

## Time inconsistency in recent monetary policy

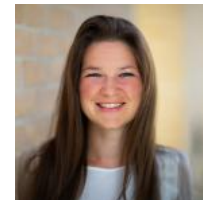
Charles Goodhart, Tatjana Schulze, Dimitri Tsomocos 04 August 2020

*A decade of near-zero, and even negative, interest rates in advanced economies has both encouraged the continued accumulation of debt and a search for yield in riskier assets, while at the same time eroding bank profitability in the retail business. This column discusses some of the palliative measures that central banks have taken to offset the erosion of bank profitability, and raises the question of whether, and how, the longer-term implications of the excessive accretion of debt will be handled.*



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The financial crisis was primarily caused by excessive leverage in the banking sector. Whilst this has been reversed by toughened regulation, the decline in interest rates during and after the financial crisis has encouraged a further accumulation of debt, and a reach for yield, not in banks but in the private and public sectors. This has made the private sector's financial position less resilient in the face of the Covid-19 pandemic. Further, the measures taken to counter the pandemic have led to an additional surge in debt accumulation with all its accompanying problems.

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Over the past decade, there have also been growing concerns about the effects of the low-for-long era on the profitability of banks, especially in the euro area. These concerns have been fuelled by the negative interest rate policy (NIRP) adopted by the ECB on 11 June 2014.<sup>1</sup> While the evidence on the effects of negative deposit rates on bank profitability is mixed, criticism has surged, in particular from banking associations such as the Federal Association of German Banks (2020), regarding the detrimental effects of low interest rates on both savers and banks, and ultimately on the stability of the financial system. In response, the ECB adopted several measures to mitigate the effects of its NIRP on the net interest margin of banks and their incentive to take risks in asset markets whilst employing forward guidance about the continuation of the NIRP. It is unclear however if these measures are sufficient and appropriate to address the negative longer run effects of unconventional monetary policy within a new paradigm, in which monetary policy ought to also take financial imbalances and fragility into account.

### Short-run effects of cuts in the interest rates

What are the immediate and intended consequences of a cut in the rate at which excess reserve deposits are remunerated, specifically into negative territory? The effects can be broadly summarized into effects on the yield curve and on the composition of banks' balance sheets (Boucinha and Burlon 2020, Bubeck et al. 2020).

- **Yield curve management (intercept):** An interest rate cut affects market participants' expectations about the future path of short-term interest rates and the perceived lower bound, thus lowering the entire yield curve.
- **Term premium (slope):** Lower interest rates put downward pressure on the term premium because investors' appetite for longer-term assets increases.
- **Lending activity:** Low interest rates create an incentive for banks to increase lending in order to minimize the cost of holding excess reserves.
- **Net worth:** Increases in asset valuations combined with an increase in interest rate margins in the retail business are expected to increase banks' net worth, conditional on banks' ability to pass (negative) rates on to customer deposits.

Arguably, these channels are amplified in the case of an unconventional cut below zero compared to a conventional interest rate cut above zero. A particular feature of monetary easing below the zero lower bound is that it does not equally transmit to all short-term interest rates. Banks are frequently unable and even reluctant to pass the negative rate cut on to their deposit customers. As

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Heider et al. (2019) note, the deposit facility rate cut in 2014 was transmitted into an equivalent cut in market rates on short-term debt into negative territory. Yet, it did not result in equally lower, negative rates on retail deposits. Consequently, banks that are more reliant on deposit-funding are disadvantaged vis-à-vis banks reliant on market-based (wholesale) funding.

### Longer-term problems of persistently low rates

Despite the power of monetary easing to provide much-needed liquidity in times of market turmoil and pandemics, keeping interest rates too low for too long breeds longer-term structural problems in virtually all sectors of the economy.

- **Debt trap:** With financing costs pushed to the lower bound, households and governments accumulated large debt burdens before the Covid-19 crisis, and are continuing to do so currently.<sup>2</sup> Moreover, asset purchases by central banks intended to tame the yield curve fuel wealth inequality as there exists a positive wealth effect towards high-income and older households.<sup>3</sup> At a deeper level, the combination of income inequality, indebtedness of the poor, and low nominal and real interest rates puts aggregate demand at risk of becoming 'indebted' (Mian et al. 2020)<sup>4</sup> which in turn gives monetary policy 'limited ammunition' going forward.
- **Poor credit allocation:** At the corporate level, low and negative interest rates lure banks into lending excessively to risky, ailing firms, keeping them afloat through artificially benign lending terms.<sup>[5]</sup> The rise in the share of zombie firms following long periods of low interest rates is well documented for the case of Japan (Caballero et al. 2008), Europe (Acharya et al. 2019), and across 14 advanced economies (Banerjee and Hofmann 2018). The market distortions resulting from zombie firms may even have contributed to disinflation in the euro area over the past decade (Acharya et al. 2020).
- **Allocation of resources and productivity:** Bad credit allocation in turn hampers the market's ability to efficiently channel resources to their most productive uses. Employment, investment, and competition suffer in the long run if inefficient firms are not driven out of the market and creditworthy firms suffer from credit misallocation (Acharya et al. 2020, Acharya et al. 2019, Banerjee and Hofmann 2018, Caballero et al. 2008). This development slows growth prospects and economic recovery
- **Profitability of banks:** In the short run banks are able to weather losses in their retail business by temporarily investing in asset classes that offer returns above their net interest rate margin. Yet, the sustained erosion of banks' traditional source of income raises the need to search for yield in the longer run through riskier positions. Such prolonged incentives create potential imbalances in the financial system and increase systemic risk, as interest rates cut into ever deeper negative territory.

