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The hemispheres of finance: GDP and non-GDP finance

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Abstract
This paper examines the interplay between one hemisphere of the financial economy that contributes to financing real-economic output, while the other deals self-referentially with capital management and financial asset management, in short, GDP finance and non-GDP finance. Since around 1980, there has been a significant GDP-disproportionate expansion in non-GDP finances, based on the credit-borne expansion of the money supply by banks, central banks and shadow banks, and resulting in problems of instability and new disparities that cannot to be remedied by conventional measures alone.

JEL codes E41, E44, E51, E58, G1, H6

Key words Financial economy, real economy, non-GDP finance, financialisation, money supply, monetary absorbency, financial carrying capacity

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Summary

The financial economy is subdivided into two functional hemispheres, one that contributes to financing the real economy, and another that does not, in short: GDP finance and non-GDP finance. GDP finances include, for example, loans for funding real-economic expenditure and investment, a firm's equity and debt, as well as taxes, social security contributions and government bonds to fund public spending. Non-GDP finances include, inter alia, secondary trading in shares, bonds and other securities, real estate as a pure capital investment, or most of the trading in derivatives and foreign exchange. The occasional dual nature of financial transactions does not alter the functional difference between them.

Starting around 1980, there was a strong surge in global financialisation. Growth of non-GDP finance exceeded nominal GDP growth several times over. New IT and securitisation methods have played a role in this, but even more so the expansion of money supply – the creation of bank deposit money (bankmoney for short), which is systemically dominant and refinanced, to a small fraction, by central-bank base money. In addition, new money surrogates based on bankmoney have emerged, such as money market fund shares, partly now also e-money and stablecoins. For a long time, the bankmoney regime remained the misjudged factor behind the disproportionate expansion of non-GDP finance and ensuing problems.

The greatly expanded money supply for non-GDP finances is not per se at the expense of the real economy, nor is government borrowing at the expense of private sector funding (crowding-out hypothesis). Modern fiat money can be freely created for all sectors of the economy, by banks, central banks and shadow banks, certainly not without complying with certain requirements and rules, but basically in any quantity deemed appropriate.

The problem thus is not a lack of GDP finance, rather: too much non-GDP finance. In recent decades, most of the money, or credit respectively, went into non-GDP transactions. Money invested in non-GDP finances will largely remain within in this hemisphere. Even the money that initially flows into GDP finances keeps circulating there only partially, while the other part drains off into the non-GDP hemisphere.

This also applies to government expenditure funded by traditional deficit spending or its continuation in the form of indirect monetary financing through Quantitative Easing, that is, the purchase of government bonds by central banks on the open market. Most government spending initially certainly serves the real economy, but over time these funds will migrate to the non-GDP hemisphere. This is all the more true when, in the event of a financial crisis, central banks on their own initiative provide additional reserves (central-bank money) to banks to support the entire financial sector (including government bonds).

The oversupply of money, to the extent it is taken up as borrowed capital, causes the trend of falling interest rates that has existed since about 1980 as well as – not only, but also because of this – low consumer price inflation. In a seemingly paradoxical way, however, low interest rates, rather than stimulating real-economic activity, are boosting non-GDP finance. Instead of inflation, the money overhang is largely generating asset inflation, i.e. rising asset prices and an increase in the volume of securities and other financial assets. There is no self-limitation of financial-market dynamics in terms of efficient-market equilibrium economics. Quite the contrary. Driven by positive feedback loops, over-investment and over-indebtedness

recurrently occur – partly sector-specific, partly involving the entire financial economy – exceeding the limits of financial carrying capacity and resulting in financial crises.

The disproportionate rise of non-GDP finance and ensuing financial crises is not neutral. Financial crises almost always trigger economic and business crises. More than serving productive structural change, they cause counter-productive destruction of capital, including human and social capital, not to mention social and political division. Social division also results from the fact that non-GDP financial income gives the same purchasing power as earned income, and thus direct access to GDP. Non-GDP finances cause income and price relations to spread apart upwardly, resulting in increased inequality of income and wealth. Earned income is increasingly left behind by non-GDP financial income; prototypically evident in home ownership and rents, but also all other goods and services that are more than hitherto determining status and lifestyle.

What to do? Non-GDP finance builds savings, reserves, proprietary capital, financial wealth. Which is something useful and desirable. The perspective will therefore be to curb the excessive overshooting of non-GDP finance.

In terms of monetary policy, this requires first of all central banks to be in charge of controlling the problem and able to effectively transmit steering impulses to the markets. Policy transmission is all the more effective the more there is central-bank money serving as a quantity lever. A key role at this falls to the introduction and large-scale use of CBDC (central bank digital currency, also referred to as sovereign digital currency) to supplement and finally replace solid cash as well as to compete with bankmoney. Notwithstanding, the legal mandate of central banks needs to be specified more expressly and completed regarding tasks, targets and instruments – while maintaining separate responsibilities for monetary policy (central bank) and fiscal policy (government and parliament).

Other suitable instruments of financial market policy include the revenue-neutral expansion of a financial transaction tax within the framework of all turnover taxes, furthermore lock-up periods for trading positions held, as well as tiered interest rates on GDP transactions and non-GDP transactions. On the fiscal side, income tax should be better differentiated for the highest top earners. Inheritance tax should spare business assets and owner-occupied housing, but should implement higher tax rates on non-GDP financial assets.

Economy and finance

Since the dotcom crisis (2000), subprime and banking crisis (2008) and the euro sovereign debt crisis (2010–12) the public is critical of the financial industry. Bubble economies should be prevented, money ought to serve the real economy rather than questionable financial dealings. However, putting it this way is not yet appropriate. One cannot separate the economy from its financing. The modern economy is a credit economy. Most investments are paid only to a lesser extent out of current earnings and provisions made, while the bigger part is pre-financed by credit. Nevertheless, opposing the real economy to the financial sector has a point often disregarded by orthodox economics, which is, that wide areas of the financial economy no longer have anything to do with financing the real economy.

The relevant dividing line does not run between the real economy and the financial economy, rather between the two hemispheres of the financial economy: on the one hand those areas

that contribute to financing the real economy, on the other hand those areas that do not contribute to financing economic output. In short, the dividing line runs between GDP finance and non-GDP finance.

Typical examples of non-GDP finance include secondary trading in bonds, shares and other securities (i.e. after their initial issue), forex trading without a background of actually making use of a respective foreign currency, derivatives trading beyond the hedging of existing risk positions, trading in real estate as a financial investment without significant change in a property's use value, as well as leveraged financial trading of any kind. Further clarification of the terms real economy, GDP finance and non-GDP finance is provided in the Annex.

Non-GDP finances are largely independent of GDP finances, but are ultimately dependent on the real economy. Real-economic business cycles and structural change affect the financial cycles in bonds, equity, commodities, real estate and other financial investments, as these in turn affect real-economic cycles.

Money that does not flow into the real economy has no effect on real-economic quantities and prices, and therefore has no direct impact on producer and consumer price inflation. Money that flows into the financial economy, whether in GDP finances or non-GDP finances, influences asset prices (asset inflation) as well as the quantitative expansion of financial-market supply.

Figures and questions on the GDP-disproportionate expansion of the financial sector

The size of the real economy is captured in aggregate figures, particularly GDP, as a measure of an area's economic output or income generated. There is no comparable aggregate indicator for the financial sector. An asset price index such as the one by FvS Research Institute is a financial equivalent of CPI.[1] It does not yet provide a comprehensive picture of the stock of financial assets. Thus one has to refer to single exemplary figures reflecting the expansion of non-GDP finance.

Growth in both the real and the financial economy cannot, as a rule, be paid for by an accelerated circulation of existing money alone. Rather, any such growth is accompanied by an expansion of the money supply, that is, the banks' primary credit creation, a fraction of which is refinanced in reserves by interbank credit and central-bank credit to the banks. In industrial countries, bank credit, and thus the money supply, grew at about the same rate as nominal GDP until around 1980. In Germany, for example, the M1 money supply oscillated around 1.8 times GDP until 1980. Since then, however, money and credit growth has sharply diverged from GDP, to 7.5 times GDP growth.[2] The period around 1980 marks the onset of so-called financialisation in the wake of globalisation.

