

Money and financing: a Keynesian perspective

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Abstract:

The aim of this article is to rethink the monetary aspect of Keynesian theory. It draws all the implications of the disappearance of money specificity in a modern financial economy. What matters is no money creation, but the quantity and quality of financing.

The first part sets out the key elements of the Keynesian theory of financing. In a modern financial system, money does not occupy a distinct position amongst financial assets. Any autonomous expenditure, any bank or bond financing, any public deficit generates the Keynesian multiplier – an increase in output – which in turn creates the savings required to finance them; part of these savings (depending on the choices of asset holders) will be held in the form of money; investment creates savings just as loans generate deposits; there is no such thing as prior savings; there is no distinction between credit based on monetary resources and financing through savings. Monetary policy should be called financing policy.

The second part analyses and critiques, from this perspective, monetarist theory, the LM curve, the French ‘circuitist’ school, the ‘100 % money’ theory. It discusses the distinctive features of post-Keynesians and of consistent stock-flow models.

According to *Modern Monetary Theory* (MMT), states that have retained their monetary sovereignty can obtain unlimited financing from their central bank, the only constraints being the maximum level of output and inflation. The third part suggests that this is merely a reworking of the Keynesian theory of functional finance. Moreover, MMT overlooks banks and credit.

Following the 2008 crisis, the eurozone sovereign debt crisis and the health crisis, central banks’ balance sheets have expanded significantly relative to GDP. Part Four analyses the problems this new situation poses for the ECB, whose instruments have been weakened and whose financial position has been compromised.

The sharp rise in public debt, the significant proportion of this debt held by the ECB, and the need to increase green public investment have given rise to numerous debates in France, that we analyse in Part Five. Some French economist argue that the ECB could finance public debt at zero interest rates, or that it could write off the public debt it holds, thereby providing fiscal policy with the leeway to finance the ecological transition. The ECB should distribute ‘helicopter money’ to households. Some advocate a debt-free currency that requires no repayment. We demonstrate that these proposals are illusory.

The conclusion reiterates that states must manage their public finances in accordance with the principles of functional finance, that is to say, to reduce economic imbalances. There is no point in launching a race for monetary reform. The priority is to channel funding (loans, bonds, reinvested profits and public investment) so that it supports the objectives of economic policy, in particular the ecological transition.

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Presenting a Keynesian perspective on money can be understood in three different ways. It may involve analysing Keynes's own arguments, as set out in *A Tract on Monetary Reform* (1923), *A Treatise on Money* (1930) and *The General Theory of Employment, Interest and Money* (1933), followed by Hicks's interpretation, or misrepresentation, of them in *Mr Keynes and the Classics: A Suggested Interpretation* (1937), which led to the IS-LM model, long the basis for the teaching of macroeconomics. This may involve analysing the monetary thinking of the various schools that claim to follow Keynes: the *circuitists*, the post-Keynesians and the neo-Keynesians (whether close to or distant from neoclassical thought). Some of these schools, though not all, reject the assumption of an exogenous money supply and emphasise that the central bank sets the key interest rate in accordance with its macroeconomic objectives. Our approach here will be to take empirical Keynesianism as our starting point, as embodied in empirical analyses and macroeconomic models. The key interest rate is set by the central bank; the long-term rate by market expectations. The concept of money is meaningless in a modern financial economy in which there are a large number of financial assets, each with different characteristics. Assets used for transactions that do not bear interest do not play a central role in macroeconomic equilibrium. Seigniorage is now of little significance. The concepts of money creation or monetisation no longer make sense: what matters is financing, both in terms of quantity and quality.

The first part sets out the key elements of Keynesian financing theory. In a modern financial system, money does not occupy a specific position amongst financial assets. Any autonomous expenditure, any bank or bond financing, any public deficit generates the Keynesian multiplier – that is, an increase in output – which creates the savings required to finance them, a portion of which (depending on the choices of asset holders) will be held in the form of money; investment creates savings just as loans generate deposits; there is no such thing as prior savings; there is no distinction between credit based on monetary resources and financing based on savings resources. Monetary policy should be called financing policy.

The second part analyses, from this perspective, monetarist theory, the French 'circuitist' school, the '100 % money' theory. It discusses the distinctive features of the Post-Keynesians. According to *Modern Monetary Theory*, states that have retained their monetary sovereignty could borrow without limit from their central bank. They should not impose public finance standards on themselves, but should manage fiscal policy in such a way as to reduce economic imbalances. The constraint would not be the level of the public deficit or debt, but the level of potential output and inflation. For us, this is not a theoretical innovation, but merely a reworking of Keynesian functional finance theory. Furthermore, this theory, which focuses on the state's role in the functioning of the monetary system, overlooks the role of banks and credit.

Following the 2008 crisis, the eurozone public debt crisis and then the health crisis, monetary policy has faced numerous challenges, particularly in the euro zone. Public debt has risen sharply. The ECB's balance sheet, like that of the Fed, the BoE and the BoJ, expanded significantly, initially due to a parallel rise in refinancing and bank reserves; subsequently,

central bank securities purchases meant that banks' reserves became much larger than their refinancing. Part Four analyses the challenges posed by this new situation for the ECB, whose instruments have been weakened and whose financial position has become more precarious. The sharp rise in public debt, the significant proportion of this debt held by the ECB, and the need to increase green public investment have given rise to numerous debates, which we analyse in the fifth part. Some argue that the ECB could finance public debt at zero interest rates, enabling the state to save on interest costs; it could even write off the public debt it holds, thereby providing fiscal policy with the leeway to finance the ecological transition. Others argue that, instead of refinancing the banks, the ECB should distribute 'helicopter money' to households. Some advocate a debt-free currency that requires no repayment. We show that these proposals are illusory.

The conclusion reiterates that the priority today is to channel funding (loans, bonds, reinvested profits and public investment) so that it aligns with the objectives of economic policy, the well-being of the population and the green transition.

1) Financing and money: a reminder of the Keynesian theory.

The role of money in macroeconomic equilibrium remains a problem for many economists, who refuse to learn from the workings of modern financial systems, where the central bank refinances banks or accepts their deposits at a key interest rate that it sets in accordance with macroeconomic objectives; where the central banks guarantees the financing of public deficits; where, therefore, the money supply (insofar as this term has any meaning) is endogenous².

1. In a monetary economy, there is no guarantee that demand will equal, *ex ante*, the output desired by firms. Firms may decide to produce 1,000 units, but they have not yet distributed the income that will enable people to purchase this production. As production precedes the distribution of income, the use of prior reserves and credit is necessary. Each economic agent spends during the period on the basis of its past and anticipated income, using accumulated financial assets or credit obtained. Demand is the sum of household consumption and business investment (disregarding public expenditure and foreign trade). Firms decide to invest 250, by drawing on 200 of financial reserves, derived from profits from previous periods, and by taking out a loan for 50. Households expect to receive 800 in income (750 in wages and 50 in dividends); they wish to consume 750, using financial assets derived from income in previous periods, and expect to build up 50 in new reserves during the period. *Ex post*, firms will have retained earnings of 200, so the credit they will benefit from *ex post* will indeed be 50. In total, 50 in credit is required for demand to equal output at 1000. Credit

² The concept of endogenous money was introduced by Jacques Le Bourva (1962). It is implicit in all models in which the central bank sets the refinancing rate in line with its macroeconomic objectives and provides liquidity to banks at that rate. The implications of the endogeneity of money for macroeconomic equilibrium are discussed, for example, by: Jérôme Creel and Henri Sterdyniak (1999): '*Pour en finir avec la masse monétaire*', *Revue économique*, May; Jérôme Creel and Henri Sterdyniak (1999): '*Monetary policy without money*', *Revue économique*, no. 70; David Romer (2000): 'Keynesian Macroeconomics without the LM Curve', *Journal of Economic Perspectives*, 14 (2); Jean-Paul Pollin (2005): 'Theory of Monetary Policy: Outlines for a Re-foundation', *Revue économique*, no. 3.

anticipates saving. It cannot be savings that determine credit and investment, since savings are not accumulated at the start of the period. There are no prior savings; savings emerge *ex post*. This characteristic of monetary economies is summarised by the formula: 'investment creates savings' or, from a monetary perspective, by the equivalent formula: 'loans create deposits'. The financial system generates credit, and thus purchasing power, without any financing constraints: it is only *ex post* that it will become apparent whether the demand generated is appropriate, excessive or insufficient. It is economic policy, through financing policy (incorrectly termed monetary policy) and fiscal policy, that must ensure a balance between supply and demand. There is no automatic mechanism, nor any way of establishing one (contrary to what proponents of the 100 % Money theory believe).

Suppose that firms invest 260, requesting 60 in credit *ex ante*; output would be 1010, *ex post* profit 210 and *ex post* credit 50. Let us imagine that households consume 760; output would be 1010, *ex post* profit 210 and *ex post* credit 40.

We can write $Y = C + I$; $PRO = C + I - W$; $CRE = W - C$. *Ex post*, profit rises as consumption and investment do, and falls when household savings increase; *ex post* credit varies inversely to consumption.

A situation of overheating, where demand exceeds potential supply, leads to inflation, an external deficit and, sometimes, rationing. Economic policy must reduce demand, either by raising interest rates and imposing constraints on the allocation of credit, by cutting public expenditure, or by increasing taxes. However, it must take care not to cut the most beneficial expenditure (such as public or private investment). Furthermore, excess demand drives growth; policies to cool the economy must be carefully considered; a certain degree of inflation is preferable to recession.

The generally accepted allocation of policy instruments is that fiscal policy should control the level of output, whilst monetary policy should control inflation. In a closed economy, this is of little relevance. Monetary policy does not have a relatively greater impact on inflation than fiscal policy. In fact, the opposite is true: rising interest rates increase firms' production costs and discourage investment. Therefore, the use of fiscal policy, through its direct impact on household incomes, appears to be preferable. In an open economy with flexible exchange rates, monetary policy appears more effective in combating inflation as it causes the exchange rate to appreciate; however, exchange rate appreciation merely transfers the inflationary shock to neighbouring countries. It is an anti-cooperative policy, the benefits of which disappear in a cooperative equilibrium or within a monetary union.

A situation of full employment is satisfactory when the inflation rate is stable at the objective level and real interest rates are close to the optimum (i.e. the real growth rate). In this situation, any permanent increase in public expenditure must be financed by a permanent increase in revenue (or a permanent reduction in other expenditure). There is no such thing as *magic money*. An increase in the public deficit would inevitably lead to a rise in inflation or interest rates, and thus to a fall in private demand: this is the crowding-out effect. Similarly, in this situation, an increase in saving is required for an increase in investment.

In a situation of underemployment, it is both necessary and possible to increase output, and thus demand. This can be achieved by lowering interest rates, but this may prove ineffective if private sector agents are already too heavily indebted, or if the economic outlook is too bleak. Long-term interest rates can hardly be lowered if private sector agents anticipate a rise, which would cause the value of issued securities to fall. There is a lower bound on interest rates, which cannot fall much below 0. Finally, low interest rates encourage some agents to take on debt for speculative purposes, which creates financial bubbles that do not directly stimulate demand and which weaken the economy. Fiscal policy must be employed. In this situation, this increase in public spending must be financed through the public deficit: in this sense, there is *magic money* that makes it possible both to increase output and to meet social needs. This is true if the shortfall in demand is permanent (for example, because the rich earn too much and the poor not enough, or because many households are saving for their retirement, or because firms demand rates of profit far higher than their rate of investment). On the other hand, if the shortfall is only temporary, the state must allow for the possibility of reducing expenditure undertaken for cyclical reasons. In such cases, the public deficit cannot be blamed for crowding out private spending (since it compensates for the shortfall in private spending), nor for raising interest rates (since the coordination of monetary and fiscal policies should ensure that interest rates remain low when the public deficit is high). This was the situation experienced by advanced economies in 2021.

2. At the beginning of the period, the firm anticipates a certain level of demand. It produces in order to satisfy this anticipated demand³. At the same time, it will invest an amount I and pay out wages of wN . Employees will consume an amount cwN . According to the Keynesian tradition, the fundamental equation is the IS curve. At short-run equilibrium⁴, anticipated demand equals supply:

(1) $Y = G + I(r - \pi, \theta_E) + C((1-t)wN, r - \pi, \theta_M)$ where θ_E and θ_M represent credit conditions for firms and households.

The SP curve determines price movements, taking into account changes in wages and the level of output. In summary: (2) $\pi = \pi_{-1} + \alpha(Y - Y_0)$

The central bank sets its interest rate according to a rule like: (3) $r = r_0 + \lambda\pi + \mu(Y - Y_0)$

Commercial banks determine credit conditions, which influence investment and consumption.

Household savings: $(1-c)(1-t)wN$ are equal to the sum of the financing requirements of businesses and households: $Y - I$ and $G - twN$. That is, in total, $S_M = BF_E + BF_G$

Households choose to invest their savings in various financial assets based on considerations of liquidity, return and risk: banknotes, demand deposits, term deposits or securities (Table 1). The government and firms decide on the amount of securities they issue. The long-term rate depends on expectations of the short-term rate and (to a lesser extent) on the supply of

³ Sur l'importance du crédit bancaire voir Edwin Le Héron (1986) : Généralisation de la préférence pour la liquidité et financement de l'investissement », *Économie et Sociétés*.

⁴ We disregard here the very short-run equilibrium in which actual demand may differ from expected demand, leading to involuntary changes in inventories.

securities relative to demand. The financial balance is achieved automatically. The *ex post* money stock results from a two-fold determination: on the one hand, household savings stem from the macroeconomic equilibrium, as set out in Equation (1); on the other hand, the share of the money stock in total financial assets depends on households' trade-offs. In fact, the definition of money is entirely arbitrary: is it B ? $B+DV$ or $B+DV+DT$?

The fundamental equation is not the equality between the supply and demand for money, which makes no sense in this context since money is an arbitrary aggregation of certain financial assets. There is no independence between the supply and demand for money. For example, if households decide to hold less money and more securities, firms may issue more securities; credit falls, and so does the money stock. Similarly, households can switch between demand deposits and term deposits without this affecting the macroeconomic equilibrium. There is no 'money supply', but rather a determination of credit conditions, which influences the level of output, as shown in equation (1).

1. The Financial Transactions Table.

Firms			Households			Government	
BF _E	C _E		B	S _M		BF _G	C _G
	T _E		DV				T _G
			DT				
			T _M				
Central Bank			Commercial banks				
RF	B		C _E	DV			
T _B	D _B		C _G	DT			
			D _B	RF			

Can money creation be defined? Two definitions are possible: one is tautological, the growth of the money stock, $\Delta (B+DV)$ the other is the growth of banks' assets, $\Delta (C+T_B)$. However, they do not coincide. In both cases, money creation appears lower when households purchase securities or switch to term deposits, which has no economic significance.

This view is now shared by all practitioners in the field of economics. Consequently, changes in the money supply are hardly monitored any more⁵. Thus, 'money creation' for the period is neither measured nor analysed.

In certain cyclical situations, the model must be adjusted. For example, balance sheet constraints may weigh on banks, which can limit their lending. This must be taken into account when describing investment and consumption behaviour. However, even in such cases, credit constraints do not take the form of a constraint on the money supply.

All expenditure decisions have a multiplier effect, and therefore an expansionary effect. Investment always generates an increase in output, which creates the necessary savings, resulting in an *ex post* increase in the money stock. There are not two types of investment (or

⁵ Von Hagen (2004): "There is a paradox regarding the role of money in economic policy. Price stability is now recognised as the primary objective of central banks, but the attention they pay to money has declined considerably. This fading of money's importance is illustrated by the sharp drop in the number of references to money in the speeches of central bank governors."

public deficit): one that would be financed by money creation, which would be expansionary (for Keynesians) and inflationary (for monetarists); the other which would be financed by securities or prior savings, and which would be macro-economically neutral.

3. In a modern financial system, it is the credit that matters and, more generally, the financing. Firms have projects which they may or may not be able to finance through their past profits, the loans granted to them by banks, or the funds they raise on the bond market. Similarly, the state decides on its expenditure and its deficit is financed by the banking and financial system. It is this expenditure and these financing decisions that matter both at the macroeconomic level (they trigger the Keynesian multiplier, where investment generates savings, loans generate deposits), at the structural level (banks and the state decide which investments they finance – whether ‘brown’ or ‘green’, socially useful, useless or harmful), and at the financial level (all financing generates the stock of financial assets, and thus the liabilities of the financial system). This is the asset side of finance. By contrast, the proportion of so-called monetary assets within these liabilities is of little significance. Its measurement depends on the definition of money (from M_0 to M_5). Households choice between different types of financial assets, each with different characteristics in terms of liquidity, return and risk; designating certain ones as monetary is arbitrary. This is the liability side of finance. Thus, the issue is not about putting money at the service of the common good, or creating ‘green’ money, or *making money a common good*, but about directing the total volume of financing.

