Money and Credit in 2050

Perhaps the most surprising thing about the world in 2050 is that we will no longer be using money as we now know it. Not only will we see the disappearance of notes and coins - which it is commonplace to assume will be replaced by ‘electronic cash’ - but also of the type of money we now hold in our bank accounts. Money as non-specific value will have been replaced by credits for specific future goods and services. What are now money transactions will be replaced by networked barter of these credits.

The economic history of the 20th century has essentially been an illustration of the problems created by money. Karl Marx, John Maynard Keynes and Milton Friedman all recognised this, but focussing on different aspects suggested radically different and often opposed solutions.

For Marx the chief problem was money’s ability to multiply the power of owners of productive assets in a way that no longer required the direct force applied by the feudal lords of old. His solution - the state must take over production and distribution. Keynes, while rejecting so jaundiced a view, did see that ‘the essential and peculiar effect of money’ was to allow human psychology - or ‘animal spirits’ - to create mismatches between what could be produced by optimising the use of societies’ resources, particularly human labour, and what was actually produced. The ‘Keynesian’ solution of boosting expectations through government expenditure, while

initially successful, led eventually to a spiral of rising wages and prices, with associated labour unrest. Milton Friedman argued that this was the inevitable result of the discretionary use of monetary power. The supply of purchasing power must, he believed, be rigidly and consistently controlled without the opportunity for government to interfere. Unfortunately, attempts to put this idea into practice in the United Kingdom and in the United States resulted in severe and prolonged economic recessions.

Since then an uneasy truce has developed between Marxian concerns over the power money gives to the initially endowed, the Keynesian desire to stimulate or maintain aggregate demand and the monetarist concerns over the longer term mismatching of money and output. A pragmatic approach has been adopted by most nations. Targeting of consumer price indexes by independent central banks is allied with a cautious approach to public expenditure. A lengthy period of steady growth and price stability for the US economy in particular has encouraged the belief that serious inflation or deflation are problems of the past. But have the problems of money such as those identified by Marx, Keynes and Friedman really been solved or are they just temporarily hidden from view?

Thinking about the money we use today is hampered by an incomplete understanding of what it really represents. It is traditionally taught that money is anything that acts as a measure of value, a means of exchange and as a store of value. But this fails to

distinguish between money that fulfils this purpose through its own intrinsic properties, such as gold, and that which is given value by the social convention of its near-universal acceptability.

Today's money can only be acceptable to us because it represents a claim on something, but on what? Since it does not represent a claim on goods and services already produced - the producers have by far the stronger right to this - it can only represent a claim on goods and services *yet to be produced*. As Wynne Godley of the Jerome Levy Economics Institute puts it:

> [M]oney is generated by the creation of credit, a process essential to the functioning of the real world economy since production and distribution take time and the future is always uncertain*

All this definition lacks is the stipulation that there must be a close relationship between the credit created and the subsequent production and distribution. If the total value of circulating money is thought to exceed that of future production, its relative price will fall - leading to inflation; if it is thought to be less then it will rise - falling prices and deflation. Of course these are aggregate effects, worked out through many transactions, and no-one actually involved in a transaction can have a complete view of all the factors involved.

One factor is the personal value to the buyer of the item relative to any other goods or services which he or she may be able to purchase, or is selling to fund the purchase, such as his or her own labour. But the purchaser also needs to know what proportion of future production the amount of money they are handing over represents. The information required for this is just impossibly complex. We need to know the total potential production for all goods and services and all externalities such as pollution and global warming that will arise from the production and consumption of these. And then we have to predict the ways in which synergies will occur, such as that between education and technology development.