The GDP-disproportionate expansion of the money supply is evident in all industrial countries. For example, from 1992 to 2008, GDP in Germany grew by 51%, but the active money supply M1 by 189%, in Switzerland GDP by 37% and M1 by 121%, in Great Britain GDP by 392% and M4 by 1,744%. In the US, there has not been such a marked increase in bankmoney, but

[1] Flossbach von Storch Research Institute, Eurozone Wealth Price Series, www.flossbachvonstorch-researchinstitute.com/fileadmin/user_upload/RI/Vermoegenspreisindex/EU-en/fvs_wealth_price_series_h2-2019.pdf.
[2] All figures on monetary quantities and credit expansion taken from Huber 2017 109–124.

there was a spectacular take-off of money market fund shares (MMFs) as a widely used new money surrogate. From 1980-2008, MMFs rose from close to zero to 2.5 times M1. In Europe, MMFs are around one third of M1. Overall, the money supply grew three to four times faster than nominal GDP in the decades leading up to the financial crisis of 2008.[3]

What for? Monetary growth did not translate into growth of the real economy and CPI, as this growth is already reflected in nominal GDP. Hence, the GDP-overshooting growth of bank credit and money went into non-GDP financial assets, including asset inflation. The volume of financial market transactions increased from 15 times GDP in 1990 to 70 times in 2007.[4] The share of loans going into GDP finance in the UK is only 15% of all loans.[5] Deposit-creating bank credit (bankmoney) serves as a secondary basis for the financial intermediation of shadow banks. The term 'shadow banks' now covers virtually everything previously referred to as 'non-monetary financial institutions'. These are financial intermediaries, including investment trusts, private-equity transactions, non-bank building societies, special purpose vehicles, and insurance companies in that they invest or lend money or operate their own investment funds. Between 2013 and 2017, shadow banks raised twice as much bankmoney for financial investment in bonds, shares and mutual funds as real-economic companies have borrowed. The shadow-bank sector today has a larger volume of lending and financial investment (32 trillion euros) than the deposit-creating banking sector (24 trillion).[6]

Financial assets increased in line with the GDP-disproportionate expansion of the stock of money. US financial assets (shares, bonds, other securities, but excluding real estate) oscillated around 4.5 times GDP until around 1980. From 1980-2007 they then rose to over 10 times GDP.[7] Financial assets held by US asset managers reached 50% of GDP in 1946 and 240% of GDP in 2014.[8] From 1980-2014, the average valuation of bonds, stocks and housing rose fourfold in 15 developed countries, while nominal GDP only doubled.[9]

In the short period from 2014 to 2019, real-economic CPI in Europe rose by a total of 5 percent, while the increase in asset prices was four times as high at 20 percent. This applies even more so to land and real estate as a financial investment. Their use value is of course not dispensable, but has tended to be pushed into the background (which has long been true for company stocks). Real property prices in the USA rose by only 7% in the hundred years between 1890 and 1997, but by 85% in the ten years from 1997 to 2007.[10] In all developed countries, house prices have risen 14 times on average since the late 1970s, even up to 21 times in Australia.[11]

[3] Calculated according to the periodically published statistics of the European Central Bank, Deutsche Bundesbank, Swiss National Bank, Bank of England, UK Office for National Statistics, and FRED Data by the Federal Reserve Bank of St. Louis, USA.
[4] Deutscher Bundestag 2020 7–8, Sigl-Glöckner 2018.
[5] Van Lerven/Hodgson/Dyson 2015 pp.26.
[6] Sigl-Glöckner 2018.
[7] Thomson Datastream. Federal Reserve. Trader's Narrative, Nov 7, 2009. Other delimitations produce a lower level but the same proportions, e.g. in Bhatia 2011 8.
[8] A. Haldane, chief economist of the Bank of England, in a speech on big institutional investors, reported in FAZ from April 8, 2014, 25. FRED Economic Data St. Louis Federal Reserve, Financial business total financial assets to GDP 1952-2018.
[9] Deutsche Bank Markets Research 2017 8-33; OECD data https://data.oecd.org/gdp/gross-domestic-product-gdp.htm
[10] Shiller 2015 20.
[11] Jordà/Schularick/Taylor 2014; FAZ, 18.10.2014, 32.

The disproportionate expansion of the financial sector in relation to GDP raises questions. Is this development at the expense of the real economy? Why is ever more money flowing into non-GDP finances rather than into GDP finances? Is financialisation not also being driven by debt financing of government expenditure, massively fostered during recent years by the central bank policy of Quantitative Easing (QE)?[12] To the extent that newly created money is first used in the real economy, does it continue to circulate there? or does it migrate into non-GDP finance? If so, does it stay there or does it once again serve to finance GDP?

Crowding-out of the real economy by the financial sector?

A neoclassical criticism of Keynesian deficit spending was the crowding-out hypothesis. It says that the government, due to its prerogative of taxation, enjoys a higher credit rating than private borrowers. The government's credit demand for funding its deficit spending thus would drive private credit demand out of the market. By analogy, the question today is whether the strong growth of non-GDP finance is depriving the real economy of money.

Such a presumption seems to be supported by the fact that the commercial financial sector has a bias in favour of well-heeled demand from institutional investors and large companies, while medium and small enterprises often have difficulty in obtaining finance. Most loans today are granted for real estate transactions and mortgages, besides also for funding public budget deficits and for leveraging financial investment other than real estate. These three purposes account for 72–80% of loans. Only the remainder goes to loans to firms and households (excluding real estate).[13] It has already been mentioned above that in the UK 85% of loans go to non-GDP finances and only 15% to financing contributing to GDP.

Nevertheless, the monetary and financial system has changed in a way that does not support to assume crowding-out of the real economy by the financial sector. In principle, this was already the case in the 1960-70s. The historically new situation is that money now exists as freely created fiat money. The expression refers to the biblical *Fiat lux* (Let there be light). Fiat money is a means of payment put into circulation as a symbolic token by agencies that are legally entitled or de facto capable of doing so, without this money being covered by gold, silver or other assets. This has been the case, at the latest, since the recurrent suspension of the gold standard in the 1930/40s, until 1971 when the US dollar was taken off its presumed gold coverage agreed on in Bretton Woods 1944. The securities, against whose deposit a central bank today issues banknotes and reserves to banks, are not a placeholder for the issued money, but rather a collateral for the loan, analogous to the pledging of, for example, real estate in the case of bank loans.

The salient point here is that modern fiat money can be created any time and in virtually unlimited amounts according to the will of the major financial agencies. This certainly requires a number of institutional, legal and economic prerequisites. Nevertheless, the symbolic tokens representing modern fiat money can freely be created. There need be no shortage of money. If the public and the private sector demand financing, it should basically be no problem to make that money available to both sectors, by credit from central banks (base money), banks (bankmoney, aka sight deposits) and shadow banks (third-level means of payment based on

[12] Quantitative Easing is an expansion of the available stock of money by extensive central-bank purchases of government bonds on the open market. This comes down to the monetisation of government debt.
[13] Liikanen Report 2012; Financial Crisis Inquiry Committee 2011; Turner 2016 61.

bankmoney). Respective amounts of money do not necessarily have to be taken or borrowed from anywhere, so that in this sense no one is lacking.

That situation puts two central assumptions of orthodox equilibrium economics into perspective. One is the assumption of causal identity of investment and preceding saving, the other the misleading assumption that banks are financial intermediaries who finance proprietary investment and lending by using customer deposits.

