates well below neutral level. Second, the US dollar was undervalued – and by much more than monetary disequilibrium in the USA would have caused on its own under a freely floating currency regime. The pound's return to gold at a pre-war parity with no subsequent readiness

by the Bank of England to tolerate monetary conditions which would have fostered a lowering in the UK price level played a big role in the dollar's undervaluation.

The cheap dollar aspect (of US monetary disequilibrium) had, as a consequence, an above equilibrium level of US savings, containing what economists described as 'forced savings'. These could be found chiefly in the US business sector in the form of retained profits, which were booming (stimulated by the cheap dollar, which meant strong exports and high profit margins in the traded goods and services sector of the US economy).

Hypothetically, we could say that if the dollar had not been undervalued and US monetary policy tighter (in line with monetary stability), the USA might well have been in trade and savings deficit (with no forced saving), whilst the rise of temperature in credit, real estate and equity markets, both in the USA and Germany (the latter on the dollar standard effectively from 1924), would have been much more modest, meaning a less violent business cycle ahead. Plausibly the descent of the Weimar Republic into the political and economic abyss had much more to do with the bursting of a gigantic global (USA, Germany and central Europe) credit and asset bubble, of which Germany was the epicentre (with the Federal Reserve as the chief source of monetary fuel), than with the economics of the transfer problem, which formed the basis of Keynes's original polemic. That is not to ignore the devastating effect (amplified by Keynes's polemics) which the reparations issue may have had in providing fodder for Nazi propaganda and so fuelling the rise of the Nazi Party once the economy was falling into the abyss. And indeed, the preface written by Keynes to the German edition of his *General Theory*, published in 1936, has excited considerable controversy (see, for example, Ralph Raico, 'Was Keynes a Liberal', *Mises Daily*, 30 April 2010).

What are the inferences which can be drawn from the Keynesian misdiagnosis of the transfer problem in relation to reparations for Bernanke's hypothesis about the so-called Asian savings glut and its potentially harmful influence on the USA?

Unlike Keynes, Bernanke does specifically consider the effect of the bulging savings surplus in the country or group of countries making the transfer (in the case of East Asia, large capital exports) on the global cost of capital. But, like Keynes, he ignores or downplays the potentially efficient role of invisible hands in allocating capital efficiently around the globe and also the key role of monetary stability in facilitating such an outcome. Bernanke also (like Keynes) fails to perceive the potential turntable role of countries receiving the capital from the country in huge surplus and then re-exporting capital to an ultimate absorber of that capital. Let's take these points in turn.

Bernanke concedes that the Asian savings helped to finance an equity-led investment boom in the USA during the late 1990s (see p. 26). He does

not take up the issue of whether this boom became excessive (irrationally exuberant) due to monetary disequilibrium under the Greenspan Federal Reserve (keeping rates below neutral as a consequence of fixation on implicit inflation-targeting whilst ignoring wider aspect of monetary stability) and whether, in consequence, the extent of recycling of savings between East Asia and the USA also became excessive. If monetary policy in the USA had been tighter, there would have been less of a boom, less malinvestment related to the NASDAQ bubble, less of a US overall savings and current account deficit, and less savings surplus in East Asia (which was bloated by 'forced savings' related to the boom in exports from that region intensified by US monetary disequilibrium).

As regards the growingly important turntable role of Europe in the global flow of savings out of East Asia and into the USA, an increasingly strong current of capital flow was evident in the form of Asian portfolio capital (both private and official) filtering into European bond markets in anticipation of the European Monetary Union (launched at the end of 1998). European investors were enthusiastic buyers of both US companies and US equities, with the capital export related to these matched by the Asian inflows. The point here is that the benign role of Asian savings in promoting IT investment in the USA occurred despite some degree of risk aversion by the ultimate Asian savers (who had a strong preference for bonds in Europe and the USA to equities) and depended on a process of risk intermediation by the Europeans.

Fed myth – Asian savings surplus fuelled the global credit bubble!

Looking at the second period of recycling (of savings surplus out of Asia into the USA), in the early and middle years of the first decade of the 21st century, about which Bernanke is more critical, the Asian savers in the main were not buying the high-risk mortgage debt and corporate debt being issued massively in the USA to finance either spending by US consumers or leveraged buyouts by US companies. In particular, the Chinese government was building up its massive portfolio of US and top European government bonds. The big buyers of high-risk US debt were in Europe (largely European financial institutions), many of which were borrowing from US money market funds (MMFs) for that purpose. Those MMFs were themselves marketing their units to largely US investors who, under conditions of income famine (as the Fed was pressing market rates far below neutral via actual and signalled money-rate pegging), were vulnerable to distortion in their vision – ignoring risks and gullibly accepting that money market funds would always redeem at par.

It could be that the huge Asian savings surpluses coupled with the skewed demand of the particular groups of Asian investors (largely governments

and sovereign wealth funds) for low or zero-risk assets contributed to a lowering of the equilibrium level of risk-free interest rates both in nominal and real terms in the global economy. And maybe those very low nominal rates triggered some irrational processes whereby many investors worldwide, with a normally large neutral weight for the dollar in their portfolios and now desperate for income, donned rose-coloured spectacles. With blurred vision they irrationally underestimated danger in buying many of the newfangled debt securities (including mortgage-backed CDOs or leverage debt–backed CLOs), taking too much notice of ratings awarded by the credit-rating agencies and ignoring or failing to do their due diligence regarding the risks piling up in leveraged financial institutions, which were investing in similar fashion.

In a well-designed monetary system such a rise in speculative temperature would precipitate a jump in demand for high-powered money (monetary base) related in part to the boom in financial transactions and in part to an acceleration of income growth which would have triggered an increase in short-term interest rates. And long-term interest rates on high-quality paper, insulated to a considerable degree (in a well-designed system) from money-rate fluctuations, would have risen in line with apparently blossoming economic opportunity (and the related strength of demand for capital, especially in the construction and real estate sectors). Hence the disequilibrium processes of irrational exuberance would be self-limiting. As the hot markets cooled down, the one-time investors there would lose their enthusiasm to re-enter them even as the interest rates subsequently fell back to their low neutral level.

In any case the stories of Asian savings depressing the equilibrium level of global interest rates by a wide margin are implausible. The underlying savings surplus of China in the early and mid-2000s may have been around $200 billion per annum and whatever downward influence this might have had on the equilibrium level of global interest rates was surely balanced by the sudden explosion in the US Federal Budget deficit (due to the Bush administration having embarked on its tax cut programme without any road map for future spending cuts, and indeed, spending was later to jump in consequence of wars and a new health-related entitlement) and the apparently real innovations in providing consumer credit to borrowers previously unable to tap into, or strictly rationed in their access to, this market.

The much bigger reported totals of the Chinese trade surplus (at its peak around $400–$500 billion) than the $200 billion mentioned above reflected, first, a flood of hot money inflows into the yuan, which was camouflaged as either phantom exports or deductions from imports so as to circumvent restrictions on such speculative money flows. Second, some part of the savings surplus which matched the large trade surpluses in East Asia, especially China, should surely be regarded as involuntary – a result of

booming export revenues and their accumulation in export corporations (this was occurring in China, especially in state companies which did not pay dividends), where these (revenues) reflected buoyant consumer demand in the USA driven by the disequilibrium in US monetary policy. (Some of these forced savings could also be attributed to undervaluation of the Asian currencies promoted by various forms of monetary sterilization to block real appreciation in the context of fixed exchange rates versus the dollar.)

In this way, much of the chatter in Washington and European capitals about the global imbalance problem was wide of the mark. US monetary disequilibrium, by promoting a rise in asset and credit market temperatures, was contributing to the observed size (but not the equilibrium size) of both the US current account deficit and the East Asian surpluses. Bernanke, in arguing that the surpluses in some sense induced the deficits, was ignoring the common cause for both in US monetary disequilibrium.

In sum, the hypothesis of a global imbalance problem and the implication that this somehow required a realignment of exchange rates, including a weaker US dollar and a strong Chinese yuan (and other East Asian currencies), largely grew out of blindness to underlying US monetary disequilibrium. And this disequilibrium was indeed being fuelled by the Greenspan-Bernanke Fed policy of breathing in inflation and seeking to accelerate the pace of US recovery from the post-IT bubble recession beyond the natural rhythm which would at first be produced by self-recovery forces building in the private sector economy within the context of monetary stability in its broadest sense.

Should monetarist revolutionaries worry about global imbalances?

Does the conclusion above mean that there would be no possibility of a 'global imbalance problem' emerging at any point in the future if the blueprint for the second monetarist revolution, as outlined in the previous chapter, were ever to be implemented in the USA and potential US monetary disequilibrium thereby greatly reduced? The answer is that there might still be a problem due to barriers put in the way of the invisible hands of market forces by foreign governments or due to monetary disequilibrium of huge proportions developing in a large foreign country or monetary zone. But in no way would these barriers be an issue for the institution put in charge of US monetary base growth. Rather they would be the focus of that US government department responsible for international economic diplomacy.

As regards barriers in the way of the invisible hands, these include exchange restrictions or various versions of 'dirty floating' (at one extreme, a fixed exchange rate where changes in foreign exchange reserves are sterilized from having any effect on the monetary base; on the other, large-scale

intervention designed to steer the exchange rate path according to the whims of the government). It is tautological that exchange restrictions prevent market forces from producing a general equilibrium solution. And large export of savings via a governmental authority into almost exclusively low-risk foreign assets may create distortions in their effect on global capital market prices with serious economic consequences.

For example, the strong preference of East Asian governments for low or zero-risk government bonds in Europe and the USA – in contrast to a greater preference for equities and other forms of risky assets which might well be manifested by private investors in these countries if they were playing a larger role in accumulation of foreign assets – would lower the equilibrium level of risk-free interest rates globally whilst raising the equilibrium level of risk capital costs (especially the cost of equity capital). This would militate towards a lower level of business investment globally than would otherwise take place. In turn, the generation of market rates in line with a neutral real rate which is sometimes negative (the extent and frequency of negativity increased by the interferences with free floating and free capital movements as described) may require episodes of good deflation accompanied by price level recovery expectations. The generation of such episodes are problematic under many monetary regimes (though not the blueprint outlined in the previous chapter).

Finally, it is not in accordance with principles of a global liberal economic order that one large country effectively targets a large trade surplus (so as to suit a political coalition of domestic trade interests) by massive interventions in the foreign exchange market, which are sterilized in terms of any monetary impact (so that the real exchange value of the currency is lowered and the savings surplus raised above its underlying level in the hypothetical free market alternative environment). Rather the size of the surplus should be determined by the interplay of private market forces only.

Perhaps Ben Bernanke had some of these points about global imbalances in mind when he made comments about the Chinese currency problem, whether in front of Congress or wider audiences, but the emphasis (as in the quote above) on the need for a large appreciation of the yuan conflicted with a strictly free market approach. Who could tell what would be the exchange rate that would prevail under a fully convertible currency regime in China if there were no interference with the invisible hands? This lack of alignment of Bernanke's views with liberal free market principle also is evident in his endorsement of bold policies of quantitative easing as a means of tackling recession, where a main implicit (or even explicit) route for the policy runs through dollar depreciation (frightening investors about the possibility of high inflation in the future so that they would dump the greenback now, triggering a big fall in its exchange value). And this was not focused depreciation against the manipulated yuan. Indeed, Beijing

was largely successful in resisting the pressures from US monetary policy towards appreciation via its strict controls on capital inflows. It was depreciation against a broad range of currencies most of which were trading free of restriction and intervention.

Was this not just a new version of the beggar-your-neighbour devaluations of the 1930s against which there had been universal revulsion (amongst economists of all persuasion), leading up to the formation of the Bretton Wood System in the flawed attempt to secure currency peace? In effect, the Federal Reserve under Professor Bernanke became a currency war machine operating to a considerable degree as a loose canon alongside an administration which, though following a 'strong dollar policy', was in fact glad to see the dollar fall. That gladness though was in fact giddiness. In reality the Bernanke Fed currency war machine was antagonizing the natural free market allies of the USA, who could have formed a coalition of pressure on Beijing to reform its currency (towards a free float and full convertibility). Instead Beijing could form a coalition against US currency aggression. Germany, with a huge trade surplus wholly determined by market forces, found itself in alliance with China against the Obama administration's demands (as expressed at the G-20 summit in Seoul, autumn 2010) that all large surplus countries commit themselves to a program of surplus reduction.

The Bernanke Fed currency war machine increasingly took aim at Berlin as the European sovereign debt crisis erupted (in winter 2009/10) and subsequently deepened in the following years. In particular, the European crisis thwarted Professor Bernanke's conduct of the war in that despite his pulling out a range of new weapons from this monetary toolbox, including ultimately World War II–style manipulation (down) of long-term interest rates on US government debt, the dollar rose in Europe.

The apparent way (from the viewpoint of the Bernanke Fed) to arrest the dollar's rise in Europe and prevent an eruption of a second Lehman crisis (about which some commentators saw Bernanke's fears as almost paranoiac, stemming from his unadmitted failings, responsible for the Great Panic of 2008) was to press the ECB to take aggressive action as 'lender of last resort' and to help by providing huge US dollar liquidity to that institution at a cost which did not reflect its possible future fate in the event of an EMU break-up. Bernanke showed no sensitivity to German concerns that the costs stemming from the ECB's making easy loans, secured in turn on highly dubious collateral, to near or actually insolvent banks would ultimately be unacceptable to the German taxpayer. In any case easy loans might make it less likely that the weak European countries and their bank stakeholders would bear the inevitable pain at the start of a journey to economic renaissance. The impression in Berlin was that, rightly or wrongly, the Bernanke Fed was in effect seeking to mobilize German taxpayer funds for the Obama re-election campaign. That impression grew in strength amidst reports

of the close communications between the new ECB chief, Mario Draghi, and US Treasury Secretary Tim Geithner and amidst a remarkably close apparent understanding between Paris and Washington on the way forward in Europe, buttressed by the French head of the IMF (whose appointment had been crucially dependent on US support).

A second monetarist revolution in the USA would shut down the Federal Reserve as a currency war machine. An era of currency peace depends on more than just dismantling that machine, although this would an important step. US diplomacy would have to carry forward the advantages into building the international coalitions and influencing the trade-offs considered by Beijing in their decision making with respect to its currency. The saying is that to make peace, it is necessary to prepare for war. In the context of defence against the Chinese menace to global economic equilibrium, preparing for war may mean many things – toughening the negotiating stance on human rights, confronting Beijing's role in nuclear proliferation, demanding a faster and more rigorous timetable for the lifting of exchange restrictions, toughening trade responses to the widespread tolerance in China of intellectual piracy, discovering and insisting on the removal of hidden subsidies to exports and barriers to imports and investigating the array of soft loans by state-owned banks to public sector corporations which jarred with any market-based order and principles of international competition according to treaty (in particular the WTO rules). Preparing for war, however, should not involve the Federal Reserve brandishing a currency weapon.

6
Bernanke-ism Equals Monetary Lawlessness

Bernanke-ism transcends the person of top Federal Reserve official Ben Bernanke. The set of monetary principles which Ben Bernanke has laid down, whether as a Princeton professor or central banker, is a partial clue to the meaning of Bernanke-ism but not an open window into its essence. That includes, in addition to a particular intellectual viewpoint or theoretical construct, the whole practice of monetary policymaking and how that fits into the wider political system. Many elements of Bernanke-ism were alive and well before Professor Bernanke entered the Federal Reserve Board in 2002, and many are found in monetary policymaking and monetary frameworks outside the USA. The whole is often more than the sum of the parts and that is the case with Bernanke-ism.

The ten elements of Bernanke-ism

There are ten elements that go to make up Bernanke-ism. **First**, there is absolutely no place for monetary rules which would regulate in a mainly non-discretionary way the growth over time of a key money aggregate so that this could perform the function of 'nominal anchor'. (The path of the price level over time as determined in general equilibrium is constrained by the nominal anchor. Under the gold standard the anchor was the fixed nominal price of gold, which in turn constrained the fluctuations in the growth of base money and its cumulative amount. In a fiat money system a possible anchor is a fixed growth rate in the nominal monetary base, subject to modification, as outlined in Chapter 4). The pivot to the classical monetary system, the monetary base, whose control either by the automatic mechanisms of the gold standard or by explicit rules was fundamental to the maintenance of monetary stability, is fully dislodged under Bernanke-ism. Monetary base (at least the key component of this in the form of reserves which banks hold at the central bank) becomes virtually indistinguishable from short-term debt (Treasury bills) issued directly by the government, as in the Bernanke-ite system reserves pay interest at near the market rate. (In

Chapter 4 we discussed this dislodgement and the steps which would be required to put monetary base back firmly in a pivotal position).

Second, instead of monetary rules, a monetary policymaking committee exercises 'command control' over short-term money market interest rates, carrying out this function on the basis of its expert judgement about all relevant matters. The tool for exercising control is setting the rate to be paid on excess reserves at the central bank. This regime may be described as one of monetary authoritarianism, albeit one where the authority (central bank policy board) believes itself to be benign. Control extends into powerfully influencing expectations of where money market rates will be in the medium term with the intention of influencing (manipulating) medium- and long-term rates rather than leave these to be steered near to neutral levels on average over time by market forces deriving in part from decentralized information sources.

Third, in exercising its command control over the path of short-term interest rates and in influencing expectations regarding this, including sometimes the direct manipulation of longer-term interest rates, the central bank aims to achieve a target for the inflation rate over the medium term (for example, a two-year period). The controllers reject (or do not understand) the broad notion of monetary stability, in the tradition of J. S. Mill and later of the Austrian school economists, whereby money 'becoming a monkey wrench in all the machinery of the economy', might emit first (and after a considerable delay) a suspected symptom in the form of temperature fluctuations away from a normal temperate zone in an important range of asset and credit markets, generating malinvestment, well before the symptom of goods and services inflation appears (and this may never happen if, say, asset price inflation turns to asset price deflation and brings about a recession). The controllers have no understanding of the Austrian school insight that short-term price level fluctuations can emit false-positive signals of monetary disequilibrium (as, for example, a rise in prices related to resource shortage or 'good deflation', perhaps in the context of a business cycle recession).

Fourth, phobia of deflation permeates the monetary controllers. There is no recognition of the principle that deflation might sometimes be benign and indeed an essential part of the process by which an economy recovers from recession under stable monetary conditions. This phobia of deflation is based in part on historical myths told about the Great Depression of the early 1930s and about Japan's 'Lost Decade' of the 1990s (see element 9, below) and in part on a modelling of the economy in which there is much inflexibility of wages and prices, much irrationality and much monetary instability.

Fifth, the controllers put forward with confidence the hypothesis that hyperactive monetary policy can stimulate the economy out of severe recession even in a situation where short-term nominal interest rates have fallen

to the 'zero-rate boundary'. In this situation, the central bank applies a tool described as 'quantitative easing' (QE) and supplements this if necessary with direct manipulation of long-term interest rates. QE involves a massive expansion in the size of the central bank's balance sheet, with the hypothesized reflationary influences coming via several channels: for example, lowering credit risk premiums via purchase of risky loan assets; lowering long-term interest rates via purchase of government bonds; raising credibility of the inflation target, despite present below-target inflation by enhancing the commitment of the Federal Reserve to hold rates down at an abnormally low level for an abnormally long period of time; and creating widespread anxiety about currency debasement, which even though irrational (according to the viewpoint of the well-meaning controllers), could stimulate consumers and businesses to bring forward spending and buy equities (if perceived as a 'real asset').

Sixth, under Bernanke-ism there is no deep respect for the monetary consumer (in the sense of the investor, whether inside or outside the country, who puts funds into the given central bank's money, in this case the dollar, as a store of value). Rather, it is wholly legitimate for the monetary controllers to spread anxiety and even panic amongst the holders of its money towards engineering a better perceived macroeconomic outcome. And it is wholly legitimate to use all means possible to manipulate long-term interest rates downwards to achieve the stated aims (of, say, inflation at 2 per cent per annum and low unemployment), even though these ultimately squeeze the saver who would normally put a high proportion of his or her funds in long-maturity dollar bonds in line with an effective investment horizon which is long-term (as, for example, if intended consumption is a long way off). The monetary controllers are not concerned at all that by manipulating downwards the real cost of long-term debt funding, they might be rescuing 'big government' from political forces which would otherwise defeat it.

In particular, quantitative easing – which involves laying monetary time bombs along the path of the economy (US and global) whilst giving an ambiguous assurance that these will be diffused in time, thereby making investors (both in the USA and outside) anxious enough to sell the dollar and households frightened enough to bring forward their spending – is wholly acceptable (to the Bernanke-ites) as a means justifying the reflationary end. There is absolutely no weight given to offsetting geopolitical considerations, for example, that an episode of US monetary disequilibrium accompanied by global distrust of the dollar could feed a speculative fever in global commodities and add to inflationary pressures in the emerging market countries, triggering thereby economic and social turmoil in close allies of the USA.

Seventh, monetary policymakers give prominent place to the new Keynesian theory promoted by Professor Bernanke about how credit

channels can get blocked during severe financial stress and why the authorities should intervene by providing alternative publicly mediated channels at such times rather than leave it to market forces to clear some partially blocked channels and build new ones. Allied to this concern about blocked credit channels is the fear of 'balance sheet recession', where falling asset values mean that many enterprises and households find themselves as overleveraged and cut back current spending. There is no optimism amongst the Bernanke-ites about the private sector's ability to generate new investment opportunity and about the capacity for presently sick equity risk appetites to recover or about the potential for debt-equity swaps – all of which could mean the economy finds the path of renaissance despite overleverage.

Eighth, currency war is legitimate under some circumstances, and the central bank should be a key part of the war machine. The rest of the world should realize that they can actually gain from a US currency war if this indeed leads to a power reflation of the US economy and an early return of US economic prosperity! This type of 'good' currency war unleashed by Washington should be distinguished from a war of defence against a non-US manipulator with the purpose of getting it to desist from currency intervention (in the case of floating exchange rate) and remove all exchange restrictions so as to allow a full market determination of its savings and trade surpluses in the context of international equilibrium.

Ninth, Bernanke-ism weaves a particular selection of historical folklore and myth in skilful fashion to justify non-orthodox and highly interventionist policy actions. The 'cloth' includes tales of Federal Reserve failures in the Great Depression (1930–3) and in the recovery which followed (especially regarding the boom of 1936 and the subsequent 'Roosevelt recession' of 1937/8); Japan's 'deflation' in the 1990s and 2000s; the 'problem' of the Asian savings surplus and its key role in generating the US housing and mortgage credit bubbles of the 2000s; and a contemporary account of how the Bernanke Federal Reserve saved the USA and the world from a second Great Depression in 2008. The central bank president lectures students on monetary history – but this is an Orwellian history, with no mention either in the lectures or in the references of counterviews and possible counterevidence. The history is also particularly US-centric and devoid of much essential political background (national and international). Take as illustration Professor Bernanke's lectures to students at George Washington University in spring 2012. Great Austrian school economists who had commented negatively on the role of the Federal Reserve received absolutely no mention. There is no mention of the role of the Federal Reserve in causing the credit and asset bubbles which preceded each great recession (or depression) and how all the malinvestment associated with the bubble period and the elevated risk premiums which emerge in the bust pose big but not insuperable challenges to the invisible hands of market forces.

Tenth, Bernanke-ism means a suspension of political liberalism insofar as it applies to the monetary order. The central bank practises a code of transparency which allows the publication of economic forecasts made by its top officials but blocks the revelation of internal decision-making processes and disagreements as regards policy other than in the highly censored and cryptic minutes of official meetings. Central bank officials resort to propaganda in buttressing the doctrine of infallibility. Transparency includes periodic press conferences held by the central bank president. These events become a stage for the central bank president to strengthen the manipulation of long-term interest rates (demonstrating the resolve, for example, to hold short-term rates at zero for many years and convincing global listeners that he means what he says, whilst diminishing the power of the dissidents within the committee who have no chance to present their views at the conference).