In the remainder, we focus on the latter structural effects of low and negative interest rates.

### Mixed evidence on the effects of negative interest rates

With different countries and banks under scrutiny, several studies have found heterogeneous effects of NIRP on banks' (i) funding conditions, (ii) credit supply, and (iii) risk-taking. The role of banks' differing business models provides a common denominator for most of the studies focusing on the euro area. The effects found differ between banks that are less reliant on deposit funding and banks that are more reliant on deposits (Ampudia and Van den Heuvel 2019, Bubeck et al. 2020, Heider et al. 2019). While the latter generally appear to be more adversely affected by NIRP in the euro area, Lopez et al. (2020) find that high-deposit banks do not seem to be disproportionately vulnerable to NIRP in a more comprehensive sample of banks in 27 countries.

On the one hand, banks' funding conditions are found to be only slightly adversely affected by negative rates because banks manage to pass them on to (corporate) depositors (Altavilla et al. 2019, Bottero et al. 2020) or to offset them with non-interest income such as capital gains on securities (Altavilla et al. 2018, Lopez et al. 2020). This is in line with the finding that banks increase their share of deposit funding following NIRP (Lopez et al. 2020). On the other hand, bank net worth is found to suffer from negative rate cuts in the euro area because they are not passed on to depositors (Heider et al. 2019) and they reduce banks' equity values (Ampudia and Van den Heuvel 2019).

One way banks are able to compensate the higher cost of funding is by extending more credit to firms. This intended expansionary effect of NIRP on bank credit supply (Altavilla et al. 2019, Bottero et al. 2020, Lopez et al. 2020) is, however, challenged by evidence that NIRP is less accommodative (Heider et al. 2019) and that low interest rates depress long-run credit growth (Balloch and Koby 2019).

There is also compelling evidence of a 'risk-taking' or 'reach-for-yield' channel of NIRP (Bottero et al. 2020, Bubeck et al. 2020, Heider et al. 2019). On average, high-deposit banks are found to invest in riskier securities and rebalance their loan portfolios towards riskier borrowers. The precise

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channels through which these effects materialize (portfolio rebalancing channel, retail deposit channel, risk-taking channel, bank lending channel) are further explored by Bittner et al. (2020).

### ECB policies to support bank profitability

On 30 October 2019, the ECB introduced a two-tier system for reserve remuneration. Its main objective is to enhance the pass-through of the negative deposit facility rate to bank lending rates while alleviating some of the burden that NIRP poses to bank profitability. Moreover, the two-tier system is intended to keep short-term money market rates closely linked to the deposit facility rate as the new steering wheel of monetary policy. With its inception, the ECB followed the examples of central banks in Switzerland, Denmark, and Japan, the latter of which first introduced a two-tier system in 2015.

The two-tier system eases pressure on banks' profit margins by exempting a share of banks' excess reserves held with the Eurosystem from the negative deposit facility rate. Two distinct rates apply to different parts of the excess reserve holdings. A first tier of reserves is exempt from NIRP and therefore remunerated at the current main-refinancing (MRO) rate of 0%. A second tier of reserves is remunerated at the deposit facility rate, which currently stands at -0.5%. The exemption allowance is calculated on the basis of a multiple of minimum reserve requirements. The multiplier is *universal* across all credit institutions and currently at six, subject to changes by the Governing Council. By contrast, minimum reserve requirements are calculated on an *individual* bank basis and dependent on bank customers' deposits. Thus, the two-tier system targets banks reliant on deposit funding as part of their business model. These banks represent the bulk of lenders to the real economy in the euro area.

