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Paper by

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Power or Economic Law?

Some fresh reflections on ECB policy

I have chosen Eugen von Böhm-Bawerks classic article of 1914[1] for the title of my paper. „The upshot of Böhm-Bawerk's treatise, as demonstrated by the example of the wage level, can best be summarized as follows: The range of power and its execution would be quite considerable in the short run. In the long run, however, it would strongly shrink in favor of what is subjected to economic laws or rather economic logic."[2]

Today's question is: Does ECB's power or do market forces determine the level of interest rates, which since the 1990s have been falling and are nowadays very low

[1] Eugen von Böhm-Bawerk, „Macht oder ökonomisches Gesetz?" In *Zeitschrift für Volkswirtschaft, Sozialpolitik und Verwaltung* 23 (1914), pp. 205-271. For an early detailed review of Böhm-Bawerk's article see James Bonar, in *The Economic Journal* 30 (1920), pp. 214-219. Incidentally, Böhm-Bawerk is one of the fathers of modern theories of capital and capital market. The latter's functioning will play a role later in this article.

[2] My translation of "Das Ergebnis von Böhm-Bawerks Ausführungen – am Beispiel der Lohnhöhe demonstriert – läßt sich am besten in der Weise zusammenfassen, daß der Bereich für die Macht und ihre Ausübung zwar kurzfristig recht beträchtlich sei, aber langfristig doch sehr zu Gunsten von dem zusammenschrumpfe, was den ökonomischen Gesetzen bzw. der ökonomischen Sachlogik untersteht." Ernst Heuss, „Macht oder ökonomisches Gesetz", in *Zeitschrift für die gesamte Staatswissenschaft / Journal of Institutional and Theoretical Economics* 128 (1972), pp. 185-195, quote p. 185. Heuss devotes his article to defining what *power* in Böhm-Bawerk's use of the word means in economic, political, and social relations .

indeed? The assumption of most people around the world is that central banks alone control interest rates. I will take issue with this view and present some evidence that market forces play a more important role.

The ECB's monetary policy of not only low, but even negative interest rates and its open-market policy of Quantitative Easing (QE) have met with especially strong criticism from the German side. The German public, journalists and mainstream economists in academia, think tanks and in the financial sector have attacked Mario Draghi for this policy. They argue that it will erode private savings and old-age provisions, lead to bubbles in the equity and real estate markets, to misdirected investments, to liquidity or even solvency problems in the financial sector and to even looser fiscal policies in those Eurozone countries that already violate the Maastricht criteria. Gunther Schnabl, chair of the Institute for Economic Policy at the University of Leipzig, even argues that Draghi's monetary policy is undermining the economic order of Germany as devised by Walter Eucken with his eight essentials.[3]

It is well known that the Deutsche Bundesbank has acted in opposition to Draghi's monetary policy program. Jens Weidmann, the Bundesbank's president, and Axel Weber, his predecessor until 2011, have been outvoted in the ECB Governing Council many times, likewise the German member of the ECB Executive Board, Jürgen Stark. Weber and shortly thereafter Stark resigned in 2011.[4]

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[3] http://www.focus.de/finanzen/experten/folgen-der-geldpolitik-die-ezb-unterhoehlt-die-grundpfeiler-unserer-wirtschaftsordnung_id_7382123.html (Accessed 7 September 2017). At his University of Leipzig Schnabl has founded and directs a research platform *Zero-Interest-Rate Policy and Economic Order* (*Nullzinspolitik und Wirtschaftliche Ordnung)*. This platform is funded by the *Friedrich von Hayek-Stiftung für eine freie Gesellschaft* and by the *Jackstädt Stiftung*. See: https://www.wifa.uni-leipzig.de/iwp/research/fnzp/themen.html (Accessed 9 September 2017).

[4] http://www.spiegel.de/international/europe/ecb-chief-economist-quits-juergen-stark-s-resignation-is-setback-for-merkel-a-785668.html (Accessed 4 September 2017).

And even leading government members, such as finance minister Wolfgang Schäuble, have labeled Draghi's monetary policy as dangerous and have asked for a tighter policy since spring of 2016.[5] This is especially ironic as it was the German government that insisted successfully on the ECB's independence from government.