Plan for a revolt against Bernanke-ism

Success of a second monetarist revolution (as described in Chapter 4) depends on the refutation and repeal of Bernanke-ism. This is an immense challenge. Bernanke-ism represents a new and dangerous phase in the corruption of the monetary order away from the ideal form that would underpin economic and political liberalism. That corruption in itself goes back a long time.

The waning of Bernanke-ism and its eventual eradication depends most of all on evolution in the body politic. Revulsion at the consequences of Bernanke-ism would provide the seeds for a new social contract to emerge between citizens, the government and the authority made responsible for monetary stability. Academic research and authoritative laissez-faire professors must play an important role in leading the revulsion against Bernanke-ism.

The good news for the USA is that the extremes of Bernanke-ism, coupled with the unique strengths of the US political order and potential for academic dissidence from mainstream economic consensus, make an early monetarist revolution more plausible there than anywhere else. Even so, that 'good news' is tinged with the disappointment that the revolution did not get under way already in 2012. The candidates in the Republican primaries who attacked Bernanke-ism had no manifesto. In any case those candidates lost in the race to a candidate (Governor Romney) whose chief economic advisers had played big roles in advancing Bernanke-ism and were largely sympathetic to its principles. The bad news for Europe is that monetary union swept into power a strand of Bernanke-ism which the weak political institutions there would be unable to evict even if monetarist revolutionaries were to emerge. Perhaps the disintegration of the European Monetary Union would provide

a chance for a monetarist revolution in one or more ex-member countries, but all of that is conjecture at this point in time.

Let's revert to describing how an eventual successful revolt against Bernanke-ism could take place. Four essential steps have to take place.

First, there is the need for historical stock taking as to how Bernanke-ism triumphed in the first place. What were the flaws and failures in the first monetarist revolution which opened the way for the monetary authoritarians to gain power? How could Bernanke-ism claim to be a descendant of Milton Friedman? The most lenient judgement of the first monetarist revolutionaries is that there was some opaqueness in their message. The harshest judgement identifies some deep flaws in the first monetarist revolution that have to be corrected.

Second, a powerful refutation or exposure of the ten elements of Bernanke-ism, as listed above, has to take place and find its way into the academic and media mainstream.

Third, a manifesto has to be composed for a second monetarist revolution based on the broad concept of monetary stability as found in the J. S. Mill–Austrian school tradition, which recognizes the powerful rebalancing forces in a capitalist economy under conditions of monetary stability and is immunized against the Keynesian virus.

Fourth, political forces have to mobilize around the manifesto.

Bernanke-ism's claim to Friedman ancestry

Let's go back to the first essential step leading to revolt. The troubling claim of Bernanke-ism to be descended from the first monetarist revolution was made somewhat apologetically, at Milton Friedman's 90th birthday party (8 November 2002), hosted by the University of Chicago. Professor Bernanke, just having joined the Federal Reserve as Governor, addressed Milton Friedman:

> Regarding the Great Depression, you're right, we (i.e. the Fed) did it. We're very sorry. But, thanks to you, we won't do it again.

Let's leave to one side what Bernanke meant by 'We're very sorry'. How can an institution be sorry? Perhaps he is referring to the ghosts of responsible previous Federal Reserve officials who still haunt its headquarters. He certainly would not have intended to include Benjamin Strong amongst those, given that Strong is praised by Friedman and Schwartz but attacked by the Austrian school economists.

Just two weeks later (21 November 2002), Ben Bernanke continued with his claim to be an intellectual descendant of Friedman. In his (in)famous 'helicopter speech' to the National Economists Club in Washington under the title of 'Deflation: Making Sure It Doesn't Happen Here', Bernanke again

drew his inspiration from Milton Friedman. In discussing how monetary policy could always – if applied sufficiently boldly – tackle deflation successfully, he explained how a money-financed tax cut (where a tax cut is financed by the government borrowing from the central bank at zero interest and making clear that it intends never to repay that loan) was equivalent essentially to Milton Friedman's proposal for a famous 'helicopter drop' of money (the figurative notion of handing out cash to the public).

In that same speech, Bernanke had a section on Japan – a key part of the then developing Bernanke-ite folklore – under the subtitle of 'Why has Japan not ended its deflation'. There he described 'Japan's deflation problem as real and serious'. According to Bernanke, 'political constraints, rather than a lack of policy instruments, explain why Japanese deflation has persisted for as long as it has'. Bernanke did not, in that speech, link the discussion of Japan's deflation to any teaching of Milton Friedman, but some economic commentators have gone down that route.

For example, Professor Jeremy Siegel, in a *Wall Street Journal* op-ed piece (2010), recounts how Friedman, in private discussion, told him he would have favoured radical monetary base expansion towards tackling Japan's deflation. A *Financial Times* blog makes a similar point, relating how Friedman exhorted Japan to aggressively expand the money supply in the mid-1990s (see Davies, 2010) and using this exhortation as evidence that Friedman would have approved of Bernanke laying QE time bombs along the rails of the US economy in 2009–10. The reader must judge whether a privately recorded statement of a great thinker in his or her 90s should be awarded the same weight as texts in acclaimed articles written decades earlier.

Yet the reality is that a significant part of Bernanke-ite 'folklore' stems directly from Milton Friedman, himself the most famous pioneer of the first monetarist revolution. It is indeed questionable whether Friedman should be associated with the Japanese element of the folklore. Even more remarkable, the Japanese element is a historical untruth, which goes unchallenged in public forums. There has been no monetary deflation in Japan since 1945, including the so-called Lost Decade and beyond, contrary to what Professor Bernanke has claimed. The price level has been broadly stable throughout, and it is hard to make the case that market rates on average have been above the neutral rate (see Chapter 7).

How did Milton Friedman unwittingly sow the seeds of Bernanke-ism (in the sense of his works being drawn into the folklore)?

Austrian school critics have long highlighted some dangerous features of Friedmanite monetarism which, in hindsight, may have played a role in the growth of Bernanke-ism. Murray Rothbard, in his essay 'Milton Friedman Unravelled' (2002), takes issue with the 'Chicago school advocacy of proto-Keynesian policy of stabilizing the price level through expansionary fiscal and monetary programs during a recession'. Rothbard made the charge that Milton Friedman, in similar fashion to the first generation of the

Chicago school (led by Henry C. Simons), saw monetary stability as essentially meaning price level stability rather than in the fuller sense of money not becoming the monkey wrench in the machine, of which there could be several symptoms. Price level fluctuations in the short or even medium run could be a false-positive symptom of monetary disequilibrium.

The irony is that Friedman gives much prominence to the J. S. Mill quote (paraphrasable as most of the time the machinery of money is unimportant but when it gets out of control it becomes the monkey wrench in all the other machinery of the economy) without drawing in full its implication for the concept of monetary stability. Friedman, however, did not share in the deflation phobia of Bernanke-ism. In his essay 'The Optimum Quantity of Money' (2006), Friedman contemplates the potential welfare gains which might be present in a steady-state deflation (as against long-run price level stability) due to extinguishing of opportunity cost (interest foregone from alternative assets) on non-interest-bearing fiat money which cost nothing to produce (see p. 56). Households would increase their holdings `of real money balances (as in a world of steady-state deflation, nominal interest rates on near alternative assets to money would be at a very low or zero level, given that this would be significantly positive in real terms). But the emphasis here is on the optimality of steady-state deflation (rather than price level variability, both upwards and downwards, over time).

Furthermore, Rothbard points out that for Friedman, 'monetarism' had an activist interpretation. If the economy swerved off the rails for any reason, then according to Friedman, monetary policy rather than fiscal policy possessed the really effective tools for getting back on track (albeit that Friedman's preference here would have been to give maximum scope for automatic self-triggering mechanisms of recovery within a system of monetary rules rather than the exercise of fine-tuning discretion by benign policymakers). Friedman did not, though, boldly advance the view that so long as monetary stability reigned, the economy would pull itself out of any temporary or more serious stall as recovery forces were generated by the 'invisible hands' (although he would have argued that a serious stall or, even more so, depression most likely meant that money had been unstable in the first place). So Bernanke could contend, partly based on his reading of Friedman and Schwartz's *A Monetary History of the United States* (1963), that the Federal Reserve by bold action could have prevented the fantastic derailment of the US economy which is now called the Great Depression. Friedman did not draw back, in intuitively politically liberal (classical sense) horror, from the massive creation of monetary base in order to pull an economy back from the abyss.

Hence we find Friedman discussing the monetary helicopters with no comment even about the social inequity of forcing a mad rush to spend the distributed notes, in which big real losses would result for many one-time holders of monetary wealth and no comment about the

withdrawal symptoms which would follow in the economy following the initial rush (see p. 69). Friedman and Schwartz make no link between the eventually aggressive expansion of the monetary base in 1934–6 and the powerful rise of temperature in commodity and equity markets during 1936, nor do they make a link between the inevitability of a subsequent temperature fall and the sudden eruption of the 1937–8 Roosevelt recession (see p. 35).

The reader of the *Monetary History of the United States* finds no reference to, or discussion of, the Austrian school hypothesis that monetary disequilibrium, as engendered by the Federal Reserve through the early and mid-1920s, lay behind a rise of speculative temperature in credit and asset markets, which perspicacious contemporaries increasingly suspected by the mid to late 1920s. All the related malinvestment and the subsequent asset price deflation which were to add to the severity of the subsequent recession were in-built consequences of that earlier monetary instability. The monetary instability did not start with the Federal Reserve overreacting to symptoms of asset price inflation in late 1928 and early 1929, with everything fine before then, as the uncritical reader of the Monetary History of the United States might come to believe.

Benjamin Strong, the key figure in determining monetary policy in the early and mid-1920s, is the villain in the Austrian analysis, but for Friedman and Schwartz he is the missing hero who would have restrained the extent of monetary tightening, in late 1928 and early 1929, undertaken to cool the equity market and could have pulled the economy back from the monetary abyss in 1930. Nor will the reader find reference to the fact that the US monetary disequilibrium spread like fire via the fixed mark-to-dollar rate to the then second-largest economy in the world, Germany, creating in many respects an even bigger bubble there. The narrative is blank about how the descent (by violent lurches) of Germany into the political and economic abyss from 1930 onwards had such knock-on effects to confidence in leading US banks and in global economic prospects as to reverse any periodic nascent tendency for the equity market to rebound and lead the economy forward, such as had occurred so effectively following the 1907 panic and great recession. These omissions are replicated in Bernanke's own historical work on the Great Depression (Bernanke, 2000).

Putting some blame at the door of Milton Friedman and Anna Schwartz for creating a germ which subsequently joined with many other intellectual influences in a particular historical environment to produce Bernanke-ism does not make them highly responsible for its existence or its triumph. Nor are they totally blameless. Friedman and Schwartz, in writing a monetary history of the Great Depression which expunges all contrarian views to their own from the Austrian school (of which they were certainly aware), and Friedman, by hypothesizing about monetary helicopters, did dull the force of laissez-faire economics.

Yet Bernanke, in developing his monetary principles, transgresses many of Milton Friedman's teachings whilst malinterpreting important aspects of Anna Schwartz and Milton Friedman's monetary history.

In particular, Friedman stressed the primacy of monetary rules (money supply should increase by x per cent per annum) and the ill-fated efforts of monetary (or fiscal) policymakers to fine-tune the economy. He warned against the pegging of money rates by the central bank, advocating that instead the central bank should steer money supply growth whilst allowing rates to be freely determined in the marketplace. He argued that central banks should not target the price level directly, as they had no means to achieve such a target with any precision and could not be held responsible for the outcome. Rather, they should target narrow money over which they had total control. His underlying political and philosophical orientation, even with some blemishes, as described by Rothbard, was towards freedom and capitalism (whereas Bernanke-ism has no such political or philosophical attachment).

Moreover, Bernanke stands accused by Anna Schwartz of wrongly linking his own monetary creed in an important issue to Friedman's monetary history and hers. She disputed (see Schwartz, 2009) that Bernanke's sweeping programme of mega lending to the banks, in the aftermath of the summer 2007 quake, was at all similar to what Friedman and Schwartz had recommended should have occurred in late 1930. At that time for banks heavily involved in agriculture there was a liquidity crisis, which the Federal Reserve failed to stem, resulting in a massive bank run, together with failures that would not have happened under the arrangements in place prior to the Federal Reserve Act (where local clearing houses would have enacted a temporary freeze on the conversion of bank deposits into banknotes). She claimed that by contrast, what the Federal Reserve confronted in summer 2007 was already an insolvency crisis and there should not have been a generalized bailing out. Instead, the lender of last resort function should have been restricted to banks which could still be preserved in solvency, not to the fundamentally insolvent – a distinction which had been made, of course, during the financial rescue operations driven by J. P. Morgan during the 1907 panic.

Implicitly Schwartz claimed that her and Friedman's criticism of the Federal Reserve during the 'great contraction' did not mean that there should have been a big bank bailout, such as the Federal Reserve sponsored in 2007–8. The invisible hands of private market forces should have been allowed to operate (bringing about insolvency where appropriate) in the banking sector, as elsewhere in the economy. Friedman and Schwartz did not advance the hypothesis, subsequently put forward by Bernanke, that bank credit channels almost inevitably seize up during severe recession (thereby justifying government intervention). Rather, they (Friedman and Schwartz) relate how the seizing up of credit channels in the midst of the

Great Depression was a direct consequence of severe tightening of monetary conditions (resulting in massive monetary disequilibrium) instituted by the Federal Reserve during autumn 1931 in response to the gold losses which occurred in the wake of Britain's break with the gold standard.

Consequently, the US credit crunch of the second half of 1931 and 1932 was not a story of inevitable 'friction' or 'market failure' associated with severe recession (as told by Bernanke). Rather, Friedman and Schwartz saw the autumn 1931 tightening by the Federal Reserve as a game changer – a new and bigger monkey wrench thrown into the machinery of the US economy than anything which had gone before. Bernanke, in his account of the Great Depression, plays down this new and serious source of monetary disequilibrium, instead focusing on his two main themes: a dysfunctional banking system, meaning that the cost of credit to borrowers unable to access capital markets became prohibitive (if available), and balance sheet effects of deflation which inhibited overall recovery.

New Keynesian spectre of credit channel blockage

Bernanke's focus on credit channel blockage is an integral part of his new Keynesian vision. Self-recovery forces of the private sector economy would be too weak to bring about a return to prosperity due to malfunctioning in bank intermediation and the huge frictional costs of deleverage. Friedman and Schwartz would have retorted that if it had not been for the monkey wrench of September 1931 (the Federal Reserve tightening savagely in response to gold losses), the private sector forces of recovery would not have been so weak. Those Bernanke-ite concerns about bank intermediation malfunctioning would have been overblown and could not have justified mass bailout.

Friedman and Schwartz do not explicitly comment on deleveraging, but evidently without the September 1931 monkey wrench this might have been on a much lesser scale. We do not know whether they would have agreed with the Austrian critique that deleverage can occur fairly smoothly within a well-functioning capitalist economy (see p. 62) in the context of monetary stability. There real rates can fall to negative levels consistent with price recovery expectations following a period of good deflation. No evidence exists on whether Friedman and Schwartz would have agreed with the wider critique that balance sheet deflation (whereby many borrowers find real debts rising with price falls) should not be a severe obstacle to recovery where the possibility of debt-equity swaps is alive and well and where a reasonably efficient market exists in corporate takeovers (financially weakened but still profitable firms are taken over by financially stronger firms).

Friedman and Schwartz ignore, in their history, the key role of price recovery expectations within the context of monetary stability in generating

negative real interest rates during a recession and how this mechanism might have been impaired by the throwing of the September 1931 monkey wrench. Specifically within the banking system, general expectations of price level recovery would have allowed rates of interest on risky loans to increase in nominal terms, thereby widening the profit margin for the viable banks.

In summer 2007, however, Professor Bernanke proceeded as if all such points, if they had been raised, would have been invalid. In his new Keynesian view the central bank had to fight to keep open the channels of credit market intermediation to prevent these from seizing up and threatening to drive the economy into depression. Hence Professor Bernanke, in what President Obama was later to describe as 'creative thinking', took the Federal Reserve into a massive programme of subsidized, collateralized and, at first, sterilized lending to the banking system. A bizarre aspect of this was the simultaneous effort to shore up risk-free interest rates so as to maintain monetary restraint in the context of inflation still above target (due in large part to the oil price bubble which formed in spring and early summer 2008). By massive subsidized, sterilized purchases of credit paper and sterilized lending at low margins against the collateral of such paper, the Federal Reserve was, in effect, preventing spreads on credits (the gap between high-risk and zero-risk interest rates) blowing out in line with perceptions of increased risk and with increased investor aversion to bearing such risks. Yet if forces of private market recovery were to operate within the banking system, just such a widening of spreads would be required.

In particular, if the history of 2007–8 were to be rerun, with the Federal Reserve immediately allowing risk-free rates to fall to zero in summer 2007 when the first quakes sounded and allowing spreads on riskier interbank loans or on money market assets to blow out, then still-solvent banks would have been incentivized to raise new equity capital. By deepening their equity cushion, they would have driven down their own cost of funding in money markets and maintained or added to their deposit base, whilst potentially making enhanced profits on risky lending (taking advantage in many cases, especially with regard to small and less well known clients, of their unique ability to monitor and assess credit risks).

From destruction of monetary pivot to Taylor rule corruption

As the Bernanke Fed extended its massive lending operations through late 2007, it found increasing difficulty in sustaining its strict pegging of short-term interest rates (around 3–4 per cent per annum) and applied to Congress for the bringing forward of new powers to pay interest on excess reserves (see p. 77). In this way, the idea was to strengthen the floor below money market rates even as huge excess reserves were beginning to swirl

around the system. Bernanke could point to this already being the practice in Europe.

Whereas the old Bundesbank paid no interest on reserves, the ECB had gained such power and so was able (by steering the interest rate on reserves close to its target money interest rate) to steer money market rates within a tight corridor. In advocating such a system, Bernanke was at the opposite pole to those Bundesbankers who led the first monetarist revolution. They understood that once excess reserves pay interest and pay it at a rate linked closely to the market rates, monetary base (otherwise described as 'high-powered money') is no longer the pivot of the monetary system.

A pure monetarist framework has the central bank targeting the growth of monetary base (on which no interest is paid) and leaving everything else (including the determination of money interest rates) to the market. Under the system as brought into being by Chairman Bernanke, the central bank is a micromanager of money market rate levels and a manipulator of longer-term interest rates – a situation which Friedman saw as a disastrous recipe for monetary stability (however flawed his particular definition).

In Bernanke-ism, there is fervent opposition to monetary base control. Professor Bernanke has stated that in his promised land of eventual monetary order, reserve requirements will have withered away to zero (see Bernanke, 2010a). More generally there is an aversion to monetary rules (in the classical sense, not the corrupt Taylor sense; see p. 90). Enlightened monetary authoritarianism should replace rules. Well-meaning monetary bureaucrats around the policymaking table, with special focus on the unemployment rate, should decide where to peg nominal money rates and where to draw the projected path for these (informing the market accordingly) on the basis of their expert view of the future for the economy (based on the best of econometric modelling) and the consistency (or not) of this with their chosen path for inflation. (For excellent and unashamed evidence of how this happens in practice, see a speech [Duke, 2010] by a Fed Board member under the friendly title of 'Come with Me to the FOMC'.) In drawing the projected path for short-term rates and trumpeting this at press conferences and in other media, the intention is to influence long-term rates.

The monetary bureaucrats may use guides for this purpose, and in many speeches Bernanke has referred to the so-called Taylor rule. This is designed to indicate to the rate setters where the policy rate they set should ideally line up for any given values of the so-called output gap (extent of slack in the economy), the natural rate of interest (the equilibrium real rate of interest for a medium or long maturity) and the desired inflation rate relative to the actual rate. There is no patience or tolerance towards the idea that markets may do a better job of estimating neutral or natural interest rates than the bureaucrats or their models, including the Taylor rule.

How monstrous the Taylor rule is for any follower of the Austrian school or of Milton Friedman! The latter would have ridiculed the idea that

monetary policy could be run on the basis of a bureaucrat's perception of an output gap – as if anyone has the least idea of where that is in real time. The monetary disasters of the Great Inflation had been based on such faulty perceptions. Who in the Austrian school (or Friedman) would have credited monetary bureaucrats with superior intuition to the decentralized market-gathering of information in the assessment of neutral or natural interest rates? Yet over and over again we find Bernanke referring to the Taylor rule as a guide, even if recently he favours an adjusted version of the rule where the inputs are expected ranges for the output gap and inflation rather than actual ranges (Bernanke, 2010a).

Bernanke-ite embrace of fiscal fine-tuning and the Keynesian 'savings paradox'

Bernanke-ism, unlike first-revolution monetarism (Milton Friedman), is ready to embrace fiscal fine-tuning. Indeed, in the new Keynesian tradition, from which Bernanke-ism comes, fiscal action may be essential to driving the economy out of a steep recession, especially if channels of private credit are blocked, the equilibrium real interest rates are sub-zero and inflation expectations are very low or even negative – and so nominal interest rates at zero are still too high in real terms. In that context there is no confidence in the invisible hands bringing about a general equilibrium solution.

In Bernanke-ism there is no room (due to presumed impracticality, lack of imagination, or limited historical reference) for good deflation to empower the invisible hands, whereby prices in the immediate vicinity fall and this, coupled with the expectation of price recovery further ahead, generates negative real interest rates. That is a shortcoming which Bernanke-ism shares with the teachers of the first monetarist revolution, as we have seen, nor is there room for the concept of equity risk appetite and the key role in which the return of this to health after two episodes of sickness (first, voracious excess, then deficiency accompanied by depression; see pp. 2–3) in Bernanke-ism.

The hypothesis about feasible aggressive monetary action in a situation of severe recession (not found in Friedman and Schwartz, where it is floated as a somewhat hazy counterfactual proposition as to what might have happened in the Great Depression) is a key element of Bernanke-ism, but that in no way implies opposition to active fiscal policy as related to cyclical fine-tuning or to mega stimulus (in severe recession). By contrast, economists influenced by the Austrian school might well argue that fiscal stimulus could actually handicap the private market forces of recovery. By blunting the amount of good deflation, if any, which takes place in the recession, fiscal stimulus limits the extent to which real risk-free rates can fall (in that any potential for price level rebound into a normal range

depends on the size of its initial fall and it is the expectation of rebound that transforms low or zero nominal interest rates into negative real rates) and thereby curtails the rebound in equity prices (or equivalently, the fall in the equity cost of capital). By creating anxiety about a future rise in taxes on capital as part of an eventual return of fiscal sobriety, the fiscal stimulus might have a similar deterrent effect via holding back a return to health of equity risk appetite.

Institutional historians might see, as one symptom of the close relationship between Bernanke-ism and Keynesian fiscal activism, the recruiting by Professor Bernanke of arch-Keynesian economist Paul Krugman to his faculty in Princeton. Just as Bernanke was leaving active duty in Princeton to take his governorship at the Federal Reserve, Krugman wrote approvingly a New York Times op-ed piece (2 August 2002) about a recommendation by Paul McCulley of Pimco that 'Alan Greenspan should produce a housing bubble to replace the NASDAQ bubble' (see Steil, 2010).

