

Funding Basic Income by Seigniorage

Joseph Huber¹

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1. Purpose and meaning of the proposal

This contribution deals with the question of how to finance basic income. The proposal put forward here aims at using the annual addition to the stock of money, i.e. funding basic income by the creation of new money instead of levying taxes, or to put it in a slightly different way, replacing a certain amount of taxes by newly created money.

Seigniorage is the public revenue from creating new money issued into circulation. The proposal says, the state – to be more precise, the central bank as an independent public authority – should have restored the prerogative of creating *all* of the official money, so that the public purse can enjoy full seigniorage from creating the quantities of new money necessitated by the economy, and the money can be spent for a widely accepted purpose such as a basic income scheme.

The proposal of restoring full seigniorage is called seigniorage reform. It is based on research I have been carrying out since 1995/96 (Huber 1998, 1999), in parallel with James Robertson who had started to think along similar lines (Robertson 1999). During the last year we have been working together on a joint

¹ Professor of Economic and Environmental Sociology at the Martin-Luther-University of Halle, Germany. Copies and contact at Institut für Soziologie, Abderhaldenstr. 7, D-06099 Halle an der Saale, Tel. +49 – 345 – 552 42 51, Fax +49 – 345 – 552 71 50, huber@soziologie.uni-halle.de, or at <http://www.soziologie.uni-halle.de/huber>.

report „Creating New Money« for the New Economics Foundation in London (Huber/Robertson 2000). This paper is derived from that report.

Seigniorage reform and funding basic income are two different things. They do not necessarily need to be combined. But linking basic income to seigniorage reform could be a lucky liaison because it can strengthen support and acceptance for both.

The idea of a basic income is in principle widely accepted, unless it is linked to higher taxes. But higher taxes are exactly what most experts and politicians expect from the introduction of a basic income scheme, because such a scheme is thought to be more expensive than comparable welfare payments today. During the 1990s we have definitely entered a new neoliberal era of cutting taxes and reducing government expenditure. Any reform proposal which suggests higher taxes is bound to get stuck. So the two or more decades we have been awaiting now basic income could easily turn into some kind of „waiting for Godot«. If, by contrast, one were able to propose a method which allows for both funding basic income and even *decreasing* taxes at the same time, that could actually improve chances of being heard.

2. The cost of basic income, matched by the annual increase in the stock of money

As shown in table 1, the estimated cost of a basic income scheme e.g. in Germany in the mid 90s would have been, roughly speaking, at about ? 50 billions per annum. The average annual increase in the stock of money M1 was at about ? 55 billions. This can be taken as empirical evidence that the proposal of funding basic income by seigniorage is a realistic one. The specifications of that basic income scheme fully include today's social assistance, education and training allowances, and unemployment aid, as well as partially low wages, unemployment insurance, and old age pensions as far as they are supplemented below certain limits.

These or similar specifications of a basic income scheme may be controversial, especially with regard to ongoing controversies over whether or not basic income should be „unconditional« or „means-tested«. But this is not too important here. Even if the cost of a basic income scheme would be higher than estimated in table 1, or the increase in the stock of money would have to be lower than it was during that period of time, it wouldn't change too much the overall picture. Funding of the total cost of basic income can easily be split to any proportion required between newly created money and tax-levied money. The important thing is that seigniorage will constitute a major contribution to the public purse so that the government can pay for welfare allowances to a considerable degree without

having to draw on the taxpayer's money. This truly opens up the perspective of being able to introduce a basic income scheme *and* to reduce the tax burden at the same time.

3. Defining and measuring the amount of money in circulation

In order to be clear about the items which represent money, have a look at tables 2 and 3. Today's stock of money consists of the monetary aggregate called M1. It includes the cash and the sight deposits in public circulation. In our understanding, coins, banknotes, and sight deposits in current accounts (including bankers' deposits) are the only items which can be referred to as money. Any other monetary item isn't money but some kind of short-term oder long-term capital. The best prima-facie-test to distinguish money from non-money is to ask whether these items represent full liquidity that can directly be transferred for carrying out regular payments. E.g. one doesn't pay with a savings booklet or by transferring a time deposit. Such deposits have to be converted into a sight deposit on a current account before the equivalent can be transferred or withdrawn. So the amount of money which is the key reference for seigniorage reform is today's M1.

Table 4, columns 1–5, show the amount of the circulating stock of money as measured in M1 and its recent growth in the Euro area, the UK, the U.S. and Japan. The quantities of money involved are important, and thus of particular interest with regard to funding basic income – which raises the question why governments, especially under budgetary constraints, do not really benefit from these quantities today, and who are those to whom most of the benefit from creating that money goes?

4. How money is created by whom

There are three actors who create money and among whom the benefit of it is, though very unequally, divided: the government, the central bank, and the commercial banks.

