

Monetary Puzzlement

Why central banks perform worse than they could, and why sovereign-money reform would help to perform much better

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Introduction

Central banks' basic mission is to be guardians of sound money and stable currencies. They are supposed to achieve this by

- running an efficient cashless payment system, including domestic and foreign transactions, as well as providing cash as long as cash is part of the stock of money
- providing liquidity to banks
- managing the foreign exchange value of their currency if need be
- managing the domestic purchasing power of the money, that is, the inflation rate, either
 - a) by exerting control over the quantity of money or
 - b) by implementing interest-rate policy.
- overseeing banks' liquidity and solvency position, for which central banks have now also been made responsible (and which is controversial in view of the already existing supervisory and regulatory agencies).

Central banks are commonly believed to be able to fulfil these tasks. They are even portrayed as the most mighty and powerful institutions, controlling the banking industry and exerting tremendous influence on financial markets and the economy beyond. Central banks

themselves are keen to leave no doubt about their being fully in control of the situation. The following passages try to sketch out what central banks actually can do and what they cannot. As will be seen, central banks do in fact have some power, but much less than is commonly thought. The predominant monetary power is the banks rather than the central bank. So too it is the banking industry rather than the central banks that is to be blamed for the recurrent crises, even though the activities of a country's banks and the national central bank are intertwined.

Providing liquidity under normal conditions

The main reason for having set up central banks since the late seventeenth century has been to provide government as well as the banking sector with a *lender of last resort* that provides cash and credit. The situation has changed in that the national banks of industrial states are now prohibited from acting as the *bank of the state*. Laws such as Art. 123 (1) of the Treaty on the Functioning of the EU, or US Code (Title 12, Chapter 3, Subchapter IX) § 355, interdict central banks from contributing directly to funding public expenditure, for example by the direct buying of sovereign bonds.

This is legitimized on the grounds of two highly biased and empirically untenable assumptions, one being that direct government funding equals inflation, and the other one assuming that government funding by primary bank credit does not. The historical truth seems to be quite different, namely – in the absence of limiting rules and arrangements – that both governments and banks tend to abuse privileged primary credit. Some governments, though, have at times proved to be monetarily responsible, whereas the banking sector always creates an overshooting money supply, resulting in inflation, asset inflation and excessive boom and bust cycles. Even though this is not up for debate here, it shall at least be stated. On balance, the prohibition of central banks from contributing directly to government funding made governments overly dependent on banks, which enjoy being privileged primary credit creators in general and lenders to governments in particular.

Central banks still deliver their annual profit to the national treasury, or much of it, depending on the ownership structure. Equally, central banks still run current accounts for public bodies, but have stopped doing so for companies and households. A central bank thus now acts as a pure *bank of the banks*. The central banks' function of lender of last resort to banks has in the process been subject to important changes.

In the first instance, present-day money systems are based on bank credit. A deposit – that is, money in a bank account, or bank money for short – is not created by depositing cash, but by crediting customer transaction accounts whenever banks make loans, admit to overdrafts, buy bonds, stocks and other securities or buy real estate and other tangible assets. Coins and notes have become residual means of payment, representing 5–18% of the

stock of money (M1). The cash is exchanged out of and back into the originally non-cash money supply.

In order to carry out the payments related to banking transactions, including the payments carried out on behalf of customers, banks still depend on obtaining means of payment from the central bank in the form of coins, notes and reserves, the latter representing non-cash central-bank money in a bank's account with the central bank. However, when granting credit and carrying out other banking transactions, banks do not bother too much about cash and reserves. They make their deals in the first place, and then look for cash and reserves thereafter, if need be. In actual fact, the process is *not* led by the central banks. The initiative is with the banks. This is to say that banks do not, as the reserve position doctrine has it, multiply a base of central bank reserves given before the fact. The real process is the reverse. Central banks re-finance after the fact a fraction of the bank money that the banks have created beforehand. As a result, the banking sector determines the entire money supply. Central banks always accommodate, because otherwise the flow of payments, and thus the entire financial and real economy, would stall.

The amounts of cash and reserves that the banks need to carry out payments represent only a fraction of the existing stocks of bank money, hence the term fractional reserve banking. The reasons are, firstly, that at any point in time only some part of the bank money is transferred or withdrawn in cash; secondly, that the outflows and inflows of cash and reserves largely offset each other, the more so the bigger a bank is; and thirdly, that payments on behalf of customers and proprietary payments of a bank are carried out via the same central-bank account of a bank. As a result, the reserves that European banks need to have available just amount to 2.5% of the circulating stock of money-on-account. The 2.5% consists of 1.4% cash for the ATMs, 0.1% liquid payment reserves (excess reserves) and 1% obligatory minimum reserves (in Japan 0.81%; in the US 10% minus cash in bank vaults). Minimum reserve positions, according to the unreal money multiplier model, are supposed to restrain the banks' credit and deposit creation. They are non-available under any circumstance – and utterly pointless as banks have the pro-active lead and central banks always feel compelled to accommodate. Thus, the central bank as *lender of last resort* to banks has become, say, the *anytime fractional refiner* of the banks.

Managing foreign exchange

As regards managing the foreign exchange value of a currency, a central bank can be effective to a certain extent, the more so if it is the guardian of one of the few international trading currencies or some other respected currency that business partners are prepared to accept.

A central bank can influence the foreign exchange value of its currency by way of buying its own currency in order to defend it against depreciation; or by selling own currency in order

to intervene against appreciation. The first case (selling foreign currencies) presumes to dispose of enough foreign currency reserves. In the second case (buying foreign exchange with own currency) a central bank is always liquid since it has legal sovereignty over its currency. This, however, is subject to the reservation that foreign partners accept a respective currency; which in turn presupposes that the currency is not overly inflationary.

If need be, a sovereign central bank might even resort to fixing the exchange value of the currency. This, however, will almost certainly create a split currency, with an official exchange rate, an unofficial rate abroad, and a black market rate at home. This hints at the fact, that even the most important central bank is not in a position to determine fully the exchange rate of its currency and that its respective power, trivial to say, is relatively limited through the web of global interdependencies.

This is meant to be an indication for the need of globally co-ordinated currency policies. It thus should not be misunderstood as an excuse for letting single currencies appreciate or depreciate by 50% or even more in a couple of months – which is certainly one of the most unreasonable and harmful elements in contemporary economies under the influence of unleashed banking ideology. Such fluctuations in the exchange value of currencies are clearly caused by massive forex speculation rather than changing trends in real-economic trade and cross-border co-production.