The question of the neutrality of money is meaningless; the state and the banks, under the control of the central bank, must decide on the total amount of funding they provide, which will influence the level of demand and therefore inflation. It is aggregate demand that matters, not the money supply. The money stock does not consist solely of transaction assets; there is no stable link between transactions and the money stock. If the money stock increase, as in 2020, because households are saving more, the effect is deflationary; if it falls because households prefer to hold life insurance policies rather than demand deposits, given the level of long-term interest rates, the macroeconomic effect is, in principle, zero.

The government, banks and financial markets make choices between competing projects when deciding which public and private investments to finance. Here too, these choices are not neutral; they depend on the tax structure, public policies (for public investment), and the outlook of bankers, who, for instance, may or may not take into account the prospect of sharp rises in the price of greenhouse gas (GHG) emissions.

4. From a certain point of view, a bank can finance anything. It accepts a loan application from company X if the project to be financed appears sufficiently profitable, given current interest rates and the risks involved. It need not concern itself with prior savings or available deposits. In the evening, the counterpart to the loan granted to company X is a deposit from that same company. From a first-round financial perspective, the bank can finance anything. The bank creates a right to spend *out of thin air*.

In the past, banks were structurally indebted to the central bank; refinancing was the adjustment variable and its interest rate was the key interest rate. Now, banks structurally

hold deposits with the central bank; it is these deposits that provide the adjustment, and their rate of return is the key interest rate. As a result, the concept of the credit multiplier (a mechanical link between central bank ‘money’ and bank credit) disappears entirely.

Let us now look at the slightly longer term: firms have invested the credit they received (see Box 1, Case A). Banks as a whole have extended 100 in credit to businesses; they have received 30 in additional deposits; they can reduce their deposits with the central bank by 70. Thanks to the additional tax revenue, the government needs to issue 45 less in government securities. Households hold 20 more. The central bank issues 5 more in banknotes and can hold 65 less in government securities. Here too, the cycle is complete. From a financial perspective, the bank can finance everything. Its deposits with the central bank are falling, but the level of these deposits is not a constraint on the bank. From a macroeconomic perspective, this additional investment may fill a demand gap; conversely, it may lead to excess demand, causing a crowding-out effect on investment and consumption through a rise in interest rates or through rising prices and inflation. The financing of the additional investment is therefore not guaranteed in the macroeconomic sense. It is the responsibility of the central bank, in conjunction with fiscal policy, to control bank credit (and, more generally, the financing of the economy) to ensure that the level of demand is at a satisfactory level. It should be noted that the money stock as defined by M_0 has fallen by 65; the money stock as defined by M_3 has risen by 35. There is no independence between the supply and demand for money.

1. Case A: the mechanism of bank credit

By way of illustration, let us consider a closed economy. We assume that the tax rate is 0.3 and the propensity to consume is 0.5. All the firm’s value added is distributed to households. A 100 increase in firms’ investment therefore results in a 150 increase in GDP; tax revenue rises by 45 and household income by 105; households save 55, comprising 5 in banknotes, 30 in bank deposits and 20 in government securities.

Changes in agents’ balance sheets

	Banks	Firms	Households	Central bank	Government
Assets	+ 100 credit - 70 deposits central bank	+100 assets	+5 banknotes +30 bank deposits +20 government securities	- 65 government securities	
Liabilities	+30 household deposits	+100 loans		+5 banknotes - 70 bank deposits	- 45 government securities

Some economists arbitrarily postulate that some assets held by households (banknotes and certain bank deposits) are of a special nature, should be designated as ‘*money*’, and should be the target of central bank policy. This is irrelevant from a macroeconomic perspective. What matters to households is their income and total wealth, not the breakdown of that wealth between so-called *monetary* assets and other financial assets, a breakdown which they are free to alter as they see fit. Similarly, the concept of *monetary financing* makes no sense: all financing anticipates savings; whether the counterparts to the assets thus created are held ex

post in so-called *monetary* form or not is irrelevant. Monetary policy should be referred to as financing policy.

5. Let us now suppose that a firm finances its investment by issuing bonds which households purchase because they offer particularly high returns. Output (or inflation) rises in the same way. We assume that households finance the purchase of these bonds, half by reducing their bank deposits and half by reducing their holdings of government securities. At first glance, the expansionary or inflationary effect is equivalent to that of financing via bank credit. The investment financed by bonds has created the savings necessary to finance it. In the case of financing via bank credit, the money stock increases by 35; with bond financing, the money stock falls by 15 and banks' holdings with the central bank fall by 20. However, households have no reason to reduce their consumption, as they have voluntarily chosen to hold higher-yielding securities; nor do banks have any reason to increase their lending, as corporate debt has not decreased. There is no fundamental difference between bank credit financing and bond financing, other than that in one case it is the banks that agree to provide the financing and in the other case, it is non-bank entities. It would be absurd to consider that bond financing is less inflationary than bank credit financing simply because the money stock decreases.

2. Case B. Bond financing					
We now assume that the firm issues 100 worth of bonds, which households purchase.					
Changes in agents' balance sheets					
	Banks	Firms	Households	Central bank	Government
Assets	- 20 deposits central bank	+100 assets	+5 banknotes -20 bank deposits -30 government securities +100 corporate bonds	- 15 government securities	
Liabilities	-20 household deposits	+100 bonds		+5 banknotes - 20 bank deposits	- 45 government securities

6. Let us now suppose that it is the state which decides on this investment of 100. The state does not need to seek a bank's approval. This is the fundamental principle governing relations between the state and the central bank; even though the central bank is independent, it must guarantee the state's financing. In countries that can borrow in their own currency, where the central bank guarantees the public debt and ensures its placement, governments never have any difficulty in securing funding.

The Treasury credits companies' accounts with 100, so that their banks have 100 at their disposal, which they deposit with the central bank, whilst the Government's account is reduced by 100. The following day, the state issues 100 of securities which primary dealers are required to purchase: they can, without difficulty, resell them to the banks, which now

have 100 in additional liquidity. At worst, they will be able to resell them to the central bank. The first-round financial closure is assured.

Following this investment, output has increased by 150, whilst the public balance has deteriorated by 55 (see Box 3, Case C). Banks, taken as a whole, have 30 more in deposits; they can hold 30 more in government securities. Households increase their holdings of government securities by 20 and the central bank by 5 (Case B). Here too, the cycle is complete. The public deficit has created the savings needed to finance it. From a second-round financial perspective, the state can finance anything. The state has the power to finance (which some refer to as *money creation*). It has the same financing power as the banks: the power to create, *out of thin air*, a right to spend. This power has no financial limit, but it does have a real limit. In the event of an *ex ante* shortfall in demand, investment must logically be financed through a budget deficit, and therefore through the issuance of government securities. If demand were already at a satisfactory level, the financing of a public expenditure programme would have to be achieved through tax increases or cuts to other expenditure. The appeal (or flaw) of *Modern Monetary Theory* lies in its emphasis on the absence of financial constraints, whilst relegating macroeconomic constraints – which are, in reality, the only ones that matter – to the background.

3 Case C: the financing of public investment.					
Changes in agents' balance sheets					
	Banks	Firms	Households	Central bank	Government
Assets	+ 30 government securities		+5 banknotes +30 bank deposits <i>Of which demand deposits: 10</i> <i>Fixed-term deposits 20</i> +20 government securities	+5 government securities	+100 Assets
Liabilities	+30 household deposits			+5 banknotes	+55 government securities

The money stock as defined by M_0 has increased by 5, that defined by M_1 by 15, and that defined by M_3 by 35; households' financial wealth has increased by 55. However, these figures are not relevant when assessing whether the additional public expenditure of 100 is inflationary or not. Depending on the definition used, one might say that the monetisation of the public deficit is 5 (looking at the central bank's accounts) or 35 (looking at the counterparts of M_3). The distinction between monetary and non-monetary factors is irrelevant in this case; the important point is that total assets and liabilities have increased by 55, representing equivalent rises in public debt and household assets. The concepts of 'money creation' or 'monetary financing of the public deficit' have no precise meaning; they depend on the

definition of money⁶. Moreover, these concepts are never used by economic forecasters or fiscal policy specialists.

It would be absurd to claim that 35 of the 55 of public deficit was financed by money creation – which could cause inflation – and 20 by prior savings. In a modern financial economy, there is no specific financial asset that constitutes *money* with specific properties.

6) Following the 100 increase in public investment (case C), the banks have 30 in additional deposits. They have no *a priori* reason to increase their lending to businesses, as this does not depend on available deposits. They can choose between holding government securities and holding reserves. They may decide not to hold any additional government securities because they consider long-term interest rates to be too low compared with the rate of return on their deposits with the central bank. All additional government securities will then be purchased by the central bank; the banks use the 30 in additional deposits to hold deposits with the central bank (Case C bis). This choice has only second-order effects. It does not alter the assets held by non-bank private agents; nor does it alter public debt, which still increases by 55.

3 Case C bis: the financing of public investment.					
Changes in agents' balance sheets					
	Banks	Companies	Households	Central bank	Government
Assets	+ 30 central bank deposits		+5 banknotes +30 bank deposits +20 government securities	+35 government securities	+100 Assets
Liabilities	+30 household deposits			+5 banknotes +30 bank deposits	+55 government securities

It may be the central bank that takes the initiative to purchase government securities in order to lower long-term interest rates. We remain in situation C (bis) with the expansion of bank deposits at the central bank.

It is a fallacy to claim that securities held by the central bank do not constitute public debt. Either public debt is held by the private sector in the form of securities bearing the long-term rate; or it is held by the central bank, that is to say in fact in the form of banks' deposits with the central bank bearing the key interest rate. In the second scenario, the central bank holds

⁶ It is misleading to write, as Cuppey-Soubeyran and Ponsot do: 'Nevertheless, [money creation](#) and the dynamic process of money circulation within the economy are entirely absent from contemporary macroeconomic models, such as those used by central banks and international financial institutions'. These models describe income flows and the spending behaviour of economic agents, taking into account their access to finance. There is no need to describe the *circulation of money* as well.

long-term securities which it finances through short-term deposits; it carries out a maturity transformation which exposes it to a risk of loss if interest rates rise⁷.

It is a fallacy to claim that it would be possible to reduce public debt by cancelling these securities⁸. Such a cancellation would result in the central bank having an unbalanced operating account (since it would pay interest on banks' deposits without receiving interest in return), the deficit of which would be added to the government's deficit; similarly, the deficit on its balance sheet would be added to the government's debt; neither the size of the public deficit nor that of the public debt would be altered. Admittedly, a deficit on the balance sheet would not prevent the central bank from functioning, but this transfer of the government's deficit to that of the central bank would provide no room for manoeuvre in a system where the central bank guarantees the public debt.

7. The central bank must manage the banking system, oversee the financial system, guarantee the financing of the state, and help ensure that aggregate demand is at a satisfactory level. It is not intended to extend credit directly to private sector entities (that is the role of the banks) or to finance public expenditure directly, whether to encourage households to spend through 'helicopter money' or to finance the green transition (that is the role of the state).

Should this situation be changed? Let us imagine that the central bank finances 100 of an environmentally friendly public investment (Box 4, Case D). From the perspective of households and banks, the situation is exactly the same as in Case B. However, the central bank assumes responsibility for a deficit of 100, rather than this deficit being borne by the State. The only difference lies in the relationship between the Treasury and the central bank. These are internal relations within the public sector, particularly as the central bank is a financial subsidiary of the state. They have no implications for the private sector. Public debt, when measured correctly, has always increased by 55. It is held in the same way by households and banks, regardless of whether the financing is provided by the state or by the central bank. The macroeconomic constraint is the same.

Direct financing by the central bank would not reduce public debt. It would not create a specific type of *currency*. In particular, it would not create '*green money*' or '*debt-free money*'. In any case, households are free to choose whether to hold banknotes, demand or term deposits, or government securities; *ex ante* financing by the central bank would not mean that they would hold more banknotes. Admittedly, government securities must be repaid on a fixed date, unlike bank deposits, but this is of no consequence when the state is assured of always being able to roll over its debt. Conversely, the government can reduce its debt if this is necessary for macroeconomic stability. This would not be the case for the central bank, which, having no controllable own resources, could not run a surplus and therefore, by implication, is not intended to run a deficit.

⁷ Consequently, the central banks of the ESCB incurred losses of around 150 billion euros in the years 2022–25 by having to pay high interest rates (up to 4 per cent) on banks' deposits, whilst holding bonds purchased in 2015–2021 at very low, and sometimes even negative, rates.

⁸ See the petition: 'The cancellation of the public debt held by the ECB would be a first strong signal that Europe is taking back control of its destiny', **Le Monde**, 5 February 2021.

4. Case D: Financing by the central bank

Changes in agents' balance sheets

	Banks	Businesses	Households	Central bank	Government
Assets	+ 30 government securities		+5 banknotes +30 bank deposits +20 government securities	-95 government securities	+100 Assets
Liabilities	+30 household deposits			+ 5 banknotes	-45 government securities

II) Some theoretical considerations

Monetarism

Monetarist theory rests on three pillars.

- Even in the short term, the level of output corresponds to full employment; it does not depend on demand ; an expansionary policy results only in a rise in prices and interest rates.
- There is a specific, non-interest-bearing asset, the quantity (supply) of which is controlled (controllable) by the central bank.
- The holding (demand) of this asset is stable and is closely linked to the level of output.

The only function of this asset is to keep the product in circulation : $Mv = pY$, where v is the velocity of money, which depends on payment habits for goods and wages. If M increases, economic agents try to get rid of the excess money by spending more, which leads to a rise in prices that restores the equilibrium between the supply of and demand for money.

According to this theory, money has a distinctive characteristic amongst financial assets. Money is viewed as being in circulation. Money is held exclusively for transactional purposes; it is therefore stable, linked to the practices of paying wages and for goods; the money supply is (and must be) exogenous and controlled. It cannot 'meet the needs of the economy', which would render the price level indeterminate.

Regardless of the assumption of full-employment production, this theory is problematic, as there is no specific asset, money, that is used solely in transactions, has no substitute, and whose available quantity is exogenous.

In a modern financial economy, there is a wide variety of financial assets, each with its own characteristics. They can be classified as increasingly risky, less liquid and less suitable for transactions, while also being used more frequently as stores of value. It is not possible to draw a clear line between money and non-monetary assets, nor is it possible for the central bank to control the quantity of any particular category of asset. The boundary is blurred between banknotes, demand deposits, term deposits, money market funds, bond funds, life insurance investments, securities and credit claims. It is not possible to identify a specific

asset, money, whose market plays a central role in macroeconomic equilibrium. There is no need to hold money to make payments, as one can draw on credit lines or tap into so-called non-monetary accounts (savings accounts, term deposits), so that the link between the money stock and the money in circulation is weakening.

There are assets used in transactions, but their supply is not controlled. There are non-interest-bearing assets, but their importance is steadily declining. Liquidity matters, but the liquidity constraint does not coincide with the holding of money, since there are liquid, interest-bearing financial assets or credit lines that can be drawn upon. Contrary to the traditional view, there is no single asset that possesses all three required characteristics: non-interest-bearing, a controlled supply, and indispensable for transactions. Similarly, there is no such thing as a money supply or *money creation*. Banks extend credit, but the counterpart to that credit may or may not be held in monetary form, as the distinction is arbitrary and vague.

Monetarist economists and certain central bankers have exhausted themselves in constantly revising their definition of money, without being able to resolve this contradiction. A narrow definition – ‘banknotes plus demand deposits’ – does indeed correspond to assets directly usable for transactions, but the money supply is not controlled; the shift between demand deposits and term deposits depends on the depositors and banking practices. A broader definition (the total liabilities of banks) includes assets that serve as stores of value and raises the question of the distinction between banks and non-banks, to which some respond in a tautological manner: a bank is a financial institution whose liabilities constitute money.

