Section 3. Expansive prosthetics funded with private bank credit money creation

Fractional reserves bank credit money creation in state fiat money regimes

The acceptance of state fiat money

The transition to fiat money regimes displaced commodity money as base money. "Base" is a metaphor stemming from architecture and refers to a foundation on which something airier is erected. State fiat money, though, is "artificial" and, thus, in some way airy itself, certainly airier than gold and silver. Still, as we saw, its general acceptance relies on two strong "material kernels". The state, the most powerful social institution and largest creditor, takes it for tax payments and the very same powerful social institution enforces its acceptance by privates for the payment of debt as legal tender. Normally, when using fiat money, people do not even think so far but rather feel comfortable to accept fiat money because of a mental shortcut. They simply ask themselves whether they still trust that they can unload their fiat money again to buy other wealth with it. If so, then they accept it. The *trust in the trust of others* emerges on top of the two material kernels – acceptance to pay taxes, legal tender – which convey the primary level of value-in-exchange to fiat money. The social use of fiat money triggers a reflexive social-psychological mechanism, a supportive emergent property of fiat money. Accordingly, while fiat money always remains an endangered species – states can undo their invention in a second by no longer accepting it for tax payments – as long as they don't and nobody expects them to, the new airy base money is rock-solid. So far so good.

No elimination of private bank money creation

After the magnificent arrival of the state fiat money gland, as it is capable of theoretically unlimited money creation, states *could* have eliminated bank credit money creation altogether and switched the whole money creation to state fiat money creation. They *could* also have taken an inventory of all sovereign debt and of even parts of private debt, and could have created enough fiat money to settle all parts of it that they wanted rid of. From there on out, they could have exclusively used their state fiat money gland to directly pay for new government expenses or to finance transfer payments (what is called, as we shall see, "overt monetary financing"). All prerequisites for a declaration of independency and practical independence from private bank credit money creation were fulfilled. Had states acted in this sense, sovereign debt would, by now, have disappeared (as a debt and as an asset) in one fell swoop and there would no longer be any more sovereign debt bond markets.

Obviously, this is *not* what happened. States and central banks did not abolish private banks' money creation gland and did not push them back to the level of the innocent early *Amsterdam Wisselbank* – into the realms merely redistribu-

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tive credit. To be sure, there were plans and ideas in this direction. E.g., in the so-called "*Chicago Plan*" of 1993, a group of well-known economists at the University of Chicago, amongst them Henry C. Simons and Frank Knight; supported a 100 percent reserves requirement and, thereby, in fact, asked for the abolition of fractional reserves bank credit creation. Since then, the proposal has never been wholly off the table; in fact, the popularity of "*full-reserve banking*" grew after the crisis of 2008. The proponents of the restrictions argue with macroeconomic dangers involved in money creation, the risk of massive losses of GDP after the bursting of bubbles and that only "full-reserve banking" can prevent private banks from blackmailing states in financial crises to, effectively, socialize risks resulting from their prior excessive money and debt creation. While the proponents of full-reserve banking are by far no anti-capitalist radicals, states and central banks have still not taken the bait to eliminate their private "junior partners" in money creation or to strangle them too much.[14] Rather, while they use the state fiat money creation gland for the base money and as a reserve tool, they still prefer to leave the credit money creation by private banks on top largely untouched. Money continues to be created at *two* hierarchical levels,[15] yet, private banks only no longer create bank credit money in a second "story" over commodity money, but, now, in a second "story" over state fiat money. This enabled an extension of bank credit money creation, which was most welcome in the 70ties.[16]

Cooperation and policing in the private banks-central bank "tandem"

The two methods of money creation now began to play together and to cooperate in "tandem", much like commodity money creation and private banks' credit money creation had done before. There were two main aspects to that. As before in a commodity money regime, states – who need a functioning money creation for their

14 E.g., Deutsche Bundesbank makes disparaging comments on full-reserve banking in Deutsche Bundesbank (2017).

15 Central banks are private law institutions and/or they do not underlie direct commands by the state in some countries. While it is imaginable that central banks might discontinue to do what states expect from them in times of great stress, we generally assume that this does not happen. Theoretically, money could still be created as merchant credit money, hence on a third level, through notes and bills. However, this level has almost wholly lost its relevance.

16 E.g., to finance reforms, new schools and universities almost everywhere, and the Vietnam war. Actually, bank depositors do also yield advantages from state fiat money as base money. True, in a fiat money regime, the collapse of fiat money leaves the credit moneyholders without a claim for precious metals against their bank and in this regard they are worse off than their predecessors who held credit money on a commodity money base. But another depositor risk is minimized: States and central banks are more willing and capable of bailing out banks in crises, if they can use state fiat money rather than scarce precious metals.