Managing the quantity of money

Managing the domestic purchasing power of the money by quantity policy is aimed at controlling the amount of money in circulation. The approach is based on the quantity theory of money, one of the oldest and most proven elements of economics.

Quantity theory says that an increase in the money supply enables the actualisation of an economy's productive potentials, whereas if such potentials are lacking, have been fully exploited or are blocked by structural mismatches, an additional money supply will result in rising prices. In reverse, a shrinking money supply will induce deflation, with under-utilisation of all the economic factors, in particular labour.

Over the last two to three hundred years, the quantity nexus has been expressed in a greater number of circulation formulas.¹ The most widespread is still the one by Fisher: $M \times V = P \times T$, meaning that the quantity of money (M) multiplied by the velocity of circulation (V) equals all money transactions, or the average price of all transactions (P) multiplied by the number of transactions (T). In the twentieth century, quantity theory and monetary quantity policy were especially promoted by the early Chicago School (which developed the Chicago Plan for 100%-reserve banking), Irving Fisher (who developed the plan for 100%-money), and later on Milton Friedman and the monetarist school (referring

¹ Cf. Humphrey, Thomas M. 1984: Algebraic Quantity Equations before Fisher and Pigou, *Economic Review of the Federal Reserve Bank of Richmond*, September/October 1984, 13–22.

here to its neo-quantity position only, excluding the supply-side doctrine for which it also stood).

The kind of quantity theory that these scholars relied on was somewhat traditional in that it primarily referred to the link between a given quantity of money and its effect on real-economic prices if all other things remain the same. Things, however, change all the time. Any up-to-date quantity theory, historically after Keynesianism and Monetarism, will certainly start from the money supply, but will have to refer to *all* kinds of prices, their impact on each other, and their feedback on the money supply. Beyond the prices of consumer goods, services and producer goods, this may possibly also include asset prices and asset inflation; interest and interest-borne inflation; and wages and wage-induced inflation – all of these also including their deflationary complement. Accordingly, equations of money circulation need to become more differentiated; in particular, they will have to make a distinction between real-economic and financial transactions, including, moreover, a distinction between GDP transactions and non-GDP transactions, the latter relating to financial transactions that do not fund real capital and consumer expenditure (for example, speculative real estate, secondary securities trading, speculative forex trade, derivatives beyond the volume of underlyings).²

On account of the strong consumer price inflation in the 1950–70s, the central banks of industrial nations tried to pursue monetary quantity policy until the mid-1980s. The idea was to restrain the overshooting growth of bank money (deposits in M1–M3) and expand the money supply in relation to the economic growth potential, or, respectively, the economic capacity or factor utilisation.

They targeted the money supply as measured by M1 (the amount of cash and bank money) and M2/M3 (M1 plus savings and time deposits and similar items). They tried to attain the respective quantity target by implementing reserve positions. According to the then-predominant multiplier model, minimum and excess reserves were considered to be the monetary base that determines the maximum multiple of bank money that the banks are able to create.³

Capacity-oriented monetary policy was basically the right idea. However, it was based on a false premiss and thus the results were disappointing. Year after year, the actual increase in

² Cf. Werner, Richard A. 2005: *New Paradigm in Macroeconomics*, New York: Palgrave/Macmillan 2005, 185, and Huber, Joseph 1998: *Vollgeld*, Berlin: Duncker & Humblot, 224. A similar approach by Hudson is to introduce a separate FIRE sector (Finance, Insurance, Real Estate) into public-private sector balances. See Hudson, Michael 2012: *The Bubble and Beyond*, Dresden: Islet Verlag. - Hudson, Michael 2006: Saving, Asset-Price Inflation, and Debt-Induced Deflation, in Wray, L. Randall/Forstater, Matthew (eds.) 2006: *Money, Financial Instability and Stabilization Policy*, Cheltenham: Edward Elgar, 104–124.

³ Bindseil, Ulrich 2004: The Operational Target of Monetary Policy and the Rise and Fall of Reserve Position Doctrine, *ECB Working Paper Series*, No. 372, June 2004. - Häring, Norbert 2013: The veil of deception over money: how central bankers and textbooks distort the nature of banking and central banking, *real-world economics review*, no. 63, 2013.

the money supply did not relate to the central-bank targets. Central-bank interest rates, as discussed below, did not help either in restraining the banks' primary credit and money creation. Quantity policy under conditions of fractional reserve banking turned out to be a complete failure. The reason for this, the false premiss, is simple and has been explained above. In the present money system, the pro-active and controlling initiative is with the banking sector. Central banks just re-act and re-finance the banks. Banks do not multiply central-bank money. The multiplier is but an abstract piece of arithmetic, a mere computing exercise, not an algorithm that represents a real process. The real process is that central banks refinance after the fact a fraction of the bank money that was created beforehand. They always accommodate the bank demand for reserves and cash. The minimum reserve requirements imposed by the central bank do not make a difference, except, maybe, for the (relatively modest) amount of interest-borne seigniorage which the central bank is able to deliver to the treasury.

At the same time, markets perpetually fail to limit the expansion of an overshooting money supply, which is another problem that many economists still refuse to recognise. They believe in self-regulation, including self-limitation, of money and capital markets. They have always done so, from the banking-school real bills doctrine at the beginning of the nineteenth century up to the present-day financial efficient-market hypothesis. In the real world, however, money has become pure fiat money, most of it created by bank fiat with no anchorage in a real value base. The demand for money can exceed many times the real economic capacity to absorb the money. Whosoever has the private privilege of creating their own money will not stop doing so, partly servicing overshooting demand and partly servicing their own ventures, because the first users of newly created money have an advantage over everybody else coming subsequently in the money circuit. The advantage is cheaper prices or bigger capital gains, while the disadvantages in the form of inflation, bubbles and crises have to be borne by everybody. Banks, in addition, enjoy the advantage of having to refinance their dealings at a fraction of only 2.5% (in the euro) while everybody else has to fund 100% of their expenditures.

About a century ago, when the multiplier model and reserve-position policies were conceived (among others, also by Keynes in his 1923 Tract on Monetary Reform), the belief in effective central-bank control over banks' credit expansion, thus money creation, may have been plausible to a degree. The gold standard still represented the framework for monetary thinking, the credit theory of bank money from the 1890s was not commonly understood, and the share of central-bank cash in comparison with bank money in M1 was about 66–50%. Today, the share of bank money has reached 80 to over 95%, depending on the monetary aggregate in question. Banks' primary creation of their own credit money has become largely independent from central banks, at least under normal business-as-usual conditions.

