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Future Economies, a university centre for research and knowledge exchange based at Manchester Metropolitan University, brings together academics from a wide range of disciplinary backgrounds, alongside policy and business practitioners, to conduct research into local, national and global economic challenges, ranging from Brexit, financial crisis, devolution and local industrial strategies to mega-sporting events and trade governance. Future Economies has a particular expertise in political economy and behavioural economics, and also encompasses Future Economies Analytics, the Centre for Policy Modelling and the Sports Policy Unit.

All views expressed in this paper are those of the author, and are not necessarily shared by Future Economies or Manchester Metropolitan University.
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Background

The Bank of England has acknowledged that it is contemplating the until recently ‘unthinkable’ reduction of its base rate to negative territory. The new Governor of the Bank Andrew Bailey when addressing MPs questions mentioned that ‘we do not rule things out as a matter of principle but we do not also rule things in’ (Giles, 2020). The Governor also confirmed that the policy of adopting negative base rates, for the first time in the Bank’s 324-year history, is under review. The change has been prompted by recent developments. First, the Bank’s own forecasts point to a decline in growth of 25 percent for Q2 and an overall recession of 14 percent for 2020.1 Second, inflation in April dropped to 0.8 percent, well below the Bank’s target of 2 percent.2 Third, for the first time the yields of the 3-year and 5-year gilts have turned negative.3 4 This is significant as it shows that UK debt maintains its safe asset status despite the amounts borrowed in gilt auctions. Given the significance of negative base rates, this paper evaluates the merits and demerits of such a policy.

The key findings point to the likelihood of setting negative nominal rates, despite their adverse impact on private banks’ profitability, due to the recent spike in private sector banks reserves with the Bank of England. If the increase in private sector banks’ reserves becomes entrenched, then lending to the real economy (households, firms, etc.) would be restricted in the short-run and would be gradual in the medium run. This would prevent a V-shaped recovery materialising and in effect would pave the way to a similar one that followed the financial crash from 2010 to 2013. Apart from being catastrophic from an employment perspective, such a development would also undermine the effectiveness of expansionary fiscal policy, as the rate of gilt issuance cannot continue in its current pace without detrimental effects on inflation and deficit reduction.5 In this way, negative nominal interest rates would be conducive to speeding up the recovery process and in this context, adopting a negative base rate by the Bank of England (henceforth, ‘the Bank’) is desirable.

The international experience with negative rates such as the Eurozone, Denmark and Sweden is providing limited lessons for the UK economy, as the circumstances, which they were

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2 Bank of England https://www.bankofengland.co.uk/monetary-policy/inflation
3 Szalay, E. (2020) ‘Gilt yields sink below zero as investors brace for more rate cuts’ https://www.ft.com/content/2c27518e-2870-47e7-b084-6a1c4ff30c32
5 Buiter, W. (2020) ‘Paying for the Covid-19 pandemic will be painful’ 15/05/2020 https://www.ft.com/content/d9041f04-9686-11ea-899a-f02a20d54625
adopted were different from the ones currently experienced by the UK economy. There are two lessons to be drawn from the international experience though.

Eurozone and Scandinavian examples highlight that setting marginally negative rates does not cause savings depletion and thus any lasting damage in private sector banks’ capital ratios and liquidity. The same is the case for the volumes of investment.\(^6\) After 6 years of negative interest rates, the ECB reported that there has not been any impact of savings in the Eurozone.\(^7\) The move to negative rates stimulated lending by households and corporations. It has to be noted however that the situation in the Eurozone was distinct, as the ECB had to step in to counter government inaction at the peak of the debt crisis. In Denmark, negative rates were adopted to halt the Krone’s appreciation in relation to the Euro and thus maintain the fixed exchange rate regime with the Eurozone.\(^8\)

The ECB’s own research highlights that negative interest rates caused an increase in firms’ investment on both tangible and intangible assets and they reduced their cash holdings to avoid the associated costs.\(^9\) With the exception of Japan (due to contractionary fiscal policies), additional lending also strengthened consumer expenditure.\(^10\)

Overall, the evidence strongly suggests that negative interest rates do not limit the effectiveness of conventional monetary policy under the monetary transmission mechanism. These are the discernible empirical trends so far, and the conditions under why these trends developed may also exist in other countries, but the UK’s experience may be different because its idiosyncrasies in a variety of ways. We should thus be extremely cautious when generalising identifiable trends across distinctive countries.