Thus, the money stock (in the broad sense) as actually held by economic agents bears no relation to the money that is actually in circulation, with the result that the velocity of money is very low and has no empirical significance. Mrs K., a 75-year-old widow, receives a pension of 2,000 euros a month, which she spends, but holds various accounts and savings books at her bank totalling 240,000 euros. One could divide 240,000 by $12 \times 2,000$ to arrive at 10 years, but it makes no sense to claim that the money she holds circulates once every 10 years.

One could envisage a modern financial system without money, where all customers’ assets would earn interest and where all customers would have the right to an overdraft. The circulation of output could be ensured without a quantifiable money aggregate. The concept of the money supply would disappear. We would nonetheless be living, more than ever, in a monetary economy, with a medium of exchange, a unit of account and a store of value; production would circulate and the problem of credit allocation would remain.

Monetarists believed that the central bank should set an inflation target (2 per cent, for example), considering potential growth (2 per cent per annum, for example) and changes in the velocity of money (-0.5 per cent per annum, for example) to set a target for money supply growth (4.5 per cent, therefore). However, central banks no longer follow this practice because money holdings have proved to be highly volatile (they increase following a financial crisis as households withdraw from the stock market and hold more cash).

Monetarists therefore write: $(M) MV = pY$, where V represents the velocity of money, which depends on institutional factors and possibly on the level of nominal interest rates (the return

one must forgo in order to hold money). In this context, M is the money used for transactions, i.e. M_1 , comprising banknotes and demand deposits. An excess of money encourages its holders to get rid of it by purchasing goods, which causes a temporary rise in output and a sustained rise in prices, until such time as equation (M) is satisfied. This equation therefore determines the price level. However, this theory faces several theoretical inconsistencies. Equation (M) assumes that the money supply is exogenous, which makes no sense for M_1 , since the depositor can always convert a demand deposit into a term deposit: the money held is not a constraint, but a choice. The actual determinants of consumption or investment decisions are not excess money, the source of which would, moreover, need to be identified. If the excess money stems, for example, from an increase in government transfers to households, its impact is already factored into the consumption equation. Why would holders of excess money not choose to purchase financial assets rather than goods?

In practical terms, some central banks, which had for a time embraced monetarism, certainly attempted to monitor changes in the money stock. This first raised the question of which measure of the money stock to monitor. As the central bank does not control the money stock, this meant, at best, that its reactionary role was: (1) $r = r_{-1} + \gamma(M - M_0)$. This obliged them, in principle, to raise interest rates when the money stock increased, which, in many cases, was not a sign of excessive demand: the money stock may fall as a result of banking innovations that encourage households to hold liquid, interest-bearing assets; it may rise when households, concerned about economic developments, build up precautionary savings or withdraw from the financial market. In such cases, central banks had to explain that they did not take changes in the money stock into account when these were at odds with trends in output and inflation. Their reaction function was therefore (2) $r = r_0 + \lambda\pi + \mu(Y - Y_0)$ and not (1).

This criticism of monetarism is also, *de facto*, a criticism of the LM curve: $M = I_p Y$, where I is a decreasing function of the interest rate, to which most macroeconomics textbooks remain attached. The definition of the money aggregate is arbitrary. There is no market in which the interplay between an exogenous supply of money and a demand for money would determine an interest rate⁹.

On the definition of the money stock

Economists used to attach great importance to the quantity of money and to the equilibrium between the supply of money, assumed to be controlled by the central bank, and the demand for money, assumed to be stable. However, there are four competing definitions of the money stock.

M_0 represents the 'monetary base', comprising banknotes and commercial banks' reserves. Its counterpart is the refinancing of commercial banks and the securities they hold. It has neither a stable supply, as this depends on the refinancing of banks, nor a stable demand, as commercial banks' reserves are not stable relative to their deposits.

⁹ In *The General Theory* (1936), Keynes posits without question that the money supply is exogenous (p. 179), such that the interest rate must balance demand for money with its 'available quantity'. At the same time, footnote 2 (p. 178) acknowledges the arbitrary nature of the definition of money: 'one may draw the line between money and "claims" at the point that best suits each particular problem'.

M₁, transaction money, comprises banknotes and demand deposits. Although demand for it is stable, its counterpart is fictitious as it passes through the balance sheets of commercial banks.

M₂ adds to M₁ term deposits of less than 2 years and interest-bearing term deposits such as savings accounts.

M₃, the broad money aggregate, adds to M₂ money market funds and certificates issued by monetary financial institutions with a maturity of less than two years.

It is to be hoped that M₁ has relatively stable demand, but it has no controllable counterpart. M₂ and M₃ comprise interest-bearing savings assets.

Consequently, the equation $M = PY I(r)$ – which assumes that the money supply is controlled and independent of demand, that demand is negatively dependent on the interest rate, and finally that it is stable and does not fluctuate like savings – cannot be expressed for any of the definitions of money.

In macroeconomics textbooks.

A macroeconomics textbook should describe the behaviour of the central bank as setting the interest rate, and analyse the supply of finance and households' portfolio choices without using the concept of 'money'.

In *Macroeconomics* (2020), Blanchard and Cohen regard the money market as the market for central bank money, which the central bank is supposed to control. They write, on page 76, 'modern central banks set the interest rate they wish to achieve and vary the money supply to reach it'; this is not the practice of banks. However, page 620, they explain that the demand for money is unstable, that there are close substitutes for money, and therefore that monetary policy no longer takes the money stock into account.

In **International Economics* (2022, 12th edition), the authors explain on page 409: 'When we refer to the money supply, we are referring to the M1 aggregate... The money supply is controlled by the central bank ... The procedures by which central banks control the money supply are complex.' This *ad hoc* hypothesis, which bears no relation to reality, makes it possible to determine a long-term price level and to set exchange rate expectations; this would not be the case with a central bank reaction function.

Dominique Plihon's book (2022), *Money and its Mechanism*, is characterised by a certain eclecticism: it does not draw a clear distinction between the two viewpoints, the irremediable specificity of money or its integration into the broader set of financial assets. It contains some questionable statements: 'Not all loans necessarily give rise to money creation. This is the case with certain institutions that open accounts for their customers, the financial services of La Poste for example, but can only finance these by drawing on pre-existing savings. Commercial banks also collect savings; the proportion of loans financed from savings does not, by definition, contribute to money creation'.

'Financial innovations have led to a proliferation of investment products that are easily convertible into means of payment and which provide a financial return with little risk: "liquid financial assets". Economic agents are therefore encouraged to substitute these "quasi-monetary" assets for money itself in their portfolios, without this affecting their spending power. This development is making the boundary between means of payment and liquid financial assets increasingly blurred, which complicates the definition of 'monetary aggregates', indicators designed to measure the money supply and provide monetary authorities with insight into the spending capacity of economic agents. Similarly, there has been an increase in the proportion of financial investments within people's assets, reflecting a desire to save and which can be converted into means of payment at any time.'

'The spending and financial investment behaviour of economic agents has an impact on the intensity of use of the money supply: its *velocity of circulation*.'

The circuit theory

The circuit theory (or the monetary theory of production,) was developed by a small group of French economists (Bernard Schmitt, Alain Parguez, Frédéric Poulon) and Italian economists

(Augusto Graziani) between 1980 and 1995¹⁰. Their theories, which were often contradictory and confusing and had few practical applications, met with little response outside this group¹¹.

Circuitists have revived the endogenous money theory, emphasising flows rather than stocks. The function of money is to anticipate production, to enable the distribution and subsequent spending of income; part of the money is destroyed, whilst another part is crystallised as savings. They describe in detail how money creation, income formation and spending decisions interrelate throughout a given period, whilst rejecting inter-period linkages.

In the morning, firms must obtain two types of credit: one, say 800, to pay wages; the other, 300, for investment. This is the initial financing. The firms then produce 1,000, which they sell to their employees (who spend 700) and to themselves as investors (for 300). At the end of the period, they can repay 1,000, but they remain in debt to the tune of 100, which corresponds to household savings. A distinction must be made between the monetary circuit (the 1,100 that circulated during the day) and savings (the 100 remaining at the end of the period, which are no longer money and are transformed into savings, the 'crystallisation'); this constitutes the final financing.

Money creation (both the 800 and the 300) is essential for putting the output into circulation and realising a profit: if the firms had not obtained the investment credit, they would only have been able to sell the wages paid minus the employees' savings and would therefore not have been able to realise a profit. If they had invested only 200, they would have been able to sell only 900 worth of output and their profit would have been just 200. In accounting terms, this is expressed as: Profit = Business credit + Household credit – Household savings.

This approach rejects the Walrasian model, which describes the economy as a system of interdependent markets where money is neutral. It shows that the economic cycle is driven by firms' production decisions and the banks' money creation.

It has its own definition of money: the means of transaction necessary to circulate the product over the course of the period. With this definition, money creation is obviously indispensable, as is the increase in the money in circulation, period after period, for the growth of output.

It assumes that the liquidity constraint is significant for firms, which in each period would depend on the banks' money creation to launch their production. Let us suppose that firms have a reserve of liquidity (in the form of bank deposits or credit rights), which they mobilise at the start of the day. The model becomes purely descriptive rather than causal. In fact, the question of the money required to keep goods circulating hardly arises in reality. It is almost never mentioned in empirical analysis (except during some periods of monetary crisis).

Some economists have pointed out that one must hold money in order to purchase goods (the cash-in-advance theory). Thus, money would not be neutral; an insufficient quantity of money in the economy would impose a specific constraint on consumption and would therefore have a recessionary impact. However, this theory has no empirical basis, insofar as most

¹⁰ Should Hajo Riese be added to this list for Germany?

¹¹ It should be noted, for example, that this theory is not mentioned in AFEP (2023): *Grand Manuel d'Économie Politique*.

households hold a significant amount of money (in the broad sense), which is therefore never, in itself, a specific constraint on their spending. Admittedly, someone going to the market must have 50 euros to pay for their purchases, but this necessity does not constrain them, since they can obtain banknotes the day before or pay by cheque or bank card. The circuit theory is often nothing more than a tautology.

Some proponents of this theory (Schmitt, 1984 in particular) believe that it would be possible and desirable to separate these two circuits: money would ensure the circulation of goods and would therefore be neutral; the financial markets would collect savings and lend them out, and they, too, would be neutral. However, Investment must take place at the start of the period, before savings are generated. Firms cannot wait until savings are available.

In an extreme version, these theorists analyse the flows of a given period whilst rejecting any links with previous periods. Consequently, Schmitt demonstrates that the multiplier is equal to 1. Monetary flows reset to 0 at the start of each period.

Contrary to what Berr and Monvoisin claim¹², there is no connection between the circuitist theory (based on directed flows) and the consistent stock-flow (SFC) models that describe the equilibrium of a TEE and a TOF. Nor is there any connection with MMT (*Modern Monetary Theory*), which forgets bank credit.

Post-Keynesians claim to have devised SFC (stock-flow consistent) models that describe macroeconomic equilibrium by incorporating a TEE and a TOF. It is a curious concept. Any model must be stock-flow consistent; this is particularly true of DSGE models, MEGC models and certain empirical macroeconomic models (for example, the Défi model, developed at INSEE by Pierre Villa in 1981). Admittedly, explicitly SFC models are relatively rare in empirical macroeconomics. The difficulty does not lie in having a consistent accounting framework; nor does it lie in aggregating flows to produce stocks. It lies in modelling changes in the prices of financial and property assets, and in valuing those stocks. It also lies in describing the formation of expectations (regarding exchange rates or interest rates). Above all, it lies in describing the impact of stocks on flows: we would like households to have a 'desired financial asset-to-income' ratio and to save in order to stabilise that ratio; we would like firms to have a desired 'debt-to-equity' ratio and for this to influence their investment decisions. The problem is that asset prices and expectations are difficult to model and that, in fact, these ratios are by no means stable, so that presenting long-term equilibria with stable ratios has little empirical relevance.

In a general equilibrium model, households accumulate financial assets in the form of banknotes, bank deposits and securities; consumer credit may depend on an *ad hoc* variable relating to the availability of credit; firms receive bank credit depending on interest rates and an *ad hoc* variable relating to the availability of credit, and issue securities. The government finances its public deficit through the issuance of securities. Monetary policy sets the short-

¹² Berr E. and Monvoisin V. (2023), '[Modern post-Keynesian approaches: continuities and ruptures with monetary circuit theory](#)', *Journal of Post-Keynesian Economics*, vol. 46, no. 2, pp. 359–377.

term interest rate on the basis of inflation and growth; the long-term rate depends on expectations of the short-term rate and (to a lesser extent) on the supply of securities relative to demand. Rather than a money aggregate, there are assets with different characteristics. There is no money creation, but rather financing. The overall equilibrium in the goods market ensures the overall equilibrium of financial assets (see page 5).

One point is important, although it forms part of the toolkit of all heterodox economists and is difficult to model: the importance of credit quality¹³. Banks can finance speculative or productive activities, brown investments or green investments.

The '100 % money' theory

For proponents of the '100 % money' theory (Henry Summers, the Chicago Plan, 1933; Irving Fisher, 1935), there is a distinctive feature of money (defined as the sum of banknotes and demand deposits) which justifies all money being controlled by the central bank. A 100 % reserve requirement should be applied to bank deposits. This would have four advantages: separating money from credit; controlling the money supply; preventing private banks from creating money; and providing free resources to the state, to which the central bank would lend the funds thus obtained at zero interest.

This proposal was advocated in France by Maurice Allais (1975, 1977, 1987). Allais seeks an organisation of the monetary sector that would allow the interest rate to balance savings and investment, a mechanism distorted by the current functioning of the monetary system: banks have the exorbitant power to create purchasing power *out of thin air* ; Allais denounces them as 'counterfeiters', creators of 'false rights'; the system is unstable, because during periods of economic boom banks offer more credit whilst households want less money. He advocates a strict separation of credit and money: 'The current mechanism of money creation through credit is a cancer that is irreparably eating away at the capitalist economy' (Allais, 1975).

Maurice Allais criticises the fact that banks lend funds on a long-term basis that they only have available in the short term: 'Fundamentally, the credit mechanism leads to the creation of means of payment *out of thin air*, because the holder of a deposit regards it as available cash whilst, at the same time, the bank has lent out the greater part of that deposit. With every credit transaction, there is a duplication of money ... This results in permanent potential instability, since banks are at all times unable to cope with massive withdrawals, their assets being available only at a later date. Whilst the mobilisation of genuine savings by banks to enable them to finance productive investment is useful, the creation of 'false claims' through money creation is harmful, both from the point of view of economic efficiency and from the point of view of income distribution. ' (Allais, 1987). This mechanism leads to an artificial fall in long-term interest rates at the expense of short-term rates and 'an artificial penalisation of short-term investments at the expense of long-term investments' (Allais, 1975).

Deposit banks should hold the counterpart to their deposits in central bank money and would not be permitted to grant loans; depositors would have to pay the banks for their services.

¹³ Voir Edwin Le Héron (2015) : *Pour une théorie qualitative de la monnaie*

Furthermore, lending banks would collect savings without being permitted to accept demand deposits; they would extend credit but, having no monetary power, could only transfer purchasing power, not create it. They would have to lend for a longer term than their liabilities.

This proposal is based on a myth: the possibility of a mechanism that would automatically ensure, *ex ante*, a balance between the financial assets issued and those that households wish to hold, that is to say, between investment and savings. In fact, in a monetary economy, it is impossible to distinguish between good credit (which would be financed by *ex ante* savings, then held in the form of securities) and bad credit (which would lead to forced savings in monetary form). In a subsistence economy, saving (choosing not to go fishing today and consume the catch) automatically determines investment (the raft that will be built instead). In a monetary economy, the issuance of financial assets creates the corresponding savings, but this can be achieved through an increase in output or prices, just as restricting this issuance can cause unemployment or reduce inflation. Imbalances do not arise in a savings/investment market or in the money market, but in the goods market. The state and the central bank cannot shirk their responsibility for setting the rules for the allocation of credit on a day-to-day basis.

Allais propagates another myth: that there would be an optimal equilibrium between savings and investment across all time horizons if the economy were not monetary, an optimality that money and banks would call into question. However, businesses need to invest for the long term, whilst households need to retain the ability to liquidate their assets in the short term; meanwhile, the law of large numbers ensures that overall savings will remain stable. Banking transformation enables the necessary investments to be made whilst allowing households to remain liquid. A ban on transformation would result in financial intermediaries being rendered redundant, as their function is precisely, thanks to the law of large numbers, to provide long-term loans from short-term deposits and to reconcile savers' desire for liquidity with investors' long-term financing needs.