The equation of investment and preceding saving [I = S or I = f(S)] is no longer tenable in this way. In reality, causality tends to run in the opposite direction [S = f(I)]. The reversal and relativization of the old formula results, on the one hand, from the fact that a large proportion of financing is not carried out with already existing money but with newly created money, and on the other hand from the fact that ever more of the existing and newly created money flows into non-GDP investment. The aggregate putting-in-one of GDP finances and non-GDP finances is misleading. Moreover, non-GDP financial cycles and real-economic business cycles are partially going their own ways.[14]

As regards financial intermediation – i.e. transfer of existing money from savers and investors to borrowers – it continues on a large scale in the non-banking sector (shadow banks), in fact to a greater extent than is financed by bank credit. Financial intermediation by non-banks is carried out on the basis of bankmoney, and now also by using new money surrogates such as MMFs. For the most part, MMFs too are issued on the basis of bankmoney, put in by non-banks. The banks for their part manage transfers of bankmoney on behalf of their customers, and in this sense they may be seen as *monetary* intermediaries, but they are not *financial* intermediaries of their own bank deposit money. Banks do not borrow bankmoney from their customers, and they cannot for technical reasons, but they are creators of that deposit money whenever they lend to non-banks or buy securities from them.

For the crowding-out hypothesis this means that if the government incurs high debts, the money for this does not need to be taken away or withheld from the private sector, because the money needed can be created instantly – which in fact happens in various ways. As a result, debt-financed public expenditure benefits the private sector to a large extent, both the private financial sector through corresponding returns and the private real economy through investment and mass purchasing power.

Similarly, the non-GDP financial hemisphere can absorb a great deal of money without the real economy having to run out of money, because the money needed for the real economy can be created at any time, provided the relevant financial actors are willing to do so. If not, however, this will certainly lead to parts of the real economy lacking funds.

The problem thus is not competition for scarce money, but rather too much non-GDP finance.[15] This is due to the largely unchecked creation of second- and third-level money, an excessive amount of which flows into non-GDP finance, leading to recurring asset inflation, over-investment and over-indebtedness, bubbles and financial crises. As a rule, this also affects the real economy.

[14] Vgl. Borio 2012, 2017.
[15] Also cf. Arcand/Berkes/Panizza 2012.

What definitely exists as crowding-out, however, is the relative diminution of earned income due to growing financial income, becoming apparent in demand for high-end goods, services, and housing. Again about this later.

Monetary financing of government expenditure

Recognising the free creation of fiat money, the 2008 crisis led to calls for monetary financing, that is, for the central bank to finance government expenditure. Among the proponents were A. Turner, then head of the British Financial Services Authority, and the New Economics Foundation.[16] To overcome the Great Depression of the 1930s and during the Second World War, monetary financing had been practised on a large scale.

If money is pure fiat money made from symbolic tokens (solid, scriptural, digital), a state with a currency and central bank of its own need never become insolvent in domestic currency. The government can borrow on the open market by way of issuing bonds, and the central bank can buy up a sufficient proportion of these bonds. In such a *paso doble* between the treasury (bond-financed government expenditure) and the central bank (buying up the bonds on the open market, i.e. monetising the debt and thus practising indirect monetary financing), desired amounts of money can always be made available – be it to boost the economy and employment, or pay for election gifts, or mitigate a shock such as the covid pandemic, or finance the ecological modernisation of industrial production and consumption. Central banks' bond purchases play now a key role in stabilising the price level of government bonds, keeping interest rates low and thus maintaining the governments' ability to borrow despite high debt levels.

At the same time, the government rids itself of part of its debt burden held by *private* creditors. To the extent that government bonds are held by the domestic central bank, interest rates are basically irrelevant. This is because interest paid by the treasury to the central bank flows back to the treasury as central-bank profit. However, as far as the amount of bonds is concerned, the treasury has to repay the central bank when the bonds mature. Otherwise, the central bank would suffer a corresponding loss and would soon have to operate on negative equity. What the treasury can do, however, is to repay maturing bonds *and* at the same time issue new bonds, part of which the central bank buys up again on the open market. The central bank can then accumulate or 'consolidate' the balance between repaid old government debt and new government debt on its balance sheet, letting grow the accumulated government debt on the balance sheet 'forever', sort of 'eternal credit'.

It can be done that way for quite a long time, as can be seen in the examples of Japan since 2001, or the USA to a relatively lesser extent already decades longer, also some European countries before the introduction of the euro, as well as the ECB today in the form of its massive purchases of government bonds since 2012/13. In 2018 the share of government bonds held by the respective domestic central bank was between 15 and 22 percent and 40 percent in Japan. The share of government bonds with 10–30 years maturity was in some

[16] Turner 2016, Buiter 2014, Buiter/Kappor 2020, Jackson/Dyson 2013, Ryan-Collins 2015, Ryan-Collins/van Lerven 2018.

cases twice as high. As a result of additional government spending to cushion the covid crisis in 2020, sovereign bonds held by central banks increased by another 40-60%.[17]
Seen like this, demands for monetary financing have been met since *indirect* monetary financing through the *paso doble* between treasuries and central banks has become general practice. But if that is so, the question arises as to what the legal prohibition of monetary financing is about, in whose interest it is, and why central banks should not also make *direct* contributions to financing public expenditure (which once was the reason for creating central banks). The banking sector and institutional investors do not have a birthright on profiting from a normally low-risk and lucrative business like government bonds.

Whether done directly or indirectly, monetary financing is a way to continue with Keynesian deficit spending by other means. In this case, the other means consist in the growing indebtedness of a state 'to itself', and proportionately decreasing debt to private banks and shadow banks. This seems reasonable as far as it reduces the governments' dependence on the capital market. At the same time it is a way out when the markets lose confidence in a nation's public finances and are no longer willing to finance government spending, or only at very high interest rates.

Indirect monetary financing of public-sector deficits by way of the treasury's and central bank's *paso doble* is certainly beneficial in a severe crisis with significantly underutilised capacities. However, one must also ask to what extent the habit of running deficits and the continued accumulation of public debt has become an integral part of general financialisation and is in itself a cause of financial crises.

QE for finance versus QE for people (= QE for the real economy)

The policy of Quantitative Easing (QE) was launched in response to the housing-market and banking crisis of 2008 and the euro sovereign debt crisis of 2010-12. QE mainly consisted of the purchase of government bonds as described above, in addition to the recapitalisation of threatened banks by governments, but without reference to the issue of government bonds. The amounts in question were used to support liquidity (payment transactions) and the balance sheets of banks and other financial institutions affected, as well as to stabilise bond and equity markets. This was in fact *QE for finance*. The enormous volume of QE in the trillions and the associated excess supply of monetary reserves (central-bank money) pressed interest rates, falling since the 1980s anyway, further downwards into the range of low, zero and even negative interest rates.

From the outset, critical voices on central banks' QE have demanded that the money created to counter the crisis after 2008 should not just be *QE for finance* and ultimately only flow into non-GDP finances, but that the money should also flow into GDP finances and benefit the economy as a whole. This gave rise to the call for *QE for people (QE4P),* in other words, *QE for the real economy*.[18]

It is not directly the central banks that pay for programmes to finance the real economy, but governments. The central banks, however, continue to buy up the bonds issued by govern-

[17] Lennkh/Bartels/Vasse 2019, **https://fred.stlouisfed.org/series/TREAST**, Economist June 20th 2020, 62. In the US, government real-estate financiers Fannie Mae and Freddie Mac and other public entities also hold large amounts of Treasury bonds.
[18] Cf. Bernanke 2016, Lonergan/Jourdan 2016, Positive Money 2015.

ments to finance their deficit spending for private households and firms. The large-volume government spending triggered by the covid crisis has combined a wide range of both demand- and supply-side components on an unprecedented scale. Indirect monetary financing is now indeed also taking place as *QE for the real economy*. The same applies to the TLTRO programmes of the ECB, which refinance longer-term bank loans to firms on concessionary terms.[19]

Does this mean that everything is all right? Not without further ado. Even monetary financing for the real economy changes little of the well-known risks of every accumulation of capital and debt, whether it is public or private. The occurrence of these risks cannot be predicted precisely in terms of their extent and timing. Nevertheless, these risks do exist. They include, for example

- The drift sand of inflation, the return of which cannot be ruled out, especially in view of the gradual ending of the low-wage competition from newly industrialised countries, as well as looming restrictions on world trade and restructured international product lines.
- Increased vulnerability to financial crises.
- A long-term socially disintegrative expansion of financial income in relation to earned income, combined with asset price inflation and an inflated supply of financial assets.
- In some countries, currency devaluation to the extent that 'money printing' is accompanied by declining competitiveness, falling productivity and imported inflation.