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prosthetics – would still not want to allow private bank's money creation to be endangered by private banks' excessive greed in a regime with state fiat money as base money. States had always been able to control, if needed, obstinate bankers and they would certainly not want to relinquish this power now, after they had even secured their general predominance in the money creation playing field. They would now adjust their arsenal of intervention, "policing" and bailing-out in crises to the birth of state fiat money.[17] The fact that base money was no longer scarce commodity money but theoretically unlimited fiat money doubly affected the situation. New factual opportunities for private banks to "misbehave" as well as new opportunities for states and central banks to save "misbehaving" private banks arose and the question of whether or not the central bank would save private banks was generally re-framed from a question of the *availability of scarce commodity money* plus *of will* into a question of *will alone*. Both sides interacted and that knowledge fed back on banks and raised moral hazards, which in turn required a more "totalitarian" style of bank-policing.

At first, the unlimited availability of base money after the advent of state fiat money allowed to liberalize the traditionally narrow, reserve fractions. Lowering the reserves fractions (or increasing the multipliers of credit money over the fiat base money in the banks' possession, which is the same thing) allowed the further growth of private banks' credit money creation ability, which was, as we already said, quite welcome. But how to set limits to protect banks' money creation gland from banks' greed instead? The answer was to establish requirements as to the balance sheets of banks, beginning with minimum requirements concerning equity and different layers of better and less valuable equity to debt and different layers of more and less risky debt. These categories could be related to assets of banks and all sorts of ratios could were set, within the liability side of the balance sheet and crosswise. Furthermore, banks' liquidity and solvency management drew more attention and became key; banks were generally forbidden from certain particularly risky activities. *In fact, these policing-innovations were only implemented with a significant time gap after the state fiat money regimes, which necessitated them, were erected*. This was due to the wave of neoliberalism ("Thatcherism", "Reaganomics") in the eighties, which delayed the introduction of proper means of bank-policing until, in fact, after the financial crisis of

17 Very much like good old German "Gewerbe-Recht" or "Policey-Recht". Quite interestingly, well into the eighties of the last century, a belief was held in Europe that administrative law governing economic activity was a "paternalist" European, if not Prussian or German thing, while administrative law appeared to play a minor role in the advanced capitalism of the US. All of a sudden, things turned around and the US began to teach the Europeans "regulation", "compliance" and "governance", which was, in fact, only the policing of businesses in the old European tradition. Nevertheless, these teachings were willingly transformed into new rules and laws by the European Union and propagated throughout Europe. The regulation was macro-prudent, anti-corruption, environmental, and gender-based etc

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2008.[18] Only then the regulatory framework for banks was adjusted to the conditions of a state fiat money regime.

The availability of quasi-unlimited base money affected states and central banks bail-out-policies. The only effective strategic answer for a prospective savior to over-reliance on being saved is to *occasionally disappoint* that very expectation. That means either consciously selecting individual banks who overplayed their hands and sacrificing them from time to time or to apply the game theoretical strategy of "brinkmanship" by allowing the situation to get a bit out of hand, thereby, in fact, delegating the decision who will be saved and who not to a random generator.[19]

States and central banks further helped the increased lending based on money and debt creation that this period witnessed by institutionally strengthening and furthering diversified, liquid, and deep debt markets, in which original lenders or second-hand debt investors could confidently unload their debt assets and re-finance themselves if they needed liquidity, such as inter-bank and repo-markets. As these markets were internationalized, investors became less dependent on national trends, too. States often created legal provisions that eased ongoing debt build-up, e.g., privileges for sovereign debt in accounting for bank regulation laws or tax provisions privileging debt financing. All of this helped to enable – without central banks already building up significant piles of debt themselves or without "overt monetary financing" – a substantial rise in the volumes of credit money created by banks, and of, consequentially, of new debt and of expansive prosthetic employment-generating spending.

The "tandem" of state fiat money and private bank money creation enables fall of interest rates

The general transition to state fiat money, and the active support by states and central banks for debt markets, resulted in a tremendous worldwide fall in interest

18 The reaction to the Great Depression in the US was still designed with a commodity money regime in mind. Nevertheless, certain moments of its policing, e.g., as contained in the *Glass-Steagall Act of 1933*, could be revived in the years following 2008. After the Great Depression, World War II, on the one hand, "solved" macroeconomic problems for some time, while, on the other hand, states particularly needed massive credit money creation for their war-financing and were ready to take more risks than normal (rather than running out of bombs). Thereafter, the post Great Depression and post World War II regulatory situation did not significantly change before globalization and neoliberalism swept through Western banking laws in the nineties; accordingly, the *Glass-Steagall Act* was revoked in 1999.

