



5. FACING THE LOWER BOUND: WHAT WILL THE ECB DO IN THE NEXT RECESSION?

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5.1. ABSTRACT

In responding to the global financial crisis and its aftermath, the ECB has pushed its monetary policy into uncharted territories over the past decade. Today, it appears increasingly constrained by persistently low interest rates and the uncertainty of the environment it operates in. This paper seeks to understand these new challenges and assess whether its current toolkit will allow the ECB to weather the next European recession. We make five key recommendations: first, the ECB must find a way to mitigate the potentially negative effects of its negative interest rate policy; second, it must rethink the issuer limit on its asset purchase program; third, a review of its monetary policy framework is in order; fourth, it must be fully prepared to use its outright monetary transactions (OMT) program; and finally, more innovative unconventional policies might be necessary.

Keywords: ECB; monetary policy; negative interest rates; zero lower bound; quantitative easing; recession; euro area

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5.2. INTRODUCTION

In responding to the global financial crisis and its aftermath, the European Central Bank (ECB) had to push its monetary policy into uncharted territories. In the last decade it has expanded its toolbox significantly with the introduction of negative rates, generous refinancing operations for banks, forward guidance, large-scale asset purchases, and tools to restore the transmission mechanism in all EMU countries.

As a result, the situation has improved in the euro area: deflation risks have abated, the economic recovery that started in mid-2013 has accelerated, investment has picked up, and unemployment has fallen considerably in the euro area as a whole.

However, since mid-2018, signs of deceleration have been piling up, as the euro area has been heavily affected by global trade tensions. Major euro-area countries, including Germany and Italy, might already be in a technical recession. After peaking at around 2% at the end of 2018, headline inflation has decelerated in recent months, market expectations have decreased to near their lowest historical levels, and core inflation is still stuck close to 1%. In addition to this cyclical challenge, it remains unclear what the ‘new normal’ of the post-crisis period really looks like, and how the ECB’s new and more traditional tools will fare in it.

Therefore, the most important question today is whether the ECB’s updated toolkit will be sufficiently robust and well-calibrated to fend off a new European recession.

One major issue is the impact that “low-for-long” (or even negative) interest rates will have on the economy. The ECB might not be able to indefinitely cut its policy rates without reaching a lower bound under which the transmission channel breaks down and its policy rates end up having an overall contractionary effect. Whether this threshold has already been reached is a point of contention, but it is clear that even if it has not, the ECB might be approaching it.

Its most traditional instrument being constrained, the ECB has, since 2007, increasingly had to rely on unconventional policies to stimulate economic growth and to bring inflation back towards 2%. Due to their relative novelty, the effects these instruments have on the economy are still uncertain and their calibration is more difficult, especially now that government yields are already very low. Moreover, after restarting its sovereign debt purchases in November 2019, the ECB will very soon face its self-imposed limit on this crucial unconventional tool.

This means that its two most important tools to face recessions and deflationary pressures – rate cuts and quantitative easing – could become insufficient in the next crisis.

Beyond these constraints weighing on its main instruments, other factors of uncertainty might also impact the transmission of the ECB’s monetary policy to the real economy. These include the possible weakening of the link between unemployment and inflation (i.e. the Phillips curve) as well as the remaining incompleteness of the EMU. Beyond that, the thread of reversing globalization and indeed the digital transformation further complicate our understanding of the “new normal” that policy makers will be asked to manage.



The ECB will thus have to put in place a systemic approach to manage this uncertainty, by designing monetary policies which are flexible enough to produce good outcomes given a variety of unpredictable circumstances. Communication will be crucial for the ECB to manage expectations and achieve its objectives.