In former times, before banknotes became widespread, the only money in circulation was precious coin. The coins were exclusively produced in the Mints of feudal Seigneurs on local as well as national levels. The authorized individual Seigneurs had the prerogative to stamp their seal upon and to issue the new coins into circulation. If, e.g., the mining and coining of 100 Louisdors or Silbertaler cost, say, 20 Louisdors or Silbertaler, the Seigneur enjoyed as seigniorage an 80-per-cent-profit from the creation of that money, because the Seigneur issued the money by spending it at a purchasing power of 100, whereas the production cost of it was just 20. Modern governments continue to have the prerogative of coining. But since banknotes became the dominant form of cash, and cash has started to

decline due to the rise of non-cash money and cashless payment practices, the stock of coins actually count for less than 1% of M1. Annual government seigniorage from coining has become even more negligible.

Banknotes stem from the central banks. Since about 100 years they have the prerogative of printing and issuing such notes. Banknotes are issued to the commercial banks against charging the banks' operational account, i.e. the current account of banks with the central bank where they are licensed to refinance. At first glance it could appear that central banks do have seigniorage from exchanging banknotes against bankers' deposits. A second look, however, reveals that this is not true, because the bankers' deposits nowadays stem almost entirely from the central bank itself. Bankers' deposits in an operational account with the central bank are non-cash money the central bank has credited to the banks. So banks pay for the notes with money that has been created by the central bank, which actually means, the central bank pays for itself. Exchanging coins, notes and sight deposits against each other is no act of creating money, simply of exchanging money already in circulation.

What remains as a profit-spinning practice of money creation in the two-tier banking system of both the central bank and the banks is: the creation of non-cash money by granting loans. Central banks create deposits in operational accounts for the banks, and commercial banks create sight deposits in current accounts for the public, by granting credit (loans). These do usually not have to be payed out, neither as cash from a banks' till nor as non-cash reserve from a bank's operational account with the central bank.

The act of creating a sight deposit consists of a double entry in the books – one entry as a credit note on the customer's current account constituting a liability to the bank, and another entry that charges the credit account of the bank in constituting a claim on the customer. After sight deposits have been created in this way they continue to exist as a cash credit (loan) which the customers allow the bank, although „allow« is somewhat exaggerated because customers are happy not to have to walk around with bags full of cash or to have to send parcels stuffed with banknotes in order to meet their liabilities. Customers are happy to enjoy the convenience and safety of cashless payment practices.

It should be noted that sight deposits represent money being used by the public, not by the issuing bank; and when the loan is being paid back, the book-entries are extinguished on both sides of the balance sheet, and with that the amount of money involved ceases to exist (reflux principle). Banks do not create their *own* money, but they create sight deposits which they remain liable for, as a means of payment for the public. Furthermore, banks are not allowed to create the sight deposits in a currency of their own. What they really do is just create a parallel means of payment in the currency of their central bank.

The trick with sight deposits basically is: they represent reserves that have never really to be payed out. In the end it makes no difference if one considers the bank's cash as a reserve for the sight deposit, or the bank's deposits in its central bank's operational account as a reserve for both cash and sight deposit. The reserve base involved has not really to be payed out. The reason is that any outflow from the system is simultaneously an inflow to the system.

5. Special banking profits, tantamount to money taxes in disguise

The banking sector creates credit ex nihilo, virtually out of thin air, though at a certain overhead and transaction cost. Through the creation of sight deposits the banking sector creams off a considerable special profit, because these credits (loans) are for zero debit-interest to the banks who charge their loan-taking customers the full capital market credit-interest. So their profit as to this fraction of the business is not, say, 9% credit-interest less 4% debit-interest = 5% normal margin gain, but 9% credit-interest less 0% debit-interest = 9% margin gain = 5% normal margin gain plus 4% supernormal special profit.

So we can conclude that central banks don't have seigniorage from printing banknotes. What they have instead, and what also the private banking sector has to a much larger extent, is the benefit of a special banking extra profit. This special banking profit should not be confused with seigniorage. The facts involved in seigniorage and special banking profits are quite different.

Since the creation of money is free and the money base (the stock of money) is a public good, the interest taken in by the central bank and the special banking profit of the banks actually *are* tantamount to money taxes. Like any tax, a central bank's interest intake (less operational expenditure) has to be delivered to the public treasury. In the case of the sight-deposit-creating banks the special banking profit is tantamount to a *private* tax, a privileged club levy, which is part of the banking sector's operational profit. Because of the ongoing growth of cashless payment practices, accelerated by information technology, private „money taxation« by the commercial banks is bound to become ever more important. Already about 80–95% of a nation's annual increase of M1 are now sight deposits created by commercial banks. For a couple of reasons banks don't need much operational reserves any longer. So the private banking profits from money-creation have started to exceed public ones by far.

Private taxation is a feature totally at odds with the public consensus we live in. The yield of the central bank's „money tax« on M0 at least flows to the finance ministry for public purposes. The bank's private „money tax« on sight deposits, however, flows to the shareholders and the employees of the banking business. If the public „money tax« on M0 taken in by central banks is questionable, the private „money tax« taken in by the banking business is a political scandal.