19 It can be argued that allowing the Lehmann Brothers to go bankrupt, which is believed to have greatly deepened the financial crisis of 2008, was either the result of misguided intent or of reasonable "brinkmanship". It may not be in the interest of states and central banks to let the public become too convinced that similar non-intervention-policies will not be repeated.

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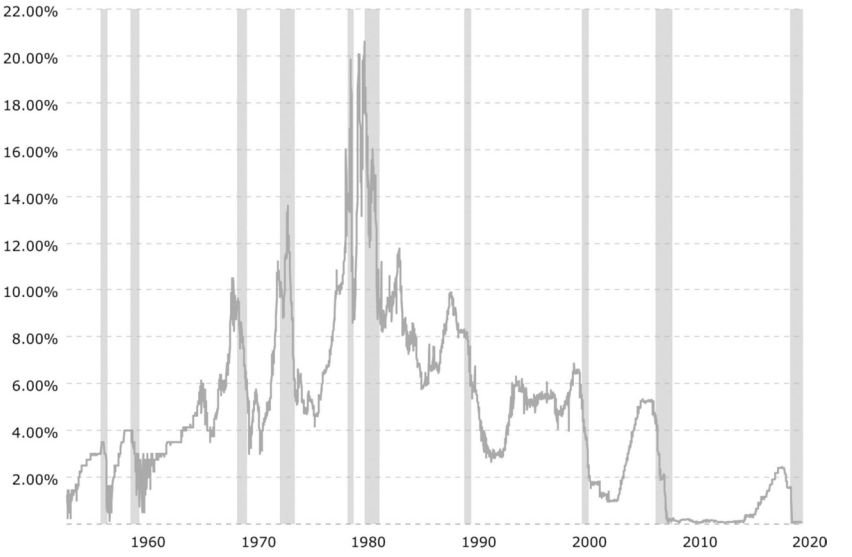
rates. The world saw the absolute high of the US Fed Fund Rate of around 20 % under Fed chairman Paul Volcker in 1980. Since then, over forty years, it has witnessed an almost uninterrupted fall down to zero or below zero almost everywhere, which of course favored a parallel and general worldwide build-up of sovereign and private debt. In the US, this build-up was backed by several waves of central bank easy money-policies under Fed chairmen Alan Greenspan, Ben Bernanke, Janet Yellen, and Jerome Powell. In all smaller or larger crises, such as the dot.com-bubble, the financial crisis of 2008, and the Corona-shock, the Fed always applied the same recipe: easy money for more debt build-up.[20] In each of these crises it transgressed new borderlines, which had appeared to be sacrosanct and inviolable in the wave before. The following graph shows the Fed Funds Rate since the sixties of last century until 2020.

Figure 19: Fed Funds Rate from before 1960 until 2020



Source: http://www.macrotrends.net

The interest rates in *China* used to be higher and did not drop so much as in other countries. Still, they followed the general downwards trend, particularly when China used its maneuvering space to, as many Western commentators said, "save the world economy" after 2008. Since the bursting of the Japanese asset bubble in

20 This at first meant only pushing interest rates down. Massive asset purchases became an additional "more of the same"- tool of central banks after 2008.

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1990, the Bank of *Japan* massively lowered interest rates and has kept them ultra-low, as one "arrow" of "Abenomics", for three decades. *Germany* saw rising interest rates in the early nineties connected with the debt build-up in the German reunification and Germany's traditional "austerity"-politics. As German reunification's main task was completed, and as the ECB took over monetary politics from the Bundesbank, the German rates, though, adjusted to the general trend and fell. Countries in which yields on sovereign debt had traditionally been higher – Italy, Spain, Portugal and Greece – used the introduction of the Euro, which boosted their creditworthiness, to lower their interest rates on sovereign debt and to build up further sovereign debt. Just as the former East-Germans received some "Begrüßungsgeld" (welcome-money) after the German reunification, peripheral European countries were flooded with loans at lower-than ever interest after joining the Eurozone. *France* also built up more sovereign debt following the "unification" into one currency. Although the UK remained outside of the Eurozone, rates fell there no less than elsewhere. The rates in the US, China, Japan, the UK, Germany, France, Italy, Spain, Portugal, and Greece, as they developed from 1980 (Japan) or 1995 (all other countries) via 2007 to 2020 are shown on the following table.