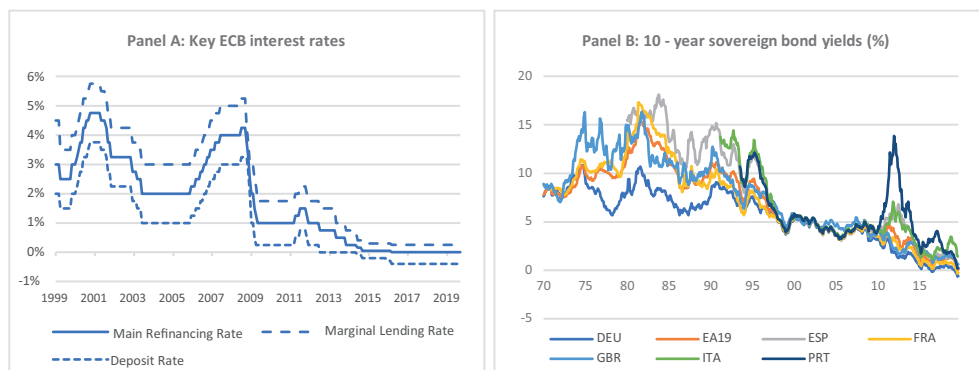
To this end, we make five key recommendations for the ECB to better prepare itself in the case of a new European recession: first, it must find a way to mitigate the potentially negative effects of its negative interest rate policy (NIRP); second, it must rethink the current issuer limit on its asset purchase program (APP); third, a review of its monetary policy framework is in order; fourth, it must be fully prepared to use outright monetary transactions (OMT); and finally, it should be ready to be innovative again if its current toolkit is insufficient.

5.3. UNDERSTANDING THE ZERO LOWER BOUND (ZLB) AND OTHER FACTORS IN THE BREAKDOWN OF CONVENTIONAL MONETARY POLICY TRANSMISSION

5.3.1. PERSISTENTLY LOW RATES: WHY HAS THE ZLB BEEN REACHED?

In a bid to provide more favorable financial conditions to support the recovery and bring inflation back towards 2%, the ECB has gradually lowered its short-term interest rates over the past decade, all the way down to the historically low levels observed today (Figure 1, panel A). This trend reached a tipping point in 2014, when the ECB pushed its deposit rate into negative territory. Since then, this rate has continued on its downward path, with the ECB's most recent policy change lowering it by another 10 basis points to its current level of -0.50% in September 2019. The central bank's two other key interest rates, the main refinancing rate and the marginal lending rate, followed this trend and are currently set at 0% and 0.25%, respectively. All three key rates have now been far below their long-term average for a significant period of time, with little perspective of being pushed back up in the near future. In parallel, a recent decline in long-term sovereign bond yields in the euro area has occurred (Figure 1, panel B) resulting in a flattened yield curve.

**CHART 1: ECB KEY INTEREST RATES
 AND 10-YEAR SOVEREIGN BOND YIELDS**



Source: Bruegel based on OECD Statistics and Bloomberg

As the euro area’s rate-setting authority, the ECB could easily be held fully responsible for the downward trend in long-term interest rates over the past two decades. However, the story is not quite so clear-cut. A growing literature points to other, more systemic factors which could be driving long term rates down. The main argument relies on the concept of the neutral interest rate², defined as the equilibrium rate compatible with full-employment and price stability. This rate points to a level of the real interest rate at which monetary policy neither stimulates nor restrains growth. This makes it an important guide for monetary policy. As such, central banks cannot be held solely responsible for the current level of long-term real interest rates.

The question then becomes twofold: what are the driving forces behind the neutral rate and what is its current value? Answering these questions is key in determining whether the current level of interest rates is justified by underlying dynamics outside of the ECB’s control or if it is distorted by the Central Bank’s policies. The latter situation could result in a distortion of the allocation of resources and produce harmful side-effects. However, the crux of the problem is that the neutral rate of interest cannot be directly observed. Historical averages of real rates do not help estimate its value either, as these could be influenced by distortionary monetary policy or other exogenous shocks. As such, estimating the neutral rate has become the focus of a significant strand of economic literature.