The amount of the „money taxes« disguised as interest is important. Table 5, line C, shows the total of „money taxes«, i.e. central banks‘ and commercial banks‘ special profits from the creation of operational and sight deposits. In 1998 these were \$55.7 bn in the USA, £23.9 bn in the UK, DM45.3 bn in Germany, and ¥4,087 bn in Japan. Is it not amazing for such an important amount of special banking profits to go almost unnoticed?

6. *Seigniorage reform: Declaring sight deposits as legal tender, and restoring the public prerogative of creating it*

Seigniorage reform is designed to put an end to the unequitable and dysfunctional situation of having private banks cashing in special profits from creating a public good, and governments staying away while having difficulties with financing their budget. Seigniorage reform requires two things:

1. to restore the prerogative of the state to issue all of the official money as legal tender, and to capture as public revenue the seigniorage that arises from issuing it. Central banks should exclusively create all of the quantities of new money they decide are needed to increase the money supply, by crediting it to their governments as public revenue. Governments should then put it into circulation by spending it, preferably for basic income.

2. It should become infeasible and be made illegal for anyone else to create new money denominated in an official currency. Commercial banks will thus be excluded from creating new credit as they do now, and be limited to loan-broking as financial intermediaries.

Restoring seigniorage and ending the creation of money by the banks would be surprisingly simple. The monetary and financial institutions need not to be changed. Their organisation will completely stay the same. Almost all the everyday routines of the banking and financial markets will continue as if nothing had happened. No one’s monetary possessions, including the banks’, will be touched. Nothing will be expropriated. Of course, the reform will not be uncontroversial. But once the political will is there, the required legal and technical measures will be straightforward.

In order to enact the public prerogative of creating all of the official money, the existing prerogative to create legal tender will have to be extended to include, in addition to cash, sight deposits in current accounts. Thus seigniorage reform recognises what we all know, i.e. sight deposits will also legally become what they already are as a matter of fact: plain money, just as cash is, but now as legal tender created as a common with a public benefit, and no longer as private money created for profiteering purposes. The state prerogative of creating money, which has applied to coins and now generally applies to banknotes too, will be extended to non-cash money. As the status of legal tender was extended from coins to

banknotes from around 1700 on, so it will now be extended to sight deposits, reflecting the overwhelmingly important role that non-cash money now plays.

This will require a simple but fundamental change in the law. It is most clearly illustrated by the change needed in the Statute of the European System of Central Banks and the European Central Bank. Article 16 of the European Statute is titled „Banknotes«. It reads as follows:

„...The Governing Council shall have the exclusive right to authorise the issue of banknotes within the Community. The ECB and the national central banks may issue such notes. The banknotes issued by the ECB and the national central banks shall be the only such notes to have the status of legal tender within the Community.«

The changed version could be titled „Legal Tender«:

„...The Governing Council shall have the exclusive right to authorise the issue of legal tender within the Community. Legal tender includes coin, banknotes, and sight deposits. The ECB and the national central banks may issue such means of payment. Coin, banknotes, and sight deposits issued by the ECB and the national central banks shall be the only means of payment to have the status of legal tender within the Community.«

Such a reformulation of the existing law will establish the prerogative of creating official money in a contemporary form. It will put beyond doubt that the institution in charge is the central bank, and that central banks are no longer the private businesses they once were. They will be formally recognised for what they now actually are: a public authority central to the monetary system, responsible for creating and regulating the stock of all official money within their realm. They will fulfill this task from a position of independence, comparable to the kind and degree of independence courts were given long ago.

Today, there is a mixed money base made up of one kind of money (cash and bankers' deposits, which are plain money) created by the government and its central bank, and another kind of money (sight deposits) created by the banks. Generalizing plain money still implies a two-tier banking system, but it does not mean having a mixed money base any longer, instead, just one kind of money from a single source, easy to understand, to handle and to keep control of.

In this sense, seigniorage reform is based on the concept of *plain money*, as being different from the current non-homogenous *reserve system*. The stock of money in circulation will no longer be composed of different types of „reserves«, such as cash, or bankers' operational deposits, and money surrogates such as demand or overnight deposits (= today's sight deposits). There will be just one homogenous quantity of plain money, be that cash as coin and notes, or non-cash as sight deposits in current accounts or on cards, flowing in any of these interchangeable forms freely and easily from everywhere to anywhere for whatever purpose money is allowed to serve.

7. *How to stop the creation of sight deposits by commercial banks*

7.1 *Historical approaches*

The second thing that needs to be achieved by seigniorage reform is to stop the creation of sight deposits by the banks. Within the current reserve system, banks cannot be prevented from creating them – partly because of the technicalities of the existing conventions of bank accounting.

Different approaches have been put forward as a solution to the problem. One was the concept of stamp scrips invented by Silvio Gesell (1919) which attracted support in Central Europe and the United States in the years around 1930. I want to stress that Gesell's approach has nothing in common at all with the plain money approach and seigniorage reform put forward here.