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Figure 20: Interest rates of major economies 1995 – 2007 –2020[21]

Interest rates	December. 1995 (Japan 1980)	December 2007	December 2020
US[i]	5,78 %	4,28 %	0,09 %
China[ii]	12,60 %	7,40 %	3,85 %
Japan[iii] June 1980	9,00 %	0,50 %	-0,10 %
UK[iv]	7,59 %	4,70 %	0,26 %
Germany[v]	6,07 %	4,21 %	-0,62 %
France	6,75 %	4,35 %	-0,34 %
Italy	13,50 %	4,00 %	0,50 %
Spain	12,35 %	4,35 %	0,14 %
Portugal	10,43 %	4,47 %	0,02 %
Greece	15,35 %	4,53 %	0,63 %

Since 2020 the rates slowly began to rise but nevertheless debt-mountains continued to grow.

Low rates enable massive build-up of sovereign debt

The overall low rates of the past enabled a massive debt build-up between the nineties of last century and today, thereby financing prosthetics at large scale, in the form of public debt. New Eurozone-members, e.g., Greece, Portugal, and Spain, give an example how productive investment, and increases of employment, arose out of debt build-up. The mentioned countries and others rewarded themselves with thousands of miles of new highways, often consisting of hundreds of bridges and tunnels through hilly beautiful landscapes along coastlines, which would never have been built under normal capitalist profit criteria and/or if they had been

21 [i] Fed Funds Rate. Source http://www.macrotrends.net.
[ii] PBC base interest rate. Sources: www/tradingeconomics.com (1995, 2007); http://www.global-rates.com (2020).
[iii] Bank of Japan interest rate. Source: www/tradingeconomics.com/japan/interest-rate
iv Long-term interest rate for convergence purposes – 10 years maturity, denominated in UK pound sterling – United Kingdom
[v] Long-term interest rate for convergence purposes – 10 years maturity, denominated in Euro: Source ECB. The data for France, Italy, Spain, Portugal, and Greece are the same data from the same source

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financed by taxation.[22] These investments, if megalomaniac and dubitable as far as their values-in-use are regarded, were still employment-generating and served the interest of local firms and of local workers (and of state bureaucrats) very well for some time. Indeed, most of the spending of sovereign debt in Eurozone countries, which led to the Eurozone debt crisis in 2009, went predominantly into productive investments.

In addition, of course, as always, a large chunk of the new debt throughout the world, in particular in the US, went into the military, be it via research and development (think of all the technological miracles, which are no paraded in the Ukraine war), arms production or payments to soldiers and veterans.

Figure 21: Military spending in major economies from 2006 to 2023

Military Spending in Billions US$								
Year	US	UK	Germany	France	Japan		Russia	PRC
2023	↑	↑	↑	↑	↑		↑	↑
2022	↑	↑	↑	↑	↑		↑	↑
2021	800,67	68,37	56	56,65	54,12		65,91	293,35
2020	778,23	59,24	52,76	52,75	49,15		61,71	257,97
2019	734,34	56,86	49,01	50,12	47,61		65,2	240,33
2018	682,49	55,68	46,42	51,41	46,62		61,61	232,53
2017	646,75	51,63	42,21	49,2	45,39		66,91	210,44
2016	639,86	53,33	39,86	47,37	46,47		69,25	198,54
2015	633,83	59,99	38,17	45,65	42,11		66,42	196,54
2014	647,79	67	44,66	53,13	46,9		84,7	182,11
2013	679,23	63,84	44,24	52	49,02		88,35	164,07
2012	725,21	65,45	43,8	50,22	60,01		81,47	145,12
2011	752,29	66,57	45,16	54,12	60,76		70,24	125,29
2010	738,01	63,98	43,03	52,04	54,66		58,72	105,52
2009	705,92	64,01	44,53	56,44	51,47		51,53	96,6
2008	656,76	72,92	45,1	55,37	46,36		56,18	78,84
2007	589,59	73,45	40,11	50,68	40,53		43,53	62,14
2006	558,34	64,22	35,88	45,79	41,55		34,53	51,45
Sources: www. Macrotrends.net and de.statista.com								

The ratios of state debt, private debt, and aggregate debt to GDP in 1995 (1980 for Japan), 2007, and 2020, which does not include the massive public spending in the Corona crisis and the huge increases of military spending since the Ukraine war yet, are shown in the following table.

22 Greece, where most vacationers go by plane, is today a wonderful country for an automobile vacation with a most generous network of new, empty highways or new countryside roads, e.g., from Thebes (ancient Thiva) to Delphi. The hilly Portuguese Island of Madeira, where the vacationers mostly use rental cars, is another example.