The unique selling point of the market economy is its price-signalling mechanism. Production and allocation of goods and services is decentralised; each transaction serves to adjust demand and supply patterns. But a non-specific money economy defies the ability of anyone to see more than a part of the whole. We see money flowing into and out of our sphere of influence, apparently to and from limitless pools of the stuff. Our price signals have to be given and received using only a fraction of the information we really need. These difficulties are worsened by the existence of multiple currencies. Transactions across currencies increase geometrically the difficulties of making comparative valuations. Little wonder that political and military power governs currency strength rather than any realistic valuation of goods and services traded. The money system tends also to blur distortions of distribution. If a

commodity, like money, appears to be in almost endless supply then however much one individual owns is of little consequence to anyone else.

But while currency unions such as the European Monetary Union attempt to tackle this problem from one angle - enhancing Europe's power to match the dollar or the yen, and removing currency disparities between member states - it increases the information required to assess transaction values in that currency. To set prices in euros we will have to estimate the possibilities for future production right across Europe.

As individuals we have such an impossible task in determining the correct money price in each transaction, that we usually have little choice but to rely on prices that we are given, both as sellers (usually of labour) and buyers. Without the information we need to make the market work for us we have to bow to the superior resources of our employers and the big corporations, who being themselves unable to determine the real value of the goods and services they are creating, adopt profit-seeking as a primary goal.

Such evidence as there is suggests that the perceived total value of money may already be greater than that of total anticipated real goods and services. While consumer price indexes help to defuse this effect for the cost of present consumption while they remain relatively low and stable, this is not so for the total cost of expected lifetime

consumption. Professor John Vickers of the Bank of England has called this latter figure the ‘cost of life’, and it has to include the asset prices which have risen in the UK and the US much more than their consumer counterparts over the past two decades. In the UK annual money supply growth has exceeded annual nominal GDP growth by an average of over one third over the last 20 years. Given the increasing amount of US paper money held abroad - estimated by the US Federal Reserve to be around 53% of the total in 1995 - and the proliferation of overseas ‘Eurodollar’ deposits, the excess of total dollar value growth over US production growth may be at least as great.

The effect of a global money supply whose perceived valuation is in excess of more resource-based calculations of global wealth is to conceal real limits to resources and to the world’s capacity to absorb the adverse effects of production and consumption. Since money is completely interchangeable the illusion is created of resources and sink capacities that too can limitlessly be interchanged. To counteract this failure of market signalling, regulation and taxation regimes are required which are in themselves economically costly.

Whatever estimate of remaining oil reserves is accepted, all sensible analysts predict peak oil production occurring well before 2050 unless there is a drastic reduction in the rate at which we use it. Yet we see no sign of the price signals that would trigger the search for the alternative energy sources needed to avoid a collapse in the prices of

oil-related assets when the production peak is reached and real economic decline as energy becomes scarce. Alongside this goes the accumulating evidence that global warming is a reality. Even if it is not a man-made phenomenon, profound economic and social changes are likely as the global climate hots up by perhaps 0.5 - 1.5ºC over the next 50 years. This prospect is most certainly not factored into the recent years of soaring share prices in London and New York. Moreover, even if the global inequality of resources that a money economy has helped bring about were to become no worse, the ease of global communication will continue to increase their impact. Local conflicts over resources and the problems of individual and population movements from poor to rich (or poor to less poor) countries are bound to increase. It is precisely these sort of prospects that while profoundly affecting future production, are ignored because they cannot be assimilated into any of the partial views held when prices are set under a non-specific money system.

Two current trends offer a glimpse of a better future. The trading of carbon dioxide emissions rights as outlined at Kyoto in 1997 is a partial form of the future production bartering that will replace money. The great advantage of emissions trading over regulation through fines or taxation is that it addresses pollution directly, not just as a money cost. Any considerations over how to trade such emissions are thus based on local environmental, social and economic consequences, not just on the losses a polluter can afford. Secondly, many individuals and companies are rediscovering the benefits of barter, especially when specialised software is used to ease the search for

less frequent coincidences of wants. The International Reciprocal Trade Association, an umbrella body for barter companies, expects 1.2 million businesses in North America alone to be engaged in barter by 2005. These businesses benefit by avoiding the costs of obtaining cash and the direct relationships built between firms producing real goods and services.