The proposal is based on a fictitious distinction between savings and money. For Allais, money is harmful whilst savings are good, even though the boundary between the two is arbitrary. On what criteria can one decide whether a financial asset represents savings or money, when the evolution of financial systems tends to blur any distinction between money and financial assets? Admittedly, banks grant credit without prior savings, but *in retrospect*, deposits are desired by their holders and have a counterpart in terms of credit. Mr. Durand has product €5,000, which he receives as a salary; he will spend only €4,000 of this; a loan of €1,000 must therefore have anticipated Mr. Durand's savings, so that demand does indeed match the €5,000 placed on the market.

Households and businesses freely choose the amount of money they wish to hold by balancing demand deposits (which provide liquidity) against deposits that are more or less liquid, risky and yield a return. This choice does not allow us to say that bank deposits constitute forced savings, whilst non-monetary assets constitute voluntary savings.

In a more moderate version of the 100 % money system, banks would have two departments: one with monetary liabilities and a reserve ratio of 100 %; the other with savings liabilities, but it could refinance itself with the central bank, which could thus control the interest rate and act as lender of last resort. This system would not be very different from the current one. However, an arbitrary decision would have to be made as to which deposits constitute money and which do not. *What* about savings accounts? *What* about money market funds? These bank reserves would need to earn interest. Otherwise, banks would refuse to accept demand deposits, which would be costly to manage. Finally, the central bank would have to continue to control the interest rate, and thus to provide refinancing to commercial banks.

According to Allais, and many of his followers, if the state were to retain the entirety of the seigniorage – that is, the profit from issuing money – taxes could be significantly reduced. This argument overlooks the fact that the state, through the central bank, already holds the privilege of issuing banknotes. A 100% reserve requirement on demand deposits would be to the detriment of their holders, who would not only receive no interest but would also have to pay the banks' operating costs for holding these deposits.

In 2012, the IMF published a study by Jaromir Benes and Michael Kumhof (2012): *The Chicago Plan Revisited*, which claimed to evaluate Irving Fisher's proposal using a DSGE model. According to the study, the 100 % money system would increase US GDP by 10 % and maintain zero inflation. In fact, this study is based on questionable assumptions: that controlling the money supply would make it possible to enforce zero inflation; that households would agree to hold large amounts of non-interest-bearing deposits so that the state could finance itself at very low cost; savings on interest payments would allow for a reduction in tax rates, which, in their neoclassical model, would lead to a sharp rise in output, which in turn would allow for a further reduction in tax rates, and thus a rise in output, and so on... in a cumulative process. The IMF published this study but never proposed implementing the reform.

This '100 % money' theory continues to circulate on the quiet, without really being taken seriously in academic debate. The financial crisis and the debt crisis have not allowed it to resurface in the mainstream academic arena, but have caused it to spread widely amongst certain circles of *semi-amateur* economists, who believe they have discovered the philosopher's stone, which would make it possible to avoid financial instability, to reduce public debt and to finance the state at a zero interest rate.

III. About *Modern Monetary Theory*

According to *Modern Monetary Theory* (MMT)¹⁴, a state that has retained its monetary sovereignty – that is, one that borrows in its own currency and is guaranteed to be financed at all times by its central bank – has no need for taxation or government bonds. It can spend

¹⁴ It was developed in the United States by Warren Mosler, L. Randall Wray, Pavlina R. Tcherneva and Stephanie Kelton; and in Australia by William Mitchell. We shall not discuss the differences between these authors here. Nor shall we address its 'guaranteed employment' aspect. For critiques of MMT from a post-Keynesian perspective, see: Marc Lavoie (2013) "The monetary and fiscal nexus of neo-chartalism: A friendly critique." *Journal of Economic Issues*, 47 (1), pp. 1–32 and Marc Lavoie (2019) "[Modern monetary theory and post-Keynesian economics](#)", *Real-world economics review*, no. 89, October, pp. 97–108.

without limit, simply by asking the central bank to finance it by issuing money. It need not worry about public debt. It faces no financial constraints.

This theory is both descriptive (it explains the relationship between the state and the central bank) and normative (it shows how the state could always maintain full employment). In the United States, it has inspired Alexandria Ocasio-Cortez, Bernie Sanders and Elizabeth Warren, who propose using this approach to fund a public healthcare system, a universal job guarantee or the 'Green New Deal'. In France, it inspires, more or less directly, proposals from certain parties or organisations to have all or part of public expenditure financed by the ECB, whether for a universal basic income or the ecological transition.

MMT challenges the neoclassical theory of deficits and public debt, the dominant theory in mainstream economic thinking: public deficits are a sign of poor public financial management; they are harmful, cause inflation, divert savings away from productive investment and drive up interest rates; public debt constitutes a burden on future generations; it weighs on the rate of growth. Criticism of this neoclassical view is not new; it has been voiced time and again by Keynesian economists.

MMT follows in the Keynesian tradition of Abba Lerner's *functional finance*: public deficits and debt should not be judged in their own right; what matters are the macroeconomic imbalances that they correct or, conversely, exacerbate, particularly in terms of employment and inflation. MMT draws on this tradition, on the one hand by focusing on the situation of underemployment which it regards as characteristic of capitalist economies, and on the other hand by emphasising the *ex ante* monetary financing of public expenditure: 'The state issues the money it spends',

According to MMT, the financing of public expenditure is always provided by the central bank, which, through an accounting entry, credits the Treasury's account. The state does not need to collect revenue in the form of taxes or borrowing beforehand. It does not use the money collected from Martin to pay for benefits to Dupont. The Treasury credits the bank accounts of its suppliers, employees or benefit recipients; the banks then deposit these funds with the central bank. The cycle is complete. The amount of the state's debt is irrelevant, as the central bank can always refinance it. Furthermore, if demand exceeds production capacity – which could lead to inflation – the state can reduce demand, either by raising taxes or by issuing bond. It is the state that is responsible for controlling inflation and maintaining the value of the currency. The money is, above all, a fiscal money, deriving its value and the confidence of households from the fact that it enables taxes to be paid.

There is some truth in this argument, but it is simplistic and exaggerated. Let us emphasise four points. The purpose of taxation is not only to finance public expenditure; it also plays a redistributive role (reducing income inequality by taxing excessive incomes) and an incentive role (taxing harmful activities and subsidising socially desirable ones).

Monetary policy is not limited to financing the state; its role is also to guarantee, supervise and refinance the banks.

Supporters of MMT often confuse money with credit; money with the totality of financial assets. Their *modern* theory overlooks the fact that money, strictly speaking, must be integrated into a general theory of financial assets and liabilities, such that the distinctions between monetary financing (or money creation) and debt financing, and between money and securities, are meaningless in a modern financial economy.

Money is not merely used to pay taxes; it is also, and above all, used to facilitate the circulation of goods and the payment of wages. Even without taxes, means of payment are necessary. Any monetary theory must account for this tension between money as a creation of the state and money as the basis of the market economy.

MMT is focused on the state, the central bank and public spending. Banks, bank credit, and firms are missing. Thus, Kelton writes¹⁵, page 28, 'The US Constitution confers on the federal government the exclusive right to issue currency', either by overlooking banks or by limiting currency to that issued by the central bank.

MMT rejects the distinction between households and businesses. For MMT, what matters is public debt (in the broad sense), namely the sum of 'central bank liabilities + government securities', which represents the private sector's net financial assets (NFA). It overlooks the Keynesian emphasis on the importance of investment and the 'animal spirits' of entrepreneurs. It downplays the importance of private credit, which does not increase the private sector's net financial assets, overlooking the fact that private investment, financed by bank credit, boosts economic activity in the short term and wealth in the medium term.

Under MMT, the state does not need to issue securities to finance itself. These serve only to reduce banks' liquidity, to prevent them from extending too much credit, and to prevent interest rates from falling to zero. This overlooks the fact that, economic agents would not hold unlimited quantities of non-interest-bearing banknotes. Moreover, some supporters of MMT advocate a zero interest rate to facilitate government financing, whilst overlooking the fact that this cannot apply to private investment.

As soon as it strays from Keynesianism, MMT goes astray¹⁶: 'When one realises that the state holds a monopoly on currency, everything sold in exchange for currency is nothing other than an expression of the demand for currency, including the supply of labour by workers. Unemployment is therefore merely an unmet net demand for currency. And full employment is achieved when the demand for currency is fully satisfied. It follows that the demand for currency can only be satisfied by the state, which holds a monopoly on currency, and that the state has the direct power to maintain full employment in its currency... MMT has its own theoretical framework, which therefore operates entirely independently, particularly in relation to Keynesian thought. MMT is based on a concept that exists nowhere else, namely that of the state's monopoly on currency, from which the entire theory derives. MMT

¹⁵ Stephanie Kelton (2020) : *The Deficit Myth : Modern Monetary Theory and How to Build a Better Economy*, John Murray, June. 2020

¹⁶ Robert Caneau (2025): [MMT : Towards a new social contract.](#)

considers that currency is fundamentally fiscal, in the sense that it is created through public expenditure, and then made necessary for private-sector agents by the state, which requires taxes to be paid in that currency. 'And the currency used to pay taxes must necessarily have been created beforehand through public expenditure.' Similarly, MMT states: 'the price level is a function of the prices the state pays when it spends', whilst acknowledging that a gap between demand and supply can lead to inflation.^{ICI}

Kelton writes on page 11: 'It is the issuer of money – the state itself – and not the taxpayer who finances public expenditure.' However, in this sentence, the verb '*finance*' is used in two different senses. Let us imagine that the state increases public expenditure by 100; it obtains an advance of 100 from the central bank, which enables it to credit its suppliers' bank accounts with 100. At the same time, it issues 100 worth of securities, which the commercial banks can purchase as they have 100 in additional funds in their bank accounts. The government can repay the central bank; it has indeed financed the increase in public expenditure through money creation. At the same time, this 100 in expenditure will have a macroeconomic impact. Let us set the tax rate at 0.3 and the private sector's income expenditure rate at 0.7. Let us assume that the economy is underemployed. *Ex post*, output will increase by 200, tax revenue by 60, the public deficit by 40, private sector income by 140, their expenditure by 100, and their savings by 40, which will remain in the form of bank deposits or be used to purchase government securities. Of the 100 in public expenditure, 60 will be financed *ex post* through taxation and 40 through borrowing in the form of securities held by banks or households. Conversely, if the economy is operating at full capacity, the state, in order to avoid additional inflationary pressure, must increase taxes by 125 whilst simultaneously increasing public expenditure by 100; the latter will be fully financed by taxation. The MMT thesis is based on the dual meaning of the verb '*to finance*'; it ignores the cyclical situation, available production margins or full employment.

What, then, are the contributions of MMT? Let us imagine a country (in a closed economy, for the sake of simplicity) that produces 2,000; demand (public and private consumption, investment) is also 2,000. The country must undertake a large-scale public investment programme worth 100. Let us imagine that, in accordance with the tenets of MMT, this programme is financed by advances from the central bank. Demand will be 2,100 *ex ante*. Demand will have to be brought back down to the level of production capacity in one way or another – through higher interest rates, through inflation, or, more satisfactory, through taxation. Even if there is no financial constraint, there is a real constraint.

It is a sleight of hand to claim that there is no link between the billions that the central bank provides to the state to finance public expenditure *ex ante* and the billions that the state must collect to finance it *ex post*. Whilst *ex ante* public expenditure is financed, for accounting purposes, through the Treasury's account at the central bank, *ex post* it must be financed through taxation (in a situation of full employment) or through public borrowing (if savings exceed investment). It is demagoguery to suggest that significant permanent expenditure (such as a universal basic income or the green transition) can be financed, without social trade-offs, solely through money creation. When the public authorities pay out 400 billion euros in

pensions, they must be assured that this 400 billion will not simply be added to private expenditure, and that contributions do indeed reduce the incomes of the working population so as to free up funds for pensioners' expenditure.

Chapter 6 of Kelton's book, devoted to social security, highlights the limitations of the MMT. In the United States, as in France, public authorities produce long-term projections of pension expenditure. Given that these projections generally forecast a future deficit, a public debate must take place on whether to plan to increase revenue (contribution rates in the case of pensions) or to reduce expenditure (by raising the retirement age or cutting pensions). This debate is necessary; it must be open and transparent. Furthermore, it is legitimate for specific revenue to be earmarked and guaranteed for pensions benefits. According to Kelton, the state, as the issuer of currency, is always financially capable of paying social benefits, so there is no need to make such projections or set aside specific resources: 'Social Security will be in perfect health as long as the state is able to pay the promised pensions' (page 222). At the same time, she acknowledges on page 219: 'Funding social rights programmes ever more generously could propel the economy beyond its real resource constraint (that is, full employment), thereby fuelling inflation, which is harmful to everyone'. However, she refuses to make the connection, to recognise that permanent public expenditure must be funded through taxes or contributions to ensure that it does not lead to excess demand.

Furthermore, contrary to what MMT claims, there is a fundamental difference between taxation (which reduces the income of private agents and thus their spending) and public borrowing (which allows private agents to invest their income). A household does not reduce its expenditure simply because he takes out a government loan rather than holding its funds in a bank account. However, government borrowing increases banks' refinancing needs, which may lead them to reduce their supply of credit.

Chapter 3 of Kelton's book deals with public debt, which, according to its title, 'does not exist'. Kelton points out that a country indebted in its own currency cannot be declared bankrupt. However, she fails to recognise that even a country with monetary sovereignty must persuade investors to hold its securities. Thus, in 1982–83, France found itself caught in a dangerous spiral, even though the Banque de France was financing the government with open-ended credit. Investors were no longer willing to lend to it, the franc was plummeting, this fuelled inflation which spread through the price-wage spiral, and the government was forced to raise interest rates sharply, which slowed economic activity without convincing the speculators. The United States has avoided this threat, owing to its low level of trade openness and the support for the dollar provided by countries seeking to avoid the appreciation of their own currencies. Kelton writes (page 112): 'Public debt could be repaid in full tomorrow morning'. In fact, she uses the word 'debt' in two senses. Either, in the usual sense, as the cumulative total of past public deficits – in which case the statement is obviously false. Or, as the sum of government securities held by the private sector, disregarding those held by the central bank. The method advocated for eliminating public debt would be for the central bank to purchase all government securities. But this overlooks the fact that, in return, the central bank would be

in debt to the commercial banks, which would have received the proceeds from the sale of the securities from households; consequently, the debt, in the original sense, would not have changed. The banks' reserves would need to be remunerated for them to hold them, meaning that the public debt would be intermediated by the banks but would not disappear.

Chapter 4 points out that the public deficit is a resource for the private sector. Admittedly, reducing the public deficit by cutting social spending or raising taxes reduces household income, and thus their consumption, and GDP; there is no pool of savings from which public deficits could be drawn at the expense of private investment, public investment creates the savings necessary to finance it. Should we therefore conclude, as Kelton does (page 144), that there is never a crowding-out effect, since the public deficit increases banks' reserves and thus tends to lower interest rates on the interbank market? Kelton overlooks macroeconomic equilibrium. In a situation of full employment, an increase in public spending results, depending on the central bank's choice, either in a rise in interest rates (which crowds out investment) or in a rise in inflation (which crowds out consumption). Kelton refuses to consider that the economy might be close to full employment

Ehnts and Höfgen (2019) apply MMT to the situation of the eurozone Member States¹⁷. These countries have lost their monetary sovereignty. To regain it, the ECB would have to agree to provide them with unlimited refinancing and the numerical thresholds of the fiscal rules would have to be abolished, which is incompatible with the Treaties. The authors instead advocate the creation of a European Treasury, which would enable monetary sovereignty to be regained at the eurozone level. This suggestion overlooks the differences in circumstances, interests and opinions amongst Member States.

MMT, in general, does not ask the question: 'Why are public deficits and high levels of public debt necessary today to ensure macroeconomic stability?', which would lead it, beyond the scope of fiscal policy, to raise questions about financial capitalism, globalisation and the triumph of capital over labour.

MMT appears to be a successful public relations exercise designed to bring traditional Keynesian theory back into the spotlight, by rebranding it as modern. Four positive aspects of MMT must be acknowledged. It emphasises that economic policies generally underestimate the level of economic activity corresponding to full employment; it advocates more active fiscal policies, supporting an economy with higher inflation and lower unemployment (though this is a traditional Keynesian theme). It emphasises that the state is not a household and need not be concerned about its debt (though, again, this is a traditional Keynesian theme).