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Figure 22: Development of sovereign and private debt in leading capitalist countries 1995–2020[23]

In %	1995 (unless otherwise indicated)			2007 (unless otherwise indicated)			2020 (unless otherwise indicated)[i]		
	State debt/ GDP	private debt[ii]/ GDP	total debt/ GDP	State debt/ GDP	private debt/ GDP	total debt/ GDP	State debt/ GDP	private debt/ GDP	total debt/ GDP
US[iii]	64.2	162.9	227.1	62.8	223.7	285.5	132.5	218.0	350.5
China[iv]	21.4	78.0	99.4	29.0	105.8	135.6	45.8	188.9 (2018)	233.7
Japan[v]	50,0 (1980)	291.9	341.9	175.4	227.3	402.7	224.8	223.8 (2018)	448.6
UK[vi]	44.5	160.0	204.5	41.5	231.7	272.2	84.6 (Q3)	190.3 (2019)	274.9
Germany[vii]	54.9	149.4	204.3	64.0	162.6	226.6	70.0	159.9	229.9
France[viii]	60.0	163.6	223.6	64.5	202.5	267.0	118.7	264.8	383.5
Italy[ix]	116.9	119.8	236.7	99.8	168.0	267.8	155.6	161.5	317.1
Spain[x]	61.5	129.9	191.4	35.8	276.1	311.9	117.8	190.4	308.2
Portugal[xi]	58.3	163.1	221.4	68.4	278.4	346.8	137.2	236.0	373.2
Greece[xii]	99.5	50.7	150.2	101.3	114.6	215.9	205.2	123.1	328.3

23 [i] State debt 2020, Private debt 2019 (unless stated otherwise indicated). Total debt includes state debt of 2020 and private debt of 2019 or of indicated date.
[ii] Debt of non-financial corporations, households and non-profit institutions serving household. Resource: stats.oecd.org (2007 and 2018, 2019).
[iii] US. Government-debt-to-gdp: Sources http://www.fred.stlouisfed.org (1995, 2007), http://www.ceicdata.com (2020). Private debt: http://www.tradingeconomics.com.
[iv] China. Government debt/gdp: Sources: www/tradingeconomics.com (1995, 2007), http://www.caixinglobal.com (2020). Private debt/gdp: Total stock of loans and debt securities issued by households and non-financial corporations as a share of gdp. Source: http://www.imf.org.
[v] Japan. Government debt/gdp: Sources: www/tradingeconomics.com (1995, 2007); http://www.ceicdata.com (2020). Private debt/gdp: http://www.tradingeconomics.com.
[vi] Government debt/gdp UK. Sources: http://www.eurostat.com (1995, 2007); http://www.ons.gov.uk. Private debt/gdp. Private debt/gdp: http://www.tradingeconomics.com.
[vii] Germany. Government debt/gdp Sources: http://www.tradingeconomics.com (1995, 2007). http://www.ceicdata.com (2020). Private debt/gdp: www.tradingeconomics.com.
[viii] France. Government debt/gdp: Source: http://www.tradingeconomics.com. (1995, 2007) http://www.statista.com (2020). Private debt/gdp: http://www.tradingeconomics.com.
[ix] Italy. Government debt/gdp Source: http://www.tradingeconomics.com. Private debt/gdp: http://www.tradingeconomics.com.
[x] Spain. Government debt/gdp Source: http://www.countryeconomy.com. Private debt/gdp: http://www.tradingeconomics.com.
[xi] Portugal. Government debt/gdp Sources: http://www.tradingeconomics.com (1995, 2007), http://www.statista.com (2020). Private debt/gdp: http://www.tradingeconomics.com.
[xii] Greece. Government debt/gdp Sources: http://www.tradingeconomics.com (1995, 2007), http://www.statista.com (2020). Private debt/gdp: http://www.tradingeconomics.com.

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As the table shows, private debt experienced a particular jump between 1995 and 2007, which contributed a lot to the period's increased prosthetic employment-generating spending. One might expect that *corporate debt* would have massively financed firms' productive investments, which was the main argument officially justifying low interest rate-policies. Yet, this was not necessarily so. Low interest rates did not induce as much productive investment as was hoped but rather financed many sterile investments, e.g., stock repurchase programs.