Did the new two-tier system live up to its goals? A first verdict shows that banks redistributed their excess liquidity through money markets and other channels upon inception on 30 October 2019. Banks with limited usage of their exemption allowance increased their excess liquidity holdings by borrowing from banks exceeding their exemption allowances. While this redistribution initially took place mainly via secured money markets, their importance declined thereafter as banks used other means to fill allowances such as asset sales (Baldo et al. 2019).<sup>6</sup>

In this debate, other efforts by the ECB to steer the economy while supporting the health of the banking system should not be left unnoticed. Three additional policy measures complement and reinforce the NIRP. First, asset purchases are intended to alleviate funding pressure on banks and enable them to transfer excess liquidity to their peers through asset trading. Second, forward guidance is designed to reduce uncertainty about the future path of interest rates, thereby giving banks more leeway in making longer-term adjustments to their business models and funding conditions, though such forecasts and guidance have often proven unreliable in the past. Finally and more importantly, targeted longer-term refinancing operations (TLTROs) act as a source of very cheap funding.<sup>7</sup> TLTROs offer loans at very favourable terms *conditional* on banks lending to households and non-financial firms (excluding mortgage-related loans). The resulting savings in funding costs can in turn be channelled towards new credit to the real economy. The targeted nature of TLTROs makes them very flexible and effective as a non-standard monetary policy tool.

### An outlook: The exit from NIRP

Recently, there is a common understanding that beyond the 'reversal interest rate' accommodative monetary policy reverses its effect and becomes contractionary for lending and output (Brunnermeier and Koby 2018, Eggertsson et al. 2017). The reversal rate tends to rise gradually, the longer the exceptionally low interest rates remain in place. This has raised the question of whether a departure of the economy from the reversal interest rate has been long overdue.

A recent paper by Schulze and Tsomocos (2020) analyses to what extent concerns for bank profitability could be a justification for the ECB to raise interest rates from the (zero) lower bound, in particular if the ECB ascribed a more proactive role to financial stability objectives in its objective function. The authors simulate the paths of inflation, output, bank profits, and default losses under optimal monetary and regulatory policy when the economy departs from the lower bound. The findings do not support the argument that bank profitability will be restored upon departure from the lower bound. Instead, they highlight the dragging effect on the price level when higher debt servicing costs increase losses from defaults away from the lower bound. Precisely these losses from loan defaults then offset any gains stemming from the net interest rate margin when the economy lifts off from the lower bound. Thus, monetary policy operates beyond the channels proposed by Brunnermeier and Koby (2018), highlighting the need to take into account Fisherian debt-deflation forces. The model moreover suggests that there are merits to attributing a serious role to financial stability objectives in central banks' monetary policy.

On the one hand, the longer the exceptionally low rates remain, the worse the outlook for financial stability. But on the other hand, raising rates would also cause problems for banks.

## Conclusion: More fundamental issues ahead

With the current pandemic-ridden global economy clinging to the lower bound and central banks such as the Fed playing with the idea of cutting rates into negative territory, the pre-crisis push towards a departure from the lower bound has become deferred indefinitely. Yet, several years down the line, policy makers will again revisit the question of when and how to unwind unconventional monetary policy and revert back to the new 'normal'. When this occurs, it will be desirable to give banks as much clear guidance as possible in advance about likely prospects. This is advisable even though unforeseen events will often prevent any plan from being carried into practice exactly as predicted.

But even if concerns about bank profitability could be assuaged, the more fundamental issues of the effects of 'low for longer' on the resilience of our wider financial structure remain. Perhaps the deflationary forces that have led to the trend declines in nominal and real interest rates over recent decades may abate and even reverse in the future. One of us is writing a book on *The Great Demographic Reversal* (Palgrave Macmillan, London, 2020), forthcoming soon, to argue that this will happen. But if not, how can we square the inconsistent objectives of maintaining interest rates low enough to maintain macroeconomic equilibrium without at the same time encouraging debt accumulation, fragile financial markets and an inefficient allocation of resources? This is a question we need a good answer to.

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## Endnotes

<sup>1</sup> Other countries that adopted negative interest rate policies include Denmark, Sweden, Switzerland, and Japan.

<sup>2</sup> See, for example, the rise in household debt in Sweden following low and negative interest rate policy (Andersson & Jonung, 2020).

<sup>3</sup> See Colciago, Samarina, and De Haan (2019) for a survey of the literature on inequality and monetary policy.

<sup>4</sup> That is, a drop in spending by poor borrowers cannot be offset by a rise in consumption by rich lenders.

<sup>5</sup> For an opposing view, see Bindseil and Schaaf (2020).

<sup>6</sup> Despite the achievement of its objective in the short term, the two-tier system has not yet managed to appease the banking industry. In a recent position paper, the Federal Association of German Banks (2020) calls for an adjustment of the two-tier system. It suggests extending the exemption allowance for negative interest rates to a larger fraction of excess reserves in the Eurosystem, calling on the example of Japan where 90% of excess liquidity is exempt from NIRP.

<sup>7</sup> As of 12 March 2020, the interest rate on TLTRO III can be as low as 25 basis points below the average deposit facility rate over a one-year ahead period.



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