A large majority of Germans live in fear of the consequences of Draghi's policy, while Draghi has spoken of the "perverse angst" of his policy among Germans.[6] The often stoked fear of inflation, even hyperinflation, as a consequence of the ECB's flood of liquidity into money and capital markets has not been substantiated by price developments at all. Increases in the cost-of-living index have remained well below the price-stability target of 2.0 percent p.a. More or less the same is true for Japan and the U.S. There the expansion of the balance sheets of their respective central banks has been even more pronounced than that of the ECB.

The other side of the coin – cheap credit for investment purposes or real-estate finance – is practically not talked, let alone complained about by those in Germany who make use of and benefit from it. The fall of interest rates has redistributed income from creditors to debtors. Hyperinflation has the same effect, only much quicker and stronger. The common denominator is surprise developments, in the present case as to future nominal interest rates and in the event of a hyperinflation as to future real interest rates.[7]

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[5] http://www.faz.net/aktuell/wirtschaft/wolfgang-schaeuble-kirtisiert-mario-draghis-ezb-geldpolitik-14171118.html (Accessed 7 September 2017)

[6] http://www.telegraph.co.uk/finance/economics/10542289/Draghi-complains-of-perverse-angst-among-Germans.html (Accessed 4 September 2017).

[7] See Carl-Ludwig Holtfrerich, *The German Inflation 1914-1923. Causes and Effects in International Perspective*, Berlin/New York: Walter de Gruyter, 1986, pp. 73-74, 119-120.

In my view and according to regular Eurobarometer polls by the European Commission,[8] Germans are much more risk- and debt-averse than citizens of other EU member states with a long tradition in international commerce and trade, namely Italy, Spain, Portugal, France, the Netherlands and England. I consciously speak of England, not of Great Britain, because Scotland as part of the latter is the proverbial land of penny pinchers and savers, not of risk-takers and debtors. Scotland shares with Germany a background of relative poverty, in the German case well into the last third of the 19th century.

As a consequence of German individuals, households, and - as a reflection of public opinion - also governments being relatively debt-averse, Germany with its very high savings and very low net investment ratios has been running current account surpluses since 2002, fast increasing since 2004 and in the range of 8.5 percent of GDP since 2015. These are – in my view – a strong impediment to economic recovery processes in Euro area deficit countries. They are a threat to a balanced economic development within the Eurozone. Germany's high current account surpluses constitute an incentive in deficit countries for cutting currency ties with the most competitive Eurozone member state, Germany, and for returning to a national currency.

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[8] See Carl-Ludwig Holtfrerich et al., *Government Debt: Causes, Effects and Limits*, Berlin: Berlin-Brandenburg Academy of Sciences and Humanities, 2016, pp. 12 and 85, endnote 6. See also Richard C. Koo, *The Escape from Balance Sheet Recession and the QE Trap. A Hazardous Road for the World Economy*, Singapore: Wiley, 2015, p. 207.

[9] https://www.welt.de/finanzen/article155356244/Verfassungsklage-gegen-den-souveraenen-Diktator-EZB.html (Accessed 7 September 2017). This was not the first complaint that Kerber initiated against ECB policy in Germany's constitutional court. He is a practicing attorney at law as well as founder (in 2005) and director of the small think tank *Europolis* in Berlin. *Europolis'* ambitions are listed as follows: "The promotion of more competition, ensuring institutionally the stability of currency and prices, promoting the consolidation of public finances, giving priority to the principle of subsidiarity." http://www.europolis-online.org/en/about-us/ (Accessed 9 September 2017). It would be interesting to know who is funding *Europolis*.

