ECONOMY, POLITICS, AND CULTURE FROM THE ARCTIC TO BRASIL

NEGATIVE RATES AND OTHER FINANCIAL TECHNOLOGIES IN MODERN ECONOMIC REALITY ON THE WORLD-SYSTEM SCALE

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In the present article the author considers negative deposit rates and other financial technologies both with respect of their evaluation by the modern economic science and as a logical development of the previous trends and also as a natural stage in a long developmental path of financial technologies. Every economic crisis gives rise to new financial technologies (NFT). The 2008 crisis also generated new financial technologies which include quantitative easing and low and negative deposit rates. The novelty of our approach consists in treating negative rates as a result of previous development of financial technologies and in analyzing them not only on the national but on the World-System scale. We also emphasize that quantitative easing and close to zero rates passed a kind of a test in Japan in the 1990s and 2000s. Negative deposit rates are another step towards a larger production of money in the situation of a) depression and deflationary pressure; b) growing national debt and emission via central banks unprecedented over the recent decades; c) abundance of easy money; and d) increasing merge of the state and private financial interests. The article forecasts a wider spread of negative rates after a new recession (which is to start already in 2020). In search for profitable spheres of application the assets will actively flow to developing markets with higher rates. As a result, the negative rates may promote financial convergence which is a convergence between developed and developing countries in terms of financial strength (as it happens with GDP). If one considers Japan as a testing ground for new financial technologies then one may expect the transition of FRS and ECB to the policy of direct purchase of shares because the Japanese Central Bank has been buying shares for the last years.

Keywords: *new financial technologies, negative deposit rates, quantitative easing, Federal Reserve System, European Central Bank, economic crisis, recession, deflation.*

Journal of Globalization Studies, Vol. 11 No. 2, November 2020 63–76
DOI: 10.30884/jogs/2020.02.05

Negative Rates and the New Economic Reality

Approaches to Negative Interest Rates in Modern Science

Negative deposit rates (further referred to as NR) have existed for more than ten years. Naturally, the economic science could by no means ignore this phenomenon whose wide implementation seemed to have little chance of working prior to the crisis of 2008–2009 (see, *e.g.*, Whittall and Goldfarb 2016; Kantchev, Whittall, and Inada 2016; Sims 2016; Whalen 2016; Orphanides 2017; Humphrey 2015–16; see also Burlachkov 2016; Burenin 2016; Leontieva 2016; Prudnikova, Nikolaenkova 2016; Pshenichikov 2016; Golovnin *et al.* 2017; Kavitskaya 2019; Kovalyov 2019). The general assessment of the 'innovativeness' of this form of credit and financial relations as a new and unusual monetary policy tool is similar among the researchers (Prudnikova, Nikolaenkova 2016; Burenin 2016; Kavitskaya 2019; Kovalyov 2019; Heller 2017 and others). Most researchers tend to think that this is a forced measure that has become almost permanent; and in the long run, it may threaten serious problems for the financial market, investors and other actors, while in the short term there is a risk that it will not work or will also require specific fiscal and other policy (Burenin 2016; Prudnikova, Nikolaenkova 2016; Kovalyov 2019 and others; Whittall and Goldfarb 2016; Kantchev, Whittall, and Inada 2016; Sims 2016; Whalen 2016; Orphanides 2017; Humphrey 2015–16). It is worth mentioning that some researchers consider the NR to be a logical continuation of the trends that have emerged earlier, for example, in the 1990s (Golovnin *et al*. 2017; Kavitskaya 2019) while other scholars think they are the result of evolution of money supply mechanism (Burlachkov 2016) or even treat them as a financial repression policy (Abu Bakr Farid 2016). The negative rates are a new and questionable phenomenon (and we will try to show their ambiguity), that is why their assessment can still be considered as preliminary. The key question remains the same: is it a contingency, a temporary twist, or a fundamental innovation? Moreover, this question defines the assessment of this phenomenon. One of the purposes of the present article is just to clarify this point.

The novelty of my study consists in the fact that I tried to consider the phenomenon of NR over a long time span as a result of the previous development of financial technologies and in addition, not only on a national, but also on the World-System scale. We also tried to analyze financial technologies as a whole and to show that a number of such technologies have been previously tested in Japan, which, therefore, objectively acts as a testing area for new financial technologies. Such approaches define our forecasting methodology.