Another influential programme of the 1920s and 1930s was the proposal of debt-free social credit put forward by C.H. Douglas (see Hutchinson/Burkitt 1997, Munson 1945, Mairet 1934). A more recent contribution is that of a general public prerogative of money creation put forward by Pahlke (1970) and Gocht (1975) independently of each other.

Among the predecessors of these reformers were two of the most eminent U.S. presidents. One was Thomas Jefferson (1743–1826) who was convinced that „the issuing power of money should be taken from the banks, and restored to the people to whom it belongs«. The other was Abraham Lincoln (1809–1865) who urged that „the government should create, issue and circulate all the currency and credit needed to satisfy the spending power of the government and the buying power of consumers« (de Maré 1999).

Perhaps the most influential approach to monetary reform was the 100%-money proposal put forward by Irving Fisher (1935) also known as the plan for 100%-banking. It was called the Chicago plan after a group of Chicago economists, among them Henry Simons and later Milton Friedman (Simons 1948, Friedman 1948, 1959, 1969b, Hart 1935). The 100%-banking proposal continues to be seen as a possible answer to the problem, and has been the only reform approach

respected inside the ivory towers of academia. The plan wanted the banks to be forced to hold a cash reserve of 100% matching every sight and savings deposit. This means, these deposits, being non-cash, would be backed by cash holdings of the same amount. In this way deposits would become again the true and safe cash deposits they were thought to have formerly been.

The Fisher and Friedman proposals were important. But the weakness of the 100% plan was its failure to perceive that the nature and functions of money were now purely informational. Money had developed over the centuries from being special commodities, like gold, to being pure information. But the 100% reformers still saw money as cash. Fisher referred to cash as „actual physical money« (1935 62). They wanted cash to play the traditional role that gold had played. They did not ask if it really made sense to „cover« one type of purely informational money that had been freely created *ex nihilo*, by another of the same kind. In this respect the Chicago plan was based on questionable concepts of money, deposits and capital. It also raised problems of how to manage the transition to 100%-banking and how to operate the new system. Not least, the plan was backward-looking, actually conserving the obsolete reserve system rather than overcoming it (details in Huber 1998, 1999).

I shall not discuss in greater depth here how far the above mentioned authors made lasting contributions to a better understanding of monetary affairs, how far they may have created fallacies of their own, and how far the appeal of their reform programmes in their time may have been overtaken historically by events and circumstances since then.

7.2 The plain money solution: Taking customers' current accounts off bank balance sheets.

The solution is, in fact, simpler than those past proposals suggest. It follows directly from declaring sight deposits to be legal tender. It is to take bank customers' current accounts off bank balance sheets, and recognise formally what they now actually are: accounts containing plain (non-cash) money which belongs to customers, just as customers' wallets and purses contain cash that belongs to them.

Under seigniorage reform money will enter into circulation as debt-free seigniorage. So the debt or liability feature of current accounts will disappear, whereas the asset feature for customers will remain – with sight deposits as official means of payment belonging to the holders of the accounts. Thus, sight deposits will become what the amended law will require them to be: plain non-cash money, and not, from the banks' point of view, a claim to be repaid money or a liability to eventually have to pay out cash.

So a simple legal declaration will convert traditional sight deposits from being part of the banks' balance sheet, to being current accounts containing non-cash money apart from the banks' balance sheet, just managed by banks as a service to their customers. The little change in the law concerning bank accountancy and managing accounts should come into force on the same set date as the change in the law on legal tender.

By detaching current accounts from the banks' balance sheet, the problem of how to prevent banks from creating non-cash money will be solved. Banks need not be forbidden to create sight deposits. They will no longer be able to. As a direct consequence of the conversion, bank loans to their customers will be paid by banks out of their own already existing stock of plain money held in their operational accounts with the central bank, into the current accounts of their borrowing customers. Those accounts will merely be managed by banks for their customers, as a basis for the payments services and cash facilities which the banks will provide and manage for them. The money in them will no more be part of the bank's own business, than banknotes in a person's wallet are, or than the bonds and shares a bank or a stock broker may be managing for a customer belong to the bank or broker. In this way, the plain money approach and seigniorage reform achieve very simply what the earlier proposal for 100% banking wanted to simulate artificially in a much more cumbersome way.

A bank's own money will exist either as cash in the bank's till or as non-cash money in its operational account with the central bank. When banks wish to make loans to customers, they will finance the loans by taking the money from their own tills or accounts. The greater part of that money will have been borrowed for the purpose by the banks from bank customers and other banks. It will be transferred from customer-lenders' current accounts at their bank (or from bank-lenders' operational accounts at the central bank), into the loan-broking bank's account at the central bank, and thence into the current account of the borrowing customer. The stock of circulating money will thus remain unchanged – except for the additions created by the central bank and spent into circulation as public expenditure, preferably for basic income. That will be the setting in which banks will continue to be money brokers – loan-facilitating intermediaries – but no longer creators of sight deposits.