There is a strong belief in Germany, but also in other countries of the Euro area as well as in Great Britain and the U.S. that the level of interest rates depends only on decisions by central banks, as if the ECB or any other central bank could wield absolute power over conditions on money and capital markets. The ECB or Draghi himself is sometimes branded as the dictator of the Euro area. In his statement of claim questioning the constitutionality of the ECB Corporate Sector Purchase Programme as an extension of the QE Program before the German Constitutional Court, Markus C. Kerber, lawyer and adjunct professor of public finance and economic policy at the department of economics and management of the Technical University of Berlin, called the ECB explicitly a "sovereign dictator".[9]

It is textbook knowledge that monetary policy of central banks has direct influence on money market conditions. But even there conditions are also shaped by other actors in the economy, both from the financial and non-financial sectors such as government, private non-banks, commercial banks, and monetary developments abroad. Depending on its fiscal policy a government can, for example, demand short-term funds from the money market in deficit situations or add to the supply of funds there in surplus situations. If government is allowed to draw on credit from the central bank and to deposit such funds in commercial banks, it also adds to the supply of money market funds thus lowering the interest rate there. The behavior of private non-banks also has effects on money-market conditions, e.g. by changing the relationship between the use of cash and deposit money and by changing the term

[9] https://www.welt.de/finanzen/article155356244/Verfassungsklage-gegen-den-souveraenen-Diktator-EZB.html (Accessed 7 September 2017). This was not the first complaint that Kerber initiated against ECB policy in Germany's constitutional court. He is a practicing attorney at law as well as founder (in 2005) and director of the small think tank *Europolis* in Berlin. *Europolis'* ambitions are listed as follows: "The promotion of more competition, ensuring institutionally the stability of currency and prices, promoting the consolidation of public finances, giving priority to the principle of subsidiarity." http://www.europolis-online.org/en/about-us/ (Accessed 9 September 2017). It would be interesting to know who is funding *Europolis*.

structure of deposit money. Commercial banks have an impact on money-market conditions mainly via their rate of credit expansion or contraction and their decisions on the extent of their liquidity reserves.[10] Last but not least, monetary developments abroad and short-term capital in- or outflows induced by them can exert a heavy impact on the domestic money market, especially in a fixed-exchange-rate system. During the Bretton-Woods era restrictive measures by the Deutsche Bundesbank, i.e. efforts at increasing the money market's interest rate, were stifled by such short-term capital inflows. It rendered the Bundesbank's monetary policy with the aim of stabilizing the domestic business cycle relatively powerless, because it was primarily obliged to stabilize the Deutschmark's exchange rate.[11] Instead, fiscal policy had to take care of the stabilizing role, in line with the Mundell-Fleming model first presented in 1962.

It also used to be textbook knowledge that central banks have no direct influence on capital market conditions. But arbitrage between short-term funds on money market and longer-term funds on capital market would eventually draw capital-market interest rate in the direction of money-market interest rate.

The supply of funds on capital market does not flow out of usual money creation of the central bank, except when QE is practiced. It is rather determined by the volume of saving worldwide. In addition to domestic saving, capital imports or exports determine the supply of funds on domestic capital market. The demand for such funds comes from all kinds of economic actors and institutions. It is true that central

[10] For this paragraph I have drawn on Otmar Issing, *Einführung in die Geldtheorie*. 11th ed., Munich: Vahlen, 1998, pp. 72-84.

[11] For more on this see Carl-Ludwig Holtfrerich, „Monetary Policy under Fixed Exchange Rates (1948-70)“, in Deutsche Bundesbank (ed.), *Fifty Years of the Deutsche Mark. Central Bank and the Currency in Germany since 1948*, Oxford/New York: Oxford UP, 1999, pp. 307-401, esp. pp. 362-390.

banks by their open-market operations may be at times among those who absorb funds from capital market. But currently the QE Program of the ECB supplies an unusually big chunk of the funds offered at Euro-area capital market, 60 billion Euros per month.

Institutions and sectors of the economy other than the central bank are usually much more active on the demand side of capital market: the financial sector (offering and demanding funds simultaneously), the non-financial business sector, private households for mortgage and consumer credit and the government sector in times of running deficits (in periods of surplus it adds to the supply of saving).

Like on all markets, the price of capital on the capital market – the interest rate – is determined by the intersection of supply and demand curves. For some capital demanders a risk premium might be added to the bare interest rate. This premium is usually zero for government, because with its taxing powers insolvency is practically excluded. It is low for sound businesses. It is higher in the mortgage and consumer credit markets. And it might be very high in financially and economically weak countries in times of fiscal or financial crises.

Interest rates on capital markets are currently still extremely low, real interest rates even negative. The downward trend did not start with the Great Recession of 2007/08,[12] but has been going on since the 1990s. What has happened on capital market's supply side since then?