Negative Rates: A Singularity or a Trend?

Already in 2016, the volume of transactions with securities with negative rates reached US$ 13 trillion (Whittall and Goldfarb 2016). According to Bloomberg estimates, in August 2019, approximately 30 per cent of all investment-rated debt securities in the world had negative return, and the volume of developed countries debts and corporate debts with negative rates reached US$ 17 trillion. However, sometime later this figure significantly decreased to less than 12 trillion, but this is not a tendency but rather natural market fluctuations. Thus, in February 2020 due to the rumors about coronavirus the purchases of

securities with negative return increased which was triggered by the fall of markets. In addition, President Donald Trump actively advocated the introduction of negative rates in America, which remained almost the only developed country that still keeps rates in the positive zone, although they have come down to almost zero. Moreover, some commercial banks began to charge their clients for keeping contributions and deposits, and the fee was taken from any deposit, and not just from major ones. For example, the Central Bank of Germany began to impose a half-percent charge for bank deposits.

What does this mean? A temporary turn that will be remembered as a financial curiosity? Thus, during the First World War in some neutral countries (in particular, in Sweden) there were cases which economists would hardly ever believe: the banks refused to give Swedish paper kronas in exchange for gold (see, *e.g.*, Varga 1974: 105–106), because there was excessive stock of gold and there emerged a phenomenon that was similar to the modern 'Dutch disease' (for details, see Grinin, Korotayev 2012: 114–115).

There is no doubt that there are generally very serious tendencies hidden in defying common sense. The global financial and economic crisis of 2008–2009 has already shown itself to be a 'crisis of money overproduction' (Grinin 2009), since a few years before it, there had occurred a rapid process of 'financialization' of economy (Krippner 2005; Blackburn 2008; Khoudyakova 2018). However, the process had gone even further during and after the crisis (Jordan 2016, 2017; Dowd and Hutchinson 2017). As a result, in recent years, the Central Banks have already started to produce more money than society could consume under the existing economic system. The process of 'money overproduction' has reached a new stage, and accordingly, this resource – money – has become devalued. However, we should note that money began to devalue not in the classical sense, in other words, not by inflation. On the contrary, the deflationary bias has increased (Grinin, Korotayev, 2018). The loans value has devalued and simultaneously there has been asset inflation, together they have caused market bubbles. As a result, a 'new reality' has emerged, which some economists like to talk about presenting paradoxical ideas (*e.g.*, Paul Krugman [Krugman *et al*. 2016]). And negative rates fit perfectly this new reality.

Financial Technologies: History and Current State

Financial Technologies: Significance and History of Development

Financial technologies are inseparable from the development of economy and production technologies. The more complicated the economy, society and law, the more complicated are the financial technologies. This is a widely known fact. What is less known and, unfortunately, understudied in a consistent manner, is the close relation between crises and crisis recovery, on the one hand, and development of new financial technologies, on the other. It has shown by convincing historical examples that every salient crisis almost always resulted in the emergence of new financial technologies or active development (improvement) of previously poorly or insufficiently widespread financial technologies (Grinin, Korotayev 2012; see also Grinin, Korotayev, Malkov 2010; Grinin, Korotayev 2014). In what follows we will generically refer to them as financial innovations (FI) but mostly as to new financial technologies (NFTs). The point is that

within a medium-term economic cycle, a new recovery is closely associated with new or modernized financial technologies, which, at the same time, become the root cause of the future crisis. Thus, *our idea is that financial technologies cause crises and at the same time become a tool to improve the situation after those crises, in other words, they are a certain response to them*. They *bring up crises* since, as a rule, such technologies begin to be more and more abused during the economic rise and boom. They are *the lessons from crisis* because the new opportunities, which are needed to revive economy and financial market, are often created just with the help of new financial technologies (of course, along with new production technologies, investments, and other factors). These FI and NFTs, first of all, allow the financial market and credit to recover, and then contribute to the expansion of financial activity and economy in general and to the growth of speculation and bubbles (about some financial technologies that appeared in the 1950s–1970s see in Vymyatina *et al*. 2018).