Following from the ECB’s marginally negative rates, it becomes apparent that an important aspect of negative base rate policy, is ‘how negative is negative?’ As the Eurozone’s case illustrates, a minus 0.5 percent rate will not cause households to hoard cash. This addresses one of the main concerns with negative base rates. There are two important questions though that follow from setting a minus 0.5 percent base rate despite the evidence pointing to lack of hoarding. First, what would the advantages be from decreasing the base rate from the current 0.1 percent to minus 0.5, given the trade-offs? Second, what is the rate at which hoarding

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\(^6\) The Editorial (2020) ‘Negative interest rates are a tool, not a gift’ 21/05/2020 https://www.ft.com/content/319b2a3a-9a8e-11ea-8b6b-63f7f5c0c669

\(^7\) Arnold, M. (2020) ‘ECB rebuffs bank complaints on negative interest rates’ 13/05/2020 https://www.ft.com/content/52de6e70-56bc-4da9-adf7-b228c8da79a0


materialises? Both questions are empirical in nature and they can only be answered *ex post*. If the base rate were set at minus 5 percent, it could be legitimately assumed that a negative base rate of such magnitude would cause cash hoarding by households. How would households respond though to a minus 2 percent rate? In such a scenario, much would depend on the extent to which private sector banks pass the negative rates to customers’ saving accounts. In section-1, the advantages of negative base rates are evaluated. In section-2 the disadvantages of negative base rates are appraised. In section-3, private sector bank reserves, liquidity traps and debt sustainability are addressed. Section-4 presents the conclusions and the key policy recommendations.

**Advantages of Negative Base Rates**

Broadly, the advantages of setting a negative base rate to the real economy are the same ones as when decreasing the base rate from 3 percent to 1 percent, as was the case in 2009. In the domestic economy, these relate to reduced mortgage payments, which cause an increase to households’ disposable income, and the disincentive to save, which increases consumption and reduces (or eliminates) the cost of borrowing money. It is anticipated that the reduced cost of borrowing money will prompt private sector firms to raise funds for investment that would overall increase productivity. In terms of volumes of trade and the balance of payments, the reduction in the base rate, under *ceteris paribus* conditions will cause a depreciation in the value of the domestic currency, which will stimulate exports and reduce imports. This would partly restore equilibrium in the balance of payments and offset deteriorating trends in the volumes of trade with other major trading partners. Depending on the magnitude of the depreciation’s substitution effect, domestic residents could adjust permanently their preferences in favour of domestically produced goods and services. If the magnitude of the depreciation’s substitution effect were limited, then the switch towards domestically produced goods and services would be temporary. Even in this case, there is going to be a positive impact on the balance of payments. The combined effect of all these processes above would stimulate growth and reduce unemployment.

Apart from the conventional advantages relating to the reduction in interest rates, negative nominal interest rates carry wider implications for the functioning of the economy. By providing disincentives for savings they challenge one of the foundations of a market economy that of capital accumulation. Consequently, as already mentioned they may be counterproductive in terms of generating investment. By discouraging savings and investments, negative nominal interest rates act in favour of debtors and against creditors be it wealthy households or
financial institutions. This specific dimension of negative nominal interest rates has vital inter-generational implications. They encourage young people to take on loans (e.g. mortgages) almost free of interest charges, whereas they provide no return on pensioners’ savings. In effect, negative nominal interest rates are a form of a ‘de facto taxation’ for savers and wealthy households. It is also a subsidy from savers to debtors. Whilst this may seem rather odd and against sound economic principles, it has to be borne in mind, that it is the younger people that have suffered the dire economic effects of the Great Recession including experiencing long term unemployment, precarious work conditions, retiring much later and receiving substantially lower pensions that current pensioners. In this respect, negative nominal interest rates could be perceived as balancing out the triple-lock enjoyed by current pensioners.

**Limitations of Negative Base Rates**

Negative nominal interest rates could offer a short-term remedy to a temporary shock in the economy. The longer negative nominal interest rates are maintained, the more likely side effects are settling in the domestic economy.