Theory states that the neutral rate is mostly determined by the saving behavior of households and the potential growth rate of an economy – which is itself largely determined by productivity and population growth trends. A range of models have emerged from the literature to explain how these long-run structural determinants affect the neutral rate³. Many empirical approaches have also been proposed, the most common of

² First introduced by Wicksell (1898), this concept has cropped back up in the economic literature a century later in New Keynesian models, led by Woodford’s (1998) seminal work.

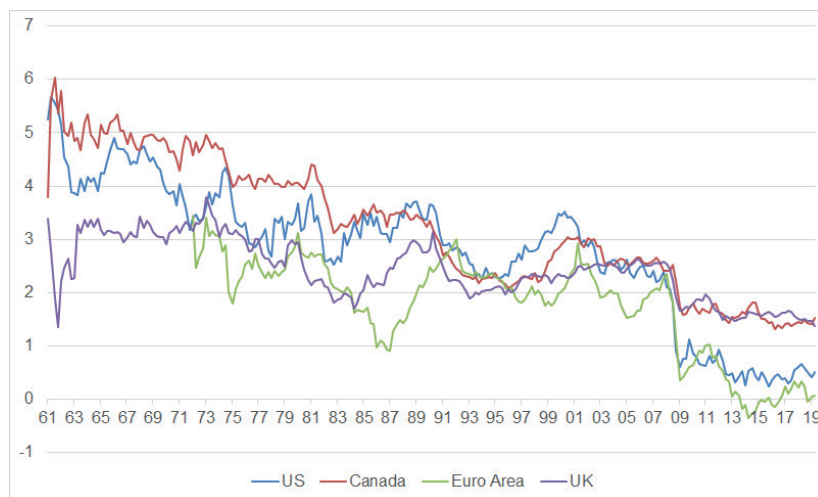
³ For instance, the simple Solow model (1956) considers the saving behavior of households to be fully

which are semi-structural models and full DSGE models. Brand, Bielecki and Penalver (2018) give a comprehensive review of the ways in which these have been used in the literature and point to the fact that most models, despite having different underlying assumptions and dynamics, find that the neutral rate of interest has been declining since the 1980s and that the euro area's neutral rate is likely below the 0% threshold today.

An example of such a study is that of Holston, Laubach and Williams (2016), whose main results are reported in Figure 2. Using a semi-structural model to filter data on output, inflation and short-term interest rates, the authors extract highly persistent components of the neutral rate of output, its trend growth rate and the neutral rate of interest in the US, Canada, the UK and the euro area. Based on this, they have two main findings. First, the neutral rate has a clear downward trend starting in the 1960s and picking up speed after 2008. Second, and perhaps even more significantly, there is a substantial co-movement across the four economies they study, suggesting that global factors may be of prime importance to explain these trends.

Though informative, these estimates are still subject to much uncertainty due to their high levels of volatility and significant confidence intervals. They should certainly not be used as real-time direct targets for monetary policy, but instead should be taken into account as an important indicator, among many others, for long-term structural and cyclical factors affecting the real rate of interest.

FIGURE 2: NEUTRAL INTEREST RATE ESTIMATES (IN %)



Source: Holston, Laubach & Williams (2017), updated in 2019.

exogenous, making technological change and population growth the only drivers of the equilibrium rate. On the other hand, micro-founded models like the Ramsey model or New Keynesian models take household preferences into account, along with population and productivity growth, to determine the long-run equilibrium rate. More sophisticated models like that of Eggertsson and Mehrotra (2015) even model changes in preference as households transition from borrowing to saving over their lifecycle, or as inequalities increase.



With this in mind, some argue that Hansen's (1939) secular stagnation hypothesis can largely explain this gradual decline in neutral rates. What he described as a "*sick recover[y] which [...] leave[s] a hard and seemingly immovable core of unemployment*", characterized by a combination of low capital formation and a high savings rate, was driven, in his view, by low population growth and the absence of new territories or techniques to invest in. Though he was ultimately proven wrong due to the increased government spending during the second world war, as well as the post-war recovery, the baby boom and a new wave of innovation, this hypothesis has been brought back to life following the Great Recession by Summers (2013) and Krugman (2011, 2013a, 2013b).