Financial technologies are very diverse. For example, the 1825 crisis in England was connected, in particular, with the fact that a new technology was used to expand the sale of cotton fabrics: large loans were issued to the governments of young Latin American countries (which had just emerged) precisely for the purchase of fabrics (Tugan-Baranovsky 2008: 92). But although they had expanded the sale of fabrics, still the British failed to get the debts back to the full extent. Other NFTs have to pass through a long way of development and diversification, since they cannot develop quickly. In this case, every important developmental stage of that or this technology can be considered as an NFT, sometimes in separate sectors. Thus, the joint stock companies and shares of railway companies played an important role in different countries at different periods over the most part of the nineteenth century. The already tried-and-true technologies, if some important modifications are made in them, also become NFTs. Thus, the residential mortgage had been used for many decades. However, in the 2000s the so-called subprimes, or 'subprime mortgages' were introduced which lowered the requirements to borrowers and thus, became the trigger of the crisis.

Naturally, new financial technologies were closely connected with legal and technological changes. Thus, until a certain moment, the joint stock companies were not widespread because the personal liability with one's own property in case of bankruptcy significantly reduced the number of participants of such companies. However, after the liability was limited only to the contributed capital and investors were allowed to participate in the shares of any number of enterprises, the joint-stock companies demonstrated 'a snowballing growth' (Anners 1994: 276). The states gradually began to play an increasingly important role in the creation or adaptation of NFTs, by means of the Central Banks. We should also agree that the peculiarity of financial innovations and their difference from technological innovations consist in that they 'represent a practical application of an idea and they are not covered by patent protection against imitators' (Minsky 2017: 299). From there, the spread of financial technologies can occur even faster than of the production ones. So it is not surprising that financial innovations make it easier for the crises to emerge and increase their scale (Burenin 2017: 17).

It is important that the emergence of new financial technologies, especially of successful ones, which became permanent tools for functioning of economies, would often

lead to euphoria and their uncontrolled use that would end in the largest crashes and crises. Only gradually (through regulation and experience) the use of these technologies would get into a more optimal direction.

Thus, the *new financial technologies can be considered as a response of economies and states to financial and economic crises*. Moreover, since we observe a consistent introduction of NFTs, it is not surprising that every new crisis was different from the previous ones in many ways (Haberler 1964). However, in the present article we do not touch the issue of history of financial technologies.[1]

We will focus on the new financial technologies that have spread after the 2008–2009 crisis (and which are likely to be recognized as responsible for the emerging crisis), with a particular focus on negative rates.

New Financial Technologies of Recent Times and Their Japanese Roots

The 2008 crisis must have inevitably generated its own NFTs. There were several of them but the quantitative easing and negative rates played especially important role (Whalen 2016; Whittall and Goldfarb 2016; Jordan 2016, 2017; Dowd and Hutchinson 2017). The peculiarity of modern NFTs is that they are generated by states and especially by the Central Banks, which assign them a huge scale. This no coincidence since the Central Banks have recently started to consider the interest rate and money supply as primary instruments of control for the financial authorities, but not as a result of functioning of the monetary market (Dowd, Hutchinson 2017: 304).

Until the second half of the twentieth century, the deflation, which is a price collapse due to small demand and weak investment, became a common occurrence in the period after economic crises which resulted in depressions (see Haberler 1964). And in the second half of the twentieth century it was inflation that constantly dominated. As a result, the deflation was forgotten. However, it returned after 2009 and actually limited the opportunities for overcoming the economic doldrums. Due to the fact that the governments of the United States and Europe decided to prevent the natural course of events which could have led to a crisis (*i.e.*, to mass bankruptcies, reduction of inefficient production, increase in unemployment and other unpleasant things), the efforts were made to support inflation at the level not lower than two per cent (Orphanides 2017; Heller 2017); however, far from all economists would agree that this was a reasonable financial policy (Heller 2017; Todd 2017).

Let us recall that Japan was the first of the developed countries to start fight against deflation in the 1990s and from time to time they would even impose increasing consumer tax as one of the measures (Sims 2016; Leontieva 2016).[2] Already in 1995 Japan introduced near-zero rates (Todd 2017: 413) together with the so-called quantitative easing (when the Central Bank issues money to purchase the government debt bonds or the bad assets that prevent banks and financial organizations from granting loans more actively to the economy and population) (Orphanides 2017). The matter is that in the 1990s in Japan an unprecedented bubble inflated in the real estate market which would later burst and lead to numerous bankruptcies and huge debts of many companies, as well as to the devaluation of many assets as a result of a sharp slide in real estate prices. From that time on, the Japanese economy has failed to overcome the low growth rate,

despite the Central Bank's active assistance. Until 2009, the quantitative easing was considered a purely Japanese tool, along with other specifically Japanese institutions, like that of lifetime employment. However, the global crisis made the American and later European economists change their mind and so they began to actively use this technology.