These dangers certainly also exist without monetary financing. Excessive fiat money is a general problem, regardless of whether it is sovereign money from national central banks or private money from banks and shadow banks. Certainly, the motives and allocation patterns of private money creation differ from those of central-bank sovereign money when this is circulated through government expenditure and thus largely for real-economic first uses of the money. This makes a difference. On the other hand, the first use of money does not determine its further uses in circulation. Not much would be gained by having to choose between rampant non-GDP investment or rampant government spending, and the question of who is going to keep the 'printing press' going more freely – the banks and shadow banks, or the government; with the central bank always accommodating, directly and indirectly, the demand for money from either side.

Where is the money concentrated after all – in the private or public sector? in GDP finances or non-GDP finances?

If the first use of money goes into real-economic purposes, or if it flows first into non-GDP finances, it does not stop circulating. Where does the money then flow to? Does it continue to circulate in the respective hemisphere? Does it move to the other hemisphere, even back and forth? Or is it concentrated in either of the two in the longer run?

So far, economics has not provided an answer to this question. Input-output tables according to Leontief are not informative in this respect. Stock-flow analyses based on aggregate sector balances, too, have so far not adequately covered the issue of GDP finances and non-GDP finances (although sector balances could be further developed in that direction).

[19] TLTRO = Targeted Longer-Term Refinancing Operations.

The quantity equation according to Newcomb, Fisher and others is equally uninformative in its present form.[20] In this model, the velocity of money circulation is not an empirically measured parameter, but an abstract, over-aggregated computational result (output divided by money supply), a value of which one cannot know what it actually means. The computational result of a decelerating velocity of circulation is a grotesque arithmetical artefact. It stems from the fact that large money volumes circulate in (non-registered) non-GDP finance rather than GDP finance reflected in economic output or GDP. This would only become visible by a corresponding disaggregation – which would show that money never circulated as fast as it does today due to IT developments and high market concentration in the banking sector.[21]

As far as the relationship between the private and public sectors is concerned, the two were mutually supportive over the past decades. The tax ratio (taxes and social security contributions as a percentage of GDP) has risen in old-industrial countries since World War I until 1975-90, depending on the country. Since then it has fluctuated between 25-30% (Switzerland, USA, Japan) and 45-50% (France, Sweden, Denmark).[22] Public-sector expenditure flows into private real-economic proceeds and income. Conversely, the private sector still covers by far the largest part of government expenditure through taxes and duties.

However, part of real-economic income is channelled out of the real economy through cumulative savings, partly set aside in deactivated savings deposits and time deposits at banks, partly in investment trusts, partly in direct purchases of shares, bonds and derivatives, overall mainly in non-GDP finance.

With growing prosperity, this may initially be a useful way of building financial reserves or own capital, all the more, as some of the money put into non-GDP finances is liquidated from time to time to be used for real economic expenditure and investment. Nevertheless, on balance more money is converted into financial capital or deactivated in bank deposits than is reactivated for real economic purposes. As mentioned in the figures chapter, active money in M1 as well as inactive money in M2/M3 has grown several times faster than nominal GDP over the past decades. Investments in financial assets (both with shadow banks and relevant departments of traditional banks) have long outgrown the stock of bank deposits. In general, financial assets, which until 1980 were two or four times GDP, depending on the country, jumped to a level twice to three times as high.

Furthermore, a one-sided relationship between the public and private sectors is created by the fact that the deficit portion of government expenditure is financed by borrowing from the private financial sector. As a result, a corresponding part of government expenditure is spent on current interest payments and repayment of maturing debt. Only a small proportion of the creditors of the accumulated debt are households and firms. On international average, they hold only about 5–10%, in rare cases up to 15% of government bonds. About one third of government bonds remain in the hands of banks, while shadow banks (large funds and insurance companies) now own about half. In addition, the central banks have now become holders of government bonds on a large scale as a result of their QE crisis policy, or indirect

[20] The equation is essentially $M \times V = P \times T$. This means that the quantity of money M multiplied by its velocity of circulation V (use frequency of the money) is equal to the sum of the prices P realised in all transactions T (or the general price average multiplied by the total number of transactions). For simplicity's sake, GDP is usually used instead of $P \times T$.
[21] Disaggregation of the quantity equation into financial and real-economic money uses has been proposed in Huber 1998 224–230, Werner 2005 185–190, Walter 2012.
[22] Tax and contribution ratios in the OECD member states 2018, Statista.com/Statistik/Daten/.

monetary financing of government expenditure, respectively. This has not yet completely changed the overall picture. It is still the private financial sector that cumulatively benefits from public debt, with the hemisphere of non-GDP finance being the main beneficiary. It was, however, not exactly the intention of the welfare state to boost financial capital.

Prosperity and finance

Financial firms reinvest most of their profits in non-GDP finances, unless the profits are distributed to the firms' owners. The owners also reinvest most of this income in non-GDP finances. Generally, non-GDP finances are fed by the fact that the disposable part of the income of the upper middle classes and higher classes – whether earned in the real or the financial economy – is invested in financial assets. Otherwise, the income of these classes flows into status-appropriate equipment and high-priced consumption. Both high-priced consumption and financial assets retroactively reinforce the unequal distribution of income and wealth, with the emergence of new social disparities and divisions.

The question of how much of current income flows into financial assets depends largely on the general level of income and wealth and its distribution. Where there is hardly any wealth, there will hardly be any financial investment. Where, by contrast, there is a high level of disposable income, correspondingly high levels of savings, reserves, equity, i.e. financial and real assets, will be built up. Similarly, those sectors of the real economy will grow that serve the demand patterns associated with higher income and prosperity. These include higher education, medical care, cultural consumption, travel and expensive leisure activities, quality of life and home ownership, in short, demand for high-quality and luxury products and services of all kinds.

It remains unclear whether growing prosperity as measured by GDP goes hand in hand with reduced or increased inequality. If things go well, income and wealth develop reasonably in line with the Pareto optimum according to which increasing productivity means that everyone is better off, albeit incomparably better off, but without making anyone worse off. In the 1950s until about 1980 economic growth was accompanied by reduced inequality. This soon changed with the accumulation of new assets, generally with the take-off of financial-market capitalism around 1980. Since then, GDP-disproportionate growth of non-GDP finances has been accompanied by increasing social inequality.[23]

This suggests that where high levels of productivity and wealth coincide with growing distributional inequality of income and wealth, there will be a pronounced growth of non-GDP finance, or vice versa, the more GDP-disproportionate non-GDP finances, the more this will lead to increased inequality. As long as financial assets grow in proportion to output and earned income, existing social disparities are unlikely to be much increased. But if capital income and wealth grow disproportionately to GDP, this implies increased inequality of income and wealth.

Why is non-GDP investment more lucrative than GDP finance?

The question why more money is flowing into non-GDP finances and relatively less into GDP finances is, on the surface, easily answered: because non-GDP finances entice with higher or faster profits, at a same or even lower risk. But how can it be that non-GDP finances are

[23] See Fullbrook/Morgan 2020, Atkinson 2015 16-44, 180, Atkinson/Piketty/Saez 2011.

usually better off in terms of return and risk than GDP finances? There are reasons for this in both hemispheres. In real-economic terms, these include saturation in the life cycle of many markets and a related decline in growth and profits. On the other hand, there are counter-acting developments due to new technologies, industries, products and services in the course of ongoing structural change.

For another thing, the financial sector offers a wide range of options for purchasing financial assets on credit. To this end, not only existing money is used, but additional money is created, be it bankmoney (bank deposits) or third-level means of payment (money market fund shares, stablecoins). The disproportionately increased supply of money in relation to GDP is multiplied by accelerated circulation of the money brought about by IT, such as automated high-speed trading, and new securitisation methods, such as special purpose vehicles, asset-backed securities, or traditional and new types of derivatives, which can be offered in any number.