MMT undoubtedly fills a gap in Keynesian theory, which did not place sufficient emphasis on how the public deficit was financed *ex ante*. On the other hand, it overlooks the fact that a public deficit has the same macroeconomic impact whether it is financed monetarily (through

¹⁷ Dirk H. Ehnts and Maurice Höfgen (2019): "Modern Monetary Theory: A European Perspective", *Real-world Economics Review*, no. 89.

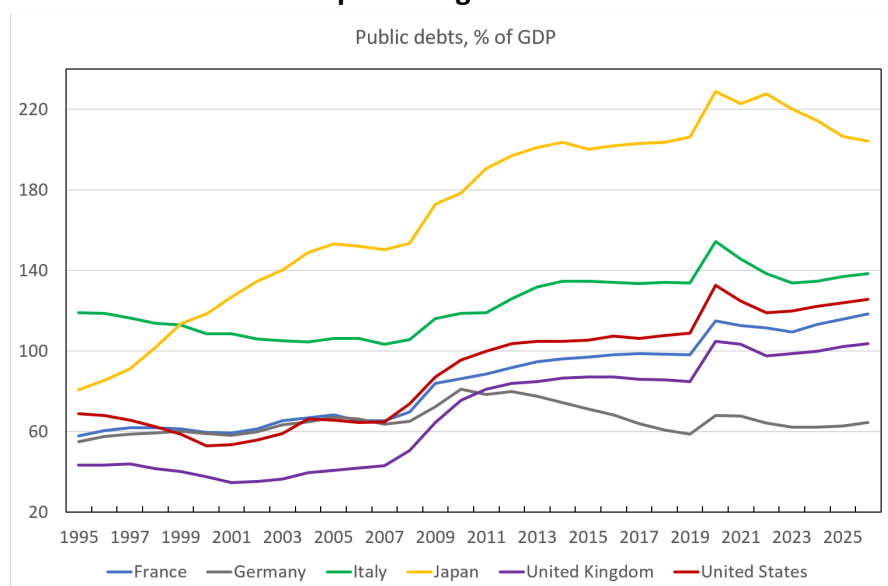
money creation) or through borrowing, since the distinction is arbitrary once it is recognised that money is no different from other financial assets.

Above all, MMT deserves credit for emphasising institutional differences. Thus, the constraint on financing public deficits is weak for the United States, which issues a currency in global demand; it is slightly stronger for countries (the United Kingdom, Japan), which have retained their monetary sovereignty, borrow in their own currency, and have flexible exchange rates; and even stronger for eurozone countries (which no longer have a central bank that is obliged to finance their governments, but in 2020, they had no difficulty at all in financing the necessary public deficits) and for developing countries (which borrow in dollars, a foreign currency). However, the financing constraint never disappears entirely. There is no ‘magic currency’ that would allow two constraints to be circumvented: the real constraint (further spending is not possible in a situation of full employment) and the financial constraint (a government whose public debt is rising cannot expect it to be held in the form of interest-free banknotes; under normal circumstances, lenders will only agree to hold large quantities of government securities on condition that they are adequately remunerated, i.e. at least at the risk-free interest rate of the financial markets).

IV. Monetary policy recent developments

Since the 2007 financial crisis, public debt has remained at high levels (Figure 1), rising in the United States from 67 per cent of GDP in 2007 to 109 per cent in 2019, and in the eurozone from 66 per cent in 2007 to 83 per cent in 2019. As the examples of Japan and the United States show, the level of debt is not correlated with the level of public expenditure. The Covid crisis has seen public debt reach new highs, at around 125 per cent of GDP for the United States, 100 per cent for the United Kingdom and many countries in the eurozone. During this crisis, governments were able to finance whatever deficits they wished at very low interest rates, often even negative ones. Governments have an unlimited capacity to finance themselves (or to *create money*, as some would put it).

Chart 1. Public debt as a percentage of GDP

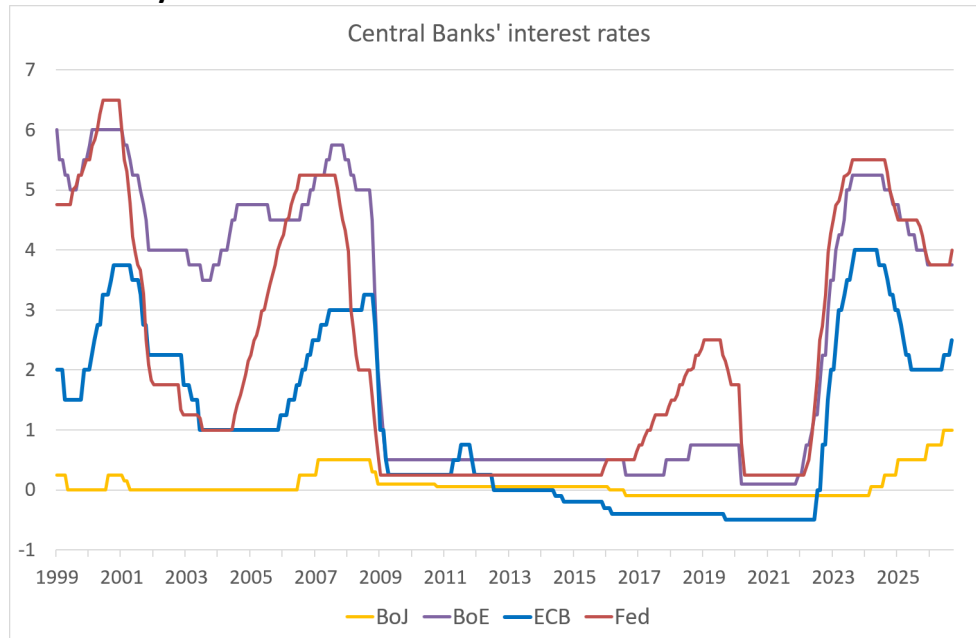


2 Gross public debt as a percentage of GDP

	2007	2019	2025
United States	67.2	108.8	123.9
Eurozone	66.4	83.3	87.3
United Kingdom	43.7	84.0	102.3
Japan	183.0	206.3	206.5

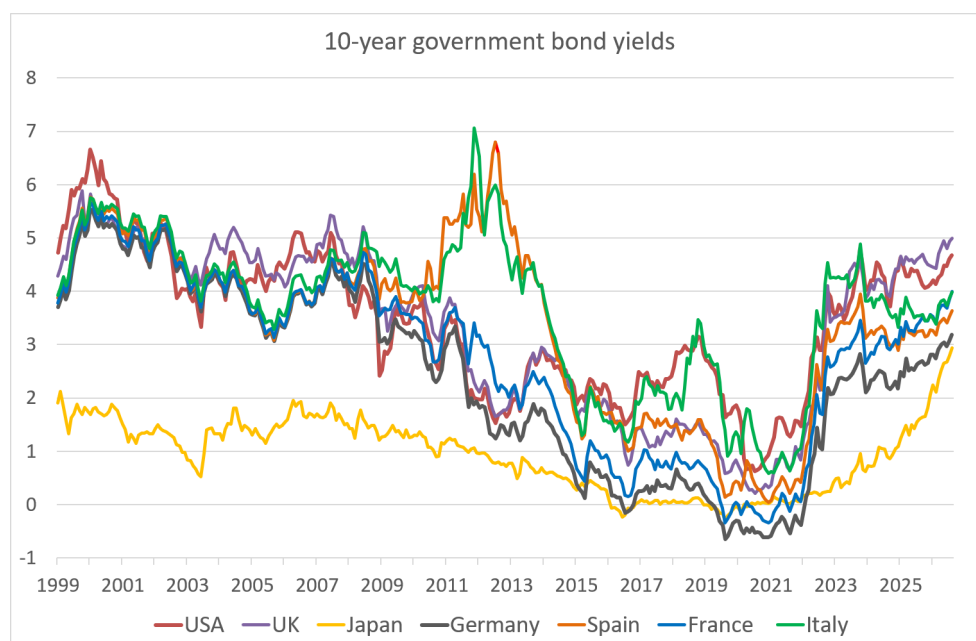
At the same time, following the financial crises, advanced economies experienced very low inflation rates, below the central banks' 2 per cent target, leading the central banks to cut their key interest rates to very low levels (Figure 2) and resulting in interest rates falling below the real GDP growth rate (Figure 3).

Chart 2: Key interest rates.



Advanced economies were generally suffering from a demand deficit, the causes of which can be found in the characteristics of globalised financial capitalism: the decline in the share of wages in value added; policies aimed at enhancing attractiveness and competitiveness; the strategies of Germany and the countries of Northern Europe' to accumulate external surpluses; the end in 2007 of a period of growth fuelled by household debt and financial bubbles. Consequently, demand had to be sustained by very low interest rates and substantial public deficits. On the one hand, maintaining low interest rates whilst interest margins remained high gave bankers excessive power, created the risk of property and financial bubbles, and posed the risk of excessive corporate and household debt; on the other hand, high levels of public debt leave indebted countries at the mercy of creditors unless they have a central bank capable of financing them and obliged to do so; thus, the situation in the United States, Japan and the United Kingdom is more favourable than that of the eurozone countries (although the latter had no difficulty in securing financing in 2020–21).

Chart 3: Interest rates from 1999 to 2026



The turnaround occurred in 2021. From 2021 to 2024, developed countries experienced a resurgence in inflation driven by supply shocks (disruptions to supply chains, a strong post-COVID recovery, and then, following Russia's invasion of Ukraine, rises in the prices of oil, gas and wheat, amongst others). Central banks raised their key interest rates to combat inflation; despite fears, this rise did not lead to any bank failures (apart from a few small US banks). The resurgence of inflation in 2026 halted, and even reversed, the fall in key interest rates. At the same time, long-term interest rates were also rising due to persistent public deficits in the United States and the capital requirements of the IA. As a result, most governments are now borrowing at long-term rates higher than their growth rates. On the one hand, central banks want relatively high rates to combat inflation¹⁸ ; on the other hand, the level of long-term rates may appear destabilising for public finances (table 3).

3. Public balance and interest rates in 2026

	Public balance	Public debt	Structural primary balance	Apparent rate	10-year rate	Inflation	Growth	Difference* stabilising ST	Difference* stabilising LT
United States	-8.0	126	-3.8	4.1	5.0	2.5	2.2	-3.0	-4.2
Eurozone	-3.3	91	-1.4	2.4	3.9	2.0	1.2	-0.7	-2.0
Germany	-3.7	66	-2.0	1.9	3.5	2.0	1.0	-1.3	-2.3
France	-5.1	118	-2.3	2.3	4.5	2.0	1.2	-1.2	-3.8
Italy	-2.9	138	0.1	3.1	4.4	2.0	0.8	-0.3	-2.1
Spain	-2.4	100	-1.0	2.6	4.0	2.5	2.2	1.1	0.6
UK	-4.9	104	-1.9	3.5	5.4	2.5	1.2	-1.7	-3.7
Japan	-2.8	204	-1.6	0.6	3.9	2.0	0.5	2.3	-4.4

*Difference between the structural primary balance and the debt-stabilising rate.

¹⁸ For the eurozone, the key interest rate is 2.50 % against around 3.75 % according to the Taylor rule; for the United States, 3.75 % against 5.2 % according to the Taylor rule.

Central banks' balance sheets.¹⁹

Central banks' balance sheets, relative to GDP, have risen sharply since 2006. Before the 2008 financial crisis, non-financial agents held a limited amount of banknotes, amounting to around 7.5 per cent of GDP. The ECB has around 10 per cent of GDP available to hold gold and foreign exchange reserves, to provide refinancing to banks and (when necessary) to contribute to finance public debt (Table 4.1). The ECB's financing of the government is therefore limited, as it does not wish to borrow from commercial banks. In the money market, banks with surplus funds (certain high-street banks) lend them to banks in need of funding (in particular, specialist banks). The key interest rate was the refinancing rate.

If we assume that households divide their money into $(1-d)$ in the form of banknotes and d in the form of bank deposits, and that banks refinance themselves (on a net basis) for r of their deposits, we obtain the multiplier $M = H / (1-d-rd)$, where H is the monetary base. However, this equation makes no sense since r is not stable, and banks behave as credit suppliers and are not constrained by their net refinancing

4.1 ECB balance sheet (end of 2006) as a percentage of the euro area's GDP.

Assets		Liabilities	
Gold and foreign exchange*	2.5	Non-resident deposits	0.2
Claims on non-residents	0.1	Banknotes	7.4
Refinancing	4.0	Bank deposits	2.1
Long-term refinancing	1.4	Other resident deposits	0.6
Securities	1.4	Other	0.8
Other	2.6	Equity	0.8
Total	12.1		12.1

*Excluding revaluation

From 2008 onwards, the banks ceased lending to each other; those with surpluses deposited them with the ECB, which refinanced the loss-making banks. At the same time, it began purchasing asset-backed securities. The central bank's balance sheet rose to 17.6 per cent of GDP (Table 4.2). This increase in the central bank's balance sheet had no macroeconomic impact. It did not encourage commercial banks to increase their lending. It was then that some economist realised that the money multiplier is unstable (something that theorists of the endogeneity of money have been saying for a long time).

With the debt crisis in southern European countries, the central bank granted itself the right to purchase government securities on the secondary market (the SMP programme). However, whilst the OMT programme has a psychological effect, it does not result in actual purchases of securities. The ECB wishes to encourage banks to increase their lending. It will guarantee them longer-term refinancing facilities – first LTROs and then TLTROs – at rates lower than those for standard refinancing. Banks borrow from the central bank without actually increasing their lending, with the result that their deposits with the central bank rise. The balance sheet of the central bank rose to 26.4 per cent of GDP in 2012, with assets comprising

¹⁹ See Paul de Grauwe and Yuemei Ji (2024) : "How to conduct monetary policies. The ECB in the past, present and future", *Journal of International Money and Finance*, Vol. 143, May ; Julien Pinter (2026) : " How the ECB implements its monetary policy: yesterday, today, and tomorrow", *BSI note*, February.

14 per cent in bank refinancing and 6.5 per cent in securities; liabilities comprised 10 per cent in banknotes and 10 per cent in bank deposits. The ECB remains a net creditor to the banks.

4.2 ECB balance sheet (end of 2009) as a percentage of euro area GDP.

Assets		Liabilities	
Gold and foreign exchange*	2.6	Non-resident deposits	0.6
Claims on non-residents	0.2	Banknotes	8.7
Refinancing	7.2	Bank deposits	4.3
Long-term refinancing	1.1	Other resident deposits	1.4
Securities	3.9	Other	1.8
Other	2.7	Equity	0.8
Total	17.6		17.6

*Excluding revaluation

4.3 ECB balance sheet (end of 2012) as a percentage of euro area GDP.

Assets		Liabilities	
Gold and foreign exchange*	2.7	Non-resident deposits	2.0
Claims on non-residents	0.2	Banknotes	9.6
Refinancing	3.1	Bank deposits	9.8
Long-term refinancing	10.9	Other resident deposits	1.4
Securities	6.5	Other	2.5
Other	2.9	Equity	0.9
Total	26.4		26.4

*Excluding revaluation

From 2015 onwards, the ECB has set its key interest rate at very low levels, sometimes at zero or even negative. To reinforce the impact of monetary policy, the central bank aims to keep long-term rates very low, and to this end it initiated the Quantitative Expansion (QE) by purchasing long-term securities. At the same time, banks have to hold an important level of High-Quality Liquid Assets (HQLA), reserve at the ECB or public bonds, to satisfy the Liquidity Coverage Ratio (LCR); they fear a rise in interest rates and are reluctant to hold long-term securities. So, banks (and others financial institutions) are selling their long-term government bonds to the central bank, whose balance sheet reached 35 per cent of GDP in 2019, comprising 25 percentage points of securities and 5 percentage points of bank refinancing, financed by 10 percentage points of GDP in banknotes and 15 percentage points in bank deposits (Table 4.4). On balance, the central bank has become a debtor to commercial banks. The deposit rate became the key rate.