Finally, not only the huge national debt, but also the reduction of rates nearly to zero was also actively practiced by the Japanese Central Bank, and this technology was also adopted by the FRS and ECB. There is no doubt that this policy has supported economic growth and especially the growth of market quotations, although it has also generated very serious imbalances in the economy. Thus, we can note that a number of financial technologies have been used since the 1990s and early 2000s but they used to be considered as specifically Japanese methods. After 2008, they were improved and launched on an unprecedented scale, and this turned them into a new financial technology of key importance for the World System.

Negative Rates: How do They Work?

As for the negative rates, unlike the above-described NFTs they are a completely new phenomenon ('invented' in Europe) and create a 'new reality' and this seems particularly counterproductive. However, this is actually just a new stage of the movement towards a more large-scale money production. How does it work that the state receives loans but does not pay interest for them, and on the contrary, the creditors pay to the state?

One should realize that only a small part of the 17 trillion negative return securities mentioned above have been initially issued with negative returns. Most of them could have acquired such a return in the situation of reduced profitable investments, uncertainty in capital maintenance and related increasing speculative activity when buyers hope for the yields increase of securities. In other words, when there is more money than profitable instruments, even the securities with negative returns become more expensive. Investors gain more on the price difference than they lose on low or negative rates. Not too long ago (in 2011–2013), many European countries could place their bonds only with very high interest rates. But in recent years, after the ECB quantitative easing, the speculators got so much easy money supply that they rushed to purchase all countries' bonds, including the unfortunate Greece and even the public bonds with a term of 100 (!) years.

Along with speculators, the investors also speculate in differences of bond rates (the so-called carry trade, although this opportunity has decreased due to the fall of the rates to zero in the USA); and in addition, in the situation of depression, instability and lack of profitable investments some financiers prefer to keep their capital in reliable assets (among which are still considered bonds of the USA, Germany, Japan and some other countries) in order to wait out the bad years until the recovery. This is a reasonable strategy, but under the new conditions, unfortunately, the fragile economy situation can become a permanent phenomenon especially with the account of the COVID-19 pandemic.

But still, with respect to the negative rates, the speculators and investors mainly play the role of implementers of the imminent process. And the developed states, whose real economies have dramatically slowed down, turn the main beneficiaries.

Fundamental Causes for the Emergence of Negative Rates

1. *The primary reason is the developed countries' exhausted opportunities for sustainable economic growth.* The GDP growth rates have slowed down; so it appears difficult to accelerate the economy when the demographic growth is weak or even negative. In the near future, one can hardly expect a start of a new powerful wave of technological innovation, similar to the one of the 1970s and 1990s which unfolded on the basis of computers, the Internet and mobile communications.[3]

2. *Globalization has created conditions for a faster development of some developing countries*. The withdrawal of many industrial enterprises and industries from Western countries to developing countries (*i.e*., deindustrialization) has increased the importance of the financial sector in GDP for the developed countries and for the global division of labor in general. Thus, *developing countries began to specialize in manufacturing industrial products, while the financial products become the developed countries' domain*. *Consequently, the support of the financial sector becomes increasingly important for the developed countries.*

3. *Western countries have more and more financial social obligations which increase rapidly due to the global population aging and low demographic growth*. Under democratic regimes, it is almost impossible to deny these obligations. In addition, the weak economic growth reduces the revenue part of budgets. This results in a constant growth of national debt. Furthermore, the huge public debt plays almost the major role in the financial sphere of developed countries' economy. *A process of gradual merge of the financial sector of economy with the financial policy of the country and the world is evident.*

4. Interest payments on debts became too heavy for the state budget. *Low rates solve the problem of the burden on the budget and allow further increasing of the national debt; meanwhile, the negative rates radically solve this problem.*[4]

Some Consequences of Introduction of Negative Interest Rates. The Nearest and Long-Term Consequences of Introduction of Negative Rates in Some Countries

Thus, the negative rates are a logical development and the highest form of low interest rate policy; a way to temporarily solve the states' main financial and social problems. They are developed along with other financial technologies in the situation of a) depression and deflationary pressure; b) recent unprecedented emission through the Central Bank and public debt increase; c) an abundance of easy money; and d) an increasing convergence of public and private financial systems and interests.