If bank credit that generates bankmoney as well as credit from shadow banks using bankmoney and further money surrogates predominantly flow into the demand for non-GDP finances, and the latter are expanded and made available more quickly, the process itself feeds the growth and profits of non-GDP finances involved, similar to a Ponzi scheme. In itself it could be a never-ending story, were it not for the troublesome real economy. It too has to meet growth and profit expectations it cannot always meet, while growing non-GDP financial income is also increasingly accessing real-economic output which they did not initially contribute to finance.

The well-heeled demand for high-end goods and services is causing an upward spread of relative prices, as is particularly evident in the case of real estate and housing. The well-heeled demand retroactively contributes to amortising the financing of respective offers, albeit with purchasing power on a scale that outcompetes most of the earned income and savings of most employees and self-employed. In this way, crowding-out of earned income and savings through financial income and wealth actually happens in real-economic supply and demand. In the run-up to the French Revolution, Marie Antoinette was attributed the satirical statement that if the people had not enough bread, they should eat cake. In the present context, the majority of working people could be advised to simply earn more financial income.

Inflation (CPI) and asset inflation

The quantity theory of inflation has existed since J. Bodin (1568). It says that if an increasing stock of money creates demand for a supply that does not grow at the same rate, this results in a general increase of prices. This corresponded to the experience of the Spanish silver inflation of that period. In the 1960/70s, M. Friedman came out with an extreme view of the matter: 'Inflation is always and everywhere a monetary phenomenon'.[24] But besides an overshooting supply of active money, inflation can also result from real factor shortages, for example a shortage of land or labour. In the modern world, an increase in the price of labour is partly pre-financed by borrowing, which in turn can lead to an increase in CPI levels.

[24] Friedman 1991 16, 1992 198.

Although oversimplified as a textbook model, quantity theory describes an actual mechanism. Upon the failure of monetarism in the 1980s, the baby was thrown out with the bathwater, especially in post-Keynesianism, where the question of limits to monetary quantities has since been considered almost irrelevant. The link between money supply and inflation is said to have disappeared. This is a short-sighted presumption. Half and more of nominal GDP growth at 2–3% remains inflation (CPI) at 1–1.5%, and moreover there has been high asset inflation.

With globalisation since the 1980s, the international aspect has gained in importance in the form of imported inflation, or disinflation, respectively. Newly industrialising countries, as low-wage countries, offered an ever increasing range of goods at low prices. In this way, an increasing and often cheaper supply of goods went hand in hand with rising wages and demand at low inflation.

Above all, orthodox economics as well as post-Keynesian economics have failed to disaggregate the financial circulation of money into GDP finances and non-GDP finances. Once this is done, it becomes clear that the GDP-disproportionate growth of the money supply resulted in increased effective demand primarily in the area of non-GDP finances, much less in the area of GDP finance. This is why there have been repeated episodes of strong asset inflation rather than high CPI as was previously common.

As is normally the case with real-economic CPI, asset inflation too is more than just asset *price* inflation, but is also reflected in an expansion and differentiation of financial assets by *quantity* and *type*. The bubbles in financial markets are not only price bubbles (not even necessarily those), but also expansion of differentiated financial assets. This is particularly evident in the case of derivatives, new securitisation vehicles, increased volumes of securities, more mergers and acquisitions, more IPOs, or an increased supply of real estate as property prices continue to rise.

Limits to the economy's monetary absorbency. Oversupply of money tendered as borrowed capital. Tendency towards zero interest combined with low growth

Real-economic cycles can overheat with regard to credit extension, investment and debt, resulting in economic recessions or even crises. A similar problem exists with regard to cycles in non-GDP finance.[25] To what extent can non-GDP finances expand without their benefits (build-up of savings, proprietary capital, wealth) becoming a problem for all? In other words, what are the limits of an economy's monetary absorbency and financial carrying capacity? To approach this problem, it is useful to distinguish between own capital and borrowed capital (debt capital). Depending on whether a financial instrument represents own capital or borrowed capital, monetary and financial overshooting has different consequences.

In the trade in debt capital (loans, bonds, other securities), a tendency towards lower interest rates arises when there is an ongoing over-supply of money, or such capital, respectively. In an artificial continuation of this trend, zero and negative interest rates are forced. The much-cited savings glut is about an oversupply of non-GDP financial capital as debt capital. The tendency has existed since around 1980. The previous era of high interest and high inflation has since been reversed into an era of interest rate cuts and disinflation. With the very low interest rates currently attained, the limits of that development have been reached and to a

[25] Cf. Borio 2012, 2017.

degree exceeded in the form of negative interest. Thinking of negative interest rates as an unconventional but logical and even beneficial continuation of conventional interest rate policy is rationalist fiction, expression of a paradigmatic fixation that does not want to admit that at the lower bound of zero interest it has reached its own limits, too.[26]

Who, as a bank customer, is voluntarily ready to keep deposits at negative interest in the longer term? Who, as a capital market creditor, is voluntarily prepared to invest money at negative yield? So far this has only worked for Japanese and European government bonds. The negative yield for the creditor is the result of a low or zero interest rate combined with a redemption discount (or payout premium) for the borrower. Buyers of such government bonds thus make a loss. There are various reasons why institutional investors have so far done so anyway. The portfolio of bond funds still consists of a certain mix of old profitable and new unprofitable bonds, so that there is still some overall profit. Some funds, especially pension funds, are obliged by statute to invest in government bonds. Under conditions of uncertainty, it may seem wiser to invest money in comparatively safe government bonds with a small loss for the time being than to take significantly higher risks on overbought stock and real estate markets.

The situation will not stay the same. If interest rates oscillate around zero, many pension funds will have to change their statutes or close down. Finance ministers will have to pay higher positive interest rates again, or offer their bonds below par in order to place them on the market. This will cause problems for public budgets in view of the high debt levels and trigger serious budget crises and political upheaval in some countries. What then? What has long since begun then will happen on an even larger scale: Indirect monetary financing of government spending becomes the new normal. The central banks continue to buy up an ever larger share of government bonds. Or central banks and governments start to break the taboo on *direct* monetary financing. The Bank of England has in fact began with this since Easter 2020 by granting the government unlimited overdraft on its central-bank account. The Bank of Canada has long practised direct monetary financing, initially on a large scale from the mid-1930s to the early 1970s. Today, the Bank of Canada acts as an auctioneer for government bonds and bills, *directly* absorbing onto its own balance sheet 20% of each issue.[27]

Low interest rates normally reflect weak rather than strong growth prospects, including weak rather than strong CPI. This will remain so as long as the overshooting money supply remains active in non-GDP finances, generating low interest rates together with asset inflation. If, on the other hand, more money that was previously inactive in GDP finances becomes active in the real economy, this will result in some inflation. If without stronger growth or structural change in the real economy itself, this will result in stagnation – or split growth with split CPIs, in the sense that segments of upscale consumption and their prices increase, but the rest of the economy tends to stagnate. It would appear that such split development presently already exists with regard to housing and high-end consumption.

Against this background, to expect low to negative interest rates to stimulate real-economic investment and other expenditure is a misleading half-truth. First and foremost it is trading in proprietary capital which benefits from low and zero interest rates. Very low interest rates are by no means an automatic incentive for debt trade, GDP investment and the real economy.

[26] Cf. Huber 2019.
[27] Becklumb/Frigon 2015.

Rather the opposite. In particular, negative interest rates on holding money and negative yields on bonds are a programme to promote stagnation in the real economy; the higher and more broadly imposed on all players, the more demotivating and contractionary. In the end, negative interest rates only serve to siphon off money to the benefit of the banks' and central banks' profits. In fact, negative interest comes close to a counterproductive money tax rather than representing interest or a fee for account management.

Limits to the economy's financial carrying capacity. Oversupply of money for purchasing proprietary capital. Tendency towards asset inflation and financial crises

Proprietary capital can increase in value far beyond the return from interest, dividends, rents and leases. So the low level of interest is mainly used for real estate transactions. As a result, real estate is highly financialised, a sub-sector of non-GDP finance attracting investment in search of value accretion.[28] The real-economic construction of houses benefits from this to some extent, but with decreasing tendency due to sharply rising land prices and construction costs. The incentive to invest cheap money in expected capital appreciation applies in the same way to price increases in shares and commodities.