There are some accountancy procedures which would have to be explained now, concerning the status of sight deposits in the balance sheets of customers, banks, and the issuing central bank, and a transitional accountancy procedure of phasing out old loans. In the present context, the focus of which is on funding basic income by seigniorage, this would perhaps go too far, and I want to ask the audience/readers who are interested in these questions to refer to the sources (Huber/Robertson 2000 23–30, Huber 1999 16–21).

8. Impacts and advantages

Seigniorage reform, and the involved step from today's opaque and inherently unstable and unsafe reserve system to plain money, do not necessitate particular changes of institutional and market structures. Simply, banks would be loan brokers and no longer be credit creators. They would lose today's special profit from the creation of sight deposits. Apart from that, the normal profitability of the banking business will remain untouched. Banks would be able without any restrictions to continue to carry out every kind of business they do now, e.g. managing deposits and transfers of their customers, granting loans to whomever they consider creditworthy, investing in finance market papers such as bonds or equity shares for their customers and for themselves, offering any variety of financial products, etc.

There are three main advantages from plain money, regarding a) constitutional order, b) more financial stability, and c) broad-based economic viability. – As regards the constitutional order, we face a fundamental choice today between either money as a public good, and renewed public control of the money base, or private money beyond public control. This is a question of constitutional importance indeed, particularly in view of the role of money – separate from and complementary to the law – as the most important instrument of economic and societal control. It's in no way a question of nationalizing banking; it's simply a question of completing the national money base, and regaining control thereof under conditions of the information age.

Most people who hear the first time that modern money is created freely ex nihilo, and that legal tender can also be phased into circulation in a debt-free way by funding a basic income scheme, make an instant, almost instinctive association with „printing money«, in effect expressing fears of inflation. Wouldn't governments start to print too much money, thus accelerating inflation? Realities, however, now and after seigniorage reform, are just the opposite. Today it is the private banking sector that prints as much money as seems profitable, whereas the governments are no longer able to print money, and the central banks are no longer able to effectively control the creation of money by the banks. After seigniorage reform, with a transparent stock of plain money, it will be much easier for central banks to keep control of the quantity of money, to decide how much new money is needed in a given period of time. Governments will continue not to be able to print money.

Seigniorage reform is not about creating *more* money, it is about creating money *differently*. Different will be the single source of money (central banks in a position of monetary independence) and the effectiveness of monetary control. Hence, insofar the quantity of money contributes to tendencies of inflation,

disinflation or deflation, one can clearly say that price stability will definitely be enhanced. This is all the more true, since plain money will come debt-free. It will constitute a money base free of interest and redemption. This contributes in itself to a lower base level of interest rates and prices.

In this way, plain money would be more sound and stable, and also completely be safe, because when a bank fails, the sight deposits in the bank are no longer at stake. Greater financial stability transmits itself directly into greater stability of business cycles. Overshooting of the markets in peaks and troughs would be smoothed considerably. Together with the non-inflationary effects, this would in turn stabilize a currency's foreign exchange value.

Seigniorage reform definitely renders possible both a lowered tax burden and a lowered interest burden on the economy. Both result in higher levels of net income and an extended capital base for both firms and private households, making them less dependent on subsidies and allowances as well as external capital, facilitating investment and employment, and leaving firms and people better enabled to make their own choices in struggling through life. So, while funding basic income, seigniorage on the basis of plain money will also contribute to reduce the number of people who are in need of being supported by the welfare state.

Table 1
Expectable Cost of a Basic Income Scheme

Welfare payments today's function	Degree of substitution by basic income	Amount today (mid 90s) DM billions	Expectable amount under conditions of seigniorage and plain money
Low wages	Supplementary payments below a certain limit	5 – 10	10
Social assistance	Fully replaced	50	30 – 40
Education and training allowances	Fully replaced	3 – 4	5 – 10
Unemployment aid	Fully replaced	20	10
Unemployment insurance	Supplementary payments below a certain limit	7 - 9	3 – 5
Old age pensions	Supplementary payments below a certain limit	34 – 41	25 – 30
Other	Supplementary payments below a certain limit	- - -	2 – 5
Total (billions of DM)		119 – 134	85 – 110

Expectable cost of basic income	DM 85 – 110 ? 43 – 56 [» 50]
Annual increase of M1 (5 years average)	DM 101–117 ? 52 – 60 [» 55]

Table 2
Synopsis of Monetary Terms, simplified

Monetary »Content«	Gold ¹	Coins	Notes	Sight deposits = Non-cash money	Time deposits	Savings deposits	Further such depos.	Securities, Bonds, Equity, or others
Monetary »Container«	Nostalgic display cabinet	Pocket, purse or wallet		Current account	Special accounts ² = Short-term capital accounts			Capital accounts
Monetary aggregate		M0						
		M1						
		M2						
		M3 / M4						
Monetary status	Out of circulation	Circulating Money = Instant full liquidity = Means of payment for transaction purposes = medium of exchange			»Near-money« = Not money = Short-term capital = "store of value"			Long-term capital = "store of value"

1) or any other material commodity such as land, industrial plants, goods, resources/energy.