Since the fundamental roots of the NRs have not been eliminated (and probably, in many ways they have already become persistent), we can assume that this technology will be developed with some modifications. The use of NRs may produce a certain positive effect for individual states in the short term. Consequently, they can temporally reduce the risk of depressions and defaults and mitigate deflationary trends; and proba-

bly, they can even have a positive impact on domestic demand (in the short term) and expand credit opportunities by lowering rates below zero, although neither has been proved yet. They can bring a short relief, like a strong medicine, and at the same time they exacerbate the existing problems and pose huge risks in the medium and longer term. Of course, most politicians prefer to get short-term benefits and to shed all risks on others. Therefore, the detrimental aspects of negative rates are obvious. In particular, the NRs:

1) habituate people to live beyond their income and politicians – to promise the moon, thus the societies move to a dead-end situations;

2) can produce a bad impact on the banks, pension and other funds;

3) limit the effectiveness of monetary policy (Burenin 2019; Dowd and Hutchinson 2017; Heller 2017; Todd 2017; Thornton 2017).

4) increase the number of zombie firms and decrease the level of business activity;

5) take capital away from productive sectors.

In general, both positive and negative effects within individual societies are quite evident. It seems more interesting to analyze *the consequences of introduction of negative rates on the World-System scale.* This aspect is obviously understudied. Moreover, it is just the world-system consequences that can become of utmost importance.

1. When the number of profitable areas for application of capitals decreases, the capital will more actively transfer to the developing countries' markets and to the countries with high rates both in government bonds and in stock markets.

2. Negative rates lead to a situation when rates in emerging markets will be lower but still remain attractive compared to the Western ones, and this tendency will contribute to the growing interest to the developing markets.

In general, it is likely that with the expanding development of NRs, there will begin a process similar to the flow of technologies and production to developing countries from developed ones – *the flow of capital from developed to developing countries.*

It is clear that the last point refers to the more distant future but it is extremely important because it may have many consequences. Nowadays, the power of developed countries' financial markets and their opportunities are enormous, so the capabilities of developed and developing countries are incomparable in this respect; meanwhile, the financial weapon is very powerful. However, one may expect *the start* of a *new cycle of great convergence – the gradual approach of developed and developing countries in the scope and importance of their financial markets and power*, as similar to the process with the GDP of the First and Third worlds in recent decades.

As it was mentioned above, the low and negative rates dramatically reduce the opportunities for the huge and over-accumulated Western capital to obtain high incomes. Considering that it is linked with constant production of new money (to cover budget deficits and maintain markets), the excess capital in Western countries will require access to new markets. This can lead to an increasing flow of capital to emerging markets. As a result, the growth of financial assets in developing countries will be significantly faster than in developed countries. Of course, this capital can bring not only benefits, but also a lot of trouble. But gradually the financial power of developing countries will grow while Western countries will weaken. We think this process would proceed in any

case, however the negative (and low) rates can significantly accelerate it. It seems that the USA will not be able to resist for too long the need to introduce negative rates, although it is possible that they will be modified in some way. But accordingly this will reduce the attractiveness of the US financial market, as the near-zero rates and huge issuance has already started to do.

Admittedly, the USA and Western countries are able to support the growth of their stock markets with the help of their Central Banks, but the stock markets of developing countries will also grow, notably at a faster pace. At the same time, there is no certainty whether it will be possible to inflate stock bubbles in the same quick manner. It is not unlikely that the history of Japan of the recent decades is 'memories of the future' of the United States and Western countries. Meanwhile, the Nikkei stock index has reached the level of 1991 only in November 2020. It is also well known that it took twenty-five years for the US stock exchanges to reach the levels of 1929 after a strong collapse during the Great Depression.

Finally, the stronger the financial markets of developing countries are, the more likely it is that the dollar and other currencies (which are the most important source of Western power) will weaken.