For example, shares. Dividends are not unimportant, but an expected or not to be expected price increase has become the more important factor. Real-economic success certainly plays a role in the competition among shares, but it is primarily expected value growth that speaks for or against a particular share. The resulting increase in demand for shares is driving prices. How far real growth will follow is often still up in the stars, but the increase in market value of the stock in question is there for the time being.

Everyone involved knows that a price-earnings ratio cannot rise to the sky, and that on the way there, the risk increases with the price. But to where? The sobering answer is, one cannot know. As the saying goes, it works until it doesn't. But we do know what it will be: a slide in share prices, a destruction of financial capital, perhaps to a limited extent, or perhaps as the next major financial collapse and the economic crisis it will trigger. The main causes of this are always to be found in over-crediting (based on hypertrophic money creation and funding procedures), over-investment and over-indebtedness.

The associated financial market failure as a dynamics of self-propelling overshoot has been described in Minsky's financial instability hypothesis, in particular the final Ponzi stage (exponential snowball effect).[29] Shiller, in his positive-feedback theory of financial crises, coined the term 'irrational exuberance'.[30] These mechanisms have always existed in capitalism, as a form of crowd madness, such as the Dutch Tulip Mania in 1636/37, the French Mississippi Bubble and the English South Sea Bubble, both in 1720, the founders' crash in the German Reich and Austria-Hungary in 1873, New York Black Friday in 1929, up to the Dotcom Bubble in 2000 and the Subprime Crash in 2008. But under today's conditions of virtually unlimited and cheap money it almost looks as if things have gone from the rare exception to being the new normal of finance.

[28] Ryan-Collins/Lloyd/Macfarlane 2017 pp.109, pp.169.
[29] Minsky 1982, 1986.
[30] Shiller 2015 pp.225.

When it comes to trading in money (domestic and foreign currency exchange), things are somewhat different. In a sense, this is literally an Old Testament trade, ages before there were transferable debentures since the late Middle Ages (debt capital) and four hundred years of tradeable shares (equity capital). Nevertheless, since the definite end of the gold-based dollar in 1971/73 and the free floating of currency exchange rates ever since, today's currency speculation is historically unparalleled. The volume of foreign exchange trading is several hundred times greater than the cross-border trade in goods and services in the real economy.[31]

Finally, trading in derivatives (options, futures, swaps). Derivatives may relate to all the above-mentioned types of trading in equity and debt, interest and foreign exchange. Their original purpose of hedging prices for livestock, grain, etc. into the future is still fulfilled today in extended applications, for example as credit default insurance (which, of course, defaults if there are too many bad loans at once). Beyond this, however, derivatives trading has moved a long way from its original purpose. The nominal value of all derivatives was already 10 times the world's GDP in 1990 and grew to 55 times by 2008.[32] Only 2% of the contracts are exercised, the rest is closed early. This means that 98% of derivatives trading is pure betting game in the 'global casino' (Keynes).[33] Among the traders it is a zero-sum game, meaning that someone's win is someone else's loss. Even large financial corporations have got into trouble because of such losses.

Non-GDP finances are not neutral

The betting game in derivatives and foreign exchange as well as trading in stocks and real estate might not be so remarkable if only the actors involved were affected. However, the dynamics of non-GDP finances is by no means neutral to the real economy, but has an impact on all areas of economy and society. It leads to developments that are partly economically dysfunctional and partly unjust and socially disintegrating.

The matter is unjust in terms of achievement. Non-GDP financial income represents as much purchasing power as earned income, and grants the same access to the goods and services supplied by the real economy. The supply is changed retroactively in the direction of an upwardly split structure of prices and consumer items. Even if earned incomes do not fall in absolute terms, they are outpaced by disproportionate rises of financial incomes and cut off from the supplies these are able to purchase. This is itself already a bit of an economic dysfunction, inasmuch as pronounced class-specific patterns of consumption and lifestyles have less overall economic potential than broader-based structures of supply and demand.

The overshoot dynamics of non-GDP finances are dysfunctional not least because of the general tendency towards financial over-investment and over-indebtedness, resulting in financial and economic crises. According to a historical study by Deutsche Bank Markets Research on 400 years of financial crises, these occur more frequently and severely today than was the case in former times.[34] According to another much-cited study by the IMF covering the period from 1970 to 2007, 425 national and international financial crises occurred worldwide, including 145 systemic banking crises, 72 sovereign debt crises and 208

[31] Bjerg 2014 25.
[32] Deutscher Bundestag 2020 7–8.
[33] Chesney 2014 33, 50. In the same vein Financial Crisis Inquiry Committee 2011.
[34] Cf. Deutsche Bank Markets Research 2017.

currency crises.[35] Such crises not only destroy financial capital, but also damage or even destroy real capital, companies, jobs and the working and private lives of people.

What to do?

Financial crises will basically not be prevented in the future. One should not necessarily try either. Despite the risky dynamics of non-GDP finances, they basically fulfil a useful function in the life cycle of firms and households in terms of building up savings, capital reserves and proprietary capital. The pertinent question is: How to better rein in non-GDP finances? how to curb their excess dynamics? analogous to the economic policy of defusing business cycles that could lead to severe crises in the 19th and 20th centuries.

Money system

The most important prerequisite for successful financial market policies is to achieve effective control over the money, more precisely over money creation and the ongoing flexible readjustment of the money stock, particularly the official means of payment (legal tender). Control of money creation does not normally mean control of the uses of money, except for its first uses. Over time, the role of monetary authority has fallen to the national central banks, at least in terms of intention. Even where the central banks are still corporate institutions of commercial origins they are now subject to public law in essential matters of monetary policy and leading personnel.

In the existing bankmoney regime, however, it is still the banking sector, and increasingly shadow banks, that largely determine money creation and thus pre-determine the central banks' reactive monetary policy. As long as the situation remains like this, little will be achieved and one will digress into bureaucratic regulation of secondary importance such as, for example, the Basel rules on bank equity and liquidity buffers under conditions of fractional reserve banking. QE has saved the situation so far, but has not remedied it. What would ultimately remain if necessary, in the absence of a fundamental change in the money system, is the heavy-handed toolset of capital controls and global credit guidance by the central bank. Even in Western market economies this was quite common during and after the Second World War, in some cases even until the 1960s. But this certainly opens up a rather unpleasing perspective.

The most effective control over the money stock is ensured by a full sovereign money system, that is, a money monopoly of the central bank without competing private means of payment. Historically, the decisive reason for the emergence of money surrogates was the persistent shortage of gold and silver in combination with growing populations and economies. With the modern transition to a pure fiat money system, there is no good reason for money surrogates anymore, but there are good reasons to effectively keep control of the money supply that can now so easily be created at will. The control of money - under fiat money conditions more than ever - is a sovereign prerogative, especially as the financial markets are continually failing in this respect due to their positive-feedback overshooting dynamics.

[35] Laeven/Valencia 2008.

What is currently emerging is a renewed mixed money system by way of introducing central bank digital currency (CBDC) side by side with bankmoney.[36] CBDC, or sovereign digital currency respectively, is intended to be a universal means of payment, i.e. for general unrestricted use by banks and non-banks alike. CBDC and continued bankmoney will coexist and compete with each other. CBDC is thus taking over the former role of central-bank issued cash. Sooner or later, cash will have disappeared, depending on how long the public continues to use cash to an extent that allows the cash infrastructure to be maintained at a cost-covering level. A different and open question is whether CBDC will displace bankmoney over time. In any case it is certain that digital central-bank money in general use will gain weight relative to bankmoney. As a result, the effectiveness of monetary policy will increase to the extent to which the share of CBDC in the money supply M1 grows.