The next step towards near-complete independence of banks from central banks would be phasing out cash (coins and notes). The banks are supported in this by technical innovation (electronic cash) and encouraged by the tax office that wants to eliminate paper cash under the table. In addition, policy makers presently going wild for negative interest rates are in favour of phasing out paper cash because customers can try to avoid negative interest by holding paper cash as an alternative to money on account.⁴ At the same time, central banks, regulators and lawmakers are slow to understand the potential of e-cash to replace paper cash – e-cash on digital devices beyond bank accounts and bank balance sheets.

Providing liquidity in times of crisis. Quantitative Easing

The central banks' role as fractional refinancers, subsidiary as it is in normal times, gains enormous importance in times of crisis. Prior to resorting to the central bank, banks normally lend excess reserves among each other on the interbank market. Payment surpluses and deficits are rebalanced in this way. If, however, banks suspect each other of being close to illiquidity and insolvency, they stop lending to each other, and this is the moment when central banks have to rescue individual banks or the entire sector. In a banking crisis – causing, or resulting from, financial-market and real-economic crises or sovereign-debt crises – central banks are urgently needed by banks and can in fact be very effective in keeping banks afloat by providing additional reserves at favourable conditions.

When the crisis hit in 2007/08, central banks started to provide relief to the banking industry through all of the regular operations as well as by taking exceptional measures. For example, the ECB minimum reserve requirement was halved from 2 to 1%, and credit lines were extended at very low interest, since 2009 at 1% in the euro area and about 0.5% in the US and Britain. Refinancing operations, normally undertaken on a short-term basis of two weeks, were offered as Long Term Refinancing Operations of one year or even three years at the same ultra-low rates. M. Draghi, the ECB president, dubbed the latter credit instrument 'Big Bertha', alluding to the long-range cannon in WWI. Various national central banks were permitted by the ECB governing council to give generous emergency liquidity assistance to banks on the national level (i.e. creating additional near-free reserves for them), and the payment system (TARGET2) accumulated structural payment imbalances of up to 700 billion euros (i.e. outstanding debt owed to the national central banks of involuntary euro creditor countries).

As this was not yet enough to still the banks' fears of the toxic assets in their portfolio – that is, non-performing loans and securities, including threatened sovereign bonds of euro member states – the central banks resorted to Quantitative Easing (QE) as introduced in Japan twenty years earlier. The US Federal Reserve, for example, launched three QE programs in 2010 alone. It bought toxic mortgage-backed securities from the public housing

⁴ Recent renowned examples include Larry Summers and Kenneth Rogoff.

financers (Fannie Mae and Freddie Mac) and from Wall Street corporations, and later on also US Treasury bonds, for hundreds of billions of dollars. The Bank of England ran a similar program from 2009–12. On the whole it created 375 billion pounds in reserves and is now holding 25% of public debt. The ECB started a similar program, called Outright Monetary Transactions, only in 2012 due to resistance from the Bundesbank (that did not want to fight the fire for fear the water flood might cause damage to the burning house). The ECB then bought sovereign bonds on a large scale and holding these over a longer period of time or even until maturity. At present, 2014/15, the ECB has also started to buy commercial paper (corporate bonds), securitised mortgages and other loans from banks as well as sovereign bonds. From 2008 to 2014, the ECB more than doubled its balance sheet (that is, the amount of money provided to the banks), the Bank of Japan's has tripled and the Fed and the Bank of England have increased fivefold theirs.

Many commentators were afraid the expansion of the central banks' balance sheets would result in inflation. However, central banks did not create money for common use, but just reserves in order to stabilise the banks' balance sheets by buying from them downgraded securities and loan packages. The counterside of these papers, which is debt, in particular public debt, was not reduced in the process, but relocated from the banks to the central banks. The hope was that the banks might use some of the reserves to absorb new government bonds, thus stabilising the bond market. The banks, though, were reluctant to make use of those reserves and kept most of them deposited with the central bank for deposit interest. Even when some of the QE money went to non-bank agents (for example to insurers and funds wanting to get rid of various securities), they did not make much use of the liquid money they obtained either. In a crisis, debtors are primarily occupied with paying down debt, while both debtors and creditors shun additional expenditure and new investment.

With regard to buying government debt, Art. 123 (1) TFEU as already mentioned prohibits central banks from direct or primary funding of government expenditure, while Art. 123 (2) allows secondary buying of sovereign bonds on the open market. The latter, though, refers to short-term monetary-policy transactions. With the recent volumes of QE, however, the central banks have obviously felt forced to cross the line into overt monetary financing of governments. This is an observation; it is not intended as a fundamental criticism. Art. 123 (1) TFEU is problematic and needs revision.

As regards the state of emergency from 2008 to 2012, one can say that, had the central banks not engaged in QE, the entire monetary and financial system in the industrial world might actually have collapsed. Nevertheless, this is no general absolution. Seen in a sober light, it is about a regrettable but unavoidable crisis intervention that gives addicts an additional dose of what they are addicted to – too much credit and debt in spirals of rising

expectations, and too much of this in unproductive non-GDP dealings, to the benefit of financial capital revenue at the expense of earned income.

Saying that there is 'too much money around' may sound counter-intuitive, if not cynical; in fact, however, and to put it a little more precisely, the crux of the problem are bubbles of monetary and financial assets and debt, turning into a big overhang of money and debt upon the eventual bursting of a bubble. Fisher's theory of debt deflation still gives a coherent explanation of such a situation.⁵ Minsky's financial instability hypothesis (credit and debt bubbles) as well as Keen's inefficient markets hypothesis (including credit and debt collapse) have taken the matter further.⁶

Keynes analysis of the problem in terms of liquidity preference was seen as an alternative approach, while in actual fact it represents a complementary view that focuses on the money and asset side of the problem. Money owners, and the banks as money creators, are reluctant to spend or lend money as long as a crisis does not seem to be coming to an end. Liquidity preference thus is part of the problem. What contributes to its resolution is debt deflation (spelling hardship) or an 'exogenous' short-term stimulus such as, in Keynes's opinion, government deficit spending which injects additional money into the real economy – while adding to the problems of an overshooting money supply and hardly repayable debt levels in the long run (in which, as Keynes famously retorted, we are all dead—so that the deluge will come upon those who happen to be the later generations).

For the time being, in spite of a certain recovery in the US, the central banks find themselves forced to keep up QE policies which are now in their sixth year. They are absorbing debentures of public and private issuers as well as packages of outstanding bank credit, some of these of debatable quality, on a very large scale and in the long term, that is, far beyond the scope of short-term refinancing operations of rather limited amounts of money and on the basis of first-grade securities. The longer the QE policies are going on, the more the central banks become entrapped in acting as the financial industry's bad bank, and becoming, in actual fact, special investment banks and para-fiscal bodies.