The secular stagnation hypothesis is appealing because it provides a good explanation for the slower recovery of post-crisis US, Japanese and European economies, compared to other post-war recoveries. Chronically-low interest rates, subpar growth and below-target inflation are not seen as characteristics of a cyclical economic downturn which will eventually and automatically be reversed, but rather as part of a "new normal" economic environment. These potentially permanent changes are driven by structural factors such as low aggregate demand and a chronic excess of savings over investments. Eggertsson *et al.* (2019) seek to quantify this phenomenon by building an overlapping generations model in which households change savings behavior throughout their life cycle. Their main finding is that reductions in fertility, mortality and the rate of productivity growth play the largest role in the secular decline of the real rate of interest while increased government spending can be the most important counterbalancing force to these factors.

While there is still some debate over the relevance of the neutral rate hypothesis and its estimation, one conclusion which can be drawn fairly unequivocally is that irrespective of their exact underlying reasons, the chronically low levels of the interest rate observed today is constraining conventional monetary policy. As a result, the ECB has to increasingly rely on unconventional monetary policy, for which calibration is much more difficult and whose effects are more uncertain.

5.3.2. *DETERIORATED ECONOMIC CONDITIONS IN AN UNCERTAIN ENVIRONMENT*

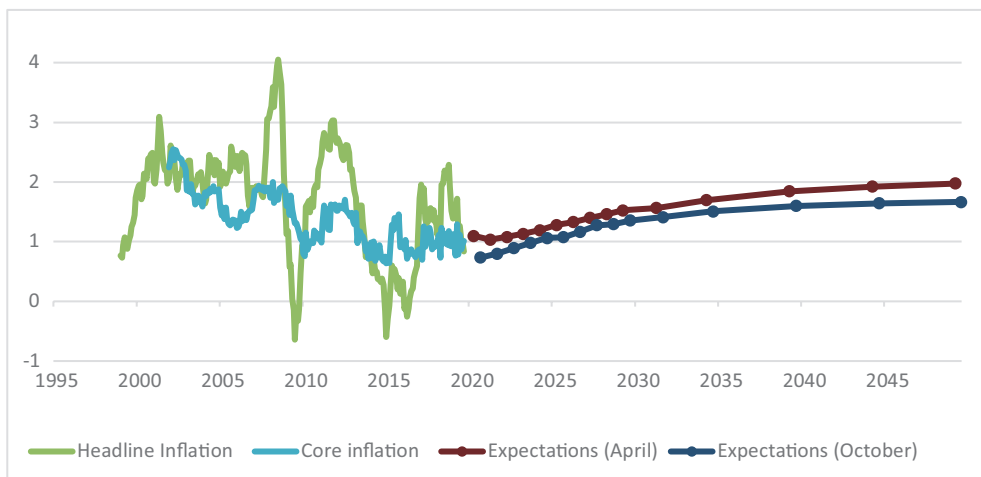
The ECB has been confronted with a multitude of other challenges than having to conduct monetary policy in the context of persistently low rates. These have significantly and permanently altered the economic environment in which it has operated for the past decade. The global financial crisis, the Great Recession and the euro crisis have successively increased the risk of deflation – especially after the 18-month long double-dip recession – and made it all the more difficult for the ECB to fulfil its mandate of maintaining price stability. The banking crisis and the sovereign debt crisis have also weakened or even fully broken-down monetary policy transmission channels in some euro-area countries as redenomination risks emerged.