The Keynesian polemic against saving – 'the paradox of saving' – is totally at odds with the Austrian school. For the Austrians the rise in savings propensities, which follows an episode of credit bubble and bust (together with malinvestment driven by high temperatures in certain asset markets), is something to be celebrated in that it provides the essential input to a new wave of investment spending required to rebuild a depleted capital stock. Much of the capital stock – human and physical – which was built up during the bubble period is now economically obsolescent. Its original creation was based on capital market price signalling, which was determined by a software deeply infected by monetary virus (see p. 3) and in the most recent episode included auto factories dependent on unsustainable demand based on consumer credit, construction workers skilled in building homes which could be sold only to takers of sub-prime mortgages and so on. True, that rebuilding may be a slow process and may require a powerful combination of entrepreneurship (the spotting and creation of new profit opportunities), relative wage and price flexibility and good appetites amongst savers for equity risk. (In communist China rebuilding means literally building a new steel mill, even though the demand for steel will never recover to bubble levels; but hopefully that does not occur in a capitalist economy – new profitable opportunities have to be found to replace the old phantom ones.) It may be that an initial episode of good deflation is required to set the stage for negative risk-free real rates alongside the positive real equity cost of capital (the spread between the two is the so-called equity risk premium). There must be general confidence in monetary stability so that price recovery from present levels is expected over the long run.

The hypothesis of a possible benign circle of higher savings and investment driving an economy forward out of the rut of an imploded credit and asset bubble is not new in economic thought and can be traced back to the 1930s Cambridge-London debate (between the Keynesians, on the one hand,

and Robbins together with Hayek on the other) and then to the insights of Schumpeter (see Schumpeter, 1939; McCraw, 2006). Critical additional features to that hypothesis, which were not present in the original debate, include stabilizing speculation in equity markets – where investors buy today at prices which reflect optimism about the nature of the long recovery further ahead – and so capital spending begins to turn up even during the weak phase of the cycle. In the growingly studied episode of the strong US economic recovery led by equity market rebound following the 1907 panic and steep recession of 1907–8, there has been too little focus on why the US economy stalled and indeed entered a very mild recession in 1910–11. That interruption stemmed from a stock market panic in early 2010 triggered by the administration of President Theodore Roosevelt, which led an assault on Big Business and, in particular, launched a criminal anti-trust prosecution of Standard Oil.

Indeed, the benign free market-led recovery from recession emphasizes the importance of an environment in which healthy appetite (not stimulated artificially and only on a transitory basis by a 'shot' of monetary disequilibrium) for equity risk can grow – a factor ignored in the older debates though recognized by Robbins (2007) in citing uncertainty about a possible looming war in Europe as holding back investment spending in the mid-1930s. The Austrian school makes an overriding point that these rare crises, where private market forces of recovery might face very challenging circumstances, would not have erupted in the first place if there had been a regime in place favourable to monetary stability (preventing the bubble from forming).

Bernanke opens up Friedman's black box

Even though differing on fiscal fine-tuning, Bernanke shares with Friedman and Schwartz the view that forceful monetary tools should be applied in deep recession where the invisible hands may be too feeble. According to the counterfactual hypothesis of Friedman and Schwartz, if somehow monetary base had been pumped up at an aggressive pace through 1930–2 without interruption, the recession would have been much less severe. But it remains a matter for Friedman's proverbial 'black box' how the monetary base expansion would lead to the hypothesized better outcome. Friedman and Schwartz assume implicitly that the multiplier between monetary base and wider money would remain within narrow limits and that wider money growth would go along with faster recovery. Bernanke opens up the black box and tries to design some tools to put in the box. In doing so, however, he insists that the use of these tools means powerful intervention by the authorities alongside the invisible hands; this might well take the form of waging currency war.

Friedman and Schwartz imply that their chosen monetary path during the Great Depression would have been forceful expansion of the monetary

base. Perhaps they would have approved if the Federal Reserve in 1930 had taken action to drive the monetary base up to a level which would have been projected as normal for 1935 on the basis of nominal GDP growing at trend between, say, 1928 and 1935 (with money supply and monetary base returning to their usual relation with nominal GDP by 1935). (Note that there is no direct evidence for saying this is what they proposed.)

Such actions may indeed have been successful in shoring up confidence amongst the general public in a rebound of the price level from its already fallen level (prices did decline sharply from autumn 1929 onwards) and so bringing about negative medium-maturity real rates with nominal rates at a little above zero. In turn the expectations of price level recovery would have allowed the nominal interest rate on risky loans to increase and banks to earn higher margins on such activity. Nothing in Friedman and Schwartz hints at their suggesting that the Federal Reserve in 1931 should have adopted a shock-and-awe policy of doubling the monetary base or something similar, though there is always that troubling passage in Friedman (2006) about the monetary helicopter (which implicitly involves a joint fiscal-monetary stimulus).

In spelling out what might be in the black box, Bernanke has become growingly explicit. Taking account of his speeches, papers and policy steps, it is possible to make an inventory and description of the tools. Many of these involve technically massive operations on the monetary base.

It is important to recall, however, that the monetary base, about which Bernanke writes and speaks, is dislodged from the pivot of the monetary system, with reserves paying market interest and reserve requirements at very low levels. The hypothesized Friedman and Schwartz optimum monetary policy of 1931–2, depending for its success on the banking system's responses to shocks affecting the monetary pivot (including a reversion of so-called money multipliers to a normal level in the medium term) is not applicable to the post-classical monetary system in which Bernanke-ism has established itself.

Moreover, monetary base expansion as hypothesized by Friedman and Schwartz would have occurred in a situation where the price level was already far below normal (given the deflation of 1929–30/1). Expectations of a price level rebound would mean real interest rates for medium-term maturities could be significantly negative. The tools in the Bernanke-ite tool box depend for their potential success on much smoke and mirrors to persuade households and businesses that the price level will rise steadily over the medium term (and the short term) in the context of no good deflation having occurred first.

QE time bombing

The Bernanke-ite tool box (for dealing with recessionary or post-recessionary situations where the hypothesized equilibrium level of market interest

rates for short and medium maturities has become negative) includes money time bombs as well as massive credit market operations to flush open some new channels to compensate for those blocked in a perceived dysfunctional banking system. There is also the tool of direct manipulation of long-term interest rates (see subsequent section). The time bombs, laid along the path of the US economy, consist of huge amounts of excess reserves. For many years they may lie dormant in the balance sheets of the banks. But the Federal Reserve promises that as the strong economic recovery emerges, it will act efficiently to sterilize the excess reserves; so the bombs will not actually go off (thereby the excess reserves will not lead to inflationary money and credit growth). The sterilization of excess reserves will take place in part by the Federal Reserve's raising the rate of interest which it pays on these and so stimulate demand for them as other market rates rise in the course of economic recovery. The other method of sterilization is soaking up excess reserves via open market operations or security borrow-and-lend operations.

Taking the first method of sterilization, the Federal Reserve can, in this way, influence a wide range of money rates and can forestall demand for reserves falling behind supply (and so a sharp increase in lending momentum) as economic recovery begins to take off. It is not the actual quantity of reserves that is critical as to whether the time bomb explodes, given that reserves in the Bernanke-ite monetary system pay interest and are virtually indistinguishable from such near alternative assets as Treasury bills. Rather, the danger of monetary disequilibrium (of the QE time bombs ultimately exploding) resides in the Federal Reserve controllers' pegging a path for money interest rates (heavily influenced by the rate they set on excess reserves) which turns out to be far below the level which would be consistent with neutrality.

In the rudderless world of Bernanke-ism there are no automatic monetary rules tending to continually contain any incipient monetary disorder. Everything depends on the rate-setting skill of the command centre. This skill would be most sorely tested under the conditions where QE time bombs lie along the rails of the economy. There is an existential ambiguity here. Bernanke would seem to imply that part of the stimulus effect of the QE depends on inhabitants of both the financial marketplaces and the wider economy possessing healthy scepticism as to whether the Federal Reserve bomb diffusion would be successful. Expectations of higher inflation – and perhaps an episode of hot temperature in some asset markets – spurs buying of goods and services in the present.

If everyone were 100 per cent certain that the Federal Reserve would be successful in its mission of bomb defusing, the present stimulus effect would be much weaker than foretold. This is an essential defect of the Bernanke-ite tool box: its success in overcoming the limit to conventional monetary policy imposed by the 'zero-rate boundary' depends on setting

up economic agents for some dashing of expectations amidst a monetary context of considerable monetary instability. Inevitably there will be bad decisions and malinvestment along the way.

Another critical aspect of the essential ambiguity inherent in the use of the QE-2 tool is its bringing about a devaluation of the dollar which would stimulate economic recovery. Doubts as to whether the Federal Reserve will make an efficient and well-timed defusing of the QE time bombs means that the US dollar tumbles as investors seek safety in currencies not crippled in this way. Many investors take fright at the Federal Reserve's massive 'money printing' operations, even though the Bernanke-ites argue correctly that this is not equivalent to present monetary expansion. If indeed the exit is more efficient than expected, the dollar would rebound – and so the monetary stimulus via QE again (as in the previous analysis) proceeds via unleashing forces which will drive considerable malinvestment (in particular overextension of the export sector, which subsequently has to contract).

These same drawbacks of QE are again apparent in its influence on commodity markets. In today's world many of these markets are effectively asset markets, where pricing is dominated by shifts in investors' expectations about the future and in their attitudes to risk. The dropping of QE time bombs causes some investors to become highly anxious about inflation danger, even though the Bernanke-ites might sneer at their irrationality. The combination of such high anxiety in some parts of the highly heterogeneous investor universe (characterized by widespread differences in perceptions of the future) with the emergence of irrational exuberance (the catalyst is the promise of a long period of zero interest rates ahead) can cause commodity prices to race towards the sky. That race could undermine any potential stimulus effect of QE on spending by eroding the purchasing power of wage incomes in the commodity importing countries. There is much malinvestment which could take place due to the huge temperature swings in a wide range of asset markets globally including commodities.

In sum, the use of QE time bombing under perceived conditions of the zero-rate trap inhibiting the practice of conventional monetary policy-making (as carried out by discretionary changes of the money rate peg) is one important component and 'innovation' of Bernanke-ism. Yet there are many grounds, as listed here, for scepticism about this innovation.

Long-term interest rate manipulation

In summer 2011, in reaction to an apparent slowdown in economic recovery and a setback in the equity market, the Bernanke Fed started to use a new instrument in its unconventional tool box – the 'long-term interest rate manipulator'. The essence of the manipulator is the promise that the Fed will peg short-term interest rates at 'present very low levels' (in fact near zero) for many years into the future. Yes, there may be some get-out clauses

to the effect that if economic circumstances change remarkably (buoyant economy or high inflation), the Fed could break the promise, but the markets understandably assume that the change would have to be huge. The markets also assume that the pegging of short-term rates at an ultra-low level will continue for some time after the expiry of the present promise (indeed the Bernanke Fed rolled the expiry date one year further into the future within about six months of its first announcement).

In principle the long-term interest rate manipulator might have only small impact at very long maturities, given that the far-off future expected short-term rates, which are proportionately more important in the determination of long than medium maturities, are least influenced by rate-pegging promises. In practice the use of the manipulator and in particular the suppression of short- and medium-maturity rates produces hunger for yield and, related to that, an irrational focus on scenarios where all is well for the yield seeker. The sharp fall in long-maturity interest rates in itself can produce feedback loops. Investors looking at the fall in yields imagine that there are many in the marketplace who really believe that inflation is dead, that profitable opportunities are very scarce and that the US bond market faces a Japan-style future (of perpetual low yields despite massive fiscal deficits). And they begin to feel more confident in their own view, which is shifting in that direction.

The Bernanke-ite long-term interest rate manipulator is a different tool from World War II–style price fixing in the US T-bond market (in fact that price fixing continued for several years after the war). Price fixing requires whatever monetary intervention is necessary to balance supply and demand at the given price, regardless of its consequences for the path of the price level through time. The technical success of those price fixing operations (meaning in particular no need for massive money printing, which would have ended up with hyperinflation rather than simply a doubling in the price level over a few years) did depend, though, on an accompanying set of expectations and attitude to equity risk. In particular many investors in the 1940s expected that there would be a post-war deflation similar to the great deflation of 1920, in which the resumption of peacetime production coupled with monetary tightening had brought prices down. And there was a high degree of equity risk aversion, with many still concerned that equities could plunge, as had occurred in 1929–33 and 1937–8.

Massive credit operations

Another main tool in the black box is massive credit operations to open up channels of public sector intermediation to compensate for those blocked in the banking system. This has been referred to already above in the context of the Bernanke Fed's reaction to the summer 2007 credit quake. Again, in early 2009 one main plank of the QE policy then initiated was massive

buying of bonds issued by the public sector housing corporations; also, new programmes (not very successful in terms of size) for buying some private sector non-bank debts of good quality. In that the housing debts effectively enjoyed a semi-implicit government guarantee, the operation could hardly be described as lifesaving, but it did hold down spreads on such paper.

The main problem with all such Bernanke-ite credit operations is that private market forces would have been driving credit spreads higher and risk-free rates lower in real terms. This would have happened in part through good deflation coupled with expectations of price level recovery. And so higher nominal rates on higher risk loans would have been less onerous in real terms (given higher prices expected in the future), and the risk-free rate might well have been negative in real terms. The wider spread on credits would have provided new profit opportunity for banks and helped them raise new equity for the purpose of jump-starting such lending. The dead hand of public sector financial intermediation keeping spreads down blocked such a process.

The rationale within Bernanke-ism for public sector–intermediated credit flows in the deep recessionary situation described stems from its deep phobia of deflation. The concept that a fall in prices may be indeed consistent with monetary stability, whether during a business recession, during a period of rapid productivity growth or during a period of rising temperature in asset and credit markets (which to be held in check require monetary conditions to tighten to such a degree as to mean some transitory downward pressure on prices), is totally anathema to the Bernanke-ites.

Bernanke-ite phobia of deflation

So deep is the phobia of deflation in Bernanke-ism that we see there the advocacy of monetary policy measures to reduce the danger of deflation emerging down the road, even when at present there is still a low rate of inflation. The arch-examples are, first, in spring 2003, when the Greenspan Federal Reserve (prodded forward to an important extent by Ben Bernanke, who had joined the Federal Reserve Board in autumn 2002) embarked on its 'breathing in inflation' policy, even though at that time core inflation was still above 1 per cent per annum. Second, there was summer 2010, when the Bernanke Fed defended its decision to launch a QE-2 time-bombing campaign on the basis of 'deflation dangers', even though all measures of inflation and inflation expectations were still significantly positive.

What lies behind this phobia of deflation found in Bernanke-ism? The fear, as spelt out in Bernanke's speeches and articles, is that once deflationary expectations become established, even very low positive interest rates would be high in real terms and thereby likely above the equilibrium level (unless the natural rate is particularly high, as during a period of capital shortage). The consequence would be the economy entering a permanent

state of deflationary recession or depression with monetary policy severely crippled.

Certainly, the monetary authorities could turn to the black tool box, as described above (laying out QE time bombs), but Bernanke would acknowledge that this is of uncertain effectiveness. So it is best for the central bank to take bold pre-emptive action against the danger of deflation, even when this is only one of several scenarios within the mainstream (but not at the centre) of a probabilistic vision. In coming to this conclusion, Bernanke was influenced, without doubt, by the whole debate in the late 1990s and the early part of this century's first decade about 'Japanese deflation' and what action the Bank of Japan should take or should have taken in the past.

Bernanke does not consider at all the hypothesis that what went wrong in Japan was the failure of good deflation to emerge after the great bubble burst (at the start of the 1990s), in large part because of huge fiscal stimulus. Nor does he consider at all the question of sick equity appetite in Japan. So instead of a period of negative real interest rates and low equity cost of capital driving the economy forward, Japan became hooked on Keynesian fiscal drugs. Japanese savings poured into the postal savings system to finance dead-end public spending rather than find their way into equity investment at home or abroad. It is not plausible in this situation that very low nominal rates in Japanese money and bond markets were actually above the equilibrium level of real rates (which were propped up by the mega fiscal deficits).

Nevertheless, for better or worse, Bernanke became convinced that the optimal conduct of monetary policy was to aim for an inflation rate over the medium term (meaning around two years) of a steady 2 per cent per annum and that undershoots should be avoided as much as overshoots. Inflation targeting is at the core of the ten principles which Bernanke sets out for monetary policymaking and is a key part of what we describe as Bernanke-ism. These ten principles are derived from his articles, many of them jointly written with Mark Gertler (see, for example, Bernanke and Gertler, 2000) and cited in Brown (2008).

Bernanke's ten principles of monetary policymaking

Principle 1: Central banks should view price stability and financial stability as highly complementary and mutually consistent objectives to be pursued within a unified policy framework.

Criticism: This is totally at odds with the distilled wisdom of monetary theorists from J. S. Mill through to Austrian school economists, who emphasize that monetary stability in its broadest sense (to include the money monkey wrench not dislocating the machinery of the economy – including temperature rises in asset and credit markets with consequential malinvestment) may require considerable fluctuations in the price level and that there

is an innate unavoidable tension between aiming for price stability in the long run and avoiding episodes of monetary instability. Such tensions are best managed within a system of rules (gold standard or monetary base control, as described in Chapter 4).

Principle 2: The best policy framework for attaining both objectives (price level and financial stability) is a regime of 'flexible' inflation targeting. Under this regime, monetary policy is committed to achieving a specific level of inflation in the long run, and long-run price level stability is designated as the primary long-run goal of policy. Avoidance of deflation is as important as, perhaps more important than, the avoidance of high inflation.

Criticism: How is the enlightened policymaker to know the amount by which inflation should fluctuate period by period so as to be consistent with monetary equilibrium? This fluctuation should be left to market determination within a stable monetary framework set by rules. As to Bernanke's deflation phobia, that has already been discussed above.

Principle 3: Central banks should adjust monetary policy actively and pre-emptively to offset incipient inflationary or deflationary pressures.

Criticism: The focus here on forecast inflation rates (relative to target) as the main objective of policy is both wrong in terms of theory and implausible in terms of practice. Which central bank has ever been pre-emptive?

Principle 4: Policymakers should not normally respond to changes in asset prices, except insofar as they signal changes in expected inflation. If, however, fluctuations in asset prices are caused by non-fundamental factors (irrational expectations or poor regulatory practice) and they have potentially significant impacts on the rest of the economy, then they can justify monetary policy action (within the regime of flexible inflation targeting) so long as this is consistent with the long-run inflation objective.

Criticism: There is not a shred of evidence to suggest that central bankers, including Bernanke himself, have any ability to spot fluctuations in asset prices that meet these criteria. Certainly Bernanke, as a key policymaker through 2002–6, showed no awareness of the amount of malinvestment taking place related to rising temperature in asset and credit markets. Rather, response of interest rates to such incipient temperature rises is likely to be swifter, and possibly pre-emptive, if they occur within a monetary framework in which rates across the board are market-determined rather than heavily influenced, especially at short and medium maturities, by central bank rate pegging (both the present peg and continuous official commentary about how the peg will be adjusted in the future). Capital market rates would respond to buoyant demand for funds from increasingly optimistic entrepreneurs and households. Conditions in the money market would be sensitive to rising demand for money related to financial transactions (as in the blueprint of the second monetarist revolution).

Principle 5: Trying to stabilize asset prices per se is problematic – not least because it is nearly impossible to know for sure whether a given change in asset values results from fundamental factors, non-fundamental factors or both.

Criticism: None. But of course trying to ascertain such matters is the job of stabilizing speculators in asset and credit markets, who should perform their function adequately (though not perfectly) if overall monetary conditions are broadly stable.

Principle 6: A central bank, by focusing on the inflationary or deflationary pressures generated by asset price movements, effectively responds to the toxic side effects of asset booms and busts without getting into the business of distinguishing fundamental from non-fundamental factors.

Criticism: There is no theoretical or practical basis for assuming that temperature rises in asset and credit markets will always be accompanied by inflationary pressures in goods and services markets (the period 1924–8 in the USA and Germany is a good example of where this did not occur). So central bankers who determine the time profile for the rates they control on the basis only of inflation forecasts will seriously depart from the path of monetary stability.

Principle 7: Because inflation targeting both helps to provide stable macroeconomic conditions and also implies that interest rates will tend to rise during (inflationary) asset price booms and fall during (deflationary) asset price busts, this approach may reduce the potential for financial panics to arise in the first place.

Criticism: Inflation targeting does not provide stable macroeconomic conditions (for example, it stands in the way of good deflation and of the essential price level fluctuations over time consistent with economic equilibrium) and thereby adds to the likelihood of asset price booms and busts.

Principle 8: Inflation targeting is generally characterized by substantial openness and transparency on the part of monetary policymakers, including, for example, the issuance of regular reports on the inflation situation and open public discussion of policy options and plans.

Criticism: If there is openness and transparency, it is about misguided targets and inevitably wrong economic forecasts. The record shows that there is no openness about key policy decisions – such as the hugely experimental QE operations and long-term rate manipulation decided on during 2010–12 or the credit support operations of 2008–9. Indeed, the Bernanke Fed systematically fought through the courts to a very late point (before conceding) the freedom of information applications made by Bloomberg and Fox News.

Principle 9: The Federal Reserve will do best by focusing its monetary policy instruments (essentially the federal funds rate) on achieving its macro

goals – price stability and maximum sustainable employment – whilst using its regulatory, supervisory and lender of last resort powers to help ensure financial stability.

Criticism: The pursuance of monetary stability should bring the best results for employment (and prosperity), and this does not mean price stability in the short or medium term.

Principle 10: The Federal Reserve should use the second tool (regulatory, lender of last resort, etc.) to defend the financial system in general and make it less vulnerable to asset price shock. If a sudden correction in asset prices does occur, the Fed's first responsibility is to do its part to ensure the integrity of the financial infrastructure.

Criticism: The importance of overriding the normal supply of monetary base and acting as lender of last resort to solvent financial institutions is not in dispute. But Bernanke's principles (and practice) imply much more than that and include aggressive clearing of new credit channels outside those of the partially blocked banks. Such action is likely to be counterproductive in jump-starting the bank credit flows, as they suppress profit opportunity which would allow banks to raise new equity capital and increase their lending.

These ten principles set out by Bernanke as to how the Federal Reserve should conduct monetary policy are a useful contribution to the understanding of Bernanke-ism, but the concept is much broader. Already in this chapter we have analysed elements (of Bernanke-ism) such as deflation phobia, new Keynesian overtones – including, in particular, a belief that credit markets fail under certain circumstances – a black box of tools for overcoming the zero-rate barrier, readiness to embrace currency war and forceful action to pre-empt a decline of inflation below a critically low level. Wider aspects of policymaking style and interaction with the political system are also defining characteristics.

Style, form and politics

A defining stylistic feature of Bernanke-ism is the lead role assigned to the economics expert. Implicit in Bernanke-ism lies the idea that the monetary policymaking process is somehow more likely to be successful if the chief controller is a highly skilled macroeconomist in the 'mainstream' tradition (new Keynesian!) who draws on the collective wisdom of highly talented economists within the Federal Reserve. The politicians who appoint or approve the appointment of experts to the Board (and of course not all the board members are to be experts) have done their job well when they choose economic experts of impeccable credentials.

In fact this Bernanke-ite view of the economic expert has been widely challenged in recent years. For example, in 2011 the Senate Republicans

were successful in vetoing the appointment of a leading labour market expert (Professor Diamond) on the basis that he would support the money printing now occurring under the lead of Professor Bernanke. But in spring 2012 the Republicans were unsuccessful in blocking a replacement nomination, even though there was every reason to believe the appointee would side solidly with Professor Bernanke on key policy issues.