First, inflation would increase in the medium to the long-run, in particular as the excess capacity in the economy is absorbed and unemployment rates are reduced. In particular, two types of inflation would arise, namely import-push inflation and asset price inflation. The former would be a result of the currency’s depreciation, as raw material for production would become more expensive. As a result, cost-push inflation would increase in particular in manufacturing. The Pound’s depreciation that followed the leave outcome of the UK’s EU Referendum in June 2016, led to an increase in inflation from 0.5 to 3 percent.\(^\text{11}\) The full effects of currency depreciations on domestic inflation take between a year and a year a half to materialise and most often are temporary in nature assuming a one-off depreciation. Prior to considering setting negative rates, the Bank will assess disinflation in the UK economy during March and April, by ascertaining the influence on inflation from the collapse in domestic demand and the collapse in oil prices. If the collapse in demand contributed more on disinflation, the more likely a negative base rate would be set in August. If the collapse in oil prices were the key disinflationary influence, the Bank would be more cautious in moving into negative territory.

Lower mortgage payments would attract more buyers (e.g. first time buyers) in the property market. The duration of negative base rates, the extent to which negative rates would be

passed through to mortgage offers, and domestic residents’ appetite for assets will determine asset price inflation. As the Bank does not include asset pricing in its decision making process when setting its base rate, it is expected that asset price volatility will equally not play a role in the decision to move the base rate back to positive territory, following a period of negative rates.

Another disadvantage of negative base rates is their adverse impact on the Bank’s credibility and its management of private sector bank deposits. This is the case, as negative base rates would imply that private sector banks would be charged to keep reserves with the Bank. The impact of this is addressed in section-3.

One of the demerits of setting negative base rates would be their impact on private sector banks’ profitability. Private sector’s bank profitability has already been squeezed after a decade of base rates maintained below 1 percent. Private sector banks have already raised their concerns over such a policy, as it would limit their ability to mitigate the risks from defaults following the pandemic lockdown. On top of reduced profit margins, as mentioned, private sector banks would have to pay the Central Bank for keeping their reserves. This is a departure and reversal from three-century old practices, which exact impact on the functioning of the UK’s financial sector is difficult to predict, let alone to plan for.

Negative nominal interest rates could also adversely affect Foreign Direct Investment (FDI) and in particular its Total Factor Productivity (TFP) component. Even prior to the pandemic and the subsequent lockdown the Bank estimated the annual productivity growth to be maintained at 0.75 percent and increase to about 1 percent at the end of 2022, well below the pre-Great Recession trend of 2.25 percent. Negative nominal interest rates provide disincentives for profits to be re-invested in the UK economy, or even be kept idle in UK financial institutions, thus causing a reduction in inward investment.

Negative nominal interest rates could also cause a decline in the value of the domestic currency. This may be desirable in the short run. If prolonged though, it can cause inflation to be maintained above target, thus de-anchoring inflationary expectations. In this case, restoring inflation to target will prove more costly. De-anchoring inflationary expectations would most likely be a by-product of negative base rates.

In extreme cases, if the depreciation of the domestic currency is of considerable magnitude and of permanent nature, a currency crisis may occur. This is an extreme scenario where

\[12\] Morris, S. and Mooney, A. (2020) ‘British banks warn BoE of pain of negative rates’ 21/05/2020 https://www.ft.com/content/f5339e6b-9bb4-48dd-8aad-aadd5f6f0d4f
financial institutions encounter such an erosion to their credibility followed by rampant inflation, so that households start conducting their transactions by using a foreign currency (usually the USA$). This process (dollarization or currency substitution) can expand to cover pricing of many markets in the domestic economy. Examples of such cases include Venezuela, Argentina in 2001, 2015 and present, Russia during 1997-2001, South East Asia from 1997 - 2002 etc. In such cases, restoring confidence becomes extremely challenging and painful for domestic authorities and usually requires assistance from international organisations such as the International Monetary Fund (IMF) or fixing the value of the domestic currency to a foreign one such as the US dollar and the Euro as a means of borrowing credibility. This would not be however a problem for the UK.