The question arises as to whether this is a temporary derogation or a new role of the central banks as 'dealer of last resort'.⁷ One might equally say 'large-scale monetiser of public and private debt'. When banks finance, or help to finance, public and private securities, they

⁵ Fisher, Irving 1933: The Debt-Deflation Theory of Great Depressions, *Econometrica*, 1 (4) 1933, 337–357. Available at <https://fraser.stlouisfed.org/docs/meltzer/fisdeb33.pdf>. Today, Richard Koo came forward with the same kind of analysis. Cf. *The Escape from Balance Sheet Recession and the QE Trap*, Hoboken, NJ: John Wiley, 2014.

⁶ Minsky, Hyman P. 1986: *Stabilizing an Unstable Economy*, New Haven: Yale University Press, pp. 223, pp. 294. By the same author 1982b: The Financial Instability Hypothesis, in: Kindleberger, C.P./ Laffargue, J.-P. (Eds.): *Financial Crises. Theory, History, and Policy*, Cambridge University Press, 13–39. - Keene, Steve 2011: *Debunking Economics*, London/New York: Zed Books, pp. 337, pp. 385. Also cf. www.debtdeflation.com/blogs.

⁷ Mehrling, Perry 2011: *The New Lombard Street. How the Fed Became the Dealer of Last Resort*, Princeton University Press.

create a corresponding amount of bank money, and trigger the creation of additional reserves at a fraction of the bank money. If, however, a central bank buys those securities on the open market from banks and nonbanks, the sellers, more precisely their banks, receive reserves (central-bank money) of the same amount.

If QE would serve its purpose, i.e. stabilising banking and finance while economic recovery would be gaining ground, things may come to a good end and the central banks may even make a good bargain if there are regular payments of interest and redemption. The example of Japan, however, that is in stagnation for over twenty years now is not very encouraging in this respect. What happens with a central bank that has to devalue or write off many of its assets?

For ECB balance-sheet losses, the euro member states are liable according to their share in the ECB capital (resulting from the size of population and GDP). Insofar as losses were caused by the sovereign bonds of euro member states, these bonds would in fact become 'eurobonds' with communitarised liability. Rather than being about 'solidarity' this is about subsidising bad investment of MFIs and bad housekeeping of governments. The no-bail-out rule of the Lisbon Treaty would be flouted once more. Message: Big money is above the law. Moreover, such intergovernmental loss compensation would result in extinguishing money at the worst possible moment when governments would do better to spend the money on real-economic purposes.

Interest-rate policy as inflation-rate policy

To return to monetary policy in business-as-usual times, the reserve position fallacy of former decades was not officially admitted to, but monetary quantity policy was abandoned as a matter of fact. Since around 1990, central banks have stopped pretending to control the money supply. They have, however, thrown the baby out with the bathwater by downgrading the importance of the quantity of money, not officially, but again as a matter of fact. Central banks have completely shifted to interest-rate policy, whereby the target is no longer the money supply but the rate of consumer price inflation.

This too can be interpreted as being aimed at managing the domestic purchasing power of the money. But the link between the money supply and inflation/deflation has analytically and in the policy pursued been removed, or made implicit, respectively. One justification for this was empirical findings allegedly showing a dwindling correlation between monetary aggregates and consumer inflation. Such results can be obtained as statistical artefacts, for example, by starting from the wrong aggregates, not considering the difference between active and inactive money, and, above all, by not including asset inflation. As soon as these aspects are included, the correlation arises as ever before. There is certainly no synchronicity of the cyclical amplitude. But most of the time there is a correlation of rhythm or length, including some time lag between additions to the money supply and the inflation rate.

Since about 1980, an increasing share of the money supply (which kept expanding in disproportion to GDP) went into non-GDP financial transactions. This caused the upsurge in investment banking and the wave of 'innovative products'. Private mortgages in many countries and sovereign bonds in almost all countries also contributed to creating oversized credit and debt bubbles.⁸ Initially, the bubble burst in the US subprime crisis. This triggered the transatlantic banking crisis, which in turn evoked the euro-area sovereign debt crisis. During the 10–15 year run-up to the crisis, the growth rate of the real money supply in old-industrial countries was from two times to four times higher than the growth rate of nominal GDP. Consumer inflation thus has to a considerable extent been replaced with asset inflation.

Neglect of asset inflation by economics and its exclusion from monetary policy is no longer defensible. Asset prices are monitored by the central banks, maybe even analysed in terms of asset inflation, but not taken into account in the policies pursued. Mainstream economics is not particularly interested in asset inflation, or even denies its existence. If house or share prices go through the roof, the owners rejoice and do not want to hear about 'money illusion' or similar unfortunate facts. Disequilibrium theories of financial cycles and crises have so far been the domain of 'heterodox' economists. As a result, doing something about asset inflation was not, and still is not, part of the central banks' mandate – supposing that they could effectively do something about it under present-day conditions, which must be doubted, in the case of asset inflation no less than with regard to consumer inflation.

The shift towards asset inflation did not put an end to consumer inflation. During the 10–15 year run-up to the banking and debt crisis, consumer inflation (included in nominal GDP) grew as much or even twice as much as real income (price-deflated real GDP). Central banks have taken credit for bringing consumer inflation down in the 1980s to what they consider to be the desirable grease rate of about 2%. In actual fact, however, this was due to a number of factors other than the central-bank interest-rate policy. The major contribution came from globalisation, or say, deregulation in the sense of removing barriers to the international flow of goods and capital. This created bigger markets with deeper and more flexible transnational chains of production, which are more adaptive to changes in demand. The constellation also included tougher price competition accompanied by gains in productivity. Even shocks of strongly increased demand, for example from Eastern Germany when the communist regimes imploded, were easily absorbed without causing notable

⁸ With regard to credit and debt cycles, and in addition to the writings by Minsky and Keen as already quoted, also cf. Schularick, Moritz / Taylor, Alan M 2009: Credit Booms Gone Bust: Monetary Policy, Leverage Cycles, and Financial Crises, 1780–2008, *National Bureau of Economic Research NBER, Working Paper 15512*, www.nber.org/papers/w15512. Paper publication: *American Economic Review*, 102 (2) 1029–1061. - Reinhart, Carmen M. / Rogoff, Kenneth S. 2009: This Time is Different. Eight Centuries of Financial Folly, Princeton University Press. - Ferguson, Niall 2008: The Ascent of Money. A Financial History of the World, London/New York: Allen Lane. - Kindleberger, Charles P. 2000: Manias, Panics, and Crashes. A History of Financial Crises, New York: Basic Books. First edition 1978. - Kindleberger, Charles P. 1993: A Financial History of Western Europe, New York: Oxford University Press.

consumer inflation. In advanced countries, furthermore, there has been a shift in consumer demand from standard mass merchandise to high-end goods and services. These are part of lifestyle-related consumption and absorb much money (and do not seem to be adequately represented in the model households of national statistical offices).