Albeit with one or two troublesome dissidents from the regional Federal Reserve Banks, the Board members on the FOMC can get on with their job in a full spirit of independence subject to the chairman's making periodic testimonies to Congress and not facing ugly intrusions, whether by audit commissions or outside experts insisting on detailed information as to how their decisions were reached. The experts publish their views on where the economy is heading, including their forecasts for inflation and growth in particular. Who in the marketplace would not be keen to gain more details on how the benign and learned officials plotting the path of interest rates are getting on with their work?!

In fact, however, monetary policymaking is a deeply political subject. Classical liberals who distrust discretionary power in the hands of even well-intentioned officials are likely to prefer the task of monetary stability to be dominated by a system of rules. Yet the definition of monetary stability, as found in J. S. Mill or the Austrian school texts, is not one which would be approved by economists or voters who believe that the invisible hands of market forces are at best crippled and weak. The classical liberal would like to see the fully defined aim of monetary stability, together with protections against that aim being interfered with by the executive or legislative branch of government enshrined in the US Constitution.

The Bernanke-ite appointment process

Classical political liberals would cite the process by which Professor Bernanke reached the head of the Federal Reserve as an example of hugely important safeguards against authoritarianism being trampled upon without any protest. Here was the administration of George W. Bush, ostensibly committed to so-called supply-side economics and political liberalism, appointing an expert economist of no declared political leaning (and thereby no mission to advance and defend liberalism in the J. S. Mill sense) but whose writings were strongly Keynesian and antisympathetic to laissez-faire, to the most critical position of responsibility for monetary stability. Yet if the monkey wrench of monetary instability seriously penetrated the machinery of the economy – and Bernanke's academic work to date revealed no staunch respect for monetary orthodoxy – surely that would endanger the conservative ideology which had won such a strong place in the US political economy under the Reagan administration? In any rescue operation, Bernanke's writings suggested that he would side with Keynesian interventionism rather than laissez-faire principles.

And why was Lawrence Lindsey's apparent lack of enthusiasm about the Bernanke appointment ignored? Lindsey, who had been with George W. Bush from the start (advising him whilst still only a presidential hopeful) in drawing up a conservative economic agenda, was pressing for alternative candidates to Bernanke in 2002 when a vacant seat as Governor – not Chair – was to be filled on the Board. Lindsey knew more than most about monetary stability.

As a Federal Reserve Governor back in the mid-1990s Lindsey had been unhappy about Greenspan ignoring the incipient bubble in equities in the conduct of monetary policy (though he did not vote against any policy decision). He was reputed to have, himself, sold out at the top of the hot equity market in the late 1990s. He would have known that Bernanke, like Greenspan, was a firm adherent of the view described loosely as the 'Blinder doctrine', according to which the Federal Reserve should ignore the possibility of asset or credit market bubbles as they were forming and concentrate on inflation, but once they burst, the Federal Reserve should act with great force. Indeed, Bernanke and Gertler had given a paper to that effect at the Jackson Hole Federal Reserve research conference of summer 1999. Greenspan had quietly agreed with them at the end (of the presentation), whilst Rudiger Dornbusch had disputed the thesis, asking prophetically how credit could be re-expanded rapidly following the bursting of a bubble (see Robb, 2005).

By late 2002, however, Lindsey's stock within the Bush Administration was falling. The economy, after having bounced back from the recession low in late 2001 (simultaneous with the terrorist attacks on the USA), was again stalling. President Bush was intent on a further round of tax cuts. Lindsey was warning about the potential costs of military intervention in Iraq. (Subsequently, after the mid-term elections of November 2002 and after the nomination of Bernanke to the Federal Reserve Board, Vice President Cheney handed out his notorious pink slips to Lindsey and Treasury Secretary O'Neil).

A key advocate within the administration for Ben Bernanke was a Columbia University professor, Glenn Hubbard, an expert in finance theory and the business cycle, now Chairman of the Council of Economic Advisers, a great enthusiast for supply-side tax reform (especially with respect to relief of dividends from double taxation), but also a 'new Keynesian'. His co-author on many papers on the subject of financial variables and their use in business cycle analysis had been Mark Gertler, of New York University, and as such, he had an academic partner in common with Ben Bernanke (who was in any case in Glenn Hubbard's academic circle). It is not known whether Glenn Hubbard spoke about a possible job in the Federal Reserve to Gertler first but, in any case, the surprised Bernanke found himself invited to the Federal Reserve Board.

There was the paradox at this time that George W. Bush, in persevering with tax cuts and yet taking no further action to reign in the budget deficit

(by expenditure cuts), found it easier to reach out to new Keynesians (albeit the variety which favoured low taxes) than to politically liberal and laissez-faire economists (anti-Keynesians). When it was the turn of Hubbard (himself a new Keynesian but also an enthusiast, as already stated, of supply-side economics and reduction in the double taxation of dividends) to leave the administration in 2003 (his initial two-year proposed term of leave from Columbia was over and he had sought a higher-up position within the administration but been rebuffed), President Bush replaced him with an arch–new Keynesian, Professor Greg Mankiw. Mankiw approved of the further tax cuts being implemented, albeit in the context of large current budget deficits, which he viewed as appropriate in imparting stimulus to an economy with a large output gap.

Subsequently, when Mankiw announced, in early 2005, his intention of returning to Harvard University, he recommended his friend and close academic contact, Governor Ben Bernanke, as a highly suitable candidate to succeed him as Chairman of the Council of Economic Advisers. Much later, Greg Mankiw and Glenn Hubbard were conspicuous in their absence from a group of conservative economists who signed a letter to the Wall Street Journal criticizing (by then) Chairman Ben Bernanke for taking the USA into great monetary danger by launching his second series of monetary time bombs (15 November 2010). That group included other economists who had been prominent in Republican administrations (including John Taylor and Michael Boskin). Noteworthy, however, was the non-presence on the list of Larry Lindsey. Perhaps he was not asked or perhaps he could not break with the rules of the central bankers' club – never criticize a fellow member even after you have left. Or perhaps Lindsey had mixed or negative views about some of the other would be signatories to the letter and about whether this would be a meaningful exercise in bringing about any desired change in policy. And of course, Larry Lindsey's successor as chief economic adviser to Bush, Allan Hubbard, was not on the list.

Traditionally, the chief economic adviser plays an important role in economics team appointments, and so it fell to the strictly non-ideological Allan Hubbard, a classmate of Bush's from the Harvard Business School, a Harvard Law School graduate and a major fundraiser for Bush, to play his role in the infernal sequence of events which eventually brought Bernanke to the top of the Federal Reserve. The fast road through Washington took Bernanke from Chair of the Council of Economic Advisers in spring 2005 to his nomination in late October 2005 as Chairman of the Federal Reserve (to succeed Alan Greenspan in January 2006). There were no ideologically right-wing laissez-faire alternative candidates on the list.

According to Wessel (2009), Glenn Hubbard, Greg Mankiw, Martin Feldstein, John Taylor and Stephen Friedman were on the short list in addition to Ben Bernanke. Feldman, though a supply-sider and ex-chief of the Council of Economic Advisers under Reagan, is Keynesian and has a reputation as a dollar devaluationist; Stephen Friedman, as the chief economic

adviser (previously co-chair of Goldman Sachs) who had succeeded Lindsey and preceded Al Hubbard, espoused no ideology nor economic principles, and indeed his appointment as adviser had been attacked by conservatives. John Taylor, who had served as Undersecretary of the Treasury responsible for international affairs in Bush's first administration before returning to Stanford, did subsequently write a book (Taylor, 2009) attacking the Federal Reserve as responsible for creating the credit bubble. The core, however, of his attack was that Greenspan and his colleagues did not faithfully follow his rule in their pegging of short-term rates – hardly the substance of a full-blooded monetary critique based on the liberal principles of J. S. Mill and Hayek.

Yet why would Bush and his appointment committee have taken the ideological gamble of nominating a politically neutral new Keynesian expert such as Ben Bernanke if they had had any shred of concern about preserving the Reagan revolution and if they had realized that monetary stability would be essential to that purpose? The only logical answer is that they did not care so much about the Reagan revolution (at least in comparison with their own chances of re-election) or did not realize how important monetary stability would be to preserving the Reagan legacy and how unfit Bernanke might be to the cause of monetary stability. According to a group of New York Times editorialists (see Andrews et al., 2005), the answer was in part his 'stellar academic credentials and a good reputation in Congress'. History has shown that George W. Bush's appointments, from the viewpoint of bolstering political liberalism, were not just flawed in the monetary arena but also in the Supreme Court (with his appointee, Justice Roberts, casting the deciding vote in favour of sustaining Obamacare).

Of course Reagan himself had not been so astute in terms of protecting his revolution in appointing (summer 1987) Alan Greenspan, given the ultimately destructive great credit bubble and bust which emerged from his policies of monetary disequilibrium. But at least, in Reagan's defence, Greenspan had a fully adequate CV as an ideological political liberal – having been an associate of Ayn Rand, a conservative chairman of the Council of Economic Advisers (instrumental in reforming social security) and author of an article praising the gold standard. Reagan and his appointment committee may have misunderstood the broadness of the task of maintaining monetary stability and that this extended well beyond inflation, but who was making that point then? The point was left to be made much later by Sechrest (2005).

Reagan's earlier reappointment of a Fed Chairman (Paul Volcker, in 1983) could be seen as suitably appropriate by many conservatives, given Volcker's lead in 'defeating inflation'. Certainly, many conservatives had had reservations, but these were related to his original links to the Democrats (appointed first by President Carter) and to questions as to whether he had administered tougher recessionary medicine than had been required. The key criticism never came into play in Washington, even

amongst conservatives, that Volcker, once reappointed, went on to create severe monetary disequilibrium during the second half of his reign (in the form of credit and asset market temperature rise), and now was the time for a new approach to monetary policy.

For this reason, Greenspan's lack of knowledge about or respect for wider aspects of monetary stability (in the J. S. Mill and Austrian school sense) did not enter as a factor into any debate about his nomination during summer 1987. It is plausible that those on Reagan's appointment committee viewed Greenspan, with his keen focus on business cycle fluctuations, as a safe pair of hands to best steer the economy into the crucial presidential and congressional elections taking place in November 1988.

The record does not confirm this, but there are at least grounds for historical speculation that one big factor behind the Bush administration's appointment of Ben Bernanke to the chair of the Federal Reserve in late 2005 was his reputation for bold contracyclical action and his advocacy of inflation targeting (prompt action to prevent inflation falling below target, as could well occur in economic slowdowns or recessions, and tolerance of asset price inflation so long as inflation remained low). According to such speculation, Bernanke's helicopter speech would have won rather than lost points in the appointment process. With already much chatter about the housing bubble peaking (and on some measures speculative fever did, in fact, peak in autumn 2005), it was surely good to know that there was a pro-active chairman in charge. Bernanke's lead role in promoting aggressive monetary expansion in 2003 so as to 'breathe inflation back into the system out of concern that it had fallen to a dangerously low level' may have been noticed (by the appointment committee) as one key factor in the successful re-election of President Bush in November 2004.

All of this is speculation. But there is that interesting letter from Mankiw to Bernanke, congratulating him on his appointment and giving him a few tips of advice (Mankiw, 2006) – in particular to follow the inflation-targeting rule in practice but delay making any big announcement to this effect (given divisions within the Board on the issue and difficulties with Congress). Mankiw advises against becoming a high-profile figure:

> Don't talk on social issues and foreign policy, become as boring a public figure as possible. The central bank's job is to create stability, not excitement. It would be ideal, if after a long successful tenure your retirement as Fed Chairman were a less momentous event than your arrival. And P.S. I will miss seeing you as regularly at conferences, but I must admit that I will not miss you as a competitor in the textbook market.

Whatever Mankiw's advice and whatever Bernanke's intention, his reign turned out to be one of fantastic monetary instability and huge monetary excitement. But before we discover more about the essence of Bernanke-ism

from that reign, let's conclude what we have learnt about Bernanke-ism from his appointment process. Bernanke was not carried in miraculous triumph from his Princeton University chair to the Chair of the Federal Reserve. Rather, the journey occurred through the fast lane, steered by the appointment committees within the Bush Administration. All the various checkpoints at which, in principle, the guardians of political liberalism and a stable monetary order might have stopped the journey turned out to be unmanned or not yet even constructed.

How could this happen? There are many questions of detail. Should the Senate not be able to view the short list and ask why others were not on the short list and why this particular candidate had been selected – with an explanation set out in full written form? Why did some US senators not demand that a chairman more in line with their conservative views and political liberalism (including monetary stability) be presented? Surely it would have been appropriate for US senators to have full access to transcripts of all Federal Reserve policy meetings in which Bernanke had participated so that they could judge his record? (They would have seen, according to a subsequent release of such information, that Bernanke in 2003 had been pressing for a version of quantitative easing but had been overruled by Greenspan.) The review process in the Senate was defective in terms of honouring the fundamental expectations of US citizens regarding monetary stability. Were all as devoid of principle on these matters as President Bush and his inner circle? Was there too much uncritical thinking in the form of 'here is an academic expert of the first rank, what else is there to check about his appropriateness to the post?' There could be nothing better than a top expert.

These unanswered questions (unmanned or unconstructed checkpoints) are all part of the essence of Bernanke-ism. They touch on another essential part – the doctrine of infallibility for the top US monetary official.

Infallibility of the central bank president

Even now, four years on from the Great Panic, Bernanke does not admit any fault in the generation of the credit bubble and bust (see Bernanke, 2010a). It was the entire fault of the Asian savings surplus or of lax financial regulation. Bernanke is at pains to use the latest academic expertise (forward-looking Taylor rules) to show the Federal Reserve could not have been to blame. This total lack of monetary self-criticism, albeit plausibly matched by conviction that no mistake had been indeed made, has been a visible feature of Bernanke-ism. In that respect – and indeed in many others – the chairmanship of Alan Greenspan was Bernanke-ite.

Greenspan did admit mistakes – but the mistake which he spoke about was having believed so fully in the beneficial power of free markets rather than in the conduct of monetary policy. This was more in the nature of a

belated conversion – repudiating his Ayn Rand roots. He told the Senate (23 October 2008) that his free market ideology of shunning certain regulation on the financial industry had been flawed, though he subsequently clarified and minimized the extent of his backtracking on principle.

For Bernanke there has been no prior allegiance to laissez-faire principles which might have created contradictions in embracing the populist hypothesis that unregulated financial markets had been a key source of trouble. Around the time of his difficult renomination hearings (early 2010), Ben Bernanke made clear in a TV programme that he was with the people who inhabited Main Street – he told his audience about how he had grown up there. On entering Wall Street as the bubble burst and to save monetary system, he had to hold his nose (meaning that the stench of malpractice was so great; Brown, 2010). Later in the same year he took a highly moralistic tone against the mortgage bankers, promising that the Federal Reserve would be looking intensively at the policies, procedures and internal controls relating to foreclosures at the nation's largest mortgage lenders, following allegations that they cut corners to illegally throw defaulting mortgage holders out of their homes.

Ben Bernanke still had nothing to say about the Federal Reserve taking some blame for the bubble. He rebutted adamantly (but not convincingly!) the critique that if it had not been for the huge monetary instability created by the Greenspan Fed, of which he was a key latter-day member, and this continued in mutated form under his own watch, there would have been no bubble and bust. Cynical commentators might say that politics, including Bernanke-ite central bank politics, is about the art of the possible, and here that meant deflecting the public and congressional fingers of anger away from the Federal Reserve and towards Wall Street and the East Asians (most of all China). That interpretation, however, runs ahead of any hard evidence. Rather, public comments by Bernanke suggest a zest to perform a 'great monetary experiment' (based on his writings) successfully (meaning great economic benefit) rather than an inner cynicism.

Before the panic and bust of 2008, senior Federal Reserve officials had seen, as one of their tasks, bolstering the international competitiveness of New York as a global financial centre. Indeed, that had been perhaps the key motivating drive of the Federal Reserve's founding board members (see p. 23). Now, under Bernanke-ism, the Federal Reserve put up no resistance to the populist tide, which found expression in Congress's drawing up massive new legislation to regulate the financial industry. Analysts could question whether that lack of resistance stemmed in part from deals made between Professor Bernanke and the Democratic leadership in the Senate during the difficult reappointment process in late 2009. There was also a more straightforward explanation that Professor Bernanke was indeed, by conviction, in favour of the legislation. Professor Bernanke had faced an

uphill challenge in the Senate to his renomination by President Obama. A combination of conservatives (who were highly critical of his monetary policy record) and left-wing Democrats (disapproving of his Wall Street bailout operations) threatened to block his appointment. The media reported extensive behind-the-scene 'conversations' between Bernanke and key Democrat senators. The question for future monetary historians is whether those conversations in anyway diminished the Federal Reserve's subsequent independence as a weighty influence in the debate about the looming regulatory offensive on Wall Street.

Bernanke-ism and the French connection

Though Bernanke found that he had to 'hold his nose' so as not to be disturbed by the odour of malpractice when he entered Wall Street, he revealed no such problem about his regular participations in the international central bankers' club. The summer research conference of the Federal Reserve System – the Jackson Hole meeting – became such an international event that Central Banking magazine reported in summer 2010 that the supply of tickets to regional Federal Reserve officials was being cut from two to one so as to allow room for more foreign central bankers. Senior officials of the ECB have been lively participants ever since its creation.

The ECB's monetary principles and practices – unlike those of the old Bundesbank – overlap, in part, what is here described as Bernanke-ism (see also Brown, 2010). It is hard, by contrast, to imagine the old Bundesbankers – the legendary Otmar Emminger, for example, the champion of the hard DM and monetarist principle in the 1970s and practitioner of revolt against following the global lead of the Arthur Burns Fed into the Great Inflation – having come with enthusiasm to international central bankers' club meetings in Jackson Hole. Ironically that path was taken by the officials of European Monetary Union, for which one key argument (put forward especially by the political elite in Paris during the long journey to its realization) was to gain independence from US monetary instability.

French senior officials never tired of repeating their mantra about global imbalances and the role of undeserved US privilege in generating these. Here they found at last a monetary ally in Washington. We have already seen how historians might question whether Bernanke played the 'China currency card' towards winning support in Congress for his original nomination as Federal Reserve chair (see p. 127). His testimonies and writings also reveal a strong view that 'global imbalances' are a fundamental problem for international economic prosperity and not soluble by simply removing all restrictions in the way of private capital flows and establishing monetary stability in each of the big countries (especially in the USA). In general, his commentaries have been highly favourable to the enterprise of European Monetary Union.

Back in the days of the great credit bubble of the first decade of the 21st century – both in the USA and Europe – Bernanke praised the growing financial integration which EMU was bringing (even though we now know with hindsight that much of this integration was a credit bubble engendered by ECB's unstable monetary path, together with the Fed's own similar path; see Brown, 2010). During the crisis talks in April and May 2010 to prevent Greece and perhaps several other periphery zone countries in EMU going into debt default and possible enforced exit from the euro, Bernanke was in no doubt that Europe had to 'get its act together' to prevent a further global meltdown; he made it absolutely clear to any doubters in Washington that the USA should fully back the IMF in lending to Greece and the other troubled nations.

On calling for the 'Europeans to get their act together', Ben Bernanke entirely overlooked the all-important nuances about whether there was such a person as the 'European'. Why indeed should the German taxpayer be bailing out the Greeks, the Portuguese or anyone else, and why should Chancellor Merkel continue to be the 'mouse' portrayed in the German tabloids who could not say no to the hectoring French President, Sarkozy. Bernanke implicitly presented an analysis of the European periphery debt crisis in terms suited to an area where history did not exist, and neither did deep political frictions and fissures between the various nation states which made up monetary union.

As the European Monetary Union crisis deepened through 2011–12, Professor Bernanke joined with US Treasury Secretary Geithner in impatiently demanding that Germany be 'bolder' in working for a solution. In late autumn 2011 he pulled off a big deal with the new ECB President, Mario Draghi (who, like Ben Bernanke, had earned a PhD from MIT and studied under Stanley Fischer), supplying him with vast US dollar swap lines (permission granted by Treasury Secretary Geithner) so as to be able to refinance weak European banks (most of all French banks at that time!) suffering a haemorrhage of their dollar deposit base. Professor Bernanke told Congress that none of this was a burden on US taxpayers, as the ECB was a 100 per cent solid institution, fully backed by European sovereign governments. (Evidently he did not put any finite probability on the increasingly talked about scenarios of EMU contraction or break-up, in which the ECB itself would wind up.)

Further back in his career, Bernanke had prefaced his general work on the Great Depression by saying that he approached it as an economist studying the data with no particular knowledge of the historical nuances, especially in the all-important international arena (i.e. outside the USA). That lack of knowledge explained one of the big flaws in his analysis – a failure to confront the enormity of Germany's journey to the abyss (see p. 147). He omits from his work on the Depression the key feedback loops between the German collapse and the US financial system meltdown of the early 1930s.

That same absence of understanding about the nuances of the European situation in political and historical terms is similarly present in his stark calls for action by the IMF and EU to 'save EMU'.

Indeed a long-time Bernanke and Fed critic, Representative Ron Paul, was aware of the real nature of the situation when he asked Bernanke, during the course of testimony on 24 February 2010, about the possibility that the Fed could be helping in the bailout of Greece. Bernanke firmly denied any role in the bailout process. Indeed, he replied to Ron Paul: 'These specific allegations you've made, I think are absolutely bizarre. The Fed has no plans whatsoever to be involved in any foreign bailouts or anything of that sort'. Within two months of that statement, Ben Bernanke was using all the force of his position in Washington to lobby for IMF participation in an EMU bailout, and within a few months of that he was preparing the way for a large further share of US government debt to be monetized. The following year, as we have seen above, the Fed was making huge loans to the ECB. Ron Paul eventually obtained passage of his 'Audit the Fed' legislation through the House of Representatives in July 2012, according to which Congress could instruct audits, which would include transactions of the Fed with foreign central banks and more generally how it reached monetary policy decisions. But there was no prospect of this becoming law.

How can we explain Bernanke's embrace of EMU and his exhortation that it be salvaged at a huge cost (most of all to the German taxpayer but with some ultimate burden also falling on the US taxpayer)? There are three obvious explanations. First, there is the solidarity of the central bankers club. Second, there is the fear of a second Lehman. Perhaps the extent of that fear stemmed from sensitivity on the part of Bernanke to accusations that the decision not to rescue that institution had played a key role in precipitating the panic of 2008 (and of course, Bernanke had been a key decision maker at that critical juncture), even though he maintained that a rescue was simply not feasible. In the climate of late 2011 and into 2012, cynics could say that political pressures became dominant, with the Obama re-election campaign desperate to avoid any blow up of international financial crisis stemming from European monetary disintegration. Third, Bernanke might have found it hard to comprehend the extent of German popular revulsion against a European Central Bank which might be embarking on the course of mega money printing to buy weak sovereign debts and lend massively through its back-door (collateralized operations) to the Eurozone periphery.

In Bernanke-ism, there is no grand vision (at least on record) of the central bank having as its prime task production of a highly attractive money 'brand' for its own and foreign citizens. Rather, everything points in the opposite directions. The tricks of QE-2, for example, depend on frightening and confusing holders of dollars both in the USA and worldwide. That is all in deep contrast to the old Bundesbank, whose grand vision was inspirational. The old Bundesbank became the most popular institution in Germany, and

the hard Deutschmark the most popular currency in the world. Opinion poll evidence reveals, by contrast, that the Bernanke Federal Reserve is even more unpopular than the Internal Revenue Service.