**Reserve Management, Liquidity Traps and Debt Management**

Regardless of their advantages and disadvantages, potential side effects need to be considered prior to setting a negative base rate. These relate to reserves accumulation by private sector banks and their management by the Bank of England, the circumstances that give rise to liquidity traps and debt management. We assess each of these in turn. The evolution of private sector banks’ reserves with the Bank of England is presented in figure-1 below.
As it can be observed, there have been three instances during the last 11 years when private sector banks have accumulated more reserves with the Bank of England. First, during spring-summer 2009 as the full scale of the Great Recession was becoming apparent. Second, during summer-autumn 2012, as the fiscal cuts led to mounting speculation of a double-dip recession and third, in the aftermath of the UK’s EU Referendum in the summer-autumn 2016. What is extremely important to note in figure-1, is that the latest release on May 2020 reflects a sharp rise in reserves. Whereas during March 2020, reserves declined by £6954 million, in April reserves increased from £469036 million to £552427 million, an increase of £83391 in April. This is the single largest increase on a monthly basis since the series starts in 2006 and it represents an increase of 17.8 percent in reserves just on April alone.

This is the main underlying reason accounting for the changing attitude of the Bank in terms of going negative. The magnitude of the recession, which according to the Bank’s central forecast points to a 14 percent drop in GDP in 2020, renders private sector banks’ balance sheets sensitive to impeding defaults. To mitigate impeding defaults private sector banks increased their reserves with the Central Bank in order to preserve their liquidity. Whilst this is a natural response by private sector banks to a severe recession, it also implies that banks plan to provide fewer loans. By doing so, they contribute to prolonging the recession and reduce the chances of a V-shaped recovery. The increase in reserves in April leaves no doubt as to the banks’ plans for further increases in reserves in the summer. The major instrument the Bank has to disincentive such an increase in reserves is to reduce its base rate into negative territory, in effect, ‘forcing’ private sector banks to pay the Bank for keeping their reserves. This of course, signals a departure from a three centuries old practice that was preserved even during the 1930s and 1940s. However, the experience from 2010-13 illustrates that even with a low base rate of 0.5 percent private sector banks were not deterred from accumulating reserves with the Bank of England.

It is perhaps for this reason that the Bank has not ruled out further rounds of QE, as a means of appeasing private sector banks and at the same time ensuring that the biggest share of its QE programmes reaches the real economy. In effect, further rounds of QE would shield the UK economy from a repetition of the 2010-13 experience, when private sector banks became

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14 Giles, C. (2020) ‘BoE warns UK set to enter worst recession for 300 years’ 07/05/2020, FT https://www.ft.com/content/734e604b-93d9-43a6-a6ec-19e8b22dad3c
extremely stringent when it came to approving new loans. However, more rounds of QE in turn leads to the second potential problem namely that of a liquidity trap.

A liquidity trap emerges when accommodative monetary policy ceases to have an impact on real economic activity in particular at the lower interest rate bound. From 2009 to March 2020, the lower interest rate bound was considered the 0.5 percent. Since April this year, it has been lowered to 0.1 and in the near future it may further decrease to negative territory. This increases the chances of the emergence of a liquidity trap where more rounds of QE fail to stimulate growth. The case of Japan is a case in point. The Japanese experience has shown that many rounds of QE are required for a marginally positive impact on the real economy.\(^{15}\) Whilst this is desirable in the short run, after more than two decades of QE it has led to a situation where the Bank of Japan’s assets exceeded the Japanese GDP in 2019. They stood at 20 percent of the Japanese GDP in 2007.\(^{16}\)

The Japanese case has led proponents of QE to claim that governments can ask central banks to purchase *unlimited* quantities of government bonds if needs, be without causing any long-term disruption or damage to domestic economies.\(^{17}\) In what is called Modern Monetary Theory, countries that have control of their currencies can choose to fully finance their deficits via printing money i.e. not fully covering their deficits via taxation. Notwithstanding any short term potential advantages of this theory, Japanese growth rates during the last two decades does not enhance the Theory’ legitimacy. Given that a V recovery is essential for fiscal sustainability, regardless of how many more rounds of QE the Bank many engage to, different growth scenarios need to be evaluated.

As the UK authorities (Government and the Treasury, Debt Management Office and the Bank) have shifted the emphasis from the stock of debt to its price\(^{18}\), negative nominal interest rates become appealing, at least in the short and medium run. As disinflation pressures have reduced inflation to 0.8 percent, it is hard to maintain negative *real* interest rates in the case of a further drop in inflation without setting negative nominal interest rates. Negative *real* interest rates are essential in periods of severe recessions in maintaining debt-to-GDP increases in manageable levels.\(^{19,20}\) Table-1 below presents the evolution of gross debt-to-