2) Accounts with limited or no access. Deposits not available until agreed maturity up to 2 years (time deposits) or redeemable at notice up to three months (traditional savings accounts). Increasingly, however, such accounts offer availability of money any time. Nevertheless such deposits have to be converted in a sight deposit before cashless payments can be carried out.

Table 3
Monetary Aggregates

Cash	=	coin	+	banknotes
M0	=	cash	+	bankers' operational deposits
M1	=	cash	+	customers' sight deposits
M2	=	M1	+	time deposits (up to two years) + savings deposits
M3	=	M2	+	money market fund shares/units + debt securities (up to 2 years)
M4	=	cash	+	all types of retail and wholesale deposits including building society deposits
M	=	cash in public circulation	+	banks' cash + sight deposits (i.e. all chequeable deposits) + a fraction of bankers' operational deposits

Table 4
The Stock of Money in Circulation
 Recent growth of M1, today's M, and M after seigniorage reform in the USA, UK, Euro area, Germany, and Japan.
 Billion units. Non-statistical explanations see accompanying text

M1 today						M under present conditions					Future M after seigniorage reform					
	A Cash ²	B Sight deposits ³	A + B = M1	D M1	Δ M1 3 years average	C Banks' cash ⁴	D Oper. Depo- sits 50%	C + D + M1 = M	D M	Δ M 3 years average	E 30% of M2-spec. deposits ⁵	F Future oper. depo- Sits ⁶	E + F + M = Future M	Future D M ⁷	Future Δ M 3 years average	
USA US-Dollar																
1990	247	578	825			186	0.83	1,012			736	93	1,841			1990
1991	267	630	897	72		186	0.51	1,084	72		745	93	1,922	81		1991
1992	293	732	1,025	128		186	0.58	1,212	128		723	93	2,028	106		1992
1993	322	807	1,129	104	101	193	0.53	1,323	111	104	708	97	2,128	100	96	1993
1994	354	796	1,150	21	84	182	0.58	1,333	10	83	706	91	2,130	2	69	1994
1995	372	755	1,127	-23	34	194	0.65	1,310	-23	33	757	97	2,164	34	45	1995
1996	394	688	1,082	-45	-16	201	0.71	1,284	-26	-13	823	101	2,208	44	27	1996
1997	424	651	1,075	-7	-25	228	0.84	1,304	20	-10	892	114	2,310	102	60	1997
1998	459	635	1,094	19	-11	217	0.79	1,312	8	1	992	109	2,413	103	83	1998
1999	505	604	1,109	15	9	236	0.66	1,346	34	21	1,056	118	2,520	107	104	1999

² 4 - 6 % of which are coin, 94 - 96% banknotes.

³ Sight deposits = overnight deposits = all chequeable deposits

⁴ If source data are not available, banks's cash is accounted at 15% of currency.

⁵ M2-specific deposits = M2 - M1. M2 in USA = M1 + Retail MMMFs + Savings + Small Time Deposits. In Europe without MMMFs (Money Market Fund shares/fund units/paper).

⁶ 50% of today's cash in the banks' till

⁷ Future Δ M = the potential of seigniorage if it existed today.

M1 today						M under present conditions					Future M after seigniorage reform					
	A Cash ⁸	B Sight deposits ⁹	A + B = M1	D M1	Δ M1 3 years average	C Banks' cash ¹⁰	D Oper. Depo- sits 50%	C + D + M1 = M	D M	Δ M 3 years average	E 30% of M2-spec. deposits ¹¹	F Future oper. depo- Sits ¹²	E + F + M = Future M	Future D M ¹³	Future Δ M 3 years average	
UK Sterling																
1993 ¹⁴	20.4	194	214			3.1		217			54	1.5	273			1993
1994	21.7	200	222	8		3.3		225	8		56	1.6	283	10		1994
1995	23.2	224	247	25		3.5		251	26		57	1.7	310	27		1995
1996	24.7	241	266	19	17	3.7		270	19	17	59	1.8	331	21	19	1996
1997	26.3	313	339	73	39	4.0	0.08	343	73	39	96	2.0	441	110	53	1997
1998	27.8	339	367	28	40	4.2	0.13	371	28	40	105	2.1	478	37	56	1998
1999 ¹⁵	29.3	389	418	51	51	4.4	0.09	422	51	51	101	2.2	525	47	65	1999
Euro area																
1997 ¹⁶	311	1,284	1,595			52		1,647			618	26	2,291			1997
1998	324	1,453	1,777	182		59		1,836	189		635	30	2,501	210		1998
1999 ¹⁷	329	1,543	1,872	95		62	0.35	1,934	98		638	31	2,603	102		1999

⁸ 4 - 6 % of which are coin, 94 - 96% banknotes.

⁹ Sight deposits = overnight deposits = all chequeable deposits

¹⁰ If source data are not available, banks' cash is accounted at 15% of currency.