Thin-deep transparency and continued maestroism

The actions of the Federal Reserve during the Great Panic (2007–8) have attracted much journalistic and congressional attention. Various news organizations have made some headway with successful action in the courts in pursuit of freedom of information applications, which the Bernanke Federal Reserve stalled as long as possible. The information obtained – amounting to data on emergency loans and borrowing institutions – does not go far in answering the big questions as to how and why the Federal Reserve took a series of giant decisions during the crises of 2007–9. The main point is that the boasted transparency of Bernanke-ism is only thin deep – economic forecasts, which these days stir little interest, as most market participants assume they are as wrong as the average of independent projections; information on present or future plans to rig short-term interest rates in accordance with the principles of Bernanke-ism; and the teaching of those principles (with no invitation to debate!).

The economic forecasting institute aspect of Bernanke-ism did not come into existence with the arrival of Professor Bernanke at the top of the Federal Reserve. A bigger gap existed previously between the econometric-based model outputs of the staff and the intuitive assessments (themselves made with much knowledge of the business cycle both in theory and practice) made by the Fed Chair, most famously Arthur Burns and later Alan Greenspan. In part, the greater team-play element in economic forecasting and the apparent importance given to it by Ben Bernanke may reflect mainly the distinct personality and talent traits of successive Federal Reserve chiefs.

Some writers (for example, Wessel, 2009) have suggested that Bernanke came to the Fed's top office in January 2006 with the idea that the chair should have less of a maestro role (than Alan Greenspan), and indeed we have seen that this was the advice to him from Mankiw (see p. 168). The idea of the maestro is of a Fed Chair who would play the monetary strings with such perfection that the economy would be pulled back from any potential derailment (see Woodward, 2000). The history of Alan Greenspan's tenure as head of the Fed seemed to match just such a caricature – the list of averted derailments included the aftermath of the October 1987 stock market crash, the quelling of deep recession risks in 1991, the avoidance of an inflation break-out in 1994, the adroit monetary response to the Mexico debt market 'shock' of early 1995, the avoidance of recession and market meltdown in the aftermath of the South East Asian crisis of 1997–8.

To discerning critics of Alan Greenspan, the maestro had already lost his touch in his slow response to the bursting of the NASDAQ bubble (summer

2000) and of the simultaneous telecommunications boom – failing to realize that a sharp slowdown was already under way in autumn 2000 and only slowly cutting rates through early 2001. The maestro's playing became totally bizarre in spring 2003, though some would blame this on the evil genius of Ben Bernanke, who had now joined the Board and exerted a huge influence related to his expertise as a renowned monetary economist with a specialization in deep recessions. Greenspan's abrupt policy turn of spring 2003 towards 'breathing in inflation' was seen by some contemporaries as a further maestro stroke. But it was no such thing; the initial Iraq mission was already complete, and the US economy on the verge of pulling into a growth cycle upturn.

Bernanke's dislike of the maestro image appears to have had more to do with style than any substance. He is not on record as making a connection between the opportunity to be a maestro and the deep flaws in monetary policy administered by that same maestro. To be specific, Alan Greenspan had so many opportunities to show his maestro skills (so-called) because the Federal Reserve had departed so far from monetary stability (in its widest sense). Monetary maestro skills were in fact essentially the same as the skills of a fireman called in to extinguish a fire which he had created.

To be fair, Greenspan's first performance as maestro, in the immediate aftermath of the October 1987 equity market crash, was not based on a self-created fire. Rather, the blame (for the fire) could be put at the door of his predecessor, Paul Volcker, who had presided over growing monetary disequilibrium in the mid-1980s which showed itself up primarily as rising temperature in asset and credit markets (see p. 43). But after that, Greenspan's maestro moments had been flashes of lightning in a forest darkened by storms of monetary instability for which he had been responsible. The Mexican debt crisis of early 1995 was a descendant of overeasy Federal Reserve policy through 1992–3, when the maestro, so keen to get a rapid economic recovery going (not in time for the first President Bush to avoid defeat in November 1992), created such monetary disequilibrium as to power a wave of speculative funds searching for higher yields in Mexico and in other high coupon bond markets. In the high-temperature conditions, irrational exuberance (as regards the Mexican paper) swamped sober judgement. The sudden sharp tightening of monetary policy by the Greenspan Fed in 1994, out of alarm at a rise of inflation in the USA, was a key trigger to the Mexican bond bubble bursting, though the maestro would seek acclaim for this 'early prompt action to prevent inflation'.

The 1997 Asian debt crisis stemmed in part from another maestro performance by the Greenspan Fed. Through the mid-1990s the maestro got much applause for recognizing the productivity-enhancing affect of the IT revolution and how this contained any 'inflation pressures', but he completely missed the point that at such times the neutral rate of interest would be abnormally high and so should be the market rates, even though that would

go along with inflation at very low or even negative levels. By standing in the way of market rate rises in line with neutral, Alan Greenspan helped fuel the bubbles in the South East Asian (and more broadly, in emerging market) economies, most of which were in the wider dollar area (pegging their currencies to the US dollar; see Chapter 5). His maestro performance in response to those bubbles bursting and threatening to blow up the US capital markets was another instance of arsonist turned into skilled fire officer. The strong likelihood is that he was a mindless, not a premeditated, arsonist. Having never shown any interest in Austrian school economics (Sechrest, 2005) or the concept of broad monetary stability, he could not conceive that the turbulence he encountered and dealt with had been self-created.

Indeed, the concept of the maestro coming to the rescue to prevent a full-scale fire, never mind his initial responsibility for the fire, is as old as the Federal Reserve itself, albeit reaching a particular intensity under Greenspan and then a climax under Bernanke (as is about to be illustrated). For example, Milton Friedman and Anna Schwartz lament the early death of Benjamin Strong in late 1928 as meaning there was no maestro (in Greenspan terms) to react aggressively against the forces of monetary contraction in 1930–1. Friedman and Schwartz, however, do not make the connection with Strong's earlier life as unwitting arsonist through the creation of huge monetary instability in the early and mid-1920s via focusing on price stability at a time of rapid technological change and ignoring the broader concept of monetary instability.

In some respects, Volcker took on the role of maestro when he ended the brief period of monetarism (1979–82) and responded to the severity of the recession by resuming direct pegging of money interest rates, which the Fed promptly lowered sharply. Later, as maestro, he took aim at the perceived overvaluation of the dollar and the 'massive' US trade deficit and growth recession of 1984–5 and was at the centre of an activist exchange and monetary policy aimed at stimulating the economy (even though he came into conflict with Reagan-appointed FOMC members, 'the gang of four', who were arguing in 1986 for even greater ease).

Luck runs out for Bernanke's maestro performances

Greenspan had not found himself cast in the role of maestro to deal with monetary system panic. It was Bernanke's fate – one could say a fate of his own making, given his role as Federal Reserve Governor in promoting (in a separate but joint enterprise with the ECB) the monetary instability which created the global credit bubble – to find himself at the head of the Federal Reserve when the panic of 2007–8 erupted (first with the quakes of summer 2007 and then with the actual or threatened bank collapses of autumn 2008). The maestro role, which Bernanke chose to follow, was quite distinct from the traditional lender of last resort role, as set out in

banking textbooks and histories, which included an elastic supply of base money to meet the crisis-induced increase in demand for this. Bernanke's maestro role, as we have seen (see p. 149), took its cue from a particular version of new Keynesianism, in which a seizing up of channels of financial intermediation further crippled the likely weak forces of self-recovery in the market economy.

Ostensibly the high marks which Bernanke got in the political and media marketplace for his performance as maestro in those new Keynesian terms played a large part in his renomination as Fed Chair in 2009/10. The Obama appointments team (prominently including chief economic adviser Professor Summers) undoubtedly would have viewed Bernanke as 'one of them' (as a fellow new Keynesian economist deeply sceptical of laissez-faire doctrine), whereas the Bush team had less astutely regarded him as an apolitical expert. In common with President Bush, President Obama may have appreciated Bernanke's credentials as a money helicopter pilot who could apply his skills to the political cycle, even though there was, by then, the stark evidence that this pilot had been powerless to save Bush from the sea of monetary instability created by the Greenspan Fed, of which he had been the unofficial co-pilot through the fateful decisions of 2003.

Hardly had President Obama got his renomination of Bernanke through the Senate than he sought his skills as maestro. Obama consulted his monetary maestro in summer 2010 (29 June) as to what could be done to reaccelerate the pace of economic recovery amidst the accumulating evidence of at least a temporary stalling and alarming poll news for the Democrats ahead of the November mid-term elections.

The outside world did not have long to wait to find out what Bernanke had in mind – a new dose of quantitative easing (QE-2). Even though no quick action would be possible from the FOMC speculation about QE had an immediate effect in pushing the US dollar down and may have played some modest transitory role in driving equity prices up and bond yields down (as in frothy summer markets the opinion gained ground that a short-lived flow operation by the Fed in government bonds could bolster their prices, even though the stock of these and of close substitute type paper completely swamped any flow dimension). Some recovery of equity prices would almost surely have occurred without QE-2 as economic slowdown risks, as perceived in the marketplace during the summer (2010), turned out to have been exaggerated. Maestro skills could not reverse the political tide, but the counterfactual question is whether they avoided an even bigger setback, in that the Democrats maintained a (diminished) majority in the Senate. A year later Bernanke's maestro skills in introducing QE-3 just ahead of the presidential elections seemed to have bigger political effect.

Note that this role of the Fed maestro in helping the president in terms of the political cycle has an obvious precedent in the history of the newly appointed Arthur Burns easing policy in early 1970 as evidence of a mild

(and potentially severe) recession rumbled in, even though inflation and inflation expectation were still riding high (at 5 per cent per annum or higher). Greenspan's role as maestro was less ostensibly tuned into the political cycle, though there are obvious implied links between the two which could be drawn.

Global reach of Bernanke-ism

In sum, the maestro property of Bernanke-ism did not start with Bernanke, but it mutated in some distinct ways which have been just illustrated. The maestro property is the aspect of Bernanke-ism which has travelled, globally, the least. By contrast, many of the other aspects are in evidence amongst the latest state of the art central banking as practised in Europe and Japan.

In particular the ECB, Bank of Japan and Bank of England have all dislodged the monetary base from the pivot of their monetary systems (with now low reserve requirements and market-related interest paid on excess reserves) and adopted command-control rate regimes. But Bernanke-ism, as a description of the relationship between the central bank and the organs of political power, has no obvious parallel in the European Monetary Union, given that there is no parliament or Congress with real power to which the ECB is accountable, and nominations occur by supranational horse-trading and consensus building rather than by presidential selection. The Bank of Japan has been until recently the most distant from adopting any or most of Bernanke's ten principles, even though it had to bow to political pressure when drawing up its monetary framework (2003) and include a long-run inflation target (seriously qualified). Through the course of 2012, the Bank of Japan came under growing political pressure to adopt more effective inflation-targeting policies towards lowering the value of the yen from the sky-high levels it had reached in consequence of the European sovereign debt crisis and the extraordinary US monetary stance. The Bank of England in its policymaking has kept closest to Bernanke's ten principles, with the ECB not far behind (despite its protests of having a 'monetary pillar' in its framework of policymaking and of not following an inflation target).

The Bank of England and ECB display the deflation phobia which is a key element of Bernanke-ism. The Bank of Japan has operated in a political climate where many critics are concerned about deflation danger, but deflation phobia is much less prominent within its corridors of power than in Europe or the USA. That may change as a series of top appointments to the BoJ fall due in 2013 and political forces hostile to the established 'orthodoxy' have strengthened. Monetary policy was a key issue in Japan's general election at end-2012. The ECB and Bank of Japan have rarely, if at all, revealed any trait of currency aggression (in the direction of devaluation),

a key aspect of Bernanke-ism, but this has been found (on an undeclared basis) abundantly in the recent history of the Bank of England.

The ECB and Bank of England, as much as the Federal Reserve, have proclaimed the Bernanke-ite doctrine of infallibility in denying that they created huge monetary instability in the past decade and that this lay behind the emergence of the credit bubble and related asset bubbles. In part, this proclamation might reflect a complete denial or ignorance of the monetary economics literature which stresses overall stability (J. S. Mill, Austrian school) and which explicitly or implicitly warns against the perils of inflation targeting. Ignorance (though this is no excuse for blame) is an easier case to make in the case of the Bank of England than for the ECB. The first chief economist of the ECB, Professor Issing, was surely knowledgeable about the monetary economics literature in all its various strands, even though he may have treated some parts as being of no practical interest. Evidence available (see Brown, 2012) reveals that Issing gave no weight in his decision making (especially about which monetary framework to adopt) to Austrian school or wider libertarian warnings against highly discretionary policymaking or command-style rate management, with the market playing a minimal role in the discovery of neutral interest rate levels.

In the case of the ECB, the charge against it for responsibility in the formation of the credit bubble in 2003–7 has been laid out in this author's previous book, *Euro Crash* (Brown, 2012). Specifically, the flawed monetary framework (in which the monetary base was dislodged from the pivotal position and the so-called monetary pillar was a fiction) left the new monetary zone open to the serious risk of monetary instability. Subsequently, the combination of tight committee control over every interest rate move, based on econometric evaluations and business cycle assessments, and in the pursuance of a virtual inflation target over a two-year period, as well as phobia against deflation to a degree that even a fall of current inflation to 1 per cent during a weak phase of the cycle caused alarm bells to ring, did the rest of the damage. Certainly, Professor Issing and his colleagues saw it as part of their remit to 'study the behaviour of asset prices', but by the time they could be convinced that these were actually the source of concern, an excessive credit creation and much malinvestment had already occurred.

In their continuing (if inadequate) search for symptoms of asset market temperature rise, the ECB was totally blind to happenings in the European sovereign debt market. The fact that in the midpart of the decade, Greece, Ireland or Portugal was able to issue bonds at tiny margins over Bund yields can be seen now as an evidence of monetary disequilibrium. With the ECB pinning rates down at well below neutral through 2003–5/6 out of concern about inflation falling below 2 per cent per annum (too close to deflation zone for comfort) and also about the plunging dollar (driven by US

monetary disequilibrium) and what it could mean for Eurozone economic activity, investors sought relief from the income famine by adopting a favourable view and plunging into higher risk government bond markets without assessing the new type of risks these might now be subject to within the context of monetary union (where a printing press could not be used to raise inflation tax if need be). Further, the below neutral rates (both in the USA and Europe) stimulated a temperature rise in the market for financial equities where many investors overlooked the high-risk nature of profits stemming, for example, from highly leveraged positions in those same government debts or further afield in mortgage-backed securities and leveraged loans.

Like their US opposite numbers, ECB officials blamed everyone except themselves for the financial system and wider economic debacle, putting particular focus on the East Asian savings surpluses and global imbalances, as well as the greedy bankers and profligate 'periphery zone' governments. When it came to firefighting, the ECB administered the same new Keynesian prescriptions of massive intervention in the banking system, ostensibly to keep channels of credit flows open, but with all the same flaws as already outlined in the case of the Federal Reserve. There was the additional bizarre twist in Europe that the massive credit operations initially opened wider the channels of already irrationally exuberant fund flows into the weak sovereign debt markets. Banks in Germany and France, for example, scurried to the ECB to borrow cheap funds to pour into additional holdings of Spanish, Portuguese or even Greek bonds through late 2007 and into 2008, placing those as collateral (with the ECB).

Why exorcism must end the Fed's monetary powers

In looking at how Bernanke-ism, in some or all of its various traits, might eventually be exorcised from the corridors of monetary power, the starting point is politics. The present-day central bankers are not going to pioneer the second monetarist revolution. There will be no coup within the citadel. The triumph of Bernanke-ite monetary authoritarianism with the QE-2 announcement of 3 November 2010 came with just one dissenting vote. The launching of the interest rate manipulator (see p. 158) in August 2011 came with three dissenting votes, all from regional Federal Reserve Presidents. QE-3 in September 2012 had one regional dissent.

The end of Bernanke-ism depends on the emergence of political forces of sufficient momentum to confront it successfully, replacing its monetary lawlessness with a constitution of monetary rules. At what point might it become a mainstream theme in US politics, not just one pet theme of the libertarian right, that something big must be done to restore monetary stability and crush the authoritarians who have taken over the Federal Reserve (on the instigation of the Congress and the President, with varying

degrees of commission and omission)? The timing of that point will doubtless depend much on the unfolding of the economic turbulence and on its extent, which follows the QE time-bombing campaigns and the extraordinary manipulation of long-term interest rates. There is the ever-present possibility of a new, harsher climate developing within Congress towards the previous mistakes of the Federal Reserve, albeit denied by Alan Greenspan and Ben Bernanke.

The mid-term election results of November 2010, catapulting long-run critic of the Fed, Ron Paul, to the head of the House Subcommittee responsible for monetary affairs, was hailed as an important milestone in progress towards reform. As of autumn 2012 progress was virtually nil. So far, there has been little visible shift in the climate or make up of expert monetary opinion in US universities. This is still generally hostile (with few exceptions) to, or uninterested in, a second monetarist revolution.

Can a second monetarist revolution succeed without closing down the Federal Reserve? That is a key institutional question, one whose answer depends on wide political contemplation beyond the subject matter of this book. But a nearly 100-year history of monetary failure on a repeatedly grand scale and the most recent triumph of Bernanke-ite monetary authoritarianism suggest that radical institutional rearrangement would surely be part of the solution. A successful revolt against Bernanke-ism is unthinkable with the present Federal Reserve and its power structures continuing to hold the monetary strings.

In fact, the wider success of a second monetarist revolution will certainly require taking away the Federal Reserve's power to create money. A separate agency – for example, a monetary authority – would instruct the Federal Reserve how much monetary base can be created, with both a short-term and long-term path set out as determined in accordance with principles in its constitution (see p. 104). The Federal Reserve would have no say in the determination of the path, including periodic revisions.

The monetary authority would function in a revamped monetary system where reserve requirements are set at a modestly high level and where reserves would pay no interest (as outlined in Chapter 4). The monetary authority would not have the power to alter reserve requirements (and this power would be taken away from the Federal Reserve). There would be a provision for strong disciplinary action against the Federal Reserve if, during any period, it created monetary base that was out of line with the monetary authority's instructions. Such action would be entirely within the jurisdiction of a Federal Reserve control authority, which could issue orders for a termination of any responsible Board member's employment. No Federal Reserve employee (including board member) could also be employed by the monetary authority.

The monetary authority might have a board of around five members whose five-year terms started sequentially (so that in any single year one

new member came in and one retired). No member would be allowed to serve for more than one term. Each member would have one year as president of the board (with no second term or extension possible). This design would prevent the emergence of maestros or more broadly based personality cults. Recall that under the international gold standard, hardly anyone knew the name of any central banker (and of course in the USA there was no central bank). Bank of England Governors served for two-year terms with no extension whatsoever. Appointments to the Board of the Monetary Authority would be made by the President but subject to ratification by the Senate. Furthermore, the President would have to set out the detailed reasons for recommending a particular candidate, plus provide two backup candidates (alongside) for the Senate to consider (also with justifications) if the first listed was rejected.

Any overriding of the normal rules for monetary base expansion would have to be accompanied by a full written justification by the Board of the Monetary Authority. Indeed, all internal deliberations of the monetary authority towards reaching its decision would be fully transparent, both to the public and to the congressional committees responsible for its oversight. Those committees in turn would be able to challenge decisions and use expert witnesses (with the right to put questions to the authority's board) to that purpose. They (the committees) would not have the power to overturn a decision, but evidently, if they find the decision making flawed, they could make future decision making much more rigorous (for example, requiring that deliberations get a hearing before a final decision).

A big question lurking behind any such reorganization as described here of the US monetary system is what happens to the rump of the Federal Reserve, with no longer any power of decision making over interest rates or monetary growth. The rump would perform functions such as discounting paper in the market, making loans to member banks (all within the limits of the monetary base target), carrying out the vast supervisory and regulatory duties (all subject to review), administering and managing its colossal holdings of assets (many residues from the financial panic), research and think-tank roles (including economic forecasts), and international responsibilities (management of foreign exchange reserves of other countries, correspondent relationships).

There would be the thorny issue of lender of last resort function, but this could be largely placed in the Treasury, with the Federal Reserve acting as agent. And as regards these G-20 or G-7 meetings, the Federal Reserve chair could continue to attend as one of the US diplomatic team.

It is in the USA that the second monetarist revolution will erupt – if it erupts anywhere at all. The revolt against Bernanke-ism can start only from within the US political system. The long-term consequences of the QE time-bombing campaigns and long-term interest rate manipulation, and how these are perceived by the US voting public will be crucial. Much will

depend on the timing of future economic havoc, the extent of the damage, and the skill with which political opposition assembles its case, joining it with other highly moving issues. Crucial will be the extent of revulsion amongst the US public at monetary authoritarianism and its visible consequences of erosion of monetary wealth, subsidization of big government, and perpetuation of infernal cycles of irrational exuberance and depression (with all the accompanying malinvestment and cumulative wealth loss). The fall of Bernanke-ism would mark symbolically the end of the old monetary disorder. Yet it is implausible that a second monetarist revolution can succeed without a permanent shuttering of the corridors of monetary power within the Federal Reserve. Building a stable monetary order requires the cutting away of the 100-year-old deeply rotten structures and the digging of foundations on new land.

7
The Fed Believes Japan's Great Deflation Myth

Just as many contemporary Federal Reserve policymakers, including Ben Bernanke, have distilled false lessons from the history of the Great Boom and Bust in the USA of the interwar years and in applying these have caused much harm, so it has been with what they have learned from the much more recent Great Boom and Bust in Japan, starting in the mid-1980s and running into the 'lost decade' and beyond. Believing fully in the myth of Japan's Great Deflation, they deduced from this a set of false lessons for the modern conduct of US monetary policy.

There have been common elements in the misreading of history from both episodes. These have included, first, a failure to put emphasis on the huge monetary disequilibrium and malinvestment during the boom phase which preceded the bust. There has been the linked failure of ignoring the importance of a healthy appetite returning for equity risk to the process of economic renaissance after the voraciousness of the bubble period and the anorexia of the bust. Second, there has been the flawed diagnosis of 'too early removal of monetary stimulus' (USA in late 1936–early 1937 and Japan in summer 2000) as the cause of a severe recessionary setback. The correct diagnosis should have been a new asset price inflation ignited by overstimulated monetary conditions during the recovery from the depths of recession and the turning of this into asset price deflation, which would have occurred with or without the monetary tightening in question. Third, in looking at both episodes contemporary Fed policymakers (including the Bernanke-ites) have revealed their phobia of deflation, which stems from a failure to perceive that in a capitalist economy a transitory fall in the price level followed by an expected rise is in fact crucial to how the 'invisible hand' of market forces generates recovery from recession and other forms of economic adjustment, too (as outlined in Chapter 3).

The myth of Japanese deflation

Bernanke and his Fed fellows are not alone in their misreading of recent Japanese monetary history. Milton Friedman in his late years criticized

the Bank of Japan for not having been more aggressive in its monetary stimulus policies through the 1990s (see Beckworth and Ruger, 2010). No doubt Ben Bernanke has felt that in preaching the same lesson (see Bernanke, 2003), he is as good a disciple of Friedman as when he declared at the latter's 90th birthday party that the Fed would never repeat the mistakes which had allowed the Great Depression to occur. The Fed's principal mistake then, according to Bernanke – he claims to have learnt this from the monetary history authored by Friedman and Schwartz – was not to take aggressive steps towards sustaining monetary growth through 1930–2. Other leading monetary economists have agreed that key errors in Bank of Japan monetary policy took place once the credit and asset bubbles of the late 1980s started to burst. In particular they assert that easing occurred much too slowly, with the bad consequence being the 'onset of deflation'.