Other New Financial Technologies and Some Predictions

If we consider Japan as a 'testing ground' for new state financial technologies, it is quite logical to predict the transition of American and other Western economies from the Japanese deflationary disease (see above) to the Japanese share buyback program. The fact is that the Japanese Central Bank has been buying up for a long time the shares of the most important companies, owning from 30 to 40 per cent of all shares (and with the start of the 2020 crisis this process continues even on a larger scale). In fact, in Japan the public and private financial mechanism has already merged into a single public-corporate one. It is most likely that this will happen in the American and European financial sectors as well, yet, with their own specifics, of course. In this respect, one may speak about a convergence between the Western and Eastern models of financial system. However, neither the Japanese, nor Chinese stock markets demonstrate a distinct growth. There are concerns that the USA stock market will suffer the same fate in the future though the FRS will try to inflate the stock bubble as long as possible.

I would like to finish this review with a discussion of cryptocurrencies. Cryptocurrencies, whose numerous and different types have already been created (including the most famous bitcoin, Ethereum, litecoin) are a vivid manifestation of merging production and financial technologies. Born in the private sector, however, they immediately attracted the attention of both major banks and individual states that started investing in them. It is possible that in the future these technologies will turn into powerful financial technologies that will be employed by the largest banks and by the Central Banks. The interest in cryptocurrencies especially increased against the background of the sanctions expansion of the US. So there appear ideas of protecting against them by means of cryptocurrencies and even of replacing the dollar as the world currency.

Thus, from marginal currencies (since the idea was previously widespread that this kind of currency is especially needed for criminal or terrorist structures and shady

transactions) they can become the major ones. At the same time, it is possible, on the one hand, that cryptocurrencies (considering the talks that the blockchain is a unique system that prevents deceit) will give the world unprecedented examples of pyramids, and on the other hand, it is, perhaps, the future of the world currency system. So one may speak about the shift from a common currency (dollar) to a variety of cryptocurrencies, and the transfer between them will be automatic and low-cost, and then to another unified currency or some generally accepted cryptosystem.[5] But in any case, it cannot happen quickly and it is unlikely that the role of cryptocurrencies will increase significantly after the next depression. In pure technological terms, cryptocurrencies are still very imperfect.

This article had been mostly written before the market crashes in late February–March of 2020. The started gale confirmed that the interest rate reduction, quantitative easing, and buybacks, are the most important financial technologies now. And also the process of "money overproduction" has entered its new phase since huge sums of money have already been promised to help everyone and buy everything and at their background the previous large-scale measures look quite modest. So after the current depression transforms in a form of stagnation the most suitable financial technologies will be the direct buying of shares at the stock exchanges of the Central Bank and the negative rates, whose scope will be much larger than at present moment. The attempts to ban cash are also possible, which will significantly strengthen the power of banks.[6] However, we hope that gold will remain an alternative to the attempts to devalue savings.

NOTES

[1] About them see Grinin, Korotayev 2012; About some of the technologies see Vymyatina *et al.* 2018; Minsky 2017. See also: Juglar 1889; Hilferding 1981 [1910]. Mises1981 [1912]; Hawtrey 1926; Hayek 1933; Rothbard 1969; Huerta de Soto 2006).

[2] Therefore, it was quite logical to denote the reinforcement of deflationary phenomena in the Western economy as a 'Japanese disease' (see Grinin, Korotayev 2018).

[3] At the same time, paradoxically, the monetary policy is increasingly used to stimulate economy. However, the research shows that monetary policy primarily stimulates the financial markets growth while the recovery of the real economy is only secondarily. The monetary policy cannot significantly affect the recovery of real economy unless the Central Bank limits speculative activity in the financial market (Burenin 2019; on the issue that the negative rates strategy implemented by the FRS has turned ineffective with respect to stimulation of economic growth see Heller 2017).

[4] Kevin Dowd and Martin Hutchison (2017: 319) quote the paradoxical, but not entirely unfounded, statement of Richard Rahn (2016), "If governments can borrow at negative or close to zero interest rates and endlessly roll over their debts, it makes no sense to tax. Just borrow all of the money and get rid of the cost of complying with the tax code." But, of course, borrowing cannot be endless.

[5] In particular, as an example of this trend, we can point out that the Facebook Libra cryptocurrency is turning from a global cryptocurrency into a payment network that will accept various digital currencies.

[6] According to Dowd and Hutchinson (2017: 319), the proponents of negative rates are already aiming at banning the cash.

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