Low rates enable massive build-up of workers' debt

A more substantial support for employment-generating spending arose from the already touched upon growing private indebtedness, in particular from *an increase of workers indebtedness in the period*. As we have set out, debt build-up requires a coming-together of money, creditors, and debtors.[24] Workers (in the wide meaning of non-owners), with a little help from the aforementioned favorable institutional and legal framework and falling and low interest rates, significantly increased their presence in debt markets in this period. They were now, contrary to the 19th and early 20th century, heartily welcomed by creditors (banks, wealth owners) hunting sterile investments. The increased workers' debt can be split up into three sub-categories: real estate debt, educational debt, and general consumption debt. Workers, and even jobless people, were enabled to debt-finance houses, at a scale, which had been unimaginable before. This was largely employment-generating if the houses were newly built. Workers were now also more welcome by banks if they wanted to finance general consumptive purposes, such as the education of their kids, automobiles, motorcycles, sports equipment, long-lasting household goods, electronics, or even their daily subsistence by leasing-arrangements, consumer loans, overdraft facilities, or credit card or other forms of private debt. This debt, except for rolling over prior debt and interest payments, financed employment-generating spending almost exclusively. Rather than the state issuing sovereign debt and making transfer payments to workers, workers would take care of the necessary money creation and debt build-up themselves (obviously in conjunction with banks). This may also partially have been a reaction of workers to stagnant or falling real salaries in the period and to reduced social transfers in many countries.

The US subprime housing loans, which triggered the 2008 financial crisis, are an important example: Sterile wealth owners speculated in subprime loan markets (and may also have taken up non-subprime-loans themselves in this context to leverage their sterile investments there) and subprime loans were handed to workers and financed the construction of, to a significant extent, new working-class dwellings in the US (and very often of new cars etc. on top). *Without* subprime loans, thus, the US would have seen *much less construction and industrial activity*, have been

24 See page 399 et seq.

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much less prosperous, and there would have been much more unemployment in the period. All this was only enabled by working class debt build-up in conjunction with sterile investments by wealth owners. Similar jumps in private debt occurred in Greece, Portugal, Spain, and in other European countries; here, the debt build-up was largely enabled by falling interest rates connected to the Euro-introduction in peripheral Eurozone countries. Once more, spending financed by private debt build-up boosted economic activity and employment. Alternatively, when looked at it from the other side, had workers not loaded up significant debt on their shoulders, the worker-borrowers themselves, like their colleagues in the firms in which the borrowers spend the money, would not have gotten close to the living standards they actually had. Unfortunately, though, this jump in workers' indebtedness, which elevated employment-generating spending and workers' quality of life beyond the "natural" economic level, was a one-time event, which cannot be repeated after the level of workers' indebtedness has reached the limits of its sustainability. The crisis of 2008 arrived when sterile wealth owners got aware that they were financing houses and other expenditures that the purchasers could, ultimately, not afford.

They, too, contributed to prosperity in the period in the respective countries. In other words, without the falling, low, and ultra-low interest rates that we have witnessed since the nineties, there would only have been a significantly lower volume of employment-generating spending across all major developed countries of the world; hence, a significant outfall of circuit closure, a material additional depressive force on the economies, and much more unemployment, and human suffering over decades.[25]

The dilemma of private bank credit money creation in state fiat money regimes

There is a major structural dilemma of money creation by private banks in a state fiat money regime: Even if, in conjunction with rising private and public debt and before the background of state fiat money creation with its extended bail-out-possibilities, the volumes of prosthetics financed by private wealth owners, and thus the debt held by them, skyrocket at first, there comes a moment where private debt holders get irritated, feel uncomfortable and do not want to hold so much debt anymore. The more massive the debt build-up enabled by low interest rates is, the more certain, there will be a *deficiency of possible debt-holders* at some juncture. No optimization of debt and bond markets, of inter-bank and of repo-markets, and no market-making (including "dealer-of-last-resort-ship") by central banks and no regulatory improvements can maintain the willingness of creditors to absorb increasingly more junior,

25 Obviously, the debt to GDP-ratios also mirrors voluminous central bank debt purchases and asset holdings in the period between 2008 and 2020.

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more subprime, riskier and low interest public and private debt on the creditors' side. This will unload not so much in a falling readiness to absorb new debt issues (which will be connected to higher rates), but in a collapse of a reliable "shiftability" of old debt instruments between debt-holders, which would, though, be required to meet the ever-growing hunger for new debt on the debtors' side.

At some stage, the high risk, resulting from the high levels of worker debt, and the low rewards, resulting from the low interest rates, which enabled the high debt-levels, will dry out unloading-possibilities for creditors and, accordingly, dry out debt-sourcing for debtors. Euphemizing (or even deceptive or criminal) "restructuring", "repackaging", etc. of debt may also help for some time (in essence by reducing transparency of risk), as may debt insurance by credit-default-swaps (CDS, or other credit derivatives) – until doubts arise in the insurers' solvency –, but not forever. The process of loss of trust in the debt can, thus, only be slowed down and delayed, but cannot ultimately be dismissed. It will bring the rolling over existing debt, to a grinding halt. As processes of insight proliferation and opinion changes travel very fast, it will strike suddenly and everywhere.