Finally, the shift towards investment banking and financial-market dealings involved growing participation of the middle classes. The usual circumscription for this, sounding rather harmless, is that aging societies are saving more. The thing is that older and younger middle-class people alike put more of their disposable money in financial-market dealings. The not-so-harmless side of this includes increased financial instability as well as growing inequality and segmentation in the social distribution of wealth, work and income.

Central bank interest-rate policy – for good or ill – has contributed to all this much less than is commonly assumed. It must be seen that the only interest rates that a central bank can definitely pin down are its own. It cannot set interest rates in capital markets and financial markets in general. Interest rates are determined by the dominant players in those markets themselves. Insofar as the availability of money has an impact on this, it is linked to primary bank credit and secondary on-lending of bank money through financial intermediaries, not to central-bank interest rates.

The core central-bank interest rates are referred to as base rate, sometimes also as lead rate. Lead rates, however, do not take the lead in setting interest rates. Likewise, base rates, named after the base money or money base M0 which includes cash and reserves, are not the 'basis' for the deposit and lending rates of bank money, as they are in no way fundamental to defining the entire structure and level of interest rates. Base rates are but the lending rates of the central banks.

The conventional wisdom underlying monetary policy has it that there are transmission mechanisms that would transmit central-bank impulses to the banks, and via the banks to the financial and real-economic markets. How is that supposed to work? As regards quantity policy, the transmission is broken and has been reversed, i.e. the banks transmit their impulses to the central bank.

With regard to interest rates, the situation is not really different. A base-rate guideline such as the Taylor rule clearly indicates that central-bank base rates follow the inflation rate rather than leading its way. The rule suggests that in response to a 1% increase in inflation a central bank should increase its base rate by about 1.5%; upon a 1% decrease in inflation, the base rate should be cut by about 0.5%. How this is supposed to correct a deviation from the inflation target of 2% or x% is not exactly obvious.

The interest rates a central bank can influence best are money-market rates, i.e. the overnight rates for interbank lending of reserves, such as the Fed Funds Rate or the EONIA in the euro area. It is often supposed that changes in central-bank rates influence these

interbank money-market rates. But there is no mechanical link between the two. In this connection, the quantity determines the price much more than the reverse, meaning that the volume of available reserves has a stronger influence than the central-bank rates charged for the reserves.⁹ Accordingly, the more effective way for a central bank to influence interbank rates is to buy securities (mostly treasury bonds) from banks if the central bank wants to provide banks with additional reserves, which induces lower interbank rates; and to sell securities back to banks if the central bank wants to absorb excess reserves from the banks, which induces higher interbank rates. There is no doubt in this respect that central banks can effectively influence the interbank rate. It should be noted, moreover, that this is an example of quantity policy rather than interest-rate policy *sensu stricto* and that a central bank, under specific conditions, is able to successfully implement monetary quantity policy.

In the case at hand, however, the question arises: to what avail? What are the wider effects expected to unfold from interbank rates? In particular, how could central bank and interbank rates charged on reserves bring about a desired real-economic inflation rate? The longer one thinks about this, the more numerous are the question marks and doubts that arise.

There are at least four reasons why a transmission effect from central-bank rates to the banking industry and the markets is implausible. Firstly, central-bank interest rates have no short-term effect on banks' credit and deposit creation because the banks' related demand for additional cash and reserves is price-*inelastic*. The facts that have been created proactively have thereafter to be fractionally fulfilled, regardless of the expense. In the longer term, there may be some feedback, but it is unclear to what extent, because, secondly, how should a refinancing rate of 2.5% (EU) or 11% (USA) have a decisive transmission effect on the entire 100%? Thirdly, higher/lower base rates and interbank rates contribute transitorily to lower/higher profit margins of the banks. This is why banks observe central-bank interest rates. Whatever the central-bank and interbank interest rate will be, though, it will not deter banks from creating additional bank money, because the lending interest and expected capital gains are normally much higher than the central-bank rates, interbank rates and deposit rates. Fourthly, and as mentioned already, the central-bank rates do not determine the spectrum of interest rates and the general level of interest. The latter is determined on the markets for financial and real-economic capital. This is why open-market buying of vulnerable sovereign bonds on a large scale has proved to be the most effective measure of central-bank policy with regard to supporting the market value of those bonds and stabilising the interest rates at which they can successfully be offered.

⁹ Also cf. Richard Werner who holds that capital markets are 'not determined by prices, but quantities – namely according to the short side principle: whichever quantity of demand or supply is smaller determines the market outcome.' *New Paradigm in Macroeconomics*, Palgrave Macmillan, 2005, 193.

Since 2008 central banks have cut their lending interest to between 1 and 0%, and thus clearly below current inflation rates. This has been criticised as outright financial repression – as if the central banks were actually able to control the process, possibly in collaboration with the treasurers who are groaning under the burden of interest payments on high levels of public debt and who certainly welcome low interest on new bonds.¹⁰ More plausibly, however, financial repression, as much as wage repression, are among the normal results of a severe crisis. Rather than being the cause, they are the result of unusually low interest rates in general.

The explanation for the low level of interest rates which is most consistent with the facts thus is the savings glut hypothesis. 'Savings glut', though, sounds rather harmless again and might equally be called 'money glut'. It resulted from the large transatlantic credit and debt bubble which partially burst in real estate, but was provisionally fixed for the rest by the central banks and governments involved, in particular, too, as regards MFI debt and sovereign debt. Left behind is an excess of money supply that has lost, because of the crisis, a corresponding demand for money and many of the previous financial investment opportunities. At the same time, especially in the context of European austerity regimes, the high level of debt is depressing affected economies in a way that there are no impulses for a turnaround either from the demand side or the supply side.

All in all, this is to say that central-bank interest-rate policy can basically be no more effectual than reserve positions were – a conclusion that is in strong contrast to the widespread belief that central-bank lending rates would be an effective instrument for approaching some desired inflation target, not to mention some indirect influence on banks' credit and deposit creation. If this holds true, it follows, furthermore, that central banks do not particularly influence economic growth and employment, not under fractional reserve banking, not in normal times, and not sustainably by emergency measures in times of crisis.