In 2021, the deposit rate stood at -0.5 per cent. Ten-year yields were around -0.4 per cent for

4.4 ECB balance sheet (end of 2019) as a % of euro area GDP.

Assets		Liabilities	
Gold and foreign exchange*	2.6	Non-resident deposits	2.7
Non-resident receivables	0.1	Banknotes	10.9
Refinancing	0.2	Bank deposits	15.3
Long-term refinancing	5.2	Other resident deposits	2.6
Securities	24.1	Equity	0.9
Other	2.5	Other	2.3
Total	34.7		34.7

*Excluding revaluation

In 2020–21, during the Covid crisis, public deficits widened dramatically. Once again, the ECB purchased a large proportion of the securities issued, with the result that its balance sheet reached 65 per cent of GDP and its holdings of securities stood at 40 per cent of GDP by the end of 2021 (Table 4.5). According to the ECB, the aim of these purchases of government securities is to move closer to the objective of inflation and ‘to improve the transmission of monetary policy’, which can be interpreted as the implicit aim of controlling long-term interest rates and preventing divergences between the interest rates of different Member States. By financing the purchase of long-term securities through sight deposits, the ECB is acting in the opposite direction to national treasuries, which, by contrast, seek to extend the maturity of their debt. As it has no financial objective, the ECB places itself at the mercy of rising interest rates, whilst national treasuries seek to protect themselves against such rises

In 2021, the deposit rate stood at -0.5 per cent. Ten-year yields were around -0.4 per cent for Germany and 0 per cent for France. Holding securities therefore carried a risk of loss should interest rates rise. The ECB and the NCBs took this risk; commercial banks prefer to hold short-term deposits.

4.5 ECB balance sheet (end of 2021) as a percentage of euro area GDP.

Assets		Liabilities	
Gold and foreign exchange*	2.7	Non-resident deposits	6.4
Non-resident receivables	0.1	Banknotes	12.8
Refinancing	0.2	Bank deposits	36.2
Long-term refinancing	18.2	Other resident deposits	5.9
Securities	40.6	Other	2.6
Other	2.7	Equity	0.9
Total	64.8		64.8

*Excluding revaluation

The situation then returns to normal. From June 2023, the ECB will no longer reinvest maturing securities, so that its balance sheet falls to 30 per cent of GDP and its securities holdings to 25 per cent of GDP (Table 1.6)

4.6 ECB balance sheet (end of 2025) as a percentage of euro area GDP.

Assets		Liabilities	
Gold and foreign exchange*	2.4	Non-resident deposits	1.1
Claims on non-residents	0.2	Banknotes	10.2
Refinancing	0.4	Bank deposits	16.4
Securities	25.6	Other resident deposits	1.4
Other	2.0	Other	1.3
		Equity	0.2
Total	30.5		30.5

*Excluding revaluation

In return for holding securities, the ECB is indebted to households (who hold banknotes) and, above all, to banks. Any purchase of government securities by the ECB results in an increase in banks’ deposits with it. In 2006, the ECB provided net refinancing to banks amounting to 3 per cent of GDP; by 2025, it will be borrowing from banks amounting to 16 per cent of GDP. This situation raises five issues.

In the past, a rise in refinancing rates represented a cost for banks, which they could pass on to their customers, thereby potentially curbing their activities. Today, a rise in the rate of return on deposits would represent a gain for them; the ‘monetary policy transmission mechanism’ is therefore weakened.

Central banks finance, at the refinancing rate (2.5 per cent in September 2026), securities acquired when long-term rates were very low. Thus, the average yield on securities held by the Banque de France is 0.7 per cent in 2026. As central banks are financial subsidiaries of the state, their losses will be passed on to the dividends paid by the central bank to the state. If we assume that central banks held government securities amounting to 25 per cent of the eurozone’s GDP, with an average spread of 2 percentage points, over a period of 8 years, the cumulative loss would be 4 per cent of GDP, or €640 billion, as estimated by Daniel Gros²⁰. This cost could be reduced if the ECB were to raise the rate on non-remunerated reserve requirements. However, it refuses to do so, on the pretext that it does not wish to undermine the competitiveness of European banks vis-à-vis US banks or non-bank financial institutions.

The current equilibrium depends crucially on banks holding onto these deposits rather than buying government bonds – which would be costly for public finances – or extending credit, which would have an expansionary effect that the ECB wishes to avoid in 2026.

Through quantitative tightening (QT), the non-reinvestment of maturing securities, the ECB reduces the reserve by commercial banks²¹. The holding of substantial reserves by commercial banks increases their resilience to liquidity shocks and enables them to meet LCR ratios. This places a floor on the decline in the value of securities held by the ECB. Furthermore, the QT reduces demand in the government securities market and tends to push up long-term interest rates. Therefore, the ECB must be prepared to reverse this policy if necessary.

Although we have a single currency, long-term interest rates remain disparate across the eurozone countries; as at mid-October 2027: 3.48 per cent for Germany, 3.59 per cent for the Netherlands, 4.10 per cent for Spain, 4.33 per cent for Belgium, 4.58 per cent for Italy and 4.85 per cent for France. The financial markets feign belief that there is a risk of default for Italy and France. Admittedly, since July 2022, there has been the Transmission Protection Instrument, which authorises targeted purchases of bonds from a country whose financing conditions are deteriorating ‘unjustifiably’ relative to its fundamentals, in order to prevent the fragmentation of the eurozone. However, this instrument would not apply to a country pursuing an excessively inflationary policy.

V. In France a contest of eccentric monetary reform schemes.

Since 2007, public debt rose sharply in all advanced economies, whilst private sector actors accumulated vast amounts of financial assets, with the result that the rise in public debt,

²⁰ Daniel Gros Farzaneh Shamsfakhr (2022) : “The real cost of central bank bond buying”, *CEPS explainer*.

²¹ Isabel Schnabel (2025) : “Towards a new Eurosystem balance sheet, ECB Conference on Money Markets, November.

assets that are, in principle, risk-free, was welcomed by households and the financial markets. This nonetheless raises questions regarding the sustainability of debt, the instability of the financial system and the influence of finance on economic developments and economic policies. In France, some economists have proposed solutions to the issue of financing public debt and deficits: debt cancellation, helicopter money, monetisation, cancellation of securities held by the central bank, and free money without counterpart²². We will see that the proposed solutions are illusory.

One strategy would be to **write off all or part of the public debt**. A uniform reduction of 30 per cent, for example, would bring France's public debt down to 85 per cent of GDP by the end of 2025. This would be at the expense of public debt holders. However, these holders are not the wealthiest individuals, who have investment options other than government bonds, whether in property, riskier financial instruments or, for the very wealthiest, in their own businesses. The holders of public debt are middle-class households (who hold it in the form of life insurance, retirement saving plan, etc.). We cannot deprive them whilst sparing the wealthiest.

These individuals or institutions have placed their trust in the French State: France cannot claim to be unable to service its debt. Any aggrieved institutions would bring a claim before the courts, whether French or international, and would win.

Finally, raising the possibility of a partial debt write-off could frighten savers, trigger a rise in interest rates and lead to a debt crisis. French public debt would no longer be regarded as risk-free; this would force banks to tie up capital to hold it.

Taxing the wealthiest, particularly those who have become rich through unearned means (inheritance, capital gains), combating tax avoidance by the wealthiest and large corporations, and putting an end to tax competition are more promising strategies.

Some suggest, more modestly, **issuing perpetual debt securities**, which the state would never repay, but on which it would simply have to pay interest. But which financial institution would buy such securities, which it would be stuck with forever if interest rates were to rise? A perpetual debt security worth 1 million issued at 2 per cent would be worth only 0.5 million if interest rates rose to 4 per cent. The state would have to offer much higher rates or index-linked rates, which would greatly reduce the appeal of the proposal.

The second proposal would involve **printing money** or **'monetising' the public debt**. But what does 'printing money' mean in 2026? The question is not: 'Can the government distribute money to households and businesses in times of crisis?'. As we have seen: in 2020, governments were able to borrow and distribute as much money as they wished²³. This money is neither distributed nor held in the form of banknotes. There is no 'printing the money' to be done, but neither are there any additional resources at a zero interest rate.

²² The article by Jacques Mazier and Luis Reyes, '[Questions on public debt and monetary policy](#)', March 2021, expresses the same scepticism.

²³ This allows one to say, depending on one's point of view, either that *Modern Monetary Theory* is correct, or that it is stating the obvious.

Traditionally, it is said **that public debt is monetised** if it is held in monetary form, either on the assets side of the central bank (as a counterpart to M_0 , the strict definition of monetisation), or on the assets side of the banking system (as a counterpart to M_3 , the broad definition of monetisation). What is the practical significance of monetisation in a financial economy where money is endogenous, where the definition of the money is vague, where the commercial banks hold huge amount of reserves at the central bank and the central bank guarantees the placement of public debt?

Let us suppose that the government pursues an expansionary policy, paying out 10 billion to households in financial difficulty, who spend the entire amount. This will generate a multiplier effect on output if the economy is underemployed. Let us suppose that the household savings rate on current income is 0.7 and that the tax rate on output is 0.3²⁴. The Keynesian multiplier is therefore 2; output will increase by 20 billion and tax revenue consequently by 6 billion. *Ex post*, the public deficit, like household savings, will increase by 4 billion. However, these 4 billion will not be held in the form of banknotes. *Ex post*, the banks will have 4 billion in additional deposits. The following day, the Treasury will issue 4 billion worth of securities. These securities will be purchased by Primary dealers. Households will choose to invest their 4 billion in various available investment vehicles; for example, 0.4 billion in additional banknotes, 0.4 billion in demand deposits, 0.8 billion in term deposits, 0.8 billion in money market funds, in bond funds, and 0.8 billion in insurance companies. Financial intermediaries will invest 1.6 billion in securities; banks will hold 2.4 billion in securities and receive 2.0 billion in additional deposits; they will have to reduce their reserves held with the central bank by 0.4 billion. Public debt will have increased by 4 billion; the money supply as defined by M_0 will have remained stable; the money supply as defined by M_1 will have increased by 0.8 billion; and as defined by M_3 , by 2.4 billion. *The monetary financing* of public debt will have remained stable (if we consider the central bank's assets); it will have increased by 2.4 billion (if we consider money in M_3 sense). There is broad monetisation, but not strict monetisation. In fact, determining the proportion of the 4 billion in additional debt that is monetised is a question that makes little sense: the answer depends on the definition of money and on households' investment choices.

By implementing QE, the central bank would purchase 4 billion worth of government bonds from banks on the secondary market. This would not alter households' investment choices. Simply, the banks' reserves would increase by 3.6 billion. Public debt would still have increased by 4 billion, whilst the money stock M_3 would still have risen by 2.4 billion. One could say that the monetary financing of public debt has increased by 4 billion (if one considers the central bank's assets, there is indeed strict monetisation), or by 2.4 billion (if one considers money in the sense of M_3).

The macroeconomic impact of distributing these 10 billion will, *in principle*, be the same, with or without QE. The central bank sets the refinancing rate according to inflation and economic activity; the interest rate will only rise if fiscal policy is inflationary or expansionary. There is

²⁴ To simplify the argument, we consider a closed economy.

little reason why one type of financing should be more inflationary (or more expansionary) than another. What matters is public spending, which triggers the Keynesian multiplier, not the increase in the money aggregate. Moreover, the more households save, the more the money aggregate (in the M_3 sense) increases, and the weaker the expansionary – and therefore inflationary – effect of fiscal policy becomes.

Monetisation, as defined here, does not reduce public debt; nor does it, *a priori*, reduce the amount of interest the government will have to pay. Under this form of monetary financing, the central bank must pay interest on the banks' reserves; the government must therefore continue to pay interest on its debt held by the central bank.

There are, however, a few differences. Banks' reserves will be higher, which may encourage banks to expand their lending; this may be favourable if monetary policy is indeed intended to be expansionary; it may be dangerous if credit gets out of hand.

What the central bank gains in interest on the government securities it has acquired, it loses in interest on bank reserves. The central bank acquires long-term interest rates in exchange for short-term deposits. It assumes the risk of rising interest rates. Conversely, a reduction in the supply of long-term securities may cause long-term rates to fall, which may be useful if market have fears about rising interest rates, but the effect is undoubtedly small. This fall could boost demand for credit.

The cost to the central bank of holding government securities is an opportunity cost, that is to say, a loss of income (formerly the banks' refinancing rate, now the rate of return on banks' reserves); it is therefore legitimate that the state to bear this cost. Financing the government at a zero rate would amount to a levy on the central bank's profits (which in itself is of little consequence, since ultimately the central bank's profits are paid back to the government; however, it would be contrary to the central bank's autonomy for the government to be able to reduce its profits at its discretion).

The central bank belongs to the state and pays its profits to it. For the 'central bank–state' entity as a whole, monetisation takes the form of funding at the refinancing rate, which must be compared with the cost of funding through securities. The two are equivalent if bond yields accurately reflect future monetary rates.

From the state's perspective, funding at the bank reserve rate must be compared with funding through securities, which takes place at long-term rates that reflect market expectations regarding the movement of short-term rates, as well as a liquidity premium (which may be negative if savers are seeking long-term securities or positive if the government has issued too many long-term securities) and a risk premium. Thus, when long-term interest rates are zero, as in 2020, the government might prefer to borrow in the long term, as this protected it against the risk of a rise in interest rates. The central bank's purchases of securities therefore ran counter to the policy of extending the maturity of government securities.

Furthermore, the central bank's purchase of securities reminds that countries which have retained their monetary sovereignty (public debt denominated in their own currency, guaranteed by their central bank) cannot be forced into default. It therefore avoids tensions

in the financial markets, which may help to lower long-term interest rates. The effect is negligible for countries where the central bank's guarantee of public debt poses no problem (the United States, the United Kingdom, Japan); it may be significant for fragile countries in the eurozone.

The central bank, as the guarantor of the currency, has three main tasks: to ensure macroeconomic stability by prioritising the inflation rate and, secondarily, the level of economic activity; to supervise the banking system; and to finance public deficits and guarantee public debt. In this latter role, whilst it cannot finance a significant portion of public debt, it must intervene when such financing becomes problematic. Monetisation (in the strict sense) can prevent certain states from facing temporary difficulties in securing funding or having to pay excessively high interest rates on certain issues.

The fact that central banks *monetise* public debt is of little consequence; what matters is the banks' commitment to absorb all the securities the government wishes to issue and the central bank's commitment to accept these securities in order to refinance the banks.

Some argue that if the central bank holds government securities indefinitely, the government does not have to repay them. This is certainly true, but it applies to the entire public debt, guaranteed by the central bank. At each maturity date, the government is assured of being able to refinance the debt that has fallen due. Institutional investors immediately reinvest the redeemed securities in government securities. The state is eternal: there will always be savers who wish to hold risk-free financial assets. There will never be a 'Day D' when the state will have to repay its debt. The state must simply maintain control over the debt; it must be prepared to reduce it (by running budget surpluses) if demand is too high in relation to production capacity (and thus leads to inflationary pressures or pressure on interest rates). This control does not depend on whether the debt is financed monetarily or not.

A CEPII paper²⁵ offered 'theoretical insights into the choice between monetisation and the issuance of additional public debt'. It states: 'Monetisation, the financing of public expenditure through money creation without the government repaying the central bank, is an attractive solution'; and further: 'The central bank issues the amount of money the government needs to pay for its expenditure. The government never repays this sum; there is no loan'. The authors fail to recognise that public debt itself is no more repaid, since the state can always roll over its debt; that the central bank's purchase of government securities does not reduce public debt; that the central bank cannot finance this acquisition by issuing more banknotes, but must borrow from the banks, so that there are in fact two loans: one from the central bank to the state, and one from the commercial banks to the central bank. There is no trade-off between monetisation and public debt.

²⁵ Axelle Arquié, Jérôme Héricourt, Fabien Tripier (2020): "Covid-19: Has the Time Come for Mainstream Macroeconomics to Rehabilitate Money Printing?", *Policy Brief*, CEPII, April.

A document from the OFCE²⁶ proposes a *genuine* monetisation (page 11): ‘In return for a set of fiscal measures, the government would issue a perpetual zero-coupon bond, purchased by commercial banks. The central bank would then purchase the debt from the commercial banks, which would be held on its balance sheet. Thus, unlike QE, the measure is linked to a fiscal policy that results in direct monetary transfers to certain economic agents. The debt issued is not claimable and is matched by a creation of money that can be used directly by non-financial agents’.

The comparison is flawed because the authors analyse QE on the assumption that fiscal policy remains unchanged, whereas, for monetisation, they analyse the impact of both a more expansionary fiscal policy and its financing by the central bank. It is misleading to write on page 14: ‘Since monetisation would be accompanied by a fiscal transfer to households or businesses, this would result in a more direct effect on expenditure, which distinguishes this strategy from that of QE, which stimulates demand through its effect on asset prices at the risk of fuelling a financial bubble’. This overlooks the fact that the securities the central bank purchases through QE have themselves financed public expenditure, which in turn has had a direct effect on the demand for goods and services.