[12] For statistics covering the seven most important OECD countries since January 2007 see: https://data.oecd.org/interest/long-term-interest-rates.htm (Accessed 13 September 2017). The data are those on ten-year government bonds.

The volume of world-wide saving has increased much stronger than world-wide GDP. This resulted mainly from extremely high growth in emerging economies like the BRICS states where social security is still relatively underdeveloped compared to advanced economies. Well-to-do middle class citizens now constitute a large and growing portion of society there. They have the means to save and thus to care for their social security individually. In China, for example, national saving to GDP ratios have been estimated at 40 percent, much higher than those in advanced economies.

These developments on the capital-market supply side were labeled *saving glut* by Ben Bernanke.[13] Bernanke had observed that after the outbreak of the East Asian financial crisis of 1997, preceded by Mexico 1994 and followed by Russia 1998, Brazil 1999 and Argentina 2002, Emerging Market Economies (EMEs) thereafter no longer drew on the pool of world saving by importing capital, but built up huge "war chests" of foreign exchange reserves used as buffers against potential capital outflows. In addition, the stockpiling of reserves resulted from foreign-exchange interventions with the aim of keeping exchange rates undervalued and thus promoting export-led growth. Oil-exporting countries also piled up more and more reserves, because there was a sharp rise in oil prices. In other words EMEs and oil exporters ran large current account surpluses instead of deficits. This indicates that they were exporting big chunks of their domestic saving to the rest of the world. These capital exports were mainly absorbed by the United States. Bernanke contends that this led to "persistently low longer-term interest rates in the mid-2000s

[13] Ben S. Bernanke: The global saving glut and the US current account deficit. Remarks by Mr. Ben S Bernanke, Member of the Board of Governors of the US Federal Reserve System, at the Sandridge Lecture, Virginia Association of Economics, Richmond, Virginia, 10 March 2005. http://www.bis.org/review/r050318d.pdf (Accessed 13 September 2017). For a reassessment in the light of post-financial-crisis developments see: Ben S. Bernanke, "Why are interest rates so low, part 3: The Global Savings Glut", Brookings Institution, Washington DC, Wednesday, April 1, 2015. https://www.brookings.edu/blog/ben-bernanke/2015/04/01/why-are-interest-rates-so-low-part-3-the-global-savings-glut/ (Accessed 17 September 2017).

while the Fed was raising short-term rates. Strong capital inflows also pushed up the value of the dollar and helped create the very large US trade deficit of the time, nearly 6 percent of US gross domestic product in 2006."[14] The deficit had been only 1.5 percent of GDP in 1996.

A contributor to the saving glut has been the balance sheet recession, a theory that Richard Koo first used to explain the post-1990 sluggish development of the Japanese economy. He diagnosed it for Germany since the collapse of the IT bubble in 2000 as well as for the Euro area and for the U.S. since the Great Recession. It occurs after bubbles burst. Businesses and consumers then prefer to save and pay off their debts rather than spend and invest despite very low interest rates.[15] This increases supply and reduces demand on world capital market, thus driving interest rates down.

Carl Christian von Weizsäcker explains the saving glut that causes very low or negative nominal and real interest rates from a different angle.[16] Taking Böhm-Bawerk's capital theory and Knut Wicksell's interest-rate theory as points of departure, he focuses on the effects of demographic developments in the OECD countries and fast-growing China on the supply and demand for capital. In contrast to Karl Marx' and Böhm-Bawerk's expectations that there would be a secular trend of a perennially rising ratio of capital to output, always resulting in a positive nominal and *natural* real rate of interest, the capital coefficient during the spectacular economic

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[14] Ibid. In late 2006 Niall Ferguson and Moritz Schularick coined the term Chimerica for the symbiotic relationship between China and the U.S., i.e. huge saving by the Chinese and big overspending by Americans. http://www.jfki.fu-berlin.de/faculty/economics/persons/schularick/chimerica.pdf (Accessed 17 September 2017). Niall Ferguson/Moritz Schularick , "'Chimerica' and the Global Asset Market Boom", in *International Finance* 10 (2007**)**, pp. 215-239.

[15] R. C. Koo, *Escape from Balance Sheet Recession*, ibid. Koo presents a lot of data validating his theory.