There is a large literature (for a survey, see Ito and Mishkin, 2004) now on what unconventional steps the Bank of Japan could have taken to 'defeat deflation' once it 'became established'. Bernanke made his own contribution to this literature. He does criticize the Bank of Japan for having run too easy a monetary policy during the last two years (1988–9) before the bubble started to burst, thereby taking a different position on this from some other economists who, like Bernanke himself, do not include the monetary phenomenon of asset price inflation in their analysis. Bernanke's criticism here is based on the Bank of Japan having incorrectly followed the Taylor Rule (which in fact takes a form of inflation targeting as optimal). Japanese economists fault him (in this criticism) for not having realized that one factor in the jump of reported inflation at that time was the introduction of a 3 per cent sales tax in early 1989. Bernanke makes no link between monetary disequilibrium and irrational exuberance. Also, he applies his version of the Taylor Rule to earlier years and on the basis of his findings criticizes the Bank of Japan for having run *too tight* a policy during the period 1985–7. This conclusion is opposed to the findings of Okina and Shiratsuka (2002), who criticizes the Bank of Japan for having lowered interest rates too far in 1986 and early 1987 to prevent excess appreciation of the Japanese yen. Moreover this was just the period when the monetary disequilibrium at the root of asset price inflation must have been building up.

By the time asset price inflation is suspected by an ever-growing number of analysts (as was the case in Japan by 1989), there must already have been monetary disequilibrium (as outlined in Chapter 1) for a considerable period of time. Indeed, by 1989 it was likely that the asset price inflation would progress to asset price deflation through a process of natural burnout. The severe tightening of monetary policy which then took place (more would have been justified by Bernanke's interpretation of the Taylor Rule) turned that process into unnecessarily severe recession (the same type of criticism

applies to the Federal Reserve's policy of sharply tightening in late 1928 and the first three quarters of 1929).

A further observation about this literature and debate on Japanese monetary history concerns the remarkable lack of attention paid to whether in fact deflation – the ogre against which almost all commentators are united – existed. As a matter of fact, the consumer price index in Japan in early 2013 was barely changed from the level at the peak of the bubble economy in 1989/90. Some other indices – including the private consumption deflator – show a fall of 10 per cent or more, but that would disappear if the hedonic estimations which have been growingly made by national income statisticians in Japan (as in many other countries and, most of all, the USA) were filtered out. (According to hedonic estimation, if a given good or service improves in quality but still has the same price, that is registered as a price cut. Such estimations were not made historically, and so if we look at data for the 1970s and before, price stability then would have been equivalent to a falling price level under today's statistical procedures.)

In broad terms, Japan has enjoyed price level stability over the last quarter century. This is surely a plus, not a minus, in its overall monetary performance. Here is a fiat money which in one respect (long-term price level stability) has attained the ideal of gold money! (Price level stability in the long run under the gold standard would translate into a falling price level under modern measurement techniques, in which national statistics offices take account of quality improvements using hedonic accounting methods.)

Misdiagnosis: Failure to spot and treat a sick appetite for equity risk

The claim that Japan attained price level stability over a quarter century does not mean that it has enjoyed monetary stability in the gold standard sense. Japan has not exhibited the high degree of price/wage flexibility (albeit improving markedly) or the healthy appetite amongst investors for equity risk which are critical to a capitalist economy's continuously regaining equilibrium under a laissez-faire regime in the monetary context of the gold standard. Nor, critically, has Japan enjoyed the long peace from currency warfare which existed under the gold standard.

The way in which a capitalist economy under stable monetary conditions generates negative risk-free rates in real terms during a recession – in spite of the constraint of the so-called zero-rate bound (the fact that nominal interest rates cannot fall below zero) – is for the price level to fall during the acute early recession phase and for this to be matched by expectations of price level recovery further ahead into the subsequent economic expansion (see Chapter 3). But in Japan any effective decline in the overall price

level (taking account notionally of unreported discounts from list price) when its bubble economy started to burst was very small – in part because the government quickly engaged in Keynesian fiscal pump priming, in part because a pattern of lifetime employment in the labour market meant there was no sudden deterioration in conditions driving wage bills down (that is, amidst expectations of a rebound in wage income during the subsequent recovery) and in part because so many domestic sectors (aside from the export sector) featured high regulation and non-competitive behaviour.

Moreover, the lack of a monetary framework in Japan under which economic agents could be confident about a recovery of prices following any fall during the recession (such a framework based on high reserve requirements and monetary base control was outlined in Chapter 4) meant there was a danger of extrapolative expectations forming, whereby price declines led to expectations of further price declines. Then real interest rates would remain positive rather than fall into negative territory. Washington-led currency warfare – with the Federal Reserve, a crucial component of the war machine, raising the spectre of further possible big rises of the yen against the dollar – also inhibited formation of expectations of price level recovery in the future.

The Bank of Japan, out of desperation or under huge political pressure to 'tackle deflation', has engaged in episodes of severe interest rate manipulation and quantitative easing. These have produced little or no general rise in prices but have occasionally scared Japanese citizens about the likelihood of substantial inflation in the far-off future and so stirred bouts of irrational behaviour in some marketplaces with related economic costs. The Bank of Japan's manipulations have surely meant that at times during the quarter century since the bursting of the Great Japanese Bubble, medium- or long-term interest rates have been depressed well below the neutral level, thus adding further to the potential for speculative temperature rises in some markets. Such episodes have included the IT bubble (late 1990s), the Tokyo real estate 'boomlet' (mid-2000s) and the bouts of rapid expansion in the yen carry trade.

The neutral level of interest rates (specified for, say, a particular medium or long maturity) is critically dependent on the appetite for equity risk. Where a healthy appetite exists, the neutral level is higher than where appetite is sickly weak. In fact, much of Japan's so-called 'zero-rate boundary problem' (that nominal rates could not be lowered to be in line with a negative neutral level) can be attributed to the sickliness of appetite for equity risk (domestic or foreign), without which the neutral level of interest rates could have been significantly positive much more of the time. Healthy equity risk appetite means higher business investment spending and less likelihood of a 'savings glut', as at a lower cost of equity capital, more investment opportunity becomes economical to exploit.

(The capital budgeter should apply the notional cost of unleveraged equity in deciding whether to accept any given project; see p. 215).

Zero-rate boundary problem is a non-problem

The conventional tale about handicaps to the emergence of negative real rates of interest (for, say, medium maturities) and how this crippled the recovery process in Japan following the burst of the 1980s bubble is plausible only as a subplot in a much larger story. This would include the non-emergence of a sharp recovery in profits or of a blossoming entrepreneurship, coupled with only a weak decline in equity risk premiums from the high point of the bust period. Together these failures blocked the route along which the Japanese economy would have travelled into an economic renaissance. The story contains true lessons – lessons the West *should* learn from modern Japanese economic history. They would replace the phoney lessons about deflation and zero-rate traps.

As Japanese private sector savings rose in the aftermath of the bubble bursting, the rate of profit fell and equity risk aversion grew. Yet ideally if the increased private sector savings is to flow into economic reconstruction – meaning the rebuilding of new capital in profitable forms to replace all the capital, now economically obsolescent, left over from the malinvestment which took place during the bubble years – there has to be a supercharged equity motor. Widespread entrepreneurial ability – one aspect of which is the creation of profit opportunity – and technological progress help in the process.

It is hard to make judgement calls about national differences in entrepreneurial ability without any quantitative evidence to back these up, though some supporting facts could be found by studying data on venture capital, equity IPOs, private equity transactions and so on. Of course, entrepreneurship also exists within the context of big companies – that is, 'Japan Inc.' A more solidly based critique would focus on the factors which prevented profit margins from rising (in fact they generally fell) in the aftermath of the bubble bursting in Japan and which inflamed equity risk aversion.

On the failure of profit margins to rise, we could cite the extent to which quasi-bankrupt companies (so-called zombie companies) were kept alive by banks ready to roll over loans at virtually zero rates rather than insist on prompt liquidation, which would have meant in many cases the removal of their capacity from the economy (sometimes brought about by merger with stronger rivals). The fact that Japanese banks acted in this way may well have reflected a lack of equity market discipline on them. This absence of discipline could be explained in part by accounting opaqueness, perhaps also by assumptions about public sector backstopping (as for example when Japanese governments later effectively guaranteed much of the debt outstanding to banks of small and medium-sized enterprises).

In the USA profit margins rose sharply in the aftermath of its great bubble bursting in 2007–8, as financially weak competitors shrank or exited. Such was not the case in Japan in the aftermath of the 1990–2 bust. Moreover, the rise in US profit margins reflected also an efficiency drive – reducing inputs of labour – which was not possible in the rather more rigid structure of the Japanese labour market.

Turning to equity risk aversion, a first point is that a bubble and burst on the scale of the Japanese experience of 1987–92 was bound to cause some big swings in the appetite for equity risk. In particular, if the outlook for earnings were assessed continuously in a sober, rational fashion, the equity risk premium in the aftermath of the bust, even once healthy equity risk appetites had become established, would likely be higher than in the bubble period (when investors wearing rose-coloured spectacles caused the equity risk premium assessed by still rationally sober investors to fall to an abnormally low level). Moreover, it may take a long time for healthy equity risk appetites to return after the anorexia, amidst irrational depression, which develops during the period of bust that follows the bubble. It is one big legacy of the monetary instability which was instrumental in the formation of the bubble in the first place. Moreover, in Japan the actual extent of equity risk to be borne in the crucial export sector (where much of the capitalization of the Japanese equity market is based) was aggravated by the Clinton administration's waging currency war during 1993–5 (with the Greenspan Fed a big cog in the war machine!).

Government actions also made the situation worse. As the Japanese government adopted bigger and bigger fiscal stimuli, it proceeded to mobilize (explicitly or implicitly) Japanese savings to a growing extent into financing the deficit – and thereby away from equity. In effect, financial repression grew with the implication that Japanese savers were rewarded for taking on government debt rather than exposure to other types of assets and equities. Alternatively some groups of savers were refused the opportunity of assuming equity risk (meaning that premiums would settle at a higher level than otherwise). Below are some examples of this anti-equity repression.

Financial repression in Japan

The giant Japanese postal savings system in effect subsidizes the taking of 'term risk' by the retail public. Savers there can get a part of the yield premium obtainable on long-maturity government bonds (JGBs) over deposit rates (zero or even negative, taking account of fees). The postal savings system holds a massive portfolio of JGBs and passes on a part of the income to its clients, who do not have to bear any of the capital loss should the JGBs later fall in price. Public sector pension funds (amounting to around 30 per cent of GDP) plough their funds to a huge extent (around

70 per cent, as of early 2012) into Japanese government bonds, with the eventual pensioners not able to elect having a proportion of their savings put into higher-yield equities whilst sharing the risks and returns.

Japanese banks piled a considerable part of their massive deposit base into assuming term risk (buying JGBs). On the basis of the income gained, they were able to pay slightly positive or zero (rather than negative) interest income to depositors. The regulatory authorities apparently overlooked the risk implicit in these huge interest rate bets being taken by the banks, and equity markets did not discipline the behaviour. (The relevant question here is whether a bank which refused to subsidize deposit clients and did not engage in big interest rate bets by accumulating a massive portfolio of JGBs would be rewarded with a lower cost of equity capital – or equivalently a higher equity price. In Japan's oligopolistic banking industry, this has not been put to the test.)

Overall we could say that if the Japanese financial system were not so mobilized towards providing finance to the government, the average equity risk premium would have been lower. How much lower would depend on further assumptions made about international arbitrage. After all, if Japanese equity risk premiums are high because local investors have been turned off equity risk by the experience of boom and bust (and this experience stems in considerable part from monetary instability) and are in any case either restrained from taking equity risk or rewarded for taking government bond risk instead, surely this is an opportunity for outside investors. It is true that the share of foreign investment in the Tokyo equity market rose strongly in the decade following the peak of the bubble in 1989. But the power of international arbitrage to bring down the equity risk premium should not be exaggerated. Compared with foreigners, Japanese investors have natural advantages (language, know-how, access to information) in their ability to appraise domestic equity. One group of potential arbitrageurs, foreign corporations interested in taking over Japanese corporations, cannot be highly active in the context of severe limits on the market for corporate control in Japan.

The Bernanke-ite central banker might retort here that surely a good dose of interest rate manipulation and quantitative easing – one even more aggressive than whatever the Bank of Japan implemented in 1999 (when a zero interest rate policy was introduced, to be rescinded in summer 2000) or in 2001–3 (quantitative easing eventually implemented and not lifted until early 2006) – could have been successful in reducing the equity risk premium. This is not a convincing hypothesis.

Yes, the price of equity might rise around the time of implementation of the new policy. But generating monetary instability detracts from long-run prospects for equity investment. At some stage in the future the excess monetary base has to be removed – with what effect (monetary cliffs and all that)? If it is not removed promptly, will there be a violent cycle of asset price

inflation and then asset price deflation? Or could long delay in removing the excess monetary base (for fear of precipitating asset market slump) mean that the economy enters ultimately a new age of high goods and services inflation? Then there is the collateral damage to consider. The quantitative easing might set off a wave of irrational exuberance, principally in markets outside the equity market, with associated eventual heavy economic cost. When that irrational exuberance gives way to irrational depression, the after-effect may also include a big rise in the equity risk premium, with damaging implications for economic recovery.

Non-conventional monetary policy experiments failed in Japan

In the case of Japan, the introduction of a zero rate policy in 1999, just as a global IT boom was reaching its climax and the NASDAQ bubble was starting to form, surely fuelled irrational exuberance with respect to the Japanese stock market, which endured a bubble-and-bust cycle through 1999–2001, in turn detrimental to any long-run return of healthy equity risk appetite. The chorus of Japanese and US economists who criticized the Bank of Japan for raising its official interest rate from zero in summer 2000, just before the onset of the 2001–2 recession, miss the point that the zero rate (in the context of huge global monetary disequilibrium engendered by the Greenspan Federal Reserve) helped promote the irrational exuberance in the Japanese stock market during 1999–2000 and that a bust was thereby already preordained.

When the Bank of Japan reverted to the zero-rate policy in 2001 (stipulating this time that rates would remain at zero until inflation became positive) and fortified this through 2002–3 by ever more aggressive quantitative easing, thereby creating anxiety about future inflation, it set off a desperate search for yield, which featured most of all irrational exuberance in the so-called yen carry trade. Japanese investors – all the more cautious about assuming equity risk in view of the recent violent cycle in the stock market (1991–2001) – piled into high coupon bonds in Australia, India, Brazil, South Africa, Greece, Spain and Italy, distorting downwards their assessment of risk related to these. That wave eventually had serious macroeconomic consequences, not just in the recipient countries (aggravating domestic booms and bust) but also in Japan, where the export industries got sucked into a partly carry trade–imposed boom (due to the cheap yen induced by the carry trade), later to find that export profits plummeted as the yen shot up (when the carry trade bubble burst).

Much malinvestment, in the form of capital spending in the Japanese export sector (fuelled by the transitorily cheap yen), which later proved to be economically obsolescent, accompanied that monetary sequence. When the carry trade bubble burst (during the parallel bursting of the global credit

bubble from summer 2007 onwards) and the yen soared, many Japanese investors surely became disillusioned about assuming risk in general, meaning a new climb in the Japan equity risk premium – a further barrier on the road back to prosperity.

Malinvestment resulting from the carry trade bubble in the Japanese economy during the global credit bubble of the early and mid-2000s was almost certainly on a smaller scale than during the Great Japanese Bubble of the later 1980s. The Great Bubble stemmed directly from the Japanese authorities' attempt to moderate (via keeping monetary conditions easy) the yen's rise against the dollar during the course of the so-called Volcker currency war whilst providing stimulus to domestic demand to offset the drag on exports from the 'yen shock'. In judging how easy money conditions were, the Japanese authorities made the fault of assuming that because inflation was low, there could be no serious monetary disequilibrium.

Yet the rising temperature in asset (real estate and equity) and credit markets (alongside much anecdotal evidence of irrational exuberance) was surely symptomatic of the monkey wrench of money having got into the machinery of the Japanese economy. The radical decontrol (removal of interest rate ceilings, for example) simultaneously taking place in the banking industry in the mid-1980s had left the Bank of Japan without any meaningful way in which to construct money supply targeting (there was much uncertainty about the demand for money under the new, freer regime), and there was absolutely no dynamic within the central bank or the finance ministry towards constructing a stable monetary order around monetary base control (a prerequisite of which would have been much higher reserve requirements).

Failure to analyse the monetary disorder which fuelled the bubble

Just as, towards understanding the Great Depression of the 1930s, we should come to grips with the huge monetary disequilibrium formed in the years before, so we should do towards Japan's lost decade of the 1990s. Crucial to understanding that decade is an appreciation of the monetary disequilibrium forming during the years culminating in the Great Bubble. Just as some great monetary historians (Friedman and Schwartz, 1963; Meltzer, 2003) chose not to focus on the monetary disequilibrium during the boom of the 1920s – in part because of no actual goods and services inflation during that period, in part because they were not sympathetic to the concept of asset price inflation and in part because of no obvious runaway growth in their chosen money supply aggregate (see Skoussen, 2005) – so there has been much reluctance amongst economists to focus on the monetary disequilibrium leading into the boom phase of Japan's great bubble and bust. A

problem for monetary historians trained in positive economics is how to empirically identify monetary disequilibrium during the long gestation period in which irrational exuberance is forming without there being a diagnosable symptom of asset price inflation.

The answer lies partly in the search for smoking guns. Has the central bank via its pegging operations with respect to short-term rates – in particular by influencing expectations as to where the peg will be situated over the medium term – been manipulating medium- and long-term interest rates, implying that free markets might not have been doing as good a job as usual in estimating the neutral level? Have there been changes in the monetary system, such that established automatic mechanisms controlling the extent of possible monetary disequilibrium in its fullest sense have been damaged? Was the central bank engaged in currency warfare – either as an aggressor (perhaps as part of the war machine, sustaining an undervaluation of the national currency) or as a defender (as the Bank of Japan was against US-led currency warfare in the late 1980s)? All these smoking guns could be identified in Japan's great asset inflation of the mid to late 1980s.

Asset price inflations are followed by asset price deflations. Unlike goods and services inflations, which require monetary policy action to bring them to an end, asset price inflations burn themselves out with no action. The burnout may be induced by a growing gap between reality and the original vision of the future through the rose-coloured spectacles of investors. Or if the asset price inflation runs on and ultimately malinvestment and overinvestment are reflected in a falling rate of profit and in falling rents, then market prices fall. By the time the central bankers are confident in their assessment of 'speculative fever', they may well turn an inevitable process of asset price deflation (which could already be about to start or even have started) into a violent collapse. As we have seen (p. 185), Bernanke's hypothesis – that Japanese monetary policy should have been tighter than it was in 1988–9, based on his interpretation of the Taylor Rule – does not address the danger that forces leading to asset price deflation might by then already have been at work. Fine-tuning of monetary policy as driven by central banker perception of speculative temperature is not a promising activity.

The biggest question in assessing how the monetary monkey wrench got into the machinery of the Japanese economy and produced the Great Bubble and Bust of 1986–93 is not whether rates should have been higher or lower in 1989, but what fanned the monetary disequilibrium which formed through 1985–7 and far pre-dated the (eventually evident) symptoms of asset price inflation. As we saw earlier, the launching of the US currency war in 1985 and Japan's disastrous decision to meet it with a monetary defence strategy form a key part of that history.

Bernanke's view that Japanese monetary policy was too tight in the early 1990s after the equity market had already crashed is not at all in dispute. But his focus on so-called balance sheet problems or deleveraging problems caused by the bursting of the asset and credit bubbles, the role played by these in holding back economic renaissance and his emphasis on printing money (sometimes termed 'quantitative easing') as a solution for these are all controversial. The lessons he derives from that Japanese history help to explain his chosen approach to piloting the US monetary machine in the aftermath of the Great Panic of 2008.

Interest rate manipulation enabled the Keynesian 'revolution'

Inside Japan, popular Keynesian economists (see, for example, Richard Koo, 2008) have argued that for more than a decade following the crash of 1990 (followed by a prolonged fall in real estate prices and equity values), the overindebted corporate sector (with overindebtedness exacerbated by the fall in asset values) restrained capital spending so as to reduce its leverage (using cash flow surpluses to pay back debt). These economists advocated a big rise in public spending so as to offset the deflationary pressure from deleverage. Implicitly they were not persuaded by the Bernanke-ites and their forerunners that aggressive 'out of the box', unconventional monetary policy could substitute for massive fiscal Keynesian stimulus.

Though Bernanke may not have embraced in full the Keynesian proposals for public spending in the case of Japan, he has argued in the case of the USA, following the bursting of its real estate and credit bubbles, that 'fiscal austerity' should not be applied in the present or near term, whilst these adverse balance sheet effects are at their most forceful. Instead, the emphasis of public spending cutbacks (relative to present projections) should be in the far out years. Bernanke has argued that in the Japanese case, more should have been done sooner to repair the bank credit mechanisms through a forceful recapitalization of the banking system, together with prompt recognition of losses.

In a crucial respect, though, the Bernanke-ite proposals for unconventional monetary policy give an advantage in the political debate to the Keynesian populists. One intention of the unconventional monetary policies is to manipulate downwards long-term interest rates. If the central bank is successful in this (for example, by setting off a search for yield amongst investors who in desperation close their eyes to possible far-off scenarios where interest rates could jump – ignoring thereby the so-called term risk), then the populist Keynesians can exclaim, 'With long-maturity government bond yields down at 1 or 2 per cent, who can say there is any problem with massive fiscal deficits? On any rational basis these low cost funds should be applied to public mega-investment projects!'

This Keynesian exclamation is based on circularity of argument. The low rates, a function of monetary distortion, most likely cannot persist unless the central bank switches eventually to pegging government bond prices, as the Federal Reserve did during World War II and its aftermath – never mind the consequent big rise in inflation. Moreover, it is not at all evident that the so-called risk-free rate is the appropriate rate to use in public sector capital budgeting.

The return from public investment projects – whether in the form of actual revenue or in the form of assumed economic benefit uncollected in fees – is in most cases correlated with the extent of economic prosperity. For example, there are more users of bridges and highway systems when an economy is thriving than in a depression. So equity cost of capital should be used for public projects as for private projects. On this basis the time for public sector extravagant spending on infrastructure or other investment projects is during boom time (as indeed has generally been so in capitalist economies). Moreover, as we have seen, Bernanke-ite manipulation of long-term interest rates and more generally the associated monetary disequilibrium have led to a higher long-run average cost of equity capital, meaning that, rationally, public investment should be curtailed under conditions of monetary instability.

In Japan's post-bubble experience, huge public sector investment spending was justified by key government officials on the basis of its very low cost of capital, measured inappropriately in terms of JGB yields, and on the Keynesian hypothesis of insufficient private sector investment opportunity whether inside Japan or outside. Later, as the public investment spending boom wound down, the same justification was applied to debt financing of public consumption. The justification on the basis of low cost was largely phoney.

The increasingly radical monetary policies in Japan through the late 1990s and early 2000s created new monetary instability (in particular, uncertainty about the extent to which the 'software' determining market price signals was being infected by a 'monetary virus'; see p. 3). This fanned perceptions of equity risk and inflamed equity risk aversion. The rapidly growing totals of public debt outstanding also added to equity risk by stirring concerns about that future time when 'the chickens would come home to roost' and there would have to be a big increase in taxation. As we have seen, the policies of financial repression increasingly put in place further fanned equity risk premiums. In a real sense Keynesian deficit spending, together with the accommodating monetary policies of the Bank of Japan, were in a symbiotic relationship, foreclosing the alternative, more prosperous route for Japan out of the hardships of the post-bubble period – a route which would have been marked by buoyant private sector investment spending alongside a thriving equity market.