This is what happened in the US subprime crisis: A huge private debt market had evolved for a certain type of private debt, housing, and ancillary debt of workers and the jobless, and not enough private wealth owners wanted to hold onto it any longer. Worse still, nobody either wanted to longer hold debt of units who were known to insure such debt or to hold much of this debt on their asset side. Basically, the same happened in 2009/2010 to sovereign debt for Greece, Italy, Spain, and Portugal. In the financial crisis of 2008 and the Eurozone sovereign debt crisis of 2009, in other words, the point was touched where the limits of the readiness of private wealth owners to absorb the (available) debt, which had been created by private banks' fractional reserves credit money creation, were hit. This appears to have spelled the end of continued debt build-up based on low interest rates and predominant fractional reserves credit money creation without significant central bank debt holding and without significant state fiat money creation.[26]

26 Sometimes it is believed that states could only afford massive indebtedness as long as interest rates are low or moderate. This view is certainly true in commodity money regimes where the means to repay the debt must mainly be procured by redistributive means (e.g., taxation, expropriation or protectionism) with their palpable limits. Yet, in state fiat money regimes, even if interest rates rise significantly, central banks can simply print even more money to either pay the higher interest rates to privates or to purchase more of the outstanding debt and thereby neutralize it. Central banks will return the interest payments, which they receive from states at the front door, at the back door – as profits distributable to the state as their shareholder. Who sits on an unlimited money creation gland is less afraid of rising interest rates than privates (without money creation gland) or even states (as long as they did not control the fiat money creation gland).

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Central banking and debt purchases by central banks

Buying up of sovereign debt by central banks was, at first, an exceptional means of state financing, e.g., in wars. After not long, sovereign debt holding by central banks became a macroeconomic means to steer business cycles. Central banks should buy and hold significant debt in a depression to stimulate activity and to overcome deflation. Conversely, central banks were said to sell the debt in a boom to calm down excessive activity and to avoid inflation. That remained the general official theory on central banks' debt holding during most of the 20th century.

It is worthwhile to look at this theory in greater depth: How, specifically, should debt purchases by the central bank help economic activity and employment? There was a sober and rather crude and a more "sophisticated" and ambitious explanation. The more crude and sober explanation, which probably ruled in the brains of politicians, the military, and in trade unions and continues to rule there until today, was quite simply that if the central bank bought sovereign debt from private entities, then private entities might consequentially recuperate this money to hand out new loans to the state or to privates who would spend more, and that this would have either a prosthetic macroeconomic or a welcome value-in-use effect. It did not matter in this context whether the central bank debt purchases were regarded as having motived privates to give loans already in the past, as they had been foreseen, or whether their execution re-equipped privates with the cash needed for future debt issues as a surprise. The relevant transmission mechanism was thus: Purchases of existing debt by the central bank enabled consecutive debt-build up, which enabled additional prosthetic employment-generating spending. The official, more "sophisticated" explanation, which labeled central bank debt holdings "open market policies", though, built upon Keynes' "inducement to invest". It turned away from the added masses of available credit and spending to a single peculiar effect of the debt purchases, which allegedly resulted from higher volumes of money being shed into the markets. This effect was *lower interest rates,* which were expected to influence the investment *calculus* of firms towards more investment. A twofold mechanism was believed to operate into this direction: First, lower costs of present investments (because of lower interest rates) would open up spaces to profitably more sell produce. Second, higher asset valuations were expected to be forthcoming, also because of lowered interest rates (by lesser discounts on future surpluses), which would also render setting up new businesses more rewarding.

As central banks bought debt, additional employment-generating spending actually did take place, but neither of the two theories was thereby vindicated. Was the additional spending because the lower interest rates had improved the calculus of firms or simply only because additional money had been made available to spenders with a high propensity to spend, i.e., to the state and non-owners, which afterwards added to higher debt mountains? For skeptics, the latter was always