[16] Carl Christian von Weizsäcker "Public Debt and Price Stability", in *German Economic Review* 15 (2014), pp. 42-61.

development since the last third of the 19th century did not increase, but remained practically constant. This means that the demand for capital by the production sector of the economy grew in tandem with the level of production, which means roughly at the same rate as GDP.

But the supply of capital by saving, i.e. accumulation of financial wealth, has grown by far faster, especially after the integration of formerly or still communist countries into the world economy, especially China. The reason is that simultaneously with rapidly rising real income and living standard, including much improved medical care, life expectancy has risen dramatically, while the retirement age has not. At the end of the 19th century the average period between the age of retirement at 65 years and death was less than two years in Germany. In 1970 it was ten years and in 2010 17 years. No matter in what form – through the social security system, implicit public debt, or the accumulation of private saving, rich societies therefor want and care for private wealth growing in tandem with the average period between the age of retirement and death, because this is the only way to maintain the consumption level of the working-age life span throughout the retirement period.

The growth of the supply of capital far outperforming the demand for capital in the production sector of the economy turns the *natural* equilibrium real rate of interest in the Wicksellian sense negative. This is incompatible with price stability. To ensure price stability, public debt has to exist and curtailing it violates the price stability goal, argues Weizsäcker. I would go further and contend that government debt has to fill the gap between the rapidly growing supply of capital and the slower growth of the demand for capital from the production sector.

Another factor that has very recently been pointed out is the increasing share of global players at the technological frontier in the service sector. Joachim Fels has discussed what the concentration of economic power in so-called FAANGs (the five most popular and best performing tech stocks in the market, namely Facebook, Apple, Amazon, Netflix, and Alphabet's Google) means for capital-market supply (and demand). Let me quote from Fels' summary:

> *Superstar firms make higher profits, save more than they invest, and pay out a smaller share of their value added to labor. The rising importance of superstar firms therefore helps to explain key macro phenomena such as the global ex-ante excess of saving over investment, rising income and wealth inequality, and low wage inflation despite falling unemployment (the "flat Phillips curve"), all of which have contributed to the current environment of low natural (r-star) and actual interest rates, which in turn supports high equity valuations for the superstars.*
>
> *What could reverse the ascent of superstar firms and thus the decline in r-star? (1) Protectionist policies that accelerate de-globalization; (2) anti-trust policies that curb superstar firm's quasi-monopoly profits; and (3) a surge in labor's bargaining power that leads to significantly higher wage growth for the bulk of the workforce. Neither of these seems particularly likely anytime soon. So superstar firms and super-low natural interest rates are likely here to stay.*[17]

Larry Summers listed some further developments that contribute to the *saving glut*:

> *more stringent capital and collateral requirements in the wake of the financial crisis have increased the demand for safe assets; … rising inequality increases the average propensity to save; … after tax real interest rates move more than one-for-one with pre-tax real interest rates, increasing the attractiveness of a given pre-tax real interest rate as inflation declines; and … the increased costs of*

[17] Joachim Fels, "How Superstar Firms Depress R-Star", in Email of Joachim Fels of 30 July 2017 to PIMCO customers and to a large group of German speaking macroeconomists that Carl Christian von Weizsäcker has interested some years ago in discussing macroeconomic issues.

> *financial intermediation, associated with the legacy of the crisis, which drives a greater wedge between the returns to savers and the costs for borrowers.*[18]

Now, let's take a closer look at the demand side on world capital market. We have just been reminded that the five FAANGs are net suppliers of funds there. These and other big or small businesses in the service sector require less capital per unit of output than in the manufacturing sector. And of this sector's investment more and more is self-financed instead of debt-financed. Larry Summers has pointed out that population growth in developed countries will continue to slow and that "the *relative price of capital goods has declined* reducing the amount of savings that are absorbed to satisfy a given real investment."[19]

Similarly the government sector has reduced its demand for funds from capital market, especially in Germany, where debt-financing even of investment outlays has not taken place for at least 15 years.[20] By imposing balanced-budget requirements also on other Euro-area countries, the German government contributed to lower their governments' capital-market demand. The current account surpluses of Germany since 2002 and the more recently occurring current account surpluses of the Eurozone as a whole indicate that the lack of domestic capital-market demand was somewhat compensated for by such demand from abroad.