If money is lacking, and central banks were able to inject money into public circulation, the situation would be different. In the present regime, however, the banks are in-between. They are the gatekeepers, deciding on how much new money enters into public circulation at which point in time. The genuine remit of central banks, nevertheless, is the currency and the quantity of money, in particular maintaining the foreign and domestic purchasing power of the money. Wanting to instrumentalise central-bank monetary policy for real-economic goals such as growth and employment has been in the interest of politics. It is supported by Keynesianism and also endorsed, paradoxically, by neoclassical economics which otherwise rejects any kind of interventionism. Central banks, however, do not exert a leading influence on the economic process, they are not even the decisive power in monetary matters. Under today's fractional reserve banking, the overriding monetary power is the banking industry.

¹⁰ Hoffmann, Andreas / Zemanek, Holger 2012: Financial repression and debt liquidation in the US and the euro area, *Intereconomics*, vol. 47, issue 6, Nov 2012, 344–351.

Because of the identity of money and credit in the present banking regime, the banks not only decide on loans and purchases of financial items, but in doing so, they determine monetary policy and whether and to what ends money is created or deleted in public circulation.

This being the case, why then do financial markets attach great importance to the decisions of a central bank's governing council? For once, besides independent investment trusts and the insurance industry, the dominant players on financial markets are the banks themselves, in particular investment banking, investment vehicles (shadow banks) and investment trusts under the roof of banks. If things are not going the way the banks would like to see them go, they would have to address themselves. At the same time, though, they lack a clear understanding of their role as monetary agencies, or do not want to know about it for fear of being held responsible. They certainly feel at ease if responsibility is attributed to the central bank or government. To the banks, 'the power of the banks' is a taboo. Quite naturally, they prefer to go about their monetary-financial activities unmolestedly, have the central banks at their service, and can be confident to be rescued by the central banks and governments in the event of a crisis.

The complexity of financial market dynamics is hard to untangle, and individual actors are thus looking for orientation. The many-voiced interpretations of what central bank governors are saying, or seem to be suggesting, and what has or has not been expected by whom, are reminiscent of Kremlinology during the Cold War. Under conditions of uncertainty, everybody longs for indications and for some rule or routine that would help to reduce the complexity and give some behavioural assurance. Consider, for example, the foretelling of the present trend of interest rates. It appears that the markets believe that the central banks are setting the trend. By setting its own base rate, however, a central bank just gives the markets its opinion on whether the trend will or should continue or come to an end. In the absence of anything reliable, it looks as if central-bank decisions on base rates provide an assuring conditioned stimulus, including an element of self-fulfilling prophecy: base rate down, financial sentiment and markets up; base rate up, sentiment scared and markets undecided or down. If such a mental mechanism is established, it has real consequences. That is why 'forward guidance' is not as fluffy as it may sound. One problem, though, is that the veil over the mystery play must not be lifted. Otherwise, everything would dissolve into the thin air whence it came.

The banks are taking their part in that puzzlement. They pretend that an increase in central-bank rates forces them to raise their own lending interest. Under the 2.5% fractional-reserve regime, however, there is no immediate link between the interest rates of a central bank and those of the banks. If a central bank raises or cuts its rates, this does not exert immediate pressure on the banks to do likewise, certainly not 1:1. The crucial point with fractional reserve banking is that banks can *avoid* refinancing costs on about 90% (USA) to

97% (EU) of banking turnover. But a rise in central-bank rates is of course an excuse for the banks to raise their lending interest. Remarkably, they are not equally prompt to raise deposit interest, or cut lending interest upon a cut in central-bank interest.

Various banks, on an individual and voluntary basis, have adopted the practice of raising and cutting their overdraft rate in line with the interbank rate (EURIBOR) of three months ago. A clear rule like this may help the banks to avoid annoying queries. They thus contribute to believing in a mechanical 1:1 link between the rates on reserves and the rates on bank money—a link that does not exist in this way.

Negative interest

Exasperated by the experience that flooding the banks with reserves at almost no cost has not brought about the desired effects, the central banks are now opening a last frontier in the form of negative interest rates on banks' excess reserves deposited with the central bank. Banks will no longer receive positive deposit interest on reserves, as was the case until a couple of years ago, and the interest will no longer be about zero, as was the case in the last two years, but banks now have to pay interest to the central bank on holdings of reserves. Presently, the ECB's deposit interest on reserves is at -0,2%.

This is a desperate step, a move by someone running out of options. Negative interest will hardly improve the desolate situation, but it may trigger disturbing consequences. The idea was advocated by experts who seem to cling to the myth of effective transmission effects by which central banks have control over banks. Stepping from zero interest into negative-interest terrain is reminiscent of upgrading the Basel rules on bank equity from stage I to II to III to IV, increasing in each step the last dose that turned out to be ineffective, in the hope that the next increase might be the final one that helps, while not caring too much about the risk of severe or maybe lethal side effects.

As far as banks need to hold liquid reserves, they have no alternative to holding the reserves in the deposit facility with their central bank where they are admitted to refinance themselves and have access to the respective payment system. For wanting to avoid negative-interest payments on reserve holdings, the banks are expected to activate and spend the reserves they have not used so far, which in turn is hoped to stimulate more far-reaching economic activity. Foreseeably, it will not work that way.

Individually, banks can simply return idle reserves to the central bank. In case the banks are in need of reserves for carrying out current payments, including their own loans and investments, the central bank will provide the needed reserves anyway, be this in the form of the intraday overdraft which is an integral part of the payment system (drawing on the marginal lending facility), or by participating in main refinancing operations. In order to prevent avoidance behaviour of the banks, these will now have to pay negative interest also on the non-utilised part of the collateral which backs the marginal lending facility. Most

likely, in particular as long as the situation has not been cleared up, the banks will react by wanting to reduce turnover to the necessary. At -0.2% negative interest that reaction may still not be very marked. Basically, though, if there is a reaction at all, it is bound to be counter-productive.

There is another reason for this. From a sectoral or collective point of view, spending reserves on some next best thing in order to avoid negative interest does not make sense, because the outflow in one bank is the inflow in another bank. The entire system of 'co-operative' credit or money creation is based on payments out and in largely offsetting each other. Accordingly, the banking industry in a currency area cannot avoid paying negative interest by spending or lending money. The reserves they expend will come back.