There has also been a much more recent deterioration of economic conditions since mid-2018, attributable to several factors. For one, the euro area has become far more



vulnerable to external shocks due to its heavily export-based economy. As the world's largest and most open trading bloc, it has been greatly affected by global trade tensions (González et Véron, 2019). Additionally, as of its latest update from early October 2019, the Eurozone's PMI index is at its lowest value since June 2013, estimated to be barely greater than 50⁴. This indicates a situation of quasi-stagnation, with countries like Germany and Italy potentially already in a recession. The manufacturing sector's weak performance can partly explain these conditions, especially in Germany, but there are other factors such as the low levels of aggregate demand and the uncertainty linked to Brexit which have also contributed to the slow-down of economic activity. These heightened uncertainties are reflected in the recent decline of market inflation expectations, as shown in Figure 3. There is little faith that the ECB will bring inflation back up to its 2% target in the next 10 or 20 years. Perhaps more worryingly, inflation expectations have even dropped further since last April.

FIGURE 3: EURO-AREA INFLATION, CORE, HEADLINE AND MARKET EXPECTATIONS (YEAR-ON-YEAR %)



Source: Bruegel based on Eurostat and Bloomberg. Notes: Inflation expectations are derived from inflation zero-coupon swaps of different terms (1 year, 2 years, up to 10 years), which provide information on market expectations of average yearly inflation over the contract term. Expectations for 2020 inflation, for instance, are derived through expected inflation over the next year (2019), given by the 1-year swap, and expected inflation over the next two years (2019 and 2020), given by the 2-year swap. Expectations related to the Eurostat HICP excluding tobacco.

Another factor of uncertainty for monetary policy comes from the apparent weakening of the empirical relationship between unemployment and inflation captured by the Phillips curve. There have been discussions about the 'disappearance' or 'flattening'

⁴ 'IHS Markit Eurozone Composite PMI- Final Data'. IHS Markit, 3 October 2019. <https://www.markiteconomics.com/Public/Home/PressRelease/51de396b073d4d3889b1afe7b9a36872>.



of this curve for some years now, as the substantial variability in unemployment has not been mirrored in inflation, which has remained at relatively low levels. For instance, in France, contrary to what the Phillips curve predicts, lower levels of unemployment and higher wages have recently not translated into higher levels of inflation (Banque de France, 2019). The study attributes this to decreased company margins, a stronger euro, and the increase of the price of investment in construction, relative to that of consumption. In a similar study, the Bundesbank (2019) estimates that the elasticity of consumer prices to changes in wages is now close to one-third, meaning that a rise in the cost of labor is still somewhat being translated into higher inflation in Germany, though to a lesser extent than was previously the case. This phenomenon has two implications for monetary policy: first, the transmission mechanism of monetary policy to inflation seems weakened; second, to reach the same objective as before, monetary policy will have to be far more expansionary than it has been in the past.

Finally, the ECB is also in a particularly complex situation because it continues to operate in an incomplete monetary union. This implies a need for a higher level of adaptability than is the case for the Fed for instance, since a single monetary policy needs to be fit for 19 different economies. Given the multi-country nature of the monetary union and the fragmentation of governance, issues may also emerge regarding the coordination of fiscal and monetary policy or the timeliness of policy decisions.

All of these factors impact the way the ECB can conduct its monetary policy, and reinforce the constraint of the zero lower-bound on its policy rates. In the case of a new European recession, the ECB's instruments will need to overcome all of these challenges for it to effectively fulfil its mandate.

5.4. UPDATES TO THE ECB'S TOOLKIT TO FACE THESE NEW CONDITIONS AND CHALLENGES

5.4.1. CHANGES TO THE OPERATIONAL FRAMEWORK AND NEW TOOLS SINCE 2007

To answer the question of whether the ECB is prepared to face the next European recession, it is important to understand exactly what tools are currently at its disposal. Following the turmoil of the global financial crisis, the ECB expanded and diversified its toolkit to make up for the reduced space for its conventional policies and the deterioration of the economic conditions during and after the crisis. Over the course of the past 10 years, these changes – summarized in Table 1 – have been quite substantial.