Now, let's quantify what the ECB has supplied to funds on Euro capital market since the start of its QE Program in March 2015, scheduled to end in its present dimension in December 2017. As you know the Program consists of ECB monthly purchases of

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[18] Larry H. Summers, "Demand Side Secular Stagnation", in *American Economic Review: Papers and Proceedings* 105/5 (2015), pp. 60–65, (2014), esp. p. 62.
[19] Ibid.
[20] Since 2003 net public investment in Germany has been negative according to data from the German Federal Statistical Office in Wiesbaden.

60 billion Euros worth of public bonds and bonds of government-owned companies. Over the 34 months of the Program's duration the ECB will have added about 2.04 trillion worth of bonds to its prior portfolio of only about 260 billion Euros.[21] It will have expanded ECB's balance sheet and central-bank, i.e. high-powered, money supply by the same amount. It certainly helps to keep bond prices high and thus interest rates low on Euro capital market, not only by the sheer amount of added demand, but also by the signal effect that a central bank's policy action also entails.

In order to assess the impact of the QE Program on bond prices and interest rates, it is useful to take a look at the total stock of bonds tradable on Euro capital market. According to statistics of the European System of Central Banks (ESCB) the latest figure for the volume of all tradable bonds, including those in the portfolio of the ECB, at the end of July 2017 – the latest available figures – was 13.4 trillion Euros, that of public bonds 7.3 trillion Euros.[22] The 60 billion Euros of bonds that ECB is buying monthly is a tiny fraction of tradable Euro-denominated bonds, in relation to the first figure only 0.4 percent, in relation to the second only 0.8 percent.[23]

The 60 billion monthly purchases of bonds by the ECB is a flow value. Rather than relating it to the two stock values used in the calculations above, it is more revealing

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[21] At a conference "Banks in Upheaval" [Banken im Umbruch] in Frankfurt/Main on 6 September 2017, not only Germany's finance minister Wolfgang Schäuble demanded again an end to QE, but also leading bankers from John Cryan (Deutsche Bank) and Martin Zielke (Commerzbank) to the presidents of the *Sparkassen* Association Georg Fahrenschon and of the *Volks- und Raiffeisenbanken* Association Uwe Fröhlich. See Rolf Obertreis, "Scharfe Kritik an der Geldpolitik. Finanzminister Schäuble und Deutsche-Bank-Chef Cryan fordern Kursänderung der EZB", in *Der Tagesspiegel* 7 September 2017, p. 18. Bank business suffers when interest rates are low and thrives when they are high.

[22] Source: "Outstanding amounts and transactions of euro-denominated debt securities by country of residence, sector of the issuer and original maturity . Last update 2017-09-14." Online: http://www.bundesbank.de/Navigation/EN/Statistics/ESCB_statistics/Securities_issues/eszb_table_view_node.html?statisticId=debt_securities&dateSelect=2017-07-01 (Accessed 28 September 2017).

[23] The total volume of ECB purchases during the current QE Program from March 2015 to December 2017 of 2,040 billion Euros would constitute merely 15.3 percent of all tradable Euro-denominated bonds and 28.1 percent of all tradable Euro-denominated public bonds (without bonds of government-owned companies), each in relation to the latest stock figure for the end of July 2017.

to calculate its share in other flow values, namely the volume of new issues of long-term Euro-denominated securities – their total, comprising privately as well as publicly issued bonds, and publicly issued bonds separately. Total new issues from the start of the QE Program of the ECB in March 2015 to July 2017 sum up to 5.4 trillion Euros, the volume of publicly issued bonds amounts to 2.5 trillion Euros. During the same period QE-purchases of the ECB totaled 60 billion per month times 29 months = 1.7 trillion Euros. This means that the ECB has absorbed about a third of all new issues of long-term Euro-denominated securities and about two thirds of such publicly issued bonds.