The authors envisage the Treasury issuing a perpetual zero-coupon bond, which the banks would purchase; the market value of such a bond would be zero. Is it conceivable that commercial banks, and subsequently the central bank, would agree to purchase or include on their balance sheets bonds that have a market value of zero?

The central bank’s balance sheet would be out of balance, as the counterpart to holding these worthless bonds would be debt owed to commercial banks. The central bank would have to pay interest on commercial banks’ deposits, which would reduce its profit and therefore the dividends it pays to the state. Ultimately, the state would still bear the burden of its debt. It is therefore incorrect to write, as the authors page 14: ‘The bond would not only be non-redeemable but would also bear no interest. Whilst it would certainly reduce central banks’ income, its counterpart would also be non-interest-bearing, which would therefore have little impact on central banks’ solvency’. In fact, banks’ deposits with the central bank do bear interest. The central bank would therefore have a deficit on its balance sheet. This debt would have to be attributed to the central bank’s shareholder; public debt would not decrease.

The authors write on page 11: ‘Monetisation makes it possible to pursue an expansionary fiscal policy without increasing the debt due.’ But public debt is no more *due* when the central bank and commercial banks undertake to finance it indefinitely. In each period, the government is assured of being able to refinance debt that has fallen due. It is never obliged to actually repay it. Conversely, commercial banks’ deposits with the central bank could fall if the banks decided to significantly increase their lending. Furthermore, it is incorrect to write, page 14: ‘Monetisation aims to create money that can be used by non-financial agents. It is the public deficit that creates financial assets, and amongst these assets, money.

²⁶ Christophe Blot and Paul Hubert (2020): “From monetisation to the cancellation of public debt: what are the challenges for central banks?”, OFCE *Policy Brief*, November.

The authors rightly criticise the proposal to write off public debt held by the central bank, without realising that this proposal is entirely equivalent to their own proposal to monetise public debt by issuing worthless securities that the central bank would absorb.

Some believe that **direct financing of governments by the central bank** should be allowed. But who would take the initiative: the central bank (which would change nothing compared with the current situation, where the central bank ensures that governments can finance their deficits and can buy back long-term debt) or the governments (but at what rates? within what limits?). There is a fundamental difference between a situation where the central bank may decide to purchase government securities to stabilise long-term interest rates and a situation where it would be compelled to finance a public expenditure programme, the amount of which it would not control.

According to Article 123 of the TFEU: ‘The ECB and the national central banks (NCBs) shall not grant overdraft facilities or any other type of credit to Union institutions, central governments, local authorities, other public authorities, public bodies or public undertakings of the Member States; the direct purchase by the ECB or the NCBs of their debt instruments is also prohibited’. However, this article is of little significance, as the ECB and the NCBs may acquire government securities on the secondary market, as the NCBs provide refinancing to the banks, which in turn must purchase these securities. It simply ensures that purchases of government securities by the ECB or the NCBs are made at market rates; however, these rates are determined, to a large extent, by the rates set by the ECB and by its securities purchase policy.

It would be preferable if the state and local authorities could borrow directly from households at regulated, non-market rates. This is the case, for example, with regulated-rate accounts. The problem is that households, at least those with substantial financial assets, hold bank accounts, and that banks have developed products to compete with regulated-rate accounts, with the result the amount of these funds has been significantly reduced (especially since, in Europe and in France, the financial oligarchy has chosen to reduce the importance of public financial channels and to liberalise capital movements).

Some²⁷ have proposed that **the central bank should cancel the government securities** it already holds, or even purchase them in order to destroy them immediately, or hold them indefinitely at a zero-interest rate. In fact, this operation, which is purely internal to the state-central bank ensemble and would not affect the present or anticipated income of any private agent, would have no macroeconomic impact. Let us imagine that the central bank cancels 500 billion in government securities that it holds. The State’s debt falls by 500 billion, but public debt, in the sense of the claims on future output guaranteed by ‘central bank + state’ ensemble, remains fixed. The operation would generate no real or financial margin. It is a zero-sum operation²⁸.

²⁷ See Laurence Scialom and Baptiste Bridonneau (2020), [‘Public debt write-offs by the ECB: let’s open the debate’](#), Terra Nova Note, April 2020. The proposal was taken up by Alain Minc, Jean-Luc Mélenchon and Arnaud Montebourg.

²⁸ This is also the view put forward by [Agnès Bénassy-Quéré](#) and [Jean Pisani-Ferry](#).

In return for holding government securities on its balance sheet, the ECB's liabilities consist of banknotes and banks' net reserves (Tables 4). If the ECB were to write off part of its assets, it would have a deficit on its balance sheet, which would be attributed to its shareholders, the Member States, meaning that their public debt would remain unchanged.

The central bank's balance sheet, like its operating account, would be out of balance. Instead of paying dividends to the state, the central bank would have to request a subsidy. The central bank's independence would be undermined. The ECB, like any other central bank, cannot accept this²⁹.

Economists who suggest transferring public debt to the central bank argue that, as the central bank is the ultimate source of liquidity, its balance sheet can be out of balance without any problem. However, this reasoning applies equally to the state, whose public debt, guaranteed by the central bank, does not need to be repaid. The equivalence between public debt and any potential debt of the central bank holds true from both a macroeconomic and a financial perspective.

According to them, the ECB could operate with negative capital. The BIS has stated that a central bank may have an unbalanced balance sheet and may operate with negative equity, but this applied to specific situations where the central bank had incurred losses whilst bailing out failed banks³⁰. To generalise this practice would be an unnecessary departure from standard practice: the central bank has a balanced balance sheet and the state bears the public debt; changing this convention would have no macroeconomic impact; if a country were to adopt this practice, its central bank's net debt would be included in the public debt. There is unity between the central bank and the state, as long as the central bank guarantees the placement of the debt. A country cannot rid itself of its public debt by having its central bank bear it.

In fact, they want to engage in creative accounting (also known as the '*sweeping it under the carpet*' method). They believe that the financial markets and European authorities will be taken in, that they will focus on the fall in public debt rather than the rise in the total 'public debt + central bank debt'. This is an illusion. By the end of 2026, France will have a public debt of 120 per cent of GDP, whilst the Banque de France will have a more or less balanced balance sheet. If it was decided (but by whom – the Bank of France?) that public debt stands at 100 per cent of GDP, whilst the Bank of France has a net debt of 20 per cent of GDP, the holdings of public debt by private entities would remain unchanged. The measure would therefore have no macroeconomic impact. Such a sleight of hand would worry savers rather than reassure them. If governments were to try to have part of their expenditure financed by their central bank or to conceal part of their debt on the central bank's balance sheet, the financial

²⁹ The rejection of this proposal has nothing to do with the specific characteristics of the euro or with the fiscal treaties. Neither the US Federal Reserve nor the Bank of England would accept such a move.

³⁰ Sarah Bell, Michael Chui, Tamara Gomes, Paul Moser-Boehm and Albert Pierres Tejada (2023) : *Why are central banks reporting losses? Does it matter?* BIS Bulletin n° 68, February.

markets and financial institutions would quickly take this into account when assessing the sustainability of their debt (which is, incidentally, what they do for developing countries).

The European criteria on deficit and debt levels need to be called into question, but this must be discussed clearly, on the basis of sound economic arguments (public deficits should only be reduced if they cause macroeconomic imbalances, not if they remedy them), and not through a sleight of hand involving the concealment of public debt.

To make the proposal more appealing, advocates of debt cancellation claim that the 500 billion in cancelled public debt could be used for green investments, but this makes no sense since these billions would not be released. They would still appear on the central bank's liabilities side and on the assets side of private entities. No private sector entity would reduce its consumption or investment. The available room for manoeuvre between production capacity and demand would remain unchanged.

The proposed operation is therefore impossible from an institutional point of view, unacceptable from an accounting point of view and, *in principle*, perfectly neutral from a macroeconomic point of view.

Despite its absurdity, the proposal to write off public debt held by the ECB – in order to free up funds for the green transition – has been backed by a group of some activists³¹, by the Veblen Institute, and subsequently backed by [a petition signed by 150 economists](#). ICI

In 2020, some observed that monetary policy had done everything in its power (zero or even negative interest rates, asset purchases) to support economic activity and reignite inflation. As it cannot do any more, they propose that it should now stimulate demand through '**helicopter money**'³², a sum that the central bank would pay to every household. They overlook the fact that this sort of operation falls within the remit of fiscal policy; it is not the role of the central bank, nor does it have the operational capacity to carry it out. A bank grants loans; it does not make payments. When monetary policy becomes ineffective, it must give way to fiscal policy. In the eurozone, each member state has taken measures to support its economy as best it can; it would be a waste to add a universal transfer to everyone – the richest as well as the poorest – or to pay money to civil servants or pensioners who have not, *in principle*, been affected; needs differ between countries that have a minimum income and an insurance scheme covering both full and temporary unemployment, and those that do not. Furthermore, some suggest that this 'helicopter money' should be used to finance the investments required for the green transition. The role of the central bank is to provide guarantees to governments and banks; it is not to finance a vast investment programme. The green transition is first and foremost an industrial issue (developing research, supporting businesses committed to the green transition, imposing rigorous standards on production and consumption), then a budgetary issue (taxing greenhouse gas emissions and polluting

³¹ Baptiste Bridonneau, Laurence Schialom, Jezabel Couppey-Soubeyran, Gaël Giraud, Nicolas Dufrène, Aurore Lalucq.

³² Jézabel Couppey-Soubeyran (2020): '*Helicopter money*' to combat the recession in the wake of the health crisis, Veblen Institute.

activities so that green investments become more profitable than brown investments, and funding green public investments), and finally, a credit policy issue (imposing social oversight on banks' criteria for granting credit, and developing a public banking and financial sector).

Giving the ECB a central role is illusory; it lacks the competence and the resources; it will not be able to finance a significant proportion of green investment from its own resources; it cannot mobilise substantial funds, unless it relies on borrowing from banks.

Strangely enough, a CAE paper³³ takes up this proposal. The authors claim that 'the side effects in terms of inequality and on the financial system are less significant (and better understood and controlled) than in the case of *quantitative easing*. A lump-sum transfer of equal value to all individuals automatically reduces income inequality (since the poorest receive a larger proportion of their income). It has no obvious impact on asset prices or on banks' profits', whilst acknowledging a little further on: 'In theoretical terms, it is equivalent for the central bank to provide support to governments (by purchasing public debt) and for the latter to make the transfer, or for the central bank to make this transfer directly'. It is this principle of equivalence that is correct; moreover, national fiscal policies can be better targeted at the poorest than a uniform distribution. Their only valid argument would be that the ECB's action would compensate for the lack of coordination of fiscal policies, but a uniform transfer, imposed by a federal authority, does not constitute a effective coordination. The authors do not make it clear that the eurozone would enter a new system in which the central bank would be in charge of fiscal policy and would have a high level of net debt (10 per cent of GDP in the long term, according to them), without any mechanism allowing a reversal of this situation (such as the ECB being able to levy a charge on households in the event of excessive inflation). They overlook the fact that households receiving 'helicopter money' would not hold it in the form of banknotes, meaning that the central bank would have to borrow from the banks, resulting in an unbalanced balance sheet and a weakened position. Such a proposal is therefore unacceptable to both central banks and Member States. The aim of its proponents is, in fact, purely *European*: to advance federalism at the expense of Member States' autonomy.

Some refer to 'the Treasury circuit', but reviving it would require developing a public banking and financial sector capable of channelling household savings towards the green transition; it would not be a matter of relying on the central bank's limited free resources. ICI

Finally, some *authors* raise the possibility of a **permanent currency, without any associated debt**. Proponents of the so-called '*money-debt*' theory claim that, under the current system, money is fragile because debt repayment which destroys money ; that it is the need for money to facilitate the circulation of goods that explains the growth in debt, which, as it must be serviced at an interest rate, creates a need for GDP growth that is harmful to the environment; that the link between money and debt must be broken; that the state could finance itself through the central bank's free monetary power, which does not generate debt.

³³ Philippe Martin, Eric Monnet and Xavier Ragot (2021): 'What else can the European Central Bank do?', CAE.

They fail to see that all financial assets (of which money accounts for only a small proportion) have as their counterpart all financial liabilities, so that money always has a counterpart in terms of debt, but that this counterpart, too, is only a small proportion of total debt, meaning that it is not the demand for money that can explain the growth in debt. Money is always a claim on future output and therefore a debt owed by society to its holder. There is no such thing as *debt-free money*.

Grandjean and Dufrêne's book ³⁴ criticises "the monetary mechanisms that closely link the money supply to debt". They propose "unrestricted and targeted money creation, without associated debt, to finance the ecological transition ... Central banks could create money without incurring debt ... The only actor capable of exercising unlimited power to create money is the central bank'. Unfortunately, 'this immense power is constrained by the very structure of the monetary and financial system: central banks can only interact with commercial banks ... As a result, no institution has the power to create permanent money, debt-free and without limits, to finance actors in the real economy'. These lines make no sense. There must be limits on credit, since there must be production capacity and a willingness to save in order to absorb the purchasing power thus created; on the other hand, the 2020 crisis clearly demonstrated the ability of governments to provide purchasing power when necessary. All bank credit automatically creates a double debt: the recipient's debt to the bank, and the bank's debt to the ultimate holder of the money created; no debt can be permanent, even if the aggregate of all debts is. There is no such thing as free money without a corresponding debt. Furthermore, the central bank is not intended to extend credit to non-financial agents; that is the role of the banks.

The authors advocate a 'magic' solution: 'adopting a method of money creation that would allow quantities of money to be introduced without any associated debt'. Let us imagine that the central bank pays out 1 billion in subsidies to individuals or businesses; its debt would automatically increase by 1 billion, just as public debt increases when the state subsidises. The recipients of the subsidies would not hold this 1 billion in banknotes, but mainly as bank deposits. The central bank would therefore have to borrow this 1 billion from the banks.

They write: 'the mechanism of free money creation would make it possible to inject hundreds of billions of euros into the economy'. How could it be guaranteed that there is indeed available output to match this injection? This injection would be no different from the public deficit, with the same problems: the public deficit is necessary in periods of under-employment, must be reduced in periods of full employment, and cannot be used to finance public expenditure sustainably beyond a certain amount.

From a macroeconomic perspective, scenarios A (financing through the issuance of government securities), B (purchase of government securities by the central bank), C (B plus the cancellation of securities) and D (direct financing by the central bank) are equivalent. To put it another way, the 1 billion in *ex post* savings corresponds to savings held by their owners,

³⁴ Alain Grandjean and Nicolas Dufrêne (2020): *An ecological currency to save the planet*, Odile Jacob.

savings which entitle them to 1 billion of future output, a right guaranteed in scenario D just as it is in scenarios A, B or C. Finally, the money stock is just as permanent in cases A and B as it is in cases C and D: admittedly, in a notional sense, the state must repay its counterparties, its counterpart is a debt owed by the central bank to its creditors, but it can roll over its debt without any problem, since the central bank guarantees its placement. Whatever the scenario, if there is excess demand, the state must pursue a restrictive fiscal policy. It is therefore misleading to claim that the cancellation of government securities held by the central bank or the central bank's subvention of certain public expenditure would avert the risk of tax increases.

Similarly, Dufrêne's book³⁵ puts forward a grandiose but false argument. It would be possible to rid oneself of public debt by having the central bank assume it, by having it write off the government securities it holds and by having it cover certain public expenditure. Boasting of having devised a 'theory of emancipatory money' that would allow for 'painless debt relief', the author fails to recognise that his proposal alters neither the real or financial accounts of private agents, nor the economy's overall debt, nor the constraints on the state's fiscal policy, nor the interest burden of the 'state + central bank' as a whole. It would merely shift part of the public debt to the Bank of France's liabilities, without altering either its level or its structure. The ultimate holders of public debt will continue to prefer interest-bearing securities rather than non-interest-bearing banknotes. His lack of a macroeconomic framework allows him to put forward ill-considered proposals: the portion of public debt held by the central bank could be converted into public investment; debt-free money could replace taxes or finance a universal basic income.

A paper by the Veblen Institute³⁶ also proposes creating 'a permanent money without a counterpart', by giving the central bank the remit to pay subsidies to households, businesses and public authorities. This is a fanciful proposal. The concept of a permanent money without a counterpart makes no sense: a financial asset always has a counterpart. What matters is not the money, but the financing. The central bank would overstep its remit to take charge of part of fiscal policy in area where it has neither competence nor legitimacy. Its deficit and net debt would be added to those of the state. The money thus created would have a counterpart in terms of public debt.