One of the main ECB responses to the crisis has been to cut policy rates – as shown in Figure 1, panel A. This culminated with the introduction of a negative interest rate policy (NIRP) with the ECB dropping its deposit rate to negative values in 2014, when it was set at -0.10%. Since then, it has been cut a few more times below 0%, leaving little leeway for the ECB to further cut rates in the case of another recession. To highlight the gravity of this constraint, it is useful to remember that since the Second World War, the



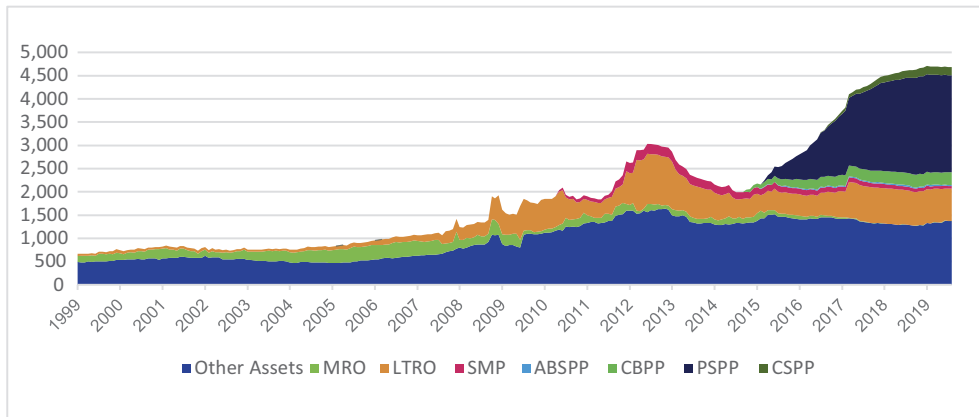
main central banks around the world (the Fed, the BoE, and the Bundesbank followed by the ECB) have cut their main policy rates by about 300 basis points on average when they faced economic downturns.

The NIRP was combined with the introduction of another unconventional policy: forward guidance, a formal commitment from the ECB to keep rates at constant or lower levels for an extended period of time. Since its first use in 2013, the ECB has fairly systematically employed forward guidance to give clear signals on the policy path decision-makers intend to follow in the medium term. Considering how constrained short-term policy rates currently are, forward guidance has become an alternative tool to influence long-term bond yields via future expected short-term rates, and reduce the volatility of market expectations for future policy rates. While the effects of these policies are subject to some discussion (see Haberis *et al.*, 2017 and Filardo and Hofmann, 2014 for relevant studies on the topic) there is a relative consensus over the fact that so long as the ECB maintains its credibility in the eyes of the market, its forward guidance will have an impact on market expectations.

In the realm of its open market operations, the ECB has made it easier for banks to access funding, turning its Main Refinancing Operations (MROs) into fixed-rate full-alotment tenders instead of variable-rate tenders in limited quantities as was previously the case. It also extended the maximum maturity of its Long-Term Refinancing Operations (LTROs), introduced Targeted LTRO programs in 2014, conditional on banks' net lending volume, and has extended the list of assets eligible as collateral several times since 2008. All of these measures have aimed to maintain favorable credit conditions and an accommodative monetary policy stance (in particular at the beginning of the crisis when there was the risk of a meltdown of the European banking sector).

The ECB introduced another major unconventional policy with its large-scale asset purchases. It successively implemented programs to buy euro-denominated covered bonds (CBPP since 2009), asset-backed securities (ABSPP since 2014), public debt securities (PSPP since 2015, also including supranational and locally-issued debt instruments) and corporate debt securities (CSPP since 2016).