The latter share would be lower if bond issues by public companies that ECB also buys as part of its QE Program could be separated from the total of long-term Euro-denominated bonds and added to the publicly issued bonds. But it is clear that the ECB absorbs the major portion of publicly issued bonds (and those issued by public companies) since the start of its QE Program. There can hardly be a doubt that capital-market interest rates would be slightly higher, without what the ECB's QE Program adds to the supply on Euro capital market. The ECB stands for low interest rates not only in its money-market policy, but also with its QE policy on capital market. At first sight, the complaints over ECB monetary policy, especially by Germany's savers, saving institutions, their associations, the German financial sector in general and finance minister Wolfgang Schäuble, are therefore not unfounded. But they are an expression of a tunnel vision with regard to private benefit. They are not an expression of an enlightened view of private interest. This requires taking into

account the consequences of private-interest demands for the general welfare and of the repercussions from there to one's own private interest.[24]

The ECB, like the US Fed and the Japanese central bank, has been fighting deflation to avoid all its disastrous effects on growth and employment that we know from economic history, especially from the 1930s. Despite its monetary policy of zero, even negative interest rates and its fairly huge QE Program, it has thus far failed to achieve its price stability goal of an inflation rate under but close to two percent.

The reason is that money and capital are no longer scarce as they used to be. Capital supply has been growing strongly, resulting in Bernanke's *saving glut*. This caused the marginal productivity of capital, which determines the *natural rate of interest,* to fall significantly. Knut Wicksell coined the term to differentiate it from the *money rate of interest* set by the banking sector and its lender of last resort, the central bank.[25] Wicksell already came to the conclusion that "the money rate of interest will always follow the level of the natural rate of interest."[26] Therefore, the central bank's power to determine money rates of interest is within small temporary margins restricted by developments of the supply of saving and the demand for such funds on capital markets in a globalized world.

In conclusion, fiscal authorities, especially in Germany and under German pressure in the Euro area, have cut their demand for funds on capital markets. For the above-mentioned reasons demand for credit from businesses and households has also

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[24] My favorite example of an enlightened policy approach is U.S. foreign-economic-policy by design after World War II. See Lutz Frühbrodt/Carl-Ludwig Holtfrerich, „Die Neugestaltung der US-Wirtschaftspolitik nach 1945. Die Erfahrungen der Zwischenkriegszeit als Argument", in *Jahrbuch für Wirtschaftsgeschichte 1998/1* (Berlin: Akademie Verlag, 1998), pp. 85-123.

[25] Knut Wicksell, *Geldzins und Güterpreis. Eine Studie über die den Tauschwert des Geldes bestimmenden Ursachen*, Jena: Gustav Fischer, 1898. Gunnar Myrdal has famously extended Wicksell's theory to a monetary theory of the business cycle. For a summary see: https://fixingtheeconomists.wordpress.com/2013/08/12/gunnar-myrdals-monetary-equilibrium-theory-a-summarized-version/ (Accessed 27 October 2017).

[26] Wicksell, *Geldzins*. But from a reprint Munich: FinanzBuch, 2006, p. 146.

been relatively shrinking. But the supply of credit from saving growth world-wide has been expanding fast. If governments had demanded more credit from capital market to finance their investments in infrastructure, R&D, education etc., market interest rate, i.e. Wicksell's *natural rate of interest*, would be higher in tandem with more economic activity, growth and employment. The QE Program, aimed at stimulating those activities by way of supporting a reduction of long-term interest rates, might have been superfluous, if governments had not curbed but expanded their demand for credit in order to finance an adequate Public Investment (PI) Program. PI by governments would have been the alternative to QE by central banks.

Budget rules like the three-percent budget-deficit and 60-percent debt ceiling of the Maastricht Treaty as well as the zero-percent deficit prescription of the German Basic Law (Constitution) since 2009 stood in the way of an adequate PI Program. They have been narrow-mindedly devised without regard to the developing *saving-glut* situation on money and capital markets. They preclude taking advantage of the favorable opportunity and appropriateness of financing investments in infrastructure, R&D, education etc. by credit without any burden on future generations, as long as interest rates on public bonds are lower than the GDP growth rates. Under current conditions, the budget rules themselves produce a heavy burden onto the shoulders of subsequent generations, in terms of deferred public investment, slow GDP growth and high unemployment, especially youth unemployment, all over the Euro area, with a few exceptions, such as Germany with its huge current account surpluses, reflecting its huge capital exports.