¹¹ M2-specific deposits = M2 – M1. M2 in USA = M1 + Retail MMMFs + Savings + Small Time Deposits. In Europe without MMMFs (Money Market Fund shares/fund units/paper).

¹² 50% of today's cash in the banks' till

¹³ Future Δ M = the potential of seigniorage if it existed today.

¹⁴ 1993-96 Notes and coin + non-interest-bearing + interest-bearing sight deposits (Mon.Finan.Stat., table 12.1). 1997-99 M1 of the EMS for the UK.

¹⁵ October 1999

¹⁶ March 1998 first available figure

¹⁷ October 1999

M1 today						M under present conditions					Future M after seigniorage reform					
	A Cash ¹⁸	B Sight deposits ¹⁹	A + B = M1	D M1	Δ M1 3 years average	C Banks' cash ²⁰	D Oper. Depo- sits 50%	C + D + M1 = M	D M	Δ M 3 years average	E 30% of M2-spec. deposits ²¹	F Future oper. depo- Sits ²²	E + F + M = Future M	Future D M ²³	Future Δ M 3 years average	
Germany Deutsche Mark																
1992	227	469	696	70	77	23.9	0.59	720			318	12	1,050			1992
1993	239	514	753	57	49	27.8	0.39	781	61		354	14	1,149	99		1993
1994	251	538	789	36	54	26.2	0.41	816	35		352	13	1,181	32		1994
1995	264	579	842	53	49	27.3	0.42	870	54	50	357	14	1,241	60	64	1995
1996	276	670	946	104	64	30.3	0.43	977	107	65	379	15	1,371	130	74	1996
1997	247	691	938	-8	50	30.8	0.37	969	-8	51	396	15	1,380	9	66	1997
1998	242	762	1,004	66	54	29.9	0.31	1,034	65	55	437	15	1,486	106	82	1998
1999 ²⁴	242	792	1,034	30	29	26.6	0.21	1,061	27	28	435	13	1,509	23	46	1999

¹⁸ 4 - 6 % of which are coin, 94 - 96% banknotes.

¹⁹ Sight deposits = overnight deposits = all chequeable deposits

²⁰ If source data are not available, banks' cash is accounted at 15% of currency.

²¹ M2-specific deposits = M2 – M1. M2 in USA = M1 + Retail MMMFs + Savings + Small Time Deposits. In Europe without MMMFs (Money Market Fund shares/fund units/paper).

²² 50% of today's cash in the banks' till

²³ Future Δ M = the potential of seigniorage if it existed today.

²⁴ August 1999

M1 today						M under present conditions					Future M after seigniorage reform					
	A Cash ²⁵	B Sight deposits ²⁶	A + B = M1	D M1	Δ M1 3 years average	C Banks' cash ²⁷	D Oper. Depo- sits 50%	C + D + M1 = M	D M	Δ M 3 years average	E 30% of M2-spec. deposits ²⁸	F Future oper. depo- Sits ²⁹	E + F + M = Future M	Future D M ³⁰	Future Δ M 3 years average	
Japan Yen																
1990	34,443	85,518	119,961			5,166		125,127			95,753	2,583	223,463			1990
1991	35,263	94,371	129,634	9,673		5,289		134,923	9,796		95,643	2,645	233,211	9,748		1991
1992	36,040	96,064	132,104	2,470		5,406		137,510	2,587		94,466	2,703	234,679	1,468		1992
1993	37,505	99,132	136,637	4,533	5,559	5,626		142,263	4,753	5,703	95,063	2,813	240,139	5,460	5,559	1993
1994	39,074	104,281	143,355	6,718	4,574	5,861		149,216	6,953	4,764	97,137	2,931	249,284	9,145	5,358	1994
1995	41,646	120,043	161,689	18,334	9,862	6,247		167,936	18,720	10,142	96,776	3,124	267,836	18,552	11,051	1995
1996	44,789	133,078	177,867	16,178	13,743	6,718		184,585	16,649	14,107	96,706	3,359	284,650	16,814	14,837	1996
1997	48,905	144,759	193,664	15,797	16,770	7,336		201,000	16,415	17,261	98,091	3,668	302,759	18,109	17,825	1997
1998	50,937	153,792	204,729	11,065	14,347	7,641		212,370	11,370	14,811	101,046	3,821	317,237	14,478	16,467	1998

²⁵ 4 - 6 % of which are coin, 94 - 96% banknotes.

²⁶ Sight deposits = overnight deposits = all chequeable deposits

²⁷ If source data are not available, banks' cash is accounted at 15% of currency.

²⁸ M2-specific deposits = M2 – M1. M2 in USA = M1 + Retail MMMFs + Savings + Small Time Deposits. In Europe without MMMFs (Money Market Fund shares/fund units/paper).

²⁹ 50% of today's cash in the banks' till

³⁰ Future Δ M = the potential of seigniorage if it existed today.