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16 Davies, M (2019) ‘Central Banks The Policy Labyrinth’ Redburn
17 Greeley, B. (2020) ‘Stephanie Kelton: ‘They’re going to have massive deficits. And it’s fine’ 17/04/2020, FT, https://www.ft.com/content/ea25934a-7b28-11ea-a4f4-da3defb3ae03
GDP ratio for the UK economy for 2020-2022, based on forecasts concerning the deficit and the scale of recession. We employ IMF’s forecasts of a 6.8 drop in GDP this year and a 4 percent increase in GDP in 2021 as a good scenario. The Bank’s estimates for a 14 percent decline in GDP in 2020 and a 15 percent increase in 2021 in a bad scenario. The Bank also forecasts inflation rates of 0.5 percent and 2 percent for 2021 and 2022 respectively. A very bad scenario is also considered in line with the Office for Budget Responsibility estimates.

Certain stylised facts are adopted. For example, the decrease in the budget deficit for 2021 to 2, 5 and 7 percent under the good, bad and very bad scenarios and a further decrease to 0, 2 and 5 percent in 2022. Assuming the Bank will not change its base rate for the rest of the year, and inflation will remain at 0.8 percent, the debt-to-GDP ratios for 2020 under the good, bad and very bad scenarios accelerate to 103.8 percent, 114.3 percent and 118.3 percent. As it can be observed in table-1, the 2021 and 2022 growth rates are vital for the debt to GDP ratios to be maintained at sustainable levels i.e. below a threshold of 120 percent of GDP. In particular, if the Bank’s forecast for a 15 percent growth in 2021 fails to materialise by a large margin then the debt-to-GDP ratios for 2021 and 2022 will exceed 120 percent of GDP under both the bad and very bad scenarios. Clearly, under the IMF’s positive scenario the debt-to-

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<td>Good scenario - IMF</td>
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<td>Bad scenario - BoE</td>
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<td>Very bad scenario - OBR</td>
<td>118.3</td>
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<th>Year: 2022</th>
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<td>Bad scenario - BoE</td>
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<td>119.7</td>
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https://www.ft.com/content/d9041f04-9686-11ea-899a-f62a20d54625
GDP ratio by 2022 drops below the 100 percent threshold, which will be ideal from a debt sustainability perspective. The IMF’s forecast though should be considered as quite optimistic under the present circumstances.

**Conclusions and Policy Recommendations**

A combination of bad news for the UK economy in June and July could prompt the Bank to do the up to recently ‘unthinkable’ and reduce its base rates below zero for the first time ever. These events include a further increase in private sector banks’ reserves, the confirmation of the Bank’s forecasts regarding the scale of recession in Q2 (25 percent drop in GDP in Q2 and a 30 percent cumulative decrease for the first half of the year), a hard Brexit and evidence of slow recovery as the lockdown is partially lifted. Under such a string of unprecedented circumstances, the Bank may succumb to the inevitable and decide to go beyond its existing unconventional tools, resorting to a negative base rate. In this paper, the strengths and weaknesses of negative base rates have been evaluated. Given the unique set of circumstances, the UK economy may encounter over the summer, moving the base rate into negative territory in not an inappropriate policy.

It would signify though a radical change in UK central banking, going beyond even the unorthodox policies pursued since 2009. Whether such a move would be successful would depend on a number of factors. These include the extent to which it would prevent private sector banks to increase their reserves, the extent to which it would stimulate growth during 2021 and 2022 and the duration the base rate would remain in negative territory. After all, reducing interest rates to 0.5 percent and QE in 2009 were supposed to be once in a lifetime, temporary measures that would be reversed once the effects of the Great Recession had abated, according to the former Governor of the Bank Mervin King. The fact that the rate remained at 0.75 percent a decade later implies that the Great Recession’s impact was not fully mitigated, if anything it had deteriorated with the Brexit process. The real danger with negative base rates then is their adoption for a lengthy period, as a means of ensuring fiscal sustainability, despite inflation restored to target. In effect, substituting the necessary discretionary fiscal policy measures with negative base rates, whilst UK authorities have run out of policy options. We recommend that if negative nominal interest rates were set, then an automatic exit strategy be adopted (and communicated as early as possible) when inflation is restored to 2 percent. This would enhance the Bank’s credibility and would not allow the de-anchoring of inflationary expectations. Such monetary policy response to the recession would
also not allow the false sense that deficit reduction would not involve discretionary fiscal policy measures.