If they feel compelled to do something nevertheless, it might again be to put money into non-GDP financial investment in real estate, stocks or similar, increasing the risk of new bubbles while not helping the real economy. As regards sovereign bonds, banks are not eager to put much money in low-yield or no-yield bonds that are no longer particularly trusted. Above all, banks will continue to be reluctant to lend to firms and households, as firms and households will continue to be reluctant to borrow and invest as long as the economic outlook is negative. As has often been said, in a balance-sheet crisis, the economy will not recover as long as debts have not been paid down or cancelled to a sufficient extent and unsatisfiable financial claims have not been written off.

Ultimately, negative central-bank interest is no different from positive central-bank interest in the sense of following rather than setting the trend. Negative central-bank deposit rates just mirror the crisis-borne deflationary tendencies rather than breaking them. Moreover, rather than initiating a turnaround, negative interest rates might actually contribute to becoming more deeply entangled in deflation. As an instrument of monetary policy, negative interest rates are a mistake.

In the meantime, negative interest on reserves is another welcome excuse for the banks to do likewise and impose negative interest on their customers. For the time being, various individual banks are engaging in this practice, at first just on large business deposits, now also on small private deposits. If the process is not stopped, the new practice will spread across the board. This means that the banks cut their liabilities to the customers to the rate of the negative interest.

Maybe the banks have started in recent years to understand better that M2/M3 deposits are inactivated bank money that does not provide them with liquid payment assets while, in normal times, it costs them deposit interest. Seen from the perspective of a bank, deposit interest represents defensive costs serving to pre-empt a customer outflow to the competition. Such one-sided outflow would send a respective bank into expensive liquidity problems. Retaining their customers allows the banks to carry on with creating additional primary credit without running an additional liquidity risk.

As the trend towards very low and even negative interest rates is generally entrenched for the time being, and as banks proceed in step with each other as they do when extending their balance sheets, they can collectively afford to be a little nastier to their customers. Negative deposit interest will save them entries in the loss account (as is the case with positive deposit interest), and it will give them a positive entry in the profit account while reducing their liabilities to the customers to the same amount. As an alternative to negative interest, higher fees for account management add to the profit account in much the same way.

Customers can try to sidestep into cash. This, however, risks resulting in dysfunctional shortages of cash and may even trigger bank runs. Otherwise, it represents an undesirable backslide into costly and clumsy cash-payment practices. The prospect alone will encourage the banking industry to push ahead with driving out cash – which in turn would reduce the remaining minimal central-bank control over banks all the more.

All this is carried out with a technocratic stance, as if it were about a merely functional question. What about property rights and the constitutional responsibility of the state to protect property? Bankers and politicians who are used to commanding other people's money are quick to belittle the effect of negative interest rates by comparing them with losses of purchasing power through inflation, or with having to pay taxes. Such comparisons come close to disinformation.

Inflation, for once, is anything but economically functional. It benefits the privileged creators and first users of money, even if the latter are debtors, but has to be borne by everybody. Deliberately heating up inflation is as illegitimate as deliberately approving of deflation. Paying taxes, by contrast, is basically legitimate, but can of course be both dysfunctional or useful, unjust or just, depending on the tax under consideration and the overall volume of taxes. The comparison with taxes, however, is out of place anyway, because public coffers do not benefit from negative interest. Negative interest on customer deposits redistributes money from the people to the banks. Moreover, it affects the middle classes, businesses and larger companies, which is economically dysfunctional, and reprieves the fortunes of the rich, who have other options than putting much of their money into bank accounts.

If banks want to earn more, they ought to charge positive fees and interest rates. If the markets do not allow this, the banks have to readjust as everybody else. The banking industry has no birthright to maintain above-average salaries and bonuses even in bad times, which they have helped to bring about themselves.

Economic outlook

Crises in the course of business cycles or financial cycles can be described as resulting from over-accumulation of capital, that is, too many claims of financial stocks that can no longer be met by the actual flow of debtors' income, or, say, over-investment and over-supply no

longer met by demand. In earlier stages of industrialisation, there was no choice but to see it happen, the crash, disastrous as this repeatedly was to crowds of workers and unemployed people, businesses and bankers. The economy eventually recovered, exactly because enough of the exceedingly accumulated assets and debt had to be written off. However, that rough type of industrial capitalism fed violent class conflict and even civil war.

Since the Great Depression after 1929 and the rise of government interventionism ever since, the problem has been mitigated through government deficit spending. This has made cyclical crises less harsh. Over time, however, in particular since about 1975–80, it has led ever more deeply to chronic deficits and the accumulation of overmuch sovereign debt, which in turn has absorbed a growing slice of the tax revenue and hampered governments' ability to act.

What road will we take from here? Still more debt? Ever more monetisation of public and private debt through the central banks? This would just be a continuation of the path towards stagnation and decline. There are now some peculiar experts who want to believe that government debt equals sovereign money creation and is thus different from private debt, and that the government of a nation with its own currency will always be solvent regardless of the size of the mountains of debt on which it is sitting. This is doomed to fail as just another this-time-is-different fallacy.

Until the recent past, economic growth induced by ongoing industrial development has been one cause of crises, but at the same time a great help in overcoming them. Growth helps to absorb excess credit and debt. If appearances do not deceive, however, the times when the transition from traditional to modern economies produced high growth rates are over in the old-industrial world. China, too, now seems to have reached the heyday of its industrial take-off. Whether further newly industrialised nations will step in is unclear. What can be expected, are further long innovation cycles. As the climax of the last such cycle, the IT innovation wave, only occurred around 2000, the next one will probably not take off within the next twenty years.

In parallel to higher GDP growth, which is economically more or less beneficial to everybody, inflation was the other big undoer of an overhang of credit and debt. Rather than being beneficial to everybody, inflation takes its toll on everybody, debt and debtors excepted. However, the current problem is lurking deflation rather than inflation, and the majority in all the groups involved, except debt managers, will not want to see inflation rates rise much above the agreed-upon 2%. Even if central banks wanted the inflation rate to be higher, it is again questionable whether they could do much about it. They would have to continue to engage in QE transactions, while governments would have to fall back to deficit spending on a large scale. This then might actually trigger inflation, but without self-supporting growth. The perspective then would be stagflation.

Meanwhile, the crisis is achieving a little by itself. For the last three years, deposit interest and high-grade bond interest have been even lower than the low inflation rate. This is no negative interest, but a negative rate of real return. In this way, too, the money is losing purchasing power. To R. Rajan, former chief economist of the IMF, this means 'expropriating responsible savers in favour of irresponsible banks'.¹¹ Without wanting to contradict, this statement reflects a rather conservative notion of acquired-status-related justice, in contrast to performance-related justice. There is no categorical right to positive real interest as there is no categorical right to real wage increases. One would be happy if there could be, but it all depends on the productivity of labour, technology and nature. (Capital is not productive, whereas it is, say, catalytic). Outright expropriation of labour begins, to put it in the chilly way of economics, when wages fall below the minimum reproduction costs of living. It turns into slavery or forced labour when the wage approaches zero. But there are no prices and wages below zero. So the real expropriation, to come back to Rajan, happens with outright negative interest rates.