In the future the money we currently hold as non-specific value will have to be replaced with credits for specific goods or services whose production is anticipated but not yet realised. These might be housing services, legal services, hairdressing services or indeed commodities still in development. All transactions, including family shopping and the payment of salaries would involve such real commodity allocations. For example, a teacher would be credited for the education services she provided. When she goes shopping she can pay the supermarket with these credits. Working estimates for various common exchanges; potatoes for plumbing services, soap for nursing services, and so on would be held on a computer network and roughly known at any time by both parties. For less frequent transactions specific negotiations may be required, but this will be eased by banks, part of whose role under the new system would be to help people manage their commodity credit portfolios. So if someone has a rather obscure job, a performance artist say, the bank would link up with consumers of performance art across the world and exchange credits for something more readily acceptable to the supermarket. Most of these exchanges could be done electronically and instantly according to preferences which could be reset as required.

The basis of the technology for global future production barter is there, and given the current rate of technical progress it seems certain that a reliable and robust system with universal access could be developed long before 2050. Once efficiency and ease of use are no longer a significant issue future production barter offers tremendous advantages over money. Every transaction will precisely specify what commodities are being exchanged. Each party to a transaction will be much clearer as to the consequences for themselves and the rest of the society of which they are part. It will be possible to compare total claims existing on future petrol production with realistic estimates of oil reserves along with the likely levels of pollution or other externalities resulting from the exercise of these claims.

The accumulation of non-specific wealth by individuals and companies will no longer be possible. All wealth will have to be held as claims on specific commodities. This will have two major beneficial effects. Firstly it will bring into perspective the significance of certain degrees of wealth. We might accept one person owning $1 billion as money. Yet if we were to see that person controlling a significant proportion of the future production of a specific important resource, we would have to wonder about the justice of this.

The change to future production credit will have profound effects on the operation of firms. Instead of non-specific monetary revenue and monetary profits, firms' revenue

and surpluses would be in the form of real commodity claims. Management, employees and shareholders will have a strong interest in ensuring that these commodities are useful to them personally, or at any rate are widely acceptable in exchange.

The provision of money as credit to invest in future production will be replaced by banks' creation of claims to commodities required to start, maintain or expand a business, in exchange for future claims to the production of that firm. In this way banks will have to be much more thoughtful about the overall consequences of their lending. They must be sure that the new claims they are creating are realistic - much easier to do for real commodities as opposed to non-specific value - and that the business has a real chance of producing useful goods or services. Banks, like other firms, will require a much broader base of decision-making if their business is to produce optimal results.

Some sort of taxation would still be required to pay for public goods. Where individuals such as doctors, nurses and teachers or firms provide goods or services direct to the public sector this will be credited against tax liability. Otherwise tax will be paid through the exchange network of banks, in the form of credits for the goods and services required by government.

The macroeconomic benefits of the alternative system would also be considerable. By removing the need to anticipate changes in money prices the self-accelerating inflations and deflations of the economic cycle could be much diminished. The risk of 'demand-push' inflation occuring as a result of too many claims chasing too little production will not be impossible, but it will be much easier to anticipate the demand and supply for specific commodities than non-specific money values for aggregate output and profits. 'Cost-push' shocks such as the oil price rises in the 1970s should be much less damaging. It will always be clear exactly which commodity and derived products have become more expensive, and usually why. In this way practical solutions, rather than stopgap actions such as wage rises or monetary expansion, will be much easier for politicians to sell to their citizens.

When confidence in the present monetary system is damaged beyond repair, we will know better than to turn to centralised planning, yet it is scarcely conceivable that there is another Keynes or Friedman who can convince us that all our system requires is some relatively minor tweaking. Money is responsible for preventing the solution of many of the environmental and social problems which we know we must tackle yet seem all but incapable of so doing. By 2050 money will have become something we can and must do without.

*"Money and Credit in a Keynesian model of income determination". Cambridge Journal of Economics 1999, Vol 23, pp 393-411