At the same time, new private money surrogates are being added, currently in the form of MMFs, e-monies and stablecoins. Because of existing and impending regulation, the danger that they could get out of hand and produce corresponding crisis dynamics is not really in the foreground. Instead, the initial diversity of such means of payment is likely to be absorbed over time by an oligopoly of only a few but all the more important private currencies. Internationally, these would be beyond the jurisdiction even of big nation states. This has already become clear with the example of the 2019 plan for a global Libra stablecoin by Facebook. Such developments can be prevented by ensuring that new money surrogates

- are denominated in a currency unit of their own, not in the official currency
- are covered 1:1 with central-bank money, not bankmoney or other money surrogates.
- A small proportion of the coverage in central-bank money may be used for other operations, but
- central bank and government must not support under any circumstances the money surrogates in question. (Bankmoney would have vanished long ago into the thin air it came from if central bank and government had not rescued it time and again, thereby promoting and securing its dominance and para-sovereign status).

If these requirements are met, a central bank's monetary policy will predictably be transmitted to the new money surrogates.

Indirect monetary financing of public expenditure is likely to continue. It ought to be combined with the introduction of CBDC. The central bank can pay its open market purchases of government bonds in CBDC, whether the sellers are banks, shadow banks, companies or households. At the same time, the banks' largely idle glut of excess reserves can be converted into CBDC, or opened up for dual use: usable as conventional liquid excess reserves or as CBDC in general use.

Such a type of mixed money system, in which central-bank money increasingly gains weight, achieves a great deal in terms of monetary and financial-market policy. This is because financial institutions will no longer be able to provide additional money at the push of a button to the same extent as before. Instead, they will have to finance loans and investments from money already available far more than hitherto. This alone may not yet create a level playing field between GDP finance and non-GDP finance, but it will contribute significantly to such a balance. This expectation is supported by the above-mentioned fact that financial assets in America and Europe developed within a relatively constant ratio to GDP until around 1980

[36] Cf. BIS 2018, 2019, Bordo 2018, Huber 2020 II, IMF 2018, Kumhof/Noone 2018, OMFIF 2019, 2020.

and only since then have moved away from that ratio. The same is true for US house prices, which, adjusted for inflation, hardly rose at all until around 1980, but have risen steeply in real terms since then.

Monetary policy

Despite QE policies and monetary financing, central banks will try to limit themselves to *monetary* policy. Nevertheless, monetary policy *is* politics. The top positions in a central bank are about political leadership, certainly presupposing expertise, but not an office for 'technocrats', as is often demanded in misjudgement of the political nature of the matter. Monetary policy and fiscal policy can cooperate, but their responsibilities and the boundaries between them must not be blurred.

Central banks con no longer avoid broadening the range of issues and indicators relevant to monetary policy, including the range of policy tools to be used. The ECB has increasingly narrowed its mandate to price stability (CPI), even if EU law also provides for the support of economic policies where this is consistent with monetary and financial stability (TFEU Art. 127). The monetary policy of the US Federal Reserve and the policy of the US Treasury place much greater emphasis on national economic policy and international currency policy.

As of late, another central bank function is to ensure the liquidity and solvency of systemically relevant financial institutions, not explicitly by law, but as a matter of fact. As long as banks continue to issue much bankmoney on a fractional reserve base, that function is likely to be maintained. However, since central banks are not only 'bank of banks', but also 'bank of the state', the de facto liquidity and solvency support should explicitly apply to the public sector as well. Central banks are in fact already performing this function through their QE programmes.

So far, central banks appear not to feel concerned about asset prices and non-GDP finance, even though asset inflation quite obviously is the one hemisphere of price level stability, the other one being CPI. The inclusion of asset inflation requires an enhanced analytical framework. Some tools are already available, for example empirical methods of bubble spotting, while others still need to be developed, for example to be able to say something more precise about the limits to an economy's monetary absorbency and financial carrying capacity.

The range of reference variables relevant for monetary policy and to be weighed against each other is thus widened: CPI, asset inflation, the foreign exchange rate and international position of the currency, interest rates, real-economic cycles and employment, as well as financial cycles and non-GDP finances – while ensuring liquidity in the public and private sectors, for GDP and non-GDP finances. The money supply itself is not an objective but an instrument of monetary policy, not an end in itself but a means of achieving the best possible balance of the relevant reference variables. Monetarism got that totally wrong.

The ECB has interpreted its mandate to maintain price stability as requiring it to set an operational inflation target at or closely below 2% CPI. This is questionable, not unlike setting a specific target level of interest rates. During the monetarist era it was believed that monetary policy should set itself growth targets for the quantity of money (M1, M2, M3, or similar). The success of monetary policy is then evaluated by the (non-)attainment of the respective targets. Such operational targets are dispensable, if only because central banks

may be able to influence those variables to a certain extent, but cannot control them effectively and attain such targets as it wishes.

It would be more appropriate to continuously weigh up the entire set of sensitive reference values against each other, in this way assessing the situation and drawing conclusions on taking or not taking measures, and communicate decisions accordingly. The public would presumably understand the sense and purpose of such a weighing-up of trends and goals much better than a target fetish of '2% inflation', a figure that seems to be concrete but remains an abstract fixation. There would of course be public discussions on the weighing-up of the various factors. This is desirable. Although modern central banks must be independent in their monetary policy decisions, comparable to the independence of the judiciary, they are not outside the *res publica*.

As far as policy instruments are concerned – using money quantities or interest rates – monetary financing of government expenditure should, within limits, become a regular tool, within limits defined by *monetary*, not budgetary considerations. This should be combined, as already mentioned, with the introduction of CBDC, in that the amounts of monetary financing are paid out in CBDC.

Interest rate policy means using central-bank interest rates to control credit extension and the quantity of money in the banking sector. In today's bankmoney regime, the nearest thing to control is in interbank credit, otherwise not. However, monetary policy can be expected to become more effective in this respect the more the share of central-bank money in relation to bankmoney and other means of payment increases, working as a quantity lever that strengthens the transmission effect of central-bank interest rates. One will remember that influencing interest rates through quantities is more effective than the reverse. A comeback of quantity policy would also be a result of QE policies of recent years. QE measures are a striking example of steering interest rates through quantities.

Financial transaction tax

Financial NGOs have advocated the introduction of a Tobin tax, that is, a tax on forex transactions, named after the economist James Tobin. Keynes had proposed a tax on stock trading in the mid-1930s, on the assumption that this would curb excesses in the 'global casino'. Such taxes on stocks and securities trading had long existed in various countries. In the course of international deregulation of capital transactions since around 1980, most of these taxes were abolished. This contributed to unleashing financial markets.

In an attempt to correct the mistake, eleven EU states decided in 2013 to introduce a transaction tax on all types of financial transactions, however at the countries' own discretion. As a result, some countries dropped out, others are still hesitating or want a special, not a general transaction tax. In the meantime, seven of these EU countries have introduced one or the other slimmed-down version, mainly on the purchase of shares and bonds of listed companies, at a rate of 0.1-0.3%, in some cases also on certain types of derivatives at a rate of 0.01%. Politicians are holding back out of concern they might weaken their country's international position in finance. The low tax rates, however, have little or no effect. The overall ratio of taxation increases, while the situation does not really change.

A more effective financial transaction tax would be justified for the sole reason of closing the only remaining gap in the systematics of turnover taxes. There is VAT on goods and services, real estate transfer tax, insurance tax and some other minor sales taxes, but there is no or only a marginal tax on financials. A serious financial transaction tax should be a general tax on *all* types of financial transactions, albeit at different levels depending on the type of transaction (shares, bonds, foreign exchange, derivatives). The additional tax should be implemented in a revenue-neutral way. This could mean, for example, reducing in turn the VAT rates on real economic goods and services.

Lock-up periods

With regard to periods of overheating financial markets, another instrument would be the use of lock-up periods for transactions in foreign exchange and securities. This means the temporary requirement to hold a financial position. When a particular financial instrument is bought, it has to be held for a certain period of time before it can be sold again.

Lock-up periods are an administrative measure, as such an alternative, or supplement, to the financial transaction tax as a fiscal measure. A lock-up period goes further than the fiscal speculation periods known so far. For example, there is a fiscal speculation period of ten years for residential property. If one sells after this period, the proceeds are tax-free; sold before, the proceeds are taxable. A lock-up period is not about taxation.
Lock-up periods are temporary and variable in application. They are not meant to be imposed as a standing rule. The length of lock-up periods – whether minutes, hours, days or weeks – would have to be specified in every application for the different type of transaction. Lock-up periods would be effective with regard to the international 'touring circus' of hotspots in non-GDP finance. These can cause great damage, as for example in the Asian crisis in 1997/98.