The deleveraging myth

Applying the deleveraging or balance sheet recession concept to Japan begs several issues. In principle, corporations can reduce their leverage by entering into debt-equity swaps (see Chapter 3, p. 62) or, if market conditions allow, by issuing equity and repaying loans. If there are attractive profit opportunities to seize – or if entrepreneurs are gifted at creating them – a present situation of excess leverage will not be an obstacle. New equity can be raised.

Now it is possible that many small and medium-sized Japanese firms lacked access to equity funding and, if excessively leveraged (asset prices having fallen), they had no means to enter into a debt-equity swap with their creditors. In fact, though, such swaps did occur informally, in the shape of banks foregoing present repayment of capital or servicing of interest in exchange for wider margins if and when the situation got better. In many cases these were favourable to the firms' owners, who had to accept less effective equity dilution than what would have prevailed under a market solution, thereby allowing excess capacity and low profits to persist longer than they would have had they been more balanced. This favourable treatment stemmed in part from government subsidization (effectively guarantees) of loans to SMEs. Ideally banks would have reduced loans to now overindebted SMEs by converting a share of these into equity and selling this to outsiders (perhaps private equity institutions), thereby diluting present shareholdings. But the institutional framework under which this could occur might well have been partly deficient.

Big Company Japan was not subject to any such institutional restraint on raising equity. The real problem was that the cost of equity capital appeared to be high, and bondholders or bank creditors of the big corporations may not have been willing to make concessions on pre-existing loan contracts such as to recognize the benefits they would obtain (in lower default risk) from a fall in the leverage ratios. Yet it is difficult to imagine that these renegotiation problems were a serious factor at work by the second half of the 1990s, given typical short and medium maturities for corporate debt contracts, whether in the capital market or the bank market.

By far the bigger issues in the failure of the Japanese economy to achieve a self-sustained take-off (driven by private market forces) into prolonged renaissance were the factors already discussed above, including the squeeze on profit rates (lifetime employment, zombie lending by the banks, equity risk premiums inflamed by such factors as financial repression and mobilization of savings into government debt, repeated currency war onslaughts from the USA). These handicaps to self-igniting renaissance were not obviously at work in the USA in the aftermath of the bursting of its credit and residential real estate bubbles in the late 2000s, though many critics cited regulatory issues and fear of big tax increases as special impediments.

Looking beyond the nitty-gritty of balance sheet adjustment problems – whether in the household or corporate sector – the essential question is, how does an economy find, under the influence of market forces, a new path of prosperity as the propensity to save in the private sector suddenly rises – as in the situation of an asset and credit bubble bursting? (This rise in savings could partly take the form of corporations retaining a higher share of profits than previously.) The answer here is that the adjustment mechanisms include a fall in the cost of debt, the return of a healthy equity risk appetite, a rise in profitability in part related to the economic destruction of capital stock left behind by a wave of malinvestment during the bubble, the flourishing of entrepreneurship, technological progress and much flexible adjustment in relative wages and prices, in the dimensions of space (between different sectors, skills and regions) and time (between periods of recession and boom).

When these first-best adjustment mechanisms are in part malfunctioning, does the modern history of Japan demonstrate that the second-best outcome is stepped-up government spending and unconventional monetary policy actions? The answer here is no – an answer different from the consensus wisdom in the Federal Reserve during the last decade. In fact, unconventional monetary policies are likely to add to the malfunctioning.

8

How to Survive and Profit from the Fed's Curse

The Fed's curse of monetary instability is challenging for those preoccupied with the preservation and growing of wealth.

First, there is a significant probability of large erosion in real terms of assets denominated in nominal dollars from cumulative inflation. Even if, averaged over time, this erosion turns out to be no more than already discounted in the various nominal interest rate markets, taxation of interest income in real terms is onerous under inflation and much more so at high rates than low rates of inflation.

Second, long episodes of asset price inflation (characterized by a build-up of irrational exuberance) and their sequel of asset price deflation (sometimes featuring irrational depression) mean that the so-called passive investment strategy lacks any theoretical validity. In particular, the key condition does not hold that financial markets are continuously efficient (in the sense of asset prices fully discounting all available information as appraised by fully rational participants). Instead, investors must be active in taking views on a range of possible outcomes, including the possible high-wire scenarios described here as '1929' and '1937' (whose possibility stems directly from the Fed's curse), and on the basis of these, deliberately construct a well-balanced portfolio (or try to find a portfolio manager who would do this for them).

'1929' describes the climax of a fantastic economic boom during which speculative temperature, fuelled by a long period of monetary disequilibrium, reaches extraordinarily high levels. The climax is followed by a plunge. '1937' describes the peaking and subsequent bust of an asset price inflation generated by monetary disequilibrium deliberately created by policymakers so as to accelerate the recovery of an economy from a post-1929 style panic and subsequent great recession. The asset price inflation turns to asset price deflation well before the economy has achieved a full recovery from the destruction and dislocations of the previous bust (meaning that capital stock – human and physical – has not been built, taking advantage of new entrepreneurial and technological opportunity, to the extent necessary to restore the labour market to full health) and well before the other

possible main symptom of inflationary monetary disequilibrium – goods and services price inflation – has had a chance to appear.

According to the simple account in Finance 101 courses, which in general endorse passive investment, wealth holders have only one job in the context of market efficiency: deciding how much non-diversifiable market risk to bear (markets do not price in an expected reward for bearing risk which can be diversified away). The greater the risk assumed, the higher the expected rate of return, but also the wider the range of possible loss. A proxy for market risk in Finance 101 courses is the estimated variance of the probability distribution of returns from a well-mixed portfolio of international equities, where each component is appropriately weighted to reflect relative market size and the geographic spread of the investor's present and future likely spending. The probability distribution from which, say, quarterly or monthly returns on the market portfolio are drawn is assumed to be constant through time; also assumed is that there is no rational basis for the investor to hope, by market timing or market selection, for performance consistently better than his or her peers'. There is a risk-free asset (say, government treasury bills) on which the real rate of return is constant and known.

Passive investors trust to past good luck continuing

Passive investors who confine their activity to choosing how much non-diversifiable risk to bear, as just outlined, count on the invisible hands of market forces to generate the average high real rate of return over time on the market portfolio which historical statistics for the past century suggest is near the mean of the underlying probability distribution of returns (being unknown, this can only be estimated). If it is important that the real value of the actual portfolio chosen (a combination of the market portfolio and risk-free assets) does not deviate by more than a modest percentage from a given projected amount at a horizon date which is, say, several years away, then investors should under normal conditions (excluding high, volatile and unpredictable inflation) accept only a low degree of overall market risk.

We could imagine a conceptual fund out of which the bearer of market risk obtains the expected reward (actual rewards in each short period fluctuate widely from positive to negative amounts). This fund is continuously fed by premiums from those stakeholders (in particular, wage earners and senior bondholders) in risk-taking enterprises who partially insure their exposure to this same risk. Stakeholders who do not wish to bear market risk pay premiums into the notional fund. In any period, however, from the viewpoint of the risk-taking stakeholder (principally equity owners), that premium might be overwhelmed by loss.

In the labour markets, workers notionally pay a premium (receiving lower wages than otherwise) into the conceptual fund, which rewards the

shareholders for bearing (non-diversifiable) market risk and so reduces potential fluctuations in their wage income. Hence labour does not find its wages immediately cut when the business cycle starts to turn down; instead, the company shareholders bear greater-than-otherwise swings in profitability. The worker may also be protected against other adverse fluctuations in corporate income (due to non-cyclical factors) in so far as they are borne instead by the shareholder. (Since some fluctuations can be diversified away in a well-constructed portfolio, competition should mean that workers do not pay a premium for shedding risk related to these). The shareholder also partially insures the bondholders ('partially' because of the possibility of bankruptcy) in the corporation against risk, promising them fixed repayment and interest in exchange for their sacrificing some return, paid as a notional premium into the conceptual fund (a premium is paid only with respect to non-diversifiable risk).

The passive investor would not engage in speculation except in pursuit of the normal expected reward for bearing market risk, as described above. The active investor, by contrast, ready to pit his or her wits against fellow active investors, hopes to make returns at least partly at their expense (the rational basis for this hope being assumed special talent). The active investor playing from the short side in an overall positive-sum game (as in the equity market, where the long side collects premiums from the notional fund described above), assumes a handicap in the form of having to pay premiums into the fund (out of which returns to the bearers of market risk are paid).

The active investor questions market prices

The active investor questions whether market prices reflect the best distillation of present and future reality (where it is described by a range of possible scenarios, each with a probability weight attached). If the active investor identifies a discrepancy, that forms the basis for taking speculative positions (long or short) in the expectation of profit. Active players will often take positions in markets where there is no notional fund, as described above, being fed by stakeholders seeking to avoid risk. In those zero-sum markets one group of players is pitched against another. The best example of such a playing field could be some parts of the currency markets or commodity markets in so far as the particular currency pair or commodity has no evident feeding line to one side of the market (either long or short) from a stakeholder notional fund.

Sometimes such a feeding line can be identified. For example, mining companies might have large mineral wealth under the ground; this represents a substantial element in their overall equity value. If futures prices for the particular commodity were exactly in line with expectations (meaning that at each date in the future the futures price equals the mean of the probability distribution of possible prices), then equity shareholders would do well if the company sold some of its mineral wealth forward (as in the

equity market, unhedged potential income in the future realizable from mineral reserves under the ground would be discounted into present market value, using a cost of capital which includes a risk premium; hedged income would be discounted at a lower cost of capital reflecting reduced risk). So in principle potential arbitrage between commodities under the ground and futures markets can mean that in the latter there is a feeding line to potential investors on the long side.

There is no such feeding line of consequence to gold futures or gold cash markets. The market value of gold underground owned by gold mining companies (where future income to be generated from this net of extraction outlays is discounted to the present) is small relative to the total amount of physical gold already mined and owned by investors (including central banks). In any case it is not evident that over long periods of time gold should be considered to have market risk, in the sense of its long-run returns being positively correlated with returns from global stock markets.

In general, positive risk premiums are generated in capital markets only for assets which have (non-diversifiable) market risk – or put less technically, whose returns are related to the extent of global economic prosperity (negative returns when prosperity turns to hardship). So most plausibly a positive risk premium is not generated for gold. The real price of gold is volatile over the short and medium term. But the risk which investors assume in consequence of holding it – and this risk is different in nature when viewed from a short- or long-run perspective – is not of a type for which they should expect an inbuilt reward for bearing on a passive basis.

In a world where there are long periods of market irrationality – in particular waves of irrational exuberance – and in which there is no asset with risk-free real returns over the medium or long run, a theoretical basis does not exist to justify passive (as against active) investment in gold or in any other asset. Investors who decide nonetheless in favour of passive investment (putting a fixed share of the portfolio into, say, equities, real estate, bonds and gold with the intention of making no review) may be implicitly trusting to a non-proven and implausible law of market averages (that past statistical patterns of returns and risk will repeat themselves). Alternatively, such investors may not fully believe in the stability of past statistical patterns but, having low confidence in their own ability to take informed views and having low trust in professional advisers (or professional managers), decide there is no realistic alternative to passive investment. Otherwise, if the investors were more optimistic about their own ability, they would adopt active portfolio management.

Most investors, whether active or passive, make the calculations and risk estimations implicitly behind their portfolio construction in real (inflation-adjusted), not nominal, terms. Strong aversion to risk in an environment of monetary stability would go along with a high weighting of money and bonds. Inflation danger, however, limits the extent of such investment overall, causing such investors to focus on other asset classes,

especially those with less apparent risk than, say, equities. The active investor, in acting on expectations about how the future might unfold, in full awareness that the future might be very different from expectation and that anyhow along the way there can be big market fluctuations, should take careful note of likely positive and negative correlations between outcomes from the various strategic positions, both long and short.

For example, an investor may feel reasonably confident about the likelihood of fairly high returns from US equities over, say, the next five years. Simultaneously the investor may put a high probability on a secular slowdown in Chinese construction spending in the wake of the 2009–12 credit boom and bust, which would mean an eventual bursting of the Australian 'bubble economy' (founded on the hypothesis of a permanent mining boom in Australia driven by Chinese demand for iron ore and coal especially) and a plunge in the Australian dollar. The latter currency had featured a growing speculative fever during 2010–12, as global investors, desperate for yield in the context of near-zero rates in the USA, Japan, Switzerland and core Europe, had become addicted to this relatively high-yielding asset bathed in the 'speculative hypothesis' of Australia enjoying a non-ending boom in consequence of its great mineral wealth. Reserve managers at central banks around the world were attracted to the 'safety' of Australian government bonds in the belief that these would be permanent beneficiaries of buoyant tax revenues from the mining boom.

The secular slowdown in Chinese construction would not be bad news for the US economy nor for US domestic corporate profits, given the benefit of lower commodity prices to US consumers and the other strong engines of growth there (its lead in technological progress, energy extraction revolution, entrepreneurship). Yet investors note that there is a substantial negative correlation between short-term rates of return from a short position in the Australian dollar against the US dollar and from a long position in the US equity market. (This negative correlation stems from the hypothesis that the Australian dollar is vulnerable to global financial crisis given the huge speculative leverage in that currency and also would suffer in global economic downturns likely to be characterized by a fall in commodity prices.) Hence investors should be prepared to stake a larger proportion of their portfolio on the combined speculative view that the Australian dollar is very overvalued from a long-run perspective and that the US equity market has much upward potential in view of the negative rather than positive correlation between short-run returns from both positions.

How should the investor respond to suspected irrational exuberance?

A fundamental question in investment strategy is what to do about irrational exuberance. Investors who suspect that irrational exuberance

might be growing – or equivalently that a process of asset price inflation might be getting under way in a number of asset classes – should not self-evidently adopt the stabilizing role of Milton Friedman's benign speculator (see Friedman, 2006) by starting to lighten up on those assets in the portfolio, in anticipation of that eventual day when asset price inflation gives way to asset price deflation. That day may be a long way off, and abstinence from markets whose speculative temperature is meanwhile rising could be very expensive. On the other hand, the investor does not want to replicate the stupidity of that great bank chairman who, in summer 2007, said that when everyone else is dancing you have to join the dance, just minutes before the dancing came to an abrupt end with the first quakes in the bursting process of the long credit and asset bubble.

There is no rule of thumb to apply here. The thoughtful investor estimates what the likely trajectory of temperature rise is and what processes (and their timing) could bring about a subsequent temperature fall. For example, the investor would monitor the possible growth of overcapacity or malinvestment in the US and global economy and how this might subsequently lead to contraction of profits amidst oversupply. The investor would also be alert to anecdotal evidence which suggests a growing degree of irrational exuberance in some markets and think about how disappointment could set in. Of course, if there were overall strong rationality in the market, speculative temperatures would never rise or fall. But a basic thesis of this volume is that there are long periods when a wide span of markets is influenced by a build-up of irrational expectations powered by monetary disequilibrium.

Yes, there are always some calm or cool investors who do not place their probabilistic vision or sensitivity at risk of becoming impaired by monetary disequilibrium. But calmness does not mean staying out of the marketplace as soon as the investor suspects the presence of some degree of irrational exuberance. In any case even the coolest and calmest investor cannot be fully confident in the diagnosis that speculative temperature has climbed and to what extent. It would be rational to acknowledge, at least in the early stages, the *possible* validity of the floating popular hypothesis (concerning how the world has changed in some aspect) that is advanced in the marketplaces where temperature is rising to justify the price advance. It is rational to consider that the price advance could have possible real information content and accordingly ratchet up the perceived probability of the popular hypothesis turning out to be true.

Two nightmare scenarios – '1929' and '1937'

There are many occasions where the calm, rational investor might suspect that the monetary virus has started to infect the intricate system of price signals which control the amount and allocation of capital in the economy

yet he cannot be confident in that diagnosis. Moreover, in the journey through suspected fluctuating temperatures in markets, the investor may be unsettled by two nightmare scenarios which can stem from the Federal Reserve's global curse of pervasive monetary instability: the '1929' and '1937' types of market precipice. The first is much better known than the second, even though the interpretation put on these varies greatly according to the school of economic analysis followed. Indeed, in some respects the investor has more forewarning that 1929 may be approaching than 1937.

In the case of 1929 there has been the long boom, and signs of speculation abound. The idea that seven lean years could follow the seven fat years is not a strange thought under such circumstances. It is different with respect to the possible approach of '1937', where the investor is in the midst of the seven lean years, albeit with the period of maximum famine some way behind. Yes, in this situation markets are climbing fast, and there is some suspicion of speculative froth. Yet unemployment is high; many commentators are still talking of a long and difficult path ahead to prosperity. Everyone and his dog is not yet playing the stock market.

The essence of the 1937 situation is that the central bank (the Federal Reserve) has created since the preceding Great Recession vast excess reserves towards pump-priming the recovery and, together with the administration, has been fighting a currency war to get the dollar down. The pump-priming and the dollar devaluation both make many investors anxious to get real income in an environment where the real return on safe nominal assets (T-bills or short-maturity T-bonds) has become negative. In the actual history of the run-up to 1937, investors consoled themselves at first with the big real returns they had made on monetary assets during the deflation of 1930–3. But then there was the growing spectre of not just losing those gains (as the price level rose upwards in the recovery) but suffering big further losses due to the radical policies of currency devaluation pursued by the Roosevelt administration. In today's world there would not have been that earlier consolation of real gains on monetary assets. So the rush of investors to obtain real income on higher risk assets, which involves an irrational underestimation of the menace from gathering storms, might develop even sooner under similar circumstances than in the actual history of the mid-1930s.

Many storms were gathering in the period leading to winter 1936/7. First and foremost was the geopolitical situation. In Europe, Nazi Germany had remilitarized the Rhineland in defiance of all treaty obligations and without the Allies taking any effective countermeasures; in Asia, Japan's military aggression in China had reached a new stage. With the prospect of world war now within the mainstream of rational probabilistic vision, business capital spending was surely at risk of declining well before it reached any robust recovery. In summer 1936, when the European gold bloc collapsed, the policy of dollar devaluation on which the Roosevelt administration had

pinned so much hope was blown apart. Then in November 1936 Roosevelt won landslide victories in the presidential and congressional elections on a populist, antibusiness platform. In April 1937 the Supreme Court upheld a key statute (power for trade unions) of the New Deal. Yet the commodity and US equity markets continued their bull run, ultimately to fall precipitously in the second half of 1937, with the collapse in confidence feeding back into the 'Roosevelt recession'. Milton Friedman and Keynesians alike have faulted the Federal Reserve's actions in late 1936 and early 1937 (the successive raising of reserve requirements to mop up surplus liquidity) as critical in the denouement, but a market relapse was sure to come anyhow, with severely recessionary consequences. Arguably the Fed's policy moves, aggravating the relapse, brought it forward by a few weeks or at most a few months.

How to invest in markets infected with Bernanke-ite monetary virus?

What bearing did the '1937' scenario have for a portfolio manager making decisions in the context of the Bernanke-ite monetary policies following the panic and great recession of 2007–9?

From early 2011 onwards, many investors and commentators suspected that speculative temperatures had risen across a range of markets– including commodities, emerging market equities, high-yield bonds, US agricultural land, and high-end residential and commercial real estate in "star cities" around the globe. Fuel for the rise came from monetary disorder, both in the USA and China. US interest rates across the maturity range (short, medium and long) had been well below the neutral level in the wider dollar area (including countries without any exchange rate link to the dollar but where the dollar has a considerable monetary function). Massive excess reserves in the USA coupled with the huge experimentation in monetary policy (together with the removal of monetary base from the pivot of the US monetary system by the paying of market interest on reserves) had stoked fears about a future inflation explosion (perhaps many years ahead). The manipulation downward of long-term low-risk interest rates to extremely low levels, meaning that long-maturity interest rates were surely below neutral for the US economy, were plausibly adding to the froth in some markets. And there had been no cushion of real gains on monetary assets from deflation during the Great Recession to make investors more stoical in the face of any cyclical rebound in prices coupled with a rise in inflation dangers when the US economy eventually took off into a self-sustaining strong expansion.

The tightening of monetary policy by the People's Bank of China through 2011 triggered a temperature fall across a swathe of markets (commodities, emerging market equities in particular) which occurred in fits (with some recovery in between) through autumn 2011 to summer 2012. In practice,

though, the temperature fall was likely to have occurred in any case, as asset price inflation is followed by asset price deflation even without monetary policy action. Moreover, the further stage of credit bubble bursting in Europe (where the sovereign debt crisis should be seen as a late component of the bursting global credit bubble of the previous decade) played a role in the timing of the temperature fall.

It was very difficult, though, for any analyst to say with confidence how much the Bernanke-ite monetary virus had caused speculative temperature to rise (if at all) in the US equity market. So much equity risk aversion had been created by the panic and bubble bursting of 2008–9 (itself a consequence of the prior decade or more of monetary instability generated by the Greenspan/Bernanke Federal Reserve) that the rise in speculative temperature had arguably been concentrated most recently in other markets – such as those listed above (see p. 205). In the world of 1936 there was less alternative speculative choice to US equities, though there was the big difference from 1929 that then (1936) commodities were in a huge speculative boom, the dollar devaluation of 1933–4, together with massive monetary base expansion, having helped to set that market alight. Anecdotal and market evidence such as the participation rate of retail investors and crude valuation parameters (for example the price-earning ratio) suggests that the speculative temperature in equities in the mid-1930s never got back to the peak level of the late 1920s, though it could nonetheless have been pretty high.

Fast forward to the years 2010–12; it is plausible that the Bernanke-ite monetary virus did indeed cause a substantial rise of speculative temperature in some sections of the US equity market. Candidate sectors for consideration (of virus attack) include those related to new technologies (including social media), commodity extraction and commodity trading or those benefiting from highly manipulated long-term interest rates or from customer demand in the emerging market world. For example, there was considerable discussion in the financial media (see Jenkins, 2012) about whether the aircraft industry had entered a bubble where superlow fixed rates granted by official export credit agencies (borrowing at record-low fixed rates without adding a realistic margin commensurate with customer credit risk) had stoked a boom in leasing aircraft and where heightened concerns about forever skyrocketing fuel prices had spurred airlines to renew fleets so as to gain energy efficiency. Any eventual malinvestment here would translate in part into a burden on the taxpayers standing behind the export credit agencies.

High-end residential real estate markets – symptoms of temperature rise

How has monetary disequilibrium in the USA and China subjected top-end residential real estate, whether in Manhattan, London, Paris, Singapore,

Hong Kong, Vancouver, Toronto or other 'star cities', to a suspected huge rise of speculative temperature in recent years ('suspected' because a diagnosis cannot be made with 100 per cent confidence)?

There are indeed many commentators and investors who would dispute such a diagnosis. They would point to the rapidly growing wealth around the world amidst growing inequality and amidst a strong advance of the emerging market economies, to the flight from burdensome taxation, which often takes the form of buying real estate for residence purposes or with the aim of laundering funds, and to the fact that rental yields (the ratio of rent to capital value) appeared reasonable relative to dividend yields on stocks. They would argue that top-end residential real estate, of which a large share of value content is land (as against the building), has a role in rational passive investment strategies of the wealthy.

Yes, those same investors and commentators would admit that the returns on top residential real estate are likely to depend on the extent of economic prosperity in the long run, meaning that these (returns) are subject to market risk. In efficient markets with a high degree of homogeneity of expectations, the owner should find that prices are determined such that expected returns (as estimated by the great majority of investors who try to estimate them) from real estate should include a normal premium for bearing this risk. The conceptual fund out of which the expected premium is paid to present owners (in aggregate) of such space comes from its future occupiers, who are not yet present in the market (not yet adult, not yet born, or not yet decided to seek residence in the particular city). Their ability to pay the premium comes from the expectation of rising real incomes and wealth through time.