The authors write on page 9: 'Permanent money free of any counterpart would serve where money embedded in bank debt and of a temporary nature fails, that is to say, in providing society with the means for its ecological and social transformation'. They put forward four points: Money and bank credit are currently said to be temporary. To say the least, this is hardly evident.

Money could be 'free of a counterpart'. Money is one of the financial assets that confer rights to future production. Either these rights are liabilities of private agents, possibly

³⁵ Nicolas Dufrêne (2024): *Debt: How to Get Rid of It*, Odile Jacob.

³⁶ Jézabel Couppey-Soubeyran and Pierre Delandre (2021): *The Monetary Transition: Towards a Currency in the Service of the Common Good*, Veblen Institute.

intermediated by the banking system, or they are socially guaranteed, constituting liabilities of society, that is to say, of the state.

The authors present a description of the banking and financial system in which the state is strangely absent. Among the roles of the central bank, they omit that of financing public deficits and guaranteeing public debt. This allows them to present as a radical innovation something that has always been the case: the counterparts to the money supply have always included a 'credit to the state' component.

Money, according to the authors, could provide society with the means for its 'ecological and social transformation'. In fact, this is not about money, but about financing. This currently operates through two channels: private investment (financed by corporate profits, bank credit and bonds), and public expenditure (financed by taxes, the budget deficit, including government securities). It is the entirety of this expenditure that must be called into question in order to bring about ecological and social transformation.

According to the authors, the ECB's independence constitutes 'an obstacle to directing central bank money towards major societal challenges, such as preventing the health crisis from destroying productive potential and jobs, preventing a rise in precariousness and inequality, and combating climate change'. The authors refuse to acknowledge that the central bank's remit is to guarantee and refinance governments and banks, not to finance, let alone subsidise, private entities. They are knocking on the wrong door, as if they were criticising their bookseller for not selling good-quality bread.

In the same vein, they write on page 23: 'How can central banking be made to serve economic and financial stability, and society, more effectively? By permanently freeing it from the requirement for a counterpart, which means creating it without such a counterpart, and channelling it directly towards the spending needs of the real economy – those of households, businesses and governments, particularly to support them and enable them to make the investments essential for the ecological transition.' However, central bank money will always have a counterpart, unless one regards the central bank as a magical entity whose debt, by its very nature, does not count.

The authors propose a new method of issuing money. The central bank would provide grants, without any consideration in return, to non-financial agents. Thus, on page 26, money would 'no longer necessarily stem from a banking mechanism or from money creation through debt: with the introduction of voluntary money, a portion of the money in circulation would be free of debt or any other counterpart – and permanent rather than temporary', and then, on page 33: 'As a purely social convention, money does not require a counterpart'. In fact, money created in this way would always have a counterpart; the billions created would appear on the central bank's liabilities side (in the form of banknotes or bank deposits); their holders would have a socially guaranteed right to a share of future output; the counterpart would be public debt, borne by the central bank. The sleight of hand *amounts* to saying that, by its very nature, the central bank cannot be in debt, but why not say the same for the state, which also has unlimited power to create money?

Appendix 3 sets out a proposal for creative accounting: to include a line item in the central bank's balance sheet entitled 'Definitive contribution to public objectives', which would reflect the deficit resulting from the various measures envisaged by the authors (subsidies to private or public sector entities, or debt write-offs), thereby 'avoiding the need to record a loss on the institution's balance sheet'. But who would be fooled by this accounting ploy? The net deficit on the central bank's balance sheet would have to be added to general government debt in order to assess public debt.

On page 28, the authors write that 'The voluntary issuance scheme would be introduced to address major current challenges such as financing the ecological transition, actively managing a pandemic, providing a universal basic income, guaranteeing employment for all, etc. ... the choice of these uses or allocations cannot be determined *in advance*, as it would result from a democratic decision.' The reference to democratic choice allows them to avoid providing any precise figures. Thus, everything can be funded with permanent money ; whatever the subject, the authors have a single answer : ' permanent money without a counterpart' can fund it. The need for social choices is denied.

The authors fail to see that their *proposed voluntary* money issuance would have exactly the same effect as the current deficit-financed public spending – useful in periods of weak demand, but dangerous if demand is spontaneously strong. Central bank money is not a magic resource. It cannot be used to finance permanent social expenditure.

However, on page 29, they propose special measures: "to influence the volume of permanent money, it would be necessary to resort to additional monetary regulation tools, the purpose of which would be to re-establish the outflow that does not occur spontaneously under the system of voluntary issuance of money without a counterpart, and to manage it ... for example through fiscal measures whereby the public authority would levy a one-off or recurring charge directly on the money supply in circulation". But the currency would then no longer be permanent, and its issuance would no longer provide a safeguard against the need to raise taxes.

Giving the central bank the power to set fiscal policy would be contrary to democratic principles. Public expenditure must be decided by the state, the local authorities or the social partners. It must be approved by parliaments elected by taxpayers. Recognising this problem, the authors propose, on page 31, to 'entrust the decision to a committee comprising representatives of the Eurosystem, Member States, the European Commission, parliaments, NGOs (particularly environmental ones), and the scientific community (for example, climate scientists for the ecological transition, health scientists for health issues, and so on)'. What would be the democratic legitimacy of such a body? How would it strike a balance between universal basic income, employment for all and the ecological transition, particularly as it would have to contend with diverse national systems? How would it determine the scale of the funding it would allocate, given that this would compete with national public expenditure? Centralising public finance decisions in Frankfurt would run completely counter to the

principles of decentralisation and democratisation that must lie at the heart of the ecological and social transition.

We agree with the authors when they write: ‘the greatest challenges currently facing public authorities are the investments required to combat climate change and restore biodiversity whilst maintaining social cohesion... these essential investments cannot secure funding because they are not financially profitable’, but the answer does not lie in ‘the introduction of this new method of money creation’, which would apply only to central bank money and be managed by the central bank. The authors fail to recognise that the ecological and social transition requires a rethinking of numerous areas of public spending, taxation and regulations so that green investments become more profitable than ‘brown’ ones; a rethinking of corporate objectives and governance (ecological objectives rather than profit targets, and greater power for employees and stakeholders); and a re-evaluation of the criteria for the allocation of bank credit and all forms of financing, and to rebuild a public banking and financial sector to guide and finance public and private investment. Rather than envisaging a vague ‘monetary transition’.

In the same vein, JCSa propose a new method of money creation: *voluntary currency*³⁷. The central bank would create money to finance a Sustainable Development Fund (CDD), which would provide non-repayable grants for necessary but financially unprofitable expenditure and investment (particularly those linked to the ecological transition). It would thus create ‘debt-free money, that is to say, money with no obligation to repay’.

In fact, these *unprofitable* expenditures are already collectively borne: they are funded by the state (or local authorities), either through taxes or through the deficit (and therefore public debt). A large proportion of ‘money creation’ already takes place through the public deficit – and is therefore carried out without regard to profitability – in order to pursue social objectives. From this perspective, *voluntary currency* already exists. However, it is neither free currency nor debt-free currency.

Proposing that part of public expenditure and investment be covered by grants from the central bank is pointless and unrealistic. From a macroeconomic and financial perspective, there is no difference between funding via a grant from the central bank and funding via a public deficit. The increase in financial assets held by non-financial agents would be the same as that in public debt. There would be no specific creation of ‘debt-free money’, which is an oxymoron. Monetary assets are not repayable at a fixed maturity; worse still, they are repayable on demand. A banknote can be used at any time to obtain goods or services. The state, for its part, faces no constraints regarding the repayment of public debt: it can roll over securities that have reached maturity, since the central bank and the primary dealers guarantee that its funding is always secured. It is absurd to claim that financing through

³⁷ Jézabel Couppey-Soubeyran, Pierre Delandre and Augustin Sersiron (2024) *The Power of Money*, Les Liens qui libèrent.

securities would increase public debt, but not financing through a central bank, which is itself funded by deposits from commercial banks.

Just because money creation was to take place through subsidies from the central bank does not mean that the ultimate holders of the monetary and financial assets thus created would hold more non-interest-bearing central bank money. The central bank could not finance its subsidies with a *voluntary*, non-interest-bearing *currency* that no economic agent would wish to hold; it would have to finance itself through bank deposits bearing interest at the key interest rate (currently 2.5 %). Its operating account would be in a perpetual state of imbalance if it did not have resources to cover this expenditure.

Whether the *ex ante* financing of green investments is provided through a subsidy from the state or the central bank would not change their macroeconomic and financial impact, except in terms of the location of public debt – on the liabilities side of the state or of the central bank, a financial subsidiary of the state. One cannot therefore claim that ‘financing through government debt and financing through the central bank’s issuance of debt-free money are by no means equivalent: one increases debt, the other does not’, that the former ‘traps us in growth’, and that the latter creates ‘money unlinked to debt’. The two types of financing are equivalent. The central bank cannot issue *voluntary money* without debt. A simple analysis using a TOF would allow JCSa to recognise this. Their proposal would not create ‘mission-based money’ – at best, it would be ‘mission-based financing’ – but this would be nothing new compared with the current financing of public infrastructure, local authority investments or social housing. Contrary to his claims, JCSa’s proposal would not change the nature of money.

Weak demand relative to production capacity often necessitates an expansionary fiscal policy. This is normally implemented by the state, and thus through the public deficit, bearing in mind that the financing of this deficit is always guaranteed by the central bank, and that the deficit must be calibrated so as not to be excessive. Direct financing by the central bank would have exactly the same macroeconomic and financial impact. It too would need to be calibrated so as not to be excessive, given the monetary and fiscal policies in place elsewhere. Who would be responsible for this? In the event of an excessive level of demand, restrictive policies would need to be implemented; the fact that part of the debt is fictitiously held in the central bank’s accounts would not alter this necessity. In the eurozone, baseless numerical fiscal rules have been put in place which purport to limit the public deficit and debt. It is these rules that must be directly challenged. Proposing to use the ECB or the BdF – bodies that advocate fiscal austerity – to conceal the size of the public deficit or public debt is a strategy doomed to failure. Resources must be found to finance the ecological transition. It is the responsibility of governments to make the necessary trade-offs, and to do so in the most democratic way possible, following a public debate. The central bank has no magic resources; it is not its role to make social choices; nor is it in a position to organise democratic debate. The banking and financial system must be harnessed to serve the ecological transition. This cannot be achieved through financial manoeuvres at the level of the central bank.

In 2026, Jean-Luc Mélenchon, candidate for the French presidency, revived the proposal to cancel the public debt securities held by the ESCB, using the false argument that ‘it is money we owe to ourselves’. A paper signed by 50 economists, [entitled ‘Putting the debt on ice: the debate is about our dependence on the financial markets’](#), offered him only a lukewarm support. Their text proposes maintaining and even increasing the amount of government bonds held by the ECB. It claims that ‘freezing the debt on the central bank’s balance sheet means neutralising the markets’ power to cause harm and defusing debt blackmail’, which is overly optimistic given that the so-called freeze applies to only 20 per cent of the debt. It overlooks the fact that the ECB is merely converting long-term public debt into short-term debt, which may be useful in certain economic circumstances to bring down long-term interest rates, but cannot be demanded on a permanent basis, especially as it requires commercial banks to agree to hold massive amounts of short-term deposits with the ECB, which exposes the ECB – and therefore the governments – to interest rate risk. In any case, calling for a less stringent monetary policy has nothing to do with cancelling public debt.

That said, the text is correct on crucial points. In the past, the compartmentalisation of markets allowed the state to finance itself at interest rates that were relatively low compared to inflation and growth. This was the ‘euthanasia of rentiers’. Similarly, capital controls made it possible to tax the wealthiest individuals and large corporations. Financial liberalisation and the free movement of capital (which the EU was helping to impose) now mean that the vast majority of capital can compare the returns and risks of different investments and demand to be *properly* remunerated. At the same time, the financial markets are not neutral; they are instruments of the financial oligarchy; although they require significant quantities of government securities, they penalise policies involving public deficits, but also tax increases, especially if they target the wealthiest and large corporations. It is both necessary and difficult to reverse this trend and reduce the influence of the financial markets.

The functioning of the eurozone is based on questionable principles. Member states must comply with arbitrary budgetary rules; the independent ECB does not guarantee public debt; responsibility for overseeing fiscal policy is entrusted to the financial markets. The long-term interest rate depends on market expectations regarding the trend in short-term rates (and therefore on inflation and growth); Since Greece’s partial default, it has also incorporated a default risk premium. Consequently, since 2011, Italy has been paying an average of 1.9 percentage points more than Germany on its public debt. That amounts to 2.5 percentage points of GDP each year, or 38 percentage points of GDP over 15 years. This transfer is imposed by the financial markets, which are united in their view that there is a risk of Italy defaulting on its debt – a risk that has not materialised. France is currently borrowing at 4.9 per cent for 10-year bonds, which is 1.35 percentage points higher than Germany, again due to a risk perceived by the financial markets. This risk is self-fulfilling: the markets are anticipating not so much a victory for Jean-Luc Mélenchon as the rise in interest rates that they themselves would trigger as the election approaches.

Through the TPI (Transmission Protection Instrument), the ECB can come to the aid of a country that pursues ‘sound and sustainable economic policies’, in line with the EU’s fiscal

framework, but which is threatened by ‘unjustified market dynamics’. It will be difficult for a left-wing government to call for such protection, or to ask the ECB to buy French securities on a massive scale, whilst at the same time pursuing a policy that falls outside European norms.

France has a public deficit, but virtually no external deficit. The public deficit could be financed directly by French people’s savings. In the medium term, the government could consider increasing the level of French government securities held by French citizens. Either by developing a public banking and financial system that would encourage residents to hold Treasury bills and government bonds directly (though this would require such holdings to be well remunerated), or by imposing quotas for French securities on financial institutions (though these two measures would risk being struck down by the CJEU, as it would contravene the free movement of capital).

Generally speaking, the green transition requires public investment and an increase in public deficits. European budgetary rules and those of the Banking Union should take this into account. So far, the European institutions have refused to do so.

Conclusion

In conclusion, we shall make a few normative observations:

- Macroeconomic analysis must set aside the concepts of money, money creation, and monetization. It is not useful to single out money from among all financial assets. What matters is the quality and quantity of financing.
- States must manage their public finances in accordance with the principles of functional finance (or MMT, to use a more modern term), that is to say, to reduce economic imbalances rather than to comply with public finance rules. Thus, they should not aim to return to arbitrary levels of public debt. Fiscal policy should only become more restrictive if demand is excessive, bearing in mind that a certain degree of tension in goods markets can be useful for supporting supply. In the longer term, the reduction of public debt would be facilitated by a tax on high net worth individuals and by combating tax competition and tax optimisation, by tackling the income inequalities caused by neoliberalism, as well as by developing investments that form part of the ecological transition.
- For the countries of the eurozone, this implies that the fiscal treaties must be set aside and that the ECB must guarantee public debt. Only if a member state’s economic policy actually has harmful consequences for its partners would the European institutions be entitled to ask it to change its policy (bearing in mind that an austerity policy, tax and regulatory competition, and a failure to tackle climate change are just as harmful, if not more so, than an overly expansionary policy).
- There is no point in launching a contest of eccentric monetary reform schemes. The central bank must supervise, guarantee and provide refinancing to banks; it must guarantee public debt: together with the state, it must ensure that demand matches potential output. It is not its role to grant credit to non-financial entities, let alone make transfers to households, businesses or public administrations.

- Productive investments can normally be financed by the private sector (self-financing, bank loans or bonds) on the basis of their expected profitability. The state must finance necessary investments that are not financially profitable or whose outcomes are uncertain, particularly in the context of the ecological transition; it must act as a financial intermediary by financing these investments through risk-free debt; it must not be constrained by the public debt limits set out in the European Treaties and by the financial markets. In between, investments should be financed by households according to other economic (such as support for domestic industry) or environmental criteria. This argues in favour of developing a public banking and financial sector capable of financing socially desirable projects, such as green investments, whilst accepting lower returns and a certain sharing of risks between the state and households. In addition to savings accounts, this public sector could offer investment bonds to households willing to share some of the risks associated with green industrial projects. This is a more realistic strategy than the utopian idea of financing by the central bank.
- The quality of financing matters. The green transition requires the introduction of standards and taxes that ensure green investments become more profitable than brown investments. The financial and banking system must factor these standards, these taxes and their announced changes into its financing decisions.