Sources: The Federal Reserve Board of the United States, www.bog.frb.fed.us, Releases, Historical data, tables 1, 2, Assets and liabilities of commercial banks in the United States/Cash assets

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Deutsche Bundesbank, www.bundesbank.de, Monatsberichte, Tabelle II.2, IV.1, V.2,

Bank of Japan, www.boj.or.jp/en, Long-term time-series data, Money stock (old basis), Central bank discount rates.

Table 5
**Seigniorage and Special Banking Profits from the
 Creation of Money.** Billion units.

	USA \$	Euro Area ?	UK £	Germa ny DM	Japan Y
A. Central bank annual surplus ¹	1997 20.8 1998 18.4	Data not yet avai- lable	1998 ² 2.50 1999 ² 2.74	1997 24.2 1998 16.2	1999 2,241
B. Commercial banks ⁴ estimated special profit in 1998/99 ³	37.3	57.9	21.4	29.7	1,846
C. (A+B) Total of special banking profits in '98	55.7	---	23.9	45.3	4,087
D. Average annual ΔM ⁴ after seigniorage reform	105	156	42	65	16,294
E. (C+D) Possible relief of the real economy	160	---	66	110	20,381
Following figures as of '98 or '99					
F. Public revenue from money creation today ¹	18.7	-	2.92	17.2	2,407
G. Seigniorage foregone ²	31.7	89.9	46.6	59.4	10,429
H. Public revenue fore- gone ³	13.3	-	44.1	43.2	8188
I. Future seigniorage ⁴	105	156	47	65	16,293
J. Future public revenue ⁵	114	> 160	48.5	75	17,414
K. Total of government tax revenue	2,331	2,932	298	1,074	81,809
L. (I : K) Current per- centage of taxes repla- ceable by seigniorage	~4.5%	~5.3%	~15%	~ 6%	~ 19%

Sources: Federal Reserve Board of the United States, www.bog.frb.fed.us, Annual Report 1998. - European Central Bank, www.ecb.int, Annual Report 1998; Monthly bulletin, tables 5.1, 7.1. - Bank of England, www.bankofengland.co.uk/mfsd, Annual Report 1999. - Office for National Statistics, London, www.ons.gov.uk. - Deutsche Bundesbank, www.bundesbank.de, Geschäftsbericht 1998, Monatsberichte, table VIII.1. - Bank of Japan, www.boj.or.jp/en, Annual Report 1999, Bank of Japan Accounts; Central banks interest rates. - Japanese Tax Administration, www.nta.go.jp, Breakdown of General Account Revenue. - OECD in Figures 1999, www.oecd.org/publications/figures, pp.12, 38

¹ Interest receivable by central bank minus interest payable to banks, and minus operational expenses of central bank, necessary capital reserves, or similar.

² Profits of the issue department payable to HM Treasury plus profits of the banking department.

³ Amounts are estimated as follows:

a) The special margin rate which earns the special banking profit from creation of sight deposits is in principle equal to the national base rate of $x\%$ (e.g. repo rate, discount rate, or similar). So the special profit on all non-interest bearing sight deposits SD in $M1 = SD \cdot x\%$.

b) A certain proportion of SD is interest-bearing to the customer. That interest of $y\%$ payable by the banks has to be subtracted from the base rate which is receivable by the banks.

c) Another proportion of SD is created by current overdrafts. On these, customers pay an additional extra interest rate of $z\%$ which has to be added to the base rate.

d) Composition of deposits and interest rates differ according to country. For simplicity's sake we assume that in all countries $_$ of chequeable deposits would be non-interest bearing, and $_$ interest-bearing (except in the UK, where the approx. proportion rather is $_$ to $_$), furthermore, $_$ of SD currently created by overdraft.

Interest rates could be accounted as follows: Base rate USA 5% - UK 5.5% - Euro area 3% - Japan 0.5% . Interest paid on sight deposits USA and UK 1.5% , Euro area 1% , Japan 0.3% . Additional overdraft rate USA and UK 5% , Euro area 4% , Japan 3% .

e) All in all, the special profits can be estimated at

$$((2SD \cdot x\%) + (SD \cdot x+z\%) + (SD \cdot x-y\%)) / 4.$$

In the UK $((SD \cdot x\%) + (SD \cdot x-y+z\%) + (2SD \cdot x-y\%)) / 4.$

⁴ Calculated for 1998 and 1999 as in table 3.

¹ Coin ($\sim 1.5\%$ of $\Delta M1$) plus central bank net profit delivered to the public purse. Numbers in i - v as of 1998 or 1999.

² ΔM minus foreign exchange surplus ($\sim 7\%$ of $\Delta M1$, except USA which has a deficit), minus new coin as above.

³ ΔM minus foreign exchange surplus as above, minus new coin as above, minus central bank net profit delivered to the public purse.

⁴ Future ΔM minus foreign exchange surplus as above.

⁵ Future ΔM minus foreign exchange surplus as above, plus interest from lending national stocks of foreign reserves ($\sim 50\%$ of central bank net profit very roughly speaking).

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