Tiered interest rates for GDP finance and non-GDP finance

The ECB has embarked on a new path with the TLTRO programmes to promote bank lending to the real economy. The programme makes a de facto distinction between loans for GDP finances and non-GDP finances, and involves preferential conditions (interest rate, maturity) for GDP finances. The principle of tiered interest rates to the benefit of GDP finances can certainly be developed further on a permanent basis.

The TLTRO programme is in great demand. In the first place, it is the central-bank interest rates that are tiered. A more effective measure would be to oblige banks and shadow banks to transmit the tiered conditions to customer transactions. 'Green TLTROs', as proposed by Positive Money Europe, Brussels, can be included advantageously in such a framework.[37]

Credit and investment ceilings rather than separate banking

Black Friday 1929 triggered the financial and economic crisis of the 1930s. One of the answers given in the USA was the introduction of separate banking. Banks had to decide whether they wanted to operate in future either as a commercial bank granting current loans

[37] van't Klooster/van Tilburg 2020.

on a fractional base of central-bank reserves, or as an investment bank without central bank refinancing. Both in one bank should no longer be possible. As a result, financing of an investment bank's securities purchases by creating its own bankmoney was prevented.

However, the laws on separate banking did not prohibit investment banks from borrowing from commercial banks in order to leverage transactions in securities, mergers and acquisitions, and others more. So it was clear that such sort of separate banking would not really serve its purpose. Having to borrow funds increased the costs of investment banks, but apparently not up to the threshold where things would have changed fundamentally. The American separate banking laws were soon relaxed, also allowing investment banks back into central bank refinancing, and finally repealed by Clinton in 1999. Basically, separating the investment business from the lending business makes little sense. What really would matter is separating money creation from the uses of money in the financial economy. This is one of the things a sovereign money system achieves.

To contain non-GDP leverage, asset inflation and bubble formation within the existing system, there is a simpler, but currently somewhat forgotten, alternative: specific credit ceilings set by the central bank if the circumstances require. The granting of loans or the investment or acceptance of funds for certain types of financial transactions may be capped for a certain period of time. Such ceilings can be variably adjusted to changes in the situation, tightened or loosened, and finally lifted again.

Setting ceilings or caps is a strong intervention in the capital markets, although not as extreme as price administration or a price freeze or even a general trade ban. Nevertheless, ceilings are among those instruments that should be the ultima ratio – in a situation when it is far better to intervene timely and resolutely than to let financial markets escalate until collapse in a severe crisis.

Derivatives trading

Taking out fire insurance for your own house is a sensible thing to do. However, it would be ambivalent and invite abuse to take out fire insurance for other people's houses. This is ruled out for good reason. Only the owner of an object can take out fire insurance for that object. When applied to derivatives (options, futures, swaps and certificates), this means that derivative contracts should only be permissible to the extent that attributable risk positions (underlyings) are in the possession of the authorised parties. This still allows derivatives to hedge the price of products, and also, for example, derivatives on indices, interest rates or exchange rates, provided an attributable risk position to be hedged exists.

Income policy and fiscal policy

Income policy and tax policy are among the key frameworks for the economy. As their institutional and legal arrangements vary from country to country, it would be going too far to go into details here. However, it is true for all industrial countries that the state makes a significant contribution to general financialisation by financing sovereign debt through banks and financial markets. This can be corrected to a degree by monetary financing of government expenditure, and also by the way in which income, wealth and inheritance are taxed. For example, inheritance tax should spare business assets and owner-occupied housing, but

should implement higher tax rates on non-GDP financial assets. Fiscal policy is complicated, but the principle pursued here is simple: Until structurally stable and balanced conditions are reached, the tax burden on the real economy and earned income, including entrepreneurial and self-employed income, must be eased, while non-GDP financial income must be curbed. This certainly opens up a new perspective for fiscal policy.

Annex

More on the terms real economy, GDP finances and non-GDP finances

The *real economy* comprises all product and labour markets, that is, the transfer of money when buying or selling work and services, infrastructure, goods and intangible goods (e.g. use rights). The so-called informal sectors of the real economy comprise unpaid work such as housework, D-I-Y and volunteering, as well as the hidden or underground economy and black labour (except for money laundering and similar financial transactions). Unpaid activities also require money, but do not normally generate income. Informal real-economic activities and their money value are not included in GDP.

The *financial economy* begins when money is lent/borrowed or invested or donated or paid as tax. If lent/borrowed or invested, the money becomes capital. Commercial finance is used to fund activities via financial markets, especially money and forex markets, capital markets and derivatives markets. The transfer of money takes place in the basic forms of lending (against interest and repayment) and financial investment. The latter includes trading in equity investments, shares, debentures of all kinds (e.g. bonds), other financial contracts, as well as insurance premiums and benefits.

The non-commercial part of the financial sector includes the transfer of money through taxes and levies on the basis of public law, as well as the voluntary transfer of money, more or less selflessly, through sponsoring, foundations, donations, gifts, and inheritance.

Just as GDP finances are upstream of the real economy and in feedback with it, so the monetary economy is upstream of the entire financial economy, and part of it; especially regarding money creation, the putting into circulation and withdrawal of means of payment in official currency by banks, central banks and shadow banks, as well as money exchange and currency trading.

In financial transactions, whether non-GDP or GDP finances, earned income is usually generated for financial services provided. This income is included in GDP but represents a small percentage of the financial transactions concerned.

As regards the boundaries between the two hemispheres of finance, there are occasional overlaps, but the functional difference is clear. Contributing to GDP, or more generally speaking, to economic output, is

- Financing of investment and other expenditure related to the real economy (infra-structure, goods, labour, services, or user rights).
- Private equity, whether as 'white knight' recapitalisation of companies of viable substance but in need of renewal, or, more importantly, as venture capital investment

in real-economic research, development and commercialisation (most recently with a focus on clean technologies).
- Overdraft facilities, as they are normally used to finance household expenditure in the real economy. This also applies to overdraft and bridging loans to firms and public households.

By contrast, non-GDP finances include, for example,

- Secondary trading (after IPO) in shares, bonds and other securities.
- Trading in shares in investment funds of any kind to the extent they invest the capital they manage in non-GDP investments.
- Insurance companies to the extent they provide capital cover through non-GDP investments.
- Derivatives trading beyond real hedging of underlyings held by a company itself.
- Leveraged buy-outs, the financing of friendly and hostile mergers and acquisitions (although these can change the market position of a company with longer-term real economic effects).
- Private equity as the 'locust' activity of the wanton dismantling of companies, making profitable residual segments available for resale.
- Real estate trading that does not serve the construction and maintenance or the modernisation of building stock, but represent pure capital investment.
- The same applies to trading in commodities as a purely financial investment.

Transactions in physical assets thus do not automatically serve the real economy. In real estate transactions, the dual-use character of real and financial assets can be pronounced. When a bank finances a construction project this is clearly about financing a production process in the real economy. Things are less clear with mortgage borrowing which can be used for real expenditure on investment and consumption, but also for non-GDP transactions. Such differences hardly appear from aggregate statistics.

In the case of bonds, it can be assumed that the money taken up is used for real economic purposes. This applies to bonds issued by companies as well as to government bonds, except for those parts of new debt that are used to pay interest on and redeem old debt.

The initial placement and additional issues of shares are likely to finance investments in the real economy or other company expenditure. However, the proceeds of the share issue can also be used to redeem existing liabilities or to increase the equity ratio, either for financial reasons or regulatory requirements. Even if the latter may be indirectly relevant to the real economy, it is directly a non-GDP act.

Another non-GDP investment is the deactivation of bankmoney in the form of bank savings and time deposits.

Generally speaking, money that does not flow into the real economy has no effect on quantities and prices, and therefore has no direct impact on producer and consumer price inflation. Money that flows into the financial economy, whether in GDP finances or non-GDP finances, influences asset prices (asset inflation) as well as the quantitative expansion of financial-market supply.

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