As a result of these policies, its balance sheet went from being around 10% of euro area GDP in the early 2000s to over 40% in 2019. Figure 4 illustrates this significant increase in the size of the ECB's balance sheet since 2007, driven first by the increased role of (T)LTROS and in recent years by asset purchases. This has reopened a debate on the optimal size of a central bank's balance sheet, pitting arguments of potential risks of excess liquidity against the benefits of maintaining such a large balance sheet (see Claeys and Demertzis, 2017).

**FIGURE 4: ECB BALANCE SHEET, ASSETS (IN € BILLION)**

Source: Bruegel based on Bloomberg

Finally, the ECB also introduced tools to restore the transmission mechanisms of monetary policy. The first was the Securities Market Program (SMP), announced by the Governing Council in 2010, through which the ECB could directly intervene in the euro area's sovereign debt markets. In 2012, this was replaced by the announcement and specification of the Outright Monetary Transactions (OMT) program, which was never actually used but whose sole existence diffused the mounting tensions of a sovereign debt crisis by guaranteeing that the ECB would do “whatever it takes” to preserve the euro⁵.

All in all, the ECB's toolkit has proved to be quite flexible in the face of the worst crisis since the Great Depression, though sometimes adjusting at a slower pace than other central banks which do not operate in such a fragmented jurisdiction have done, such as the US Fed or the Bank of England.

⁵ European Central Bank. ‘Verbatim of the Remarks Made by Mario Draghi’. European Central Bank. Accessed 22 October 2019. <https://www.ecb.europa.eu/press/key/date/2012/html/sp120726.en.html>.



**TABLE 1. SUMMARY OF THE CHANGES
TO THE ECB'S TOOLBOX SINCE THE CRISIS**

	Instrument	Pre-crisis	Post-crisis	
Open Market Operations	Main refinancing operations	Variable-rate, limited quantity tenders, minimum bid rate set at 4.25% in 2007	2008	Fixed-rate, full-allotment tenders, interest rate set at 3.75%
			2016	Interest rate set at 0%
	Long-term refinancing operations	Maximum 3-month maturity	2008	Fixed-rate full-allotment tenders Increased length up to 3 years
			2014	Longer-term refinancing operations (LTROs) up to 4-year maturity Introduction of targeted LTROs, conditional on net lending volumes Introduction of TLTRO I
			2016	Introduction of TLTRO II
Collateral	-	2008	Extension of list of assets eligible as collateral	
Forward guidance	-	2014	Ex-ante announcement about rate level or use of unconventional policies:	
Standing Facilities	Deposit facility	Rate set at 3% in 2007	2008	Compressed then re-widened policy rate corridor
			2009	Increased role of deposit rate
			2014	Rate pushed down to negative values (-0.10%)
			2019	Interest rate set at -0.50%
	Marginal lending facility	Policy rate channel defined as Main refinancing operations (MRO) +/-1%	2016	Interest rate set at 0.25%
Reserve Requirements	Minimum reserves	-	2011	Reduced reserve ratio to 1% of deposits
			2019	Tiered reserves, amount of excess liquidity exempted from negative rates equal to 6 times required reserves



	Instrument	Pre-crisis	Post-crisis
Asset Purchase Programs	Securities Market Program (SMP)/Outright Monetary Transactions (OMT) program	-	2010 Introduction of SMP: conduct interventions in euro area public debt securities markets 2012 Terminate SMP and launch OMT: announced but never used
	Covered Bond Purchase Program (CBPP)	-	2009 Introduction of CBPP1: Purchase of euro-denominated covered bonds issued in euro area 2011 Introduction of CBPP2 2014 Introduction of CBPP3
	Asset-backed Securities Purchase Program (ABSPP)	-	2014 Introduction of ABSPP: Purchase a broad portfolio of simple and transparent asset-backed securities with underlying assets consisting of claims against the euro area non-financial private sector
	Public Sector Purchase Program (PSPP)	-	2015 Introduction of PSPP Increased issue share limit from 25% to 33%, subject to case-by-case verification Include debt instruments issued by local and regional governments
	Corporate Sector Purchase Program (CSPP)	-	2016 Introduction of CSPP: Investment-grade euro-denominated bonds issued by non-bank corporations established in the euro area included in list of eligible assets for APP

Source: Bruegel based on ECB.