Yet there are grounds for disputing this sunny verdict and suspecting that the monetary virus might have got into the particular set of software that generates real estate prices.

For a start, who has not heard the theme that residential real estate is somehow lower risk than financial assets because whatever happens, you always have a space to occupy (in a choice spot and spacious in size, if we are talking about high-end real estate)? Putting this theme in technical jargon, we would say that the returns (for the homeowner) from residential real estate are negatively correlated with the economic welfare of the consumer (of residential space). If residential real estate prices were to fall (implicitly rents would fall also), then the homeowner would have suffered a loss as investor but would have some offsetting gain as consumer from a fall in imputed rental payments (notionally from himself as consumer of space to himself as investor). The theme may well involve irrational self-delusion.

Would the investor in question really have bought as much space or this particular extra space (possibly in addition to real estate owned elsewhere) if there had not been the speculative appeal of capital gain? The demand for residential space across the given real estate market as a whole depends on

speculative expectations about the future. And these expectations are likely to be heterogeneous (as against the homogeneous expectations assumed in many finance theory textbooks). A big minority in the homeowner market may have hugely optimistic views (much more so than those at the margin) about potential future capital gain, and in consequence they (the members of the minority) see the imputed rent of space occupied as very cheap. Their speculative-led demand for space tends to buoy rents in the markets for leasing residential space as the supply there shrinks. And so the investor who gets solace from looking at the decent implicit rental yield based on present sky-high rents might be under a delusion. As the speculative temperature falls, rents will fall.

Conceptually we can consider the residential real estate market to be made up of two sectors. First, there is the homeownership sector. Here owner-occupiers buy and sell homes on the bases of price, expectation of capital gain and the opportunity cost of home ownership (the return that could be made in the capital market with respect to investments of similar overall market risk). Second, there is a rental-investment sector where investors buy and sell on the basis of speculative calculations about the future stream of rental income over the economic lifetime of their building, also taking account of likely outgoings (maintenance, refurbishments, etc.). If many homeowners and potential homeowners for some reason become more optimistic about the potential for capital gain and this optimism is not shared by investor-owners in the rental sector, then homeowners bid space away from the rental sector. (Note that we are not discussing here a structural shift in the form of an increase in popularity of home ownership.) The optimistic actual and potential homeowners see the imputed rent of space as cheap given their robust speculative expectations of capital gain. So the supply of space in the rental markets shrinks, causing rental levels to rise there. Even so, rental yields most likely fall given the rise in capital values.

Alternatively, if investors become optimistic on the future path of rents whilst homeowners undergo no shift in view, the price is again bid up, this time by investors bidding houses away from the homeownership sector. Again rental yields fall. It is possible, though, in this case that short-term (say, one-year) rents would actually decline in absolute terms as investors seek to find occupants for their newly acquired properties. So the path of rents (up or down relative to trend) can sometimes tell us something about where the speculative fever is concentrated – amongst homeowners or investors in properties to rent.

Beyond deciding where the speculative fever in residential real estate markets resides (whether with homeowners or outside investors), what can we say about the process by which the monetary virus enters the software determining real estate market prices? Evidently all the links listed earlier in this volume (see Chapter 1) between monetary disequilibrium and asset

price inflation hold as much for the real estate market as any other. Most probably in residential real estate, there is the extra kicker of individuals in denial of the extent to which they have distorted upwards their demand for residential space (to consume as homeowner) based on irrational exuberance about capital gains.

Desperation triggered by exceptionally low returns on assets which are normally regarded as low risk (prominently US Treasury Bonds), fear of an inflation breakout in the future and the availability of a floating hypothesis to justify the price action in fundamental terms (growing affluence and concentration of wealth) are all part of the story of how irrational exuberance forms in the residential real estate market. Many investors compare the exceptionally low returns on, say, US Treasury Bonds with the perceived higher returns (whether actual rents or imputed rents from homeownership) on homes. In theory, though, the comparison should be between the return from unleveraged real estate and from equities of similar overall market risk. (Note, too, that there is a bias towards a market portfolio of equities being of higher risk than unleveraged residential real estate because many corporations have leveraged capital structures). Of course, chunks of real estate can be large relative to overall wealth, meaning that non-market risks related to a particular home (for example, how might the neighbourhood change in popularity? could there be a structural defect?) cannot be diversified away, as equities can.

If the Federal Reserve had been pursuing an orthodox path of price level stability over the long run in the context of a monetary system with monetary base firmly at its pivot and no manipulation of interest rates, would the global speculative fever in high-end real estate have developed? Surely not to anything like the extent witnessed. Both rents and capital values would be substantially lower. And we should not overlook the role of policies of European central banks – lookalikes for those being pursued by the Bernanke Federal Reserve.

What should be monitored? What are the warning signals that speculative fever in top residential real estate markets has reached its top temperature and is set to fall? One key signal is the extent of new supply – land is not as fixed (in supply), even in the top star categories, as the speculative bulls would maintain. New districts can become fashionable. Planning regulations can become less restrictive. Tax shock can erupt suddenly (with a near-bankrupt government levying tax on prime land and more closely monitoring money laundering). At some stage long-term interest rates will climb back up to neutral levels or above. There could be a run of exceptionally positive returns on another asset class – for example, equities – which could call into question the merits of having top-end residential real estate as a large proportion of many an investor portfolio. Or there could be a big negative event – a war, a great recession – which jars with the sunny forecasts for continuing large capital gains.

Strategies in bond markets under Bernanke-ism

In general, we could say that the subjection of the US long-maturity T-bond market to a Bernanke-ite monetary virus has directly exposed several global markets, including high-end real estate in 'star cities', to bouts of speculative fever. In an ideal monetary world an investor with a long-term horizon could park funds in long-maturity US Treasury Bonds and have a high degree of confidence about the funds' real value, together with income to be collected at the horizon date. The expected yield in real terms would be moderately positive.

Such an investment strategy with respect to long-maturity bonds is not rational where investors have no grounds for confidence that the monetary authority (the Federal Reserve) will avoid inflicting a big inflation shock at some point in the future, by design or by ineptness or by some fuzzy combination of the two, and where long-term rates are subject to deliberate manipulation (sometimes to far below zero in real terms). And so investors, searching to reduce the potential volatility of real capital value in their portfolio at a long-term horizon date and to avoid being penally subjected to manipulated negative real rates, turn to an alternative such as real estate. They often come to view the risks related to such an alternative investment as unrealistically low and the expected return as unrealistically high.

Some investors may view inflation-protected US Treasury Bonds as a safe asset, a desirable substitute for conventional bonds. That is in part a faulty perception.

Who is calculating the inflation rate used in the indexation clause? It is the government's agency (Department of Labour) which over the years has been introducing more and more innovations under the heading 'hedonic accounting' (disregarding or reversing individual price rises which can be explained by underlying improvements in the product or introducing notional price cuts out of similar consideration). Surely the government would not stop short of manipulating hedonic accounting calculations for budgetary benefit (in particular for suppressing increases in many federal benefits indexed to the consumer price basket). And note that the federal government could effectively default on its indexation promise at any point by making a forced conversion of the indexed paper into conventional paper (as occurred with the abrogation of the gold clause in Treasury bonds under the Roosevelt administration). Finally, there is no guarantee that the Treasury will forever issue inflation-protected bonds. Hence the investor counting on being able to roll over paper at maturity into new paper as part of a long-run strategy of reaching the far-distant horizon date might face disappointment.

Turning to the conventional Treasury bond market as a potentially safe place for parking funds aimed at a far-distant horizon date, the reality is that Bernanke-ism has turned this into a wild ride. Every temporary feared

stalling of growth causes the market to gyrate in anticipation of seeing the Federal Reserve seek to manipulate down long-term interest rates as its principal tool of policy. No one knows, of course, whether the tool of manipulation is reliable in the long run. If there is seriousness about meeting the 'inflation target', then markets would surely doubt the tool. The Fed may huff and puff about its intentions to keep short-term interest rates at zero for three or four years ahead, but these intentions can change. Beyond three or four years, surely, anything could happen to short-term rates, depending on the shifting outlook for inflation and on fluctuation in the neutral level of interest rates – unless the assumption is made that the Fed will indeed peg nominal rates at a low level regardless of all that and accept any swing in inflation which results. That assumption cannot be disregarded; it implies huge uncertainty in the ultimate value of a conventional long-maturity Treasury bond in real terms.

A widely discussed question in our time has been whether the US government bond market (and some foreign government bond markets – especially the UK's and Japan's) has become a bubble. This question was asked in heated terms by investors and commentators in spring and summer 2012 as long-term US government bond yields spiralled down to previously unheard-of low levels – including 20-year yields at just above 2 per cent. The question whether there is a bubble or not seems like the wrong question. Rather, the question should be whether forces of irrationality have become dominant in this market (the Treasury bond market). If they are, the irrationality's power source would not be difficult to find – the huge monetary instability created by Bernanke-ism.

The speculative hypotheses driving Treasury bond prices to such heights included the Bernanke Fed's intentions to manipulate these so as to generate ultralow long-term interest rates with a view to promoting faster employment growth. In summer 2011 the Bernanke Fed had taken the unprecedented step of promising that it would hold money rates at zero for several years into the future (until late 2013), and that promise was lengthened early in 2012 (to late 2014) and again in autumn 2012 (to mid-2015). These steps added fever to many investors' desperate search for yield, causing them to overlook or minimize the inherent risk in taking on exposure to interest rates several years from now. Suppose the Bernanke-ite experimentation were to end up with much higher inflation several years down the road; then the far-distant interest rates built into the term structure today could be far out of touch with reality (too low). Surely the rational investor would not buy bonds at prices which did not discount a significant probability of such a scenario.

The rational investor studying the US Treasury bond market in 2012 would have been sceptical of all those commentaries drawing so-called similarities with Japan's post-bubble history and that country's 'descent into deflation'. Yes, Japan had entered a long period of virtual price level

stability following the bursting of its Great Bubble, but the passage there had surely been aided by a 150 per cent appreciation of its currency in the space of a few years – a sharp contrast to the depreciation actually experienced by the dollar in the aftermath of the Great Recession. Moreover, the low yield level on Japanese government debt reflected a tremendous amount of financial repression, an intense extent of equity risk aversion on the part of Japanese investors and a partial insulation (particularly by exchange risk) of the yen area from the much larger world outside where investment opportunity was not restricted by the factors weighing on Japanese prospects.

Deleveraging by the US household sector and some parts of the corporate sector in the wake of the Great Panic (2008) had gone along with some bulge in the US private sector savings surplus, which continued as the credit and real estate bubbles burst. The surplus had got to abnormally low levels in the period of the bubble. But a return of US private sector savings propensity to normal levels or even higher was surely not grounds for predicting an age of deflation or an age of superlow neutral real interest rates. A capitalist economy, if not fully downtrodden by its central banks, regulators and tax officials, can surely generate a higher trajectory of capital spending through time to match the higher savings at a level of neutral rates which is not far below its assumed long-run average level. As to the death of inflation – tell that to the stars! Massive monetary base had been created in the course of the Bernanke-ite experimentation, and under many scenarios of substantial probability weight, the Federal Reserve would delay far too long in raising rates to contain future inflation out of fear that it would repeat the '1937' error.

The role for gold in portfolio construction

It is hardly surprising in view of the monetary lawlessness under Bernanke-ism that there has been a huge investor demand for gold. Some of this might be speculative – investors in for a ride, with no particular appreciation of whether the yellow metal should be a long-run component of their portfolio. But it just makes no sense for Professor Bernanke, Warren Buffett or any other scorner of gold and its investment role to deride the economic wastefulness of taking gold from under the ground (mining) to transport it to another hole (vault), where safekeeping fees (rentals and security costs) are significant. Sure, these costs would not weigh as much under a regime of monetary stability, where the extent of demand for the yellow metal would not be the same. There would be somewhat less gold mined in any given period at lower prices, and the costs of safekeeping a given physical volume of gold falls with its price as the incentive to steal is less. Where the monetary regime has become inherently unstable, these services (safekeeping, transport, mining) are as much a part of everyday life

as burglar alarms, fences and other security devices – none of which would be required in an ideal world. Indeed, for Professor Bernanke to lambaste the 'irrational investors' who are incurring costs to satisfy their appetite for 'the barbaric relic' is not much different from the Mafia bemoaning the efforts to which their potential victims go to provide self-defence!

Of course, it is not true that investment funds which are put into gold 'deprive' the global economy of capital resources which otherwise would have promoted greater economic prosperity. To their credit the antigold warriors mentioned above do not make that particular case. Gold above the ground is already there – in the same way as land in top residential areas is already there. The price of gold reflects its marginal worth as a monetary asset to investors who hold it as such. Totalling up the value of gold in all vaults and elsewhere (under the mattress, in jewellery) is a similar exercise to adding up the value of land in Manhattan (excluding the building content). There is a speculative element in both. The holder of gold may estimate the likely increase over time in the demand for the yellow metal as a store of value and what this might mean in terms of potential for capital gain. Private holdings of gold do not have a counterpart in natural wealth (the basis of economic prosperity) any more than do holdings of land. Big increases in the value of either (land or gold) are of considerable consequence for their owners but not in the assessing of national or global economic potential output.

How should investors analyse gold as a component of their defensive strategy against the monetary instability which is the essence of Bernanke-ism? The well-known problem here is the lack of any intrinsic measure of worth. There is no stream of prospective income (as for a stock) to discount to present value, even as a cost of capital which can be highly variable through time. There are some benchmarks to value, but they provide no precision. For example, the equivalent today (2013) in constant-purchasing-power dollars of the gold par at which the dollar was fixed when the USA in practical terms adopted the gold standard in 1873 (a few years after the end of the Civil War) is about US$500 per ounce. But we could surely say that the demand for gold has grown in real terms by much more than the supply which would be available at that price. Central bank demand for gold reserves has been increasing, whilst there is huge demand from individuals who appreciate its particular qualities in portfolio construction under a regime of fiat money which has no counterpart in the gold standard world. Though we live in a world of great technological progress, there has been no breakthrough in gold discovery such as the world experienced, for example, in the late nineteenth century.

Irrespective of where the underlying equilibrium price of gold might be – no one can it estimate within any narrow range – there are a number of variables which have a critical influence on the gold price. To understand

the importance of these variables, think of gold as a 'probabilistic' zero coupon bond with a maturity date in the very far-distant future (say, 100 years) and with principal at repayment that should 'very likely' lie within a 20 per cent range of its global purchasing power on average during 100-year periods. Over the short and medium term fluctuations in value can be very large. We can see from this construction that the gold price should rise sharply as real interest rates fall and that it should rise against the dollar as the dollar falls in terms of other currencies. It should also rise as uncertainty about the future rate of inflation increases, most particularly with respect to periods of time into the far-distant future. These are all valuable properties in constructing defensive walls for one's wealth against the attack of Bernanke-ism but they all suffer from the defect of considerable possible idiosyncratic factors (including waves of irrationality driven by monetary instability) suddenly jolting the gold price in one direction or another. In particular, we should note that the gold price might be propelled upwards by asset price inflation in the US equity market. Rising wealth along with growing anxiety about the consequences of monetary chaos could give a big present lift to gold demand. When asset price inflation turns to asset price deflation and economic recession sets in, gold prices could fall in line with shrunken wealth and an ebbing of anxiety about possible goods and services price inflation.

Such idiosyncrasies are not unique to gold, of course, or to the analysis of its portfolio role. We can say the same about the role of commodity currencies such as the Australian dollar and the Canadian dollar in portfolios. These currencies typically yield returns highly correlated with global equity markets, on the basis that both currencies are issued by countries rich in types of natural resources which are in particularly strong demand during periods of global prosperity (for example, Australia exports iron ore, coal and LNG, whilst Canada specializes in natural gas, oil and some metals). Moreover, the gearing of the Canadian economy in particular to the US business cycle (explained by the high proportion of Canadian exports going to the USA) adds to the 'good news' quality of the Canadian currency. Hence some investors might view a short position in Canadian dollars, if coupled with a strong view as to why they have risen above fundamental value and are likely to fall back, as a useful defensive position from the viewpoint of overall portfolio construction. But they are subject to unknown idiosyncratic factors which might disturb the normal relationship.

For example, despite substantial declines in commodity prices through the first three quarters of 2012 as the Chinese economy slowed and despite weakness in many global stock markets outside the USA (in part related to the emerging market slowdown, in part to the European monetary crisis), the Australian and Canadian dollars performed strongly. According to several market commentaries, the explanation for this atypical behaviour could be attributed to central banks seeking to diversify their exchange reserves

away from the euro. The Swiss National Bank in particular was aggressively buying euros in the foreign exchange markets to prevent the franc rising, and in turn it was ploughing some of these into the Australian government bond market. A similar strategy was suspected with respect to the Canadian dollar (see p. 69).

This brings us to the last asset class to be discussed – and the biggest (outside government bonds and money). It typically forms part of investors' liquid wealth – equities.

The death of equity risk bearing would be the death of capitalism!

The rate of return to equities – more specifically, the probability distribution of returns from, say, a diversified portfolio of equities over the medium and long run – can only be estimated and without great precision. When many analysts look at their favourite index of large-capitalization US stocks, say the S&P 500 or the Dow Jones industrials, they do a back of the envelope–type calculation in which projected consensus estimates of earnings in aggregate for the next year are compared with the present level of the index to produce the so-called 12-month-forward earnings yield (the inverse of which is the P/E ratio). In reality, though, investors should also estimate future earnings on the S&P 500 many years beyond the next; in particular, they should have a view on whether present earnings are above or below long-run trend.

When forming estimates of future earnings, investors should filter out that element attributable to the injection of new equity capital, whether from outside investors or from the reinvestment of retained earnings (the latter is in effect their own capital placed in new equity). They should also make allowance for a key obsolescence factor – that by the time any stock enters the S&P 500 or Dow index, its period of most dynamic growth is already behind it (or else whatever dynamic growth remains was already discounted to a major extent at the time of entry into the index), whilst the stocks which are periodically ejected from the index (to make way for newcomers) will have suffered a long period of underperformance whilst in the index.

The investor, in estimating future earnings and assessing reward for risk, should take account of corporate leverage. Most corporations have debt outstanding alongside equity in their capital structure. Yet for the purpose of value analysis, the investor should consider the hypothetical existence of a purely equity-financed corporation at the core of the actual leveraged corporation. For example, suppose business X, financed 100 per cent in equity, has a market value of $100 billion. If business X then switches to having 50 per cent of its capital structure in the form of debt, that is equivalent to X buying back 50 per cent of its equity and

issuing debt instead. So we can think of shareholders in the now leveraged corporation as holding a combination of half their shares in the original purely equity-financed corporation plus new shares in a 100 per cent leveraged portfolio (in which half the original equity shares are now matched by 100 per cent borrowing, the cash proceeds of which would have been paid out to the shareholders). Important to note is that the investors' remaining half total of shares in the originally unleveraged business is placed (hypothetically) as collateral with the lenders in the leveraged operation.

The investor (and analyst) should seek to differentiate earnings, now and in the future, which stem from the hypothetical pure equity shares (the 50 per cent which have not been put in the leveraged portfolio) and from the leveraged equity shares. Current profits from leverage (the difference between current earnings and interest payments on the debt) should not be treated as a permanent income stream to be capitalized in the same way as earnings from the pure equity shares. That is an important distinction to bear in mind when interest rates are particularly low, as might be the case during a period of intense manipulation by the Federal Reserve.

An individual firm, in deciding whether to exploit a particular investment opportunity, in principle has to ascertain the appropriate cost of capital for discounting the future expected net revenues into the present (it then compares the net present value of the revenues with the capital outlays). In principle the cost of capital should be that which would apply to 100 per cent equity financing. If in fact the firm is leveraged, with, say, 50 per cent of its capital structure in debt rather than equity, then the cost of that leveraged equity would be higher than the cost of the hypothetical non-debt-laden equity (as the risk of debt-laden equity is higher than that of full equity – in technical terms, the so-called beta coefficient of equity rises with leverage) which should be used in the capital budgeting process.

The capital budgeting officer of the firm may make estimates of the cost of 100 per cent equity capital by adding to the assumed neutral real rate of interest (relevant to the maturity of the project) a risk premium. The assessment of the latter should start with researching the equity risk premium for the market as a whole; then this should be adjusted for the risk of the project (strictly for the market risk of the project) on the assumption that it is fully financed with equity. For example, a project in a highly cyclical area of the economy (say, automobiles) would have a relatively high pure equity risk premium (compared to the estimated risk premium for the market as a whole, where this consists of the quoted equity of all corporations, whether leveraged or not). Ultimately the capital budgeting officer should try to take note of a market test. If this is a big project (relative to the size of the company), does the company's stock rise or fall on its disclosure to the market? If disclosure causes the stock price to fall, then surely that is a warning not to proceed.

There are many small and medium-sized firms which have no publicly traded equity capital outstanding and which are yet in aggregate an important engine of economic activity. Is the cost of equity capital at all a relevant concept to their capital spending decisions? Strangely to much conventional analysis, the answer is yes. The small business owner may well be influenced critically by the question whether the potential capital spending decisions under review would add or subtract from the sale value of the firm, either when taken over by a larger publicly owned firm or when this present firm goes public (issuing its stock in the equity market). So it would be influenced positively in investment spending decisions by a fall in the cost of equity capital. We should also consider the firms, now owned by private equity groups, that are driven largely by the hope that one day they could bring these to the public equity market.

In general terms, as already discussed, the curse of the Federal Reserve, amplified in modern times by Bernanke-ism, has added to the uncertainties associated with equity investment, meaning that investors plausibly require a higher than otherwise risk premium (relative to assumed long-run neutral interest rate in real terms) to justify placing capital here. The investor has to reckon with the likelihood that, much of the time not fully knowable to himself, there will be a monetary virus at work distorting market prices (including equity) away from the trajectory consistent with the best dissemination of knowledge. In consequence there will be periodic episodes of huge malinvestment followed by bust, and they take their toll on the returns over time to be made from equity.

That is the pity. Compare two worlds: one with a stable monetary order and a healthy appetite for equity risk, the other with an unstable monetary order (the Fed's global curse) and a correspondingly diminished appetite for risk. In both, the innate propensity to save is similar (meaning in technical terms that the premium individuals at the margin put on present versus future consumption is the same). Which world will be more prosperous? It is the first – for prosperity depends on tolerance of risk and the efficient taking of risk.

The society which takes more risk, and takes it efficiently, will in the long run reach higher living standards, even though there may be more fluctuations along the way (associated with disappointing outcomes, say, to the lead technological changes being pursued in any particular epoch) and in the early years less overall present consumption. For the higher risk-taking world will in general have a higher level of risk-free interest rates across the maturity range than the lower risk-taking world (in line with the greater amount of investment opportunity which can be exploited due to the lower equity risk aversion) and these higher rates mean an inducement to postpone consumption.

Just as the individual who takes consistently and efficiently higher equity risk has the expectation of becoming richer through time than the utterly

risk-averse individual, so it is between possible worlds. Sometimes the old world with the healthy risk appetite will make the mistake of Columbus – the new land will turn out to be the West Indies rather than North America, but over the course of time such error and disappointment will be more than made up for by the wins in aggregate. The world where individuals push efficiently further into the forests of investment opportunity should expect greater prosperity in the long run, even though there is the downside of possible shortfalls in living standards in the shorter term. The global curse of the Federal Reserve means a slower and more treacherous route into the forest.

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