What then remains as a way out of the crisis, beyond growth and inflation, are capital and debt cuts, or austerity, which is to say that debtors and the population of debtor countries alone have to carry the burden of redeeming the debt. In the case of government debt, it seems only fair that both sides bear an appropriate share of the burden. Any one-sided austerity approach is unjust and dysfunctional across national borders. With government expenditure at 50%, GDP will shrink by 0.5% for each 1% less government expenditure that is not compensated for by increased private expenditure (which, unpleasantly, tends to be the case, especially in a crisis).¹² Lopsided austerity creates economic depression, with most unfortunate consequences for society and politics. Lopsided debt cancellation, on the other hand, severely bites into the capital base and the life-time savings of the population in creditor countries.

Conclusion

Summing up what central banks today can do, and what they cannot do, the picture is mixed. They can be effective in managing the foreign exchange value of their currency as far as, in an internationally open economy, this can be in somebody's power. They are highly efficient operators of modern payment systems and equally efficient refinancers of the banks. They are capable of supporting banks and the entire banking sector when these run into liquidity problems or even a solvency crisis. Supporting banks threatened by insolvency is formally excluded from the responsibilities of a central bank, but in actual fact, especially in a crisis, central banks do help troubled banks as much as possible to avoid overt

¹¹ Cited in *The Economist*, 1 Dec 2012, 78.

¹² IMF World Economic Outlook. Coping with High Debt and Sluggish Growth, Oct 2012, Box 1.1, 41–43; also cf. in the same report: Simon, John / Andrea Pescatori / Damiano Sandri 2012: The Good, the Bad, and the Ugly: 100 years of dealing with public debt overhangs, 101–128.

insolvency, and they also help the state and the economy by implementing QE programs that stabilise public and private debt as far as possible.

At the same time, the role of central banks as anytime refinancers in the system of fractional reserve banking hints at the big weaknesses of the central banks with regard to what so far has widely been considered as their major tasks, namely, they in no way exert control over the banks' credit and money expansion, either by the quantity of reserve positions or by interest-rate policy. Under the present conditions, quantity policy is fully inoperable. Base-rate policy is largely ineffective as well, not only with regard to the money supply, but also in terms of inflation or deflation targets, not to mention inflation/deflation of the volumes and prices of assets and debt. In all these respects, central banks are driven by current trends rather than driving them. The fortnightly appearances of the central-bank high priests might be likened to monetary temple oracles. This may help as far as the world of finance and the public beyond believe what they are told and draw behavioural assurance from it.

With regard to their crisis interventions, the central banks have been accused of artificially delaying banking and sovereign insolvencies. This is but the other side of helping troubled banks and governments with ever more liquidity. The criticism thus has a point, especially in view of long-term stagnation ensuing from not letting the situation clear up. On the other hand, denying assistance to banks and, indirectly, governments would be at least as irresponsible in face of the impending consequences in a constellation in which almost all of the money of companies, households and the state is hostage to the banks' balance sheets and payment operations.

In the first place, however, it must be said that the central banks, in fulfilling the role of anytime refinancers of the banks, contribute fundamentally to the recurrent banking and financial problems as far as these are rooted in the system of fractional reserve-banking.

What can be done? The answer has already been given here. Under fractional reserve banking such as it stands today, in which the sovereign prerogatives of money and seigniorage have been ceded to the banks, nothing more can be done than what is being done. The next crises somewhere across the world are just a question of time.

In order to become effective, central banks must be enabled to be true masters of the money system. They need to gain full control of the money by way of monetary quantity policy. No quantity policy is possible, however, as long as the banking industry dominates the monetary system and determines the entire stock of money, while money and capital markets inherently fail to reach some 'equilibrium' and self-limitation. In conclusion, banks must stop acting as monetary quasi-authorities and become purely financial institutions, meaning that the banking industry must be stripped of its monetary power to create and delete money-on-account by creating or deleting primary credit. Banks ought to be free lending and investment enterprises, but just money intermediaries in this without the illegitimate privilege of conducting business on the basis of self-created money.

In the nineteenth century, and for much the same reasons, banks were stripped of their power to issue private banknotes. The monopoly of banknotes was given over to the central banks, many of which were set up in the process. Now the time is ripe for the same to be applied to money-on-account. Bank money should be phased out and central-bank money in public circulation in the form of money-on-account and e-cash phased in, resulting in a sovereign money system with full control of the stock of money. In this way, a state's, or a community of states', monetary prerogatives of the currency (unit of account), the money (means of payments) and the seigniorage (gain from creating money) would be fully completed. Independent public central banks – acting on a well-defined legal mandate, but not taking directives from the government – are the obvious candidates for being entrusted with the functions related to the monetary prerogatives.¹³

Base-rate policy cannot play an important role in this as long as monetary policies are to be market-compatible. Central banks should not be financial central-planning bureaucracies that administer or manipulate interest rates, for these are the prices on financial markets. Central banks ought to be able to fulfil their monetary mandate effectively, but should not cross borders either into fiscal functions or into more far-reaching financial-market functions.

In a plain sovereign-money system, too, central bank rates will be relevant only to monetary transactions, thus representing only a small part of all financial transactions so that central-bank rates cannot be decisive for the entire structure and the level of interest rates. The quantity of money, by contrast, is actually a much more effective lever in this respect.

What is acceptable, moreover, is global credit guidance relating to the use of that part of the money which the banks obtain from the central bank. The ECB program of Targeted Longer-Term Refinancing Operations from June 2014 has introduced such an element, in that funds obtainable under that program are subject to the condition that the money be spent on immediate real-economic purposes (which however—unsurprisingly amidst weak economies, unaccomplished restructurings and persistent financial vulnerabilities—did not produce great effects so far).

To return finally to the unsatisfying economic outlook discussed before. Sovereign-money reform is an option that can significantly contribute to clearing up the situation without causing havoc. It would certainly not solve all problems. But a transition from bank money to sovereign money would create a one-off transition seigniorage that allows more than half of public debt to be paid down, without the wailing of austerity and the gnashing of capital cuts. Moreover, monetary reform would greatly contribute to preventing excessive credit and debt bubbles in the future.

¹³ For more detailed explanations of sovereign-money reform cf. sovereignmoney.eu; positivemoney.org; monetary.org.