5.4.2. NEW PACKAGE PUT FORWARD IN SEPTEMBER 2019

On the 12th of September 2019, the ECB announced a new package of monetary policy measures in an effort to stimulate economic activity and boost inflation after another quarter of “*protracted weakness in euro area growth dynamics*”⁶. Five decisions were included in this package: the ECB would lower its deposit rate deeper into negative territory, restart its quantitative easing program, continue reinvesting the principal payments from maturing securities purchased under the APP, change the modalities of its third TLTRO program and introduce a two-tier system for reserve remuneration.

The first decision, to lower the deposit rate by an additional 10 basis points, took this rate from -0.40% to -0.50%. In combination with the decision to lower its deposit rate, the ECB also gave the following forward guidance: it expects to keep key rates at their current level or lower for as long as its inflation outlook does not reflect a convergence to its target of below, but close, to 2%, and until “*such convergence has been consistently reflected in underlying inflation dynamics*”⁸. This latter condition marks a turning point in the way

⁶ European Central Bank. ‘Account of the Monetary Policy Meeting’. European Central Bank. Accessed 22 October 2019. <https://www.ecb.europa.eu/press/accounts/2019/html/ecb.mg191010~d8086505d0.en.html>.



the ECB uses conditional forward guidance for its interest rates. It explicitly identifies underlying, or core, inflation as an indicator which will be used to assess when policy rates should be raised. Considering the lesser fluctuations that core inflation presents, as compared to headline inflation, this could help avoid rushed policy reversals and erroneous interest rate increases, like that of 2011 (see Claeys *et al.*, 2018).

The second decision in the September package, was to restart net purchases under the ECB's asset purchase program (APP), after these were stopped in December 2018. It was announced that the pace for these would be equal to €20 billion per month as from the 1st of November and that purchases would last for “*as long as necessary to reinforce the accommodative impact of [the ECB's] policy rates*”. However, this open-ended and potentially long-term time limit might prove to be unrealistic. The reason for this is that the ECB has self-imposed rules to guide its asset purchases, particularly in the public sector. The Governing Council established a 25% issuer limit, subsequently upped to 33%, on Eurosystem holdings for its sovereign asset purchases. This was implemented to “*safeguard market functioning and price formation as well as to mitigate the risk of the ECB becoming a dominant creditor of euro area governments*”⁷ but now represents a tangible limit to the purchases which can be made under the ECB's newly re-launched APP. The holding of bonds of major countries was already close to the 33% limit by the end of 2018, due to the massive purchases which took place from March 2015 to the end of the APP in December 2018 (Claeys *et al.*, 2018). This means that asset purchases will have to be stopped relatively soon, when this threshold is reached, which clearly puts a constraint on the use of this instrument.

The third decision, which was unanimously accepted by the Governing Council and raised little controversy, was to confirm that the ECB will continue reinvesting, in full, principal payments from maturing securities purchased under the APP, at least until interest rates are raised again.

Fourth, the ECB changed the modalities for its third series of quarterly TLTROs, which were announced on the 7th of March 2019, launched in September 2019 and will end in March 2021. Originally, the maturity was set at two years and the pricing was set to be within a 10-basis point spread above the average interest rate of the MRO; for counterparties exceeding their lending benchmark, it was set above that of the deposit facility. In September, both of these elements were modified to make monetary policy more accommodative. First, the maturity for this series of TLTROs was increased to three years, with a repayment option after two years. Second, the 10-basis point spread was removed for both levels of interest rates, meaning that the rate for banks exceeding their net lending volume benchmark can now be as low as the deposit rate. However, while past auctions have collected bids amounting to €97 billion on average, with the last auction in 2017 reaching €233 billion, banks only bid €3.4 billion