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more convincing. In the meantime, the question has become almost obsolete. At first, it is impossible to reconcile the "open market"-theorem used in by the more sophisticated interpretation with the *consistent fall of interest rates* and the *consistent growth of central banks' balance sheets* over the last almost four decades.[27] "Open market policies" have too obviously changed into a one-way-thing, a permanent flow in the same direction, which has also led to the talk about "quantitative easing" displacing the talk about "open market policies". Second, it has even become more dubitable than before whether lower interest rates really induce firms to invest more. We have had falling and radically low, ultra-low rates interest rates, even zero or below, for around two decades – but we experience "secular stagnation" instead of a boom in the productive economy, which would need to be tamed down.[28] The crucial thing that bothers firms in their investment decisions is not interest rates, but *too few investment opportunities*, i.e., to limited employment-generating spending or too limited demand. Additional investment will only be rewarded if the aggregate volume of employment-generating spending is increased. If new products can only succeed by *displacing existing products* and drawing away employment-generating spending from them, e.g., following technological or institutional innovations (mobile phones, internet purchases, changes in consumer preferences like electrical cars or biological food), even if the investment in these novelties were helped by low interest rates, it will be at the cost of reduced investment of the displaced firms.

Accordingly *Richard Koo*, when he studied the "lost decades" of Japan since 1990, found that the overwhelming part of massive and cheap credit facilities offered by the Japanese government and banks *were not used by firms as they did not expect sufficient demand*.[29] Rather, highly indebted firms only reduced old debt, in particular debt resulting from earlier speculation in the sterile economy, such as real estate and stock speculation, before they considered new ventures in the productive economy.[30] Even authors who believe that "quantitative easing" works, see the main effective "transmission channel" in manipulations of foreign exchange rate, which is ultimately a protectionist thing.[31] Similar findings appear frequently in the Annual Reports of

27 The composition of assets, of course, changed with roll-overs – old bonds becoming due and new bonds becoming purchased – and with central bank trading, but the volume only grew.

28 If there were booms in the last decades, then in BRICS-countries, especially the once-in-human-history growth period in China.

29 *Koo* (2009) page 43, 47.

30 *Koo* (2009) page 39 et seq.

31 "Lesson one is that monetary policy works. The initial 'bazooka' of massive debt purchases by the bank of Japan in 2013 was highly effective. Bond yields fell; stock markets boomed; and most important, the yen fell below ¥100 to the dollar, a boon to Japanese industry." (*Harding*, Abenomics and the fight against 'Japanification', in: *Financial Times* of 7 September 2020). *Münchau*, The success of eurozone QE relies on a confidence trick, in: *Financial Times*

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the Bank for International Settlements (BIS) in Basle or in macroeconomic writing.[32] Sometimes it is also argued that Quantitative Easing could work via "what is known as the 'portfolio rebalancing' channel – the idea that people who sell bonds to the ECB will need to put their money elsewhere, such as in the real economy".[33] But this would require that there are attractive alternative investment opportunities, which do not exist.

Carl Christian von Weizsäcker and *Hagen Krämer* took Keynes' identity of saving and investment and showed that, if it ever had existed, at least a notable divergence has arisen between saving and investment today. They found a lot of saving, but little investment[34] – notwithstanding the ultralow rates of the time. It was also observable in recent years that top-level-firms, who have proven to be able to make substantial successful investments as leaders of innovation, preferred to carry significant cash reserves over long periods or sought to shift them into the wealth economy, e.g., by re-purchasing their own stock, rather than making new investments in the productive economy. If *Apple* and *Microsoft* held reserves approaching $1 tn. or above $1 tn., their not-investing these amounts in the productive economy was certainly not due to the existing interest rate having been too high! Mainstreams economist too, today often admit that investment does not normally react much to a drop in interest rates.

Thus, a lot seems to speak for the "crude" theory! If there is a transmission belt between central bank debt purchases and increasing employment in the productive economy, it seems to be the spending of the net debt build-up (if the debt purchases are followed by a new debt-build up). Enable a raise of aggregate debt by central bank debt purchases and what you get is a raise in employment-generating spending by roughly the same amount after the state has channeled the money into transfer payments, military, or infrastructure spending. The simplest and most mechanic transmission belt of central banks debt purchases, which is openly unsustainable, appears to be the only reliable one.[35]

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of 21 March 2015, is more skeptical, even with regard to effects on the exchange rate. He only agrees that QE has certain "effects on the "exchange rate", but, adds "it is not clear that this effect will be permanent".

32 E.g., International Bank for Settlement (BIS) at Basle (2016) page 13 .

33 See also *Münchau*, The success of eurozone QE relies on a confidence trick, in: *Financial Times* of 21 March 2015.

34 *Weizsäcker/Krämer* (2021).

35 It fits together with this suspicion that in the Corona crises, central banks announced *in advance* that they would buy ("back") the sovereign debt, which states or the European Union was issuing to fight the crisis. See page 485 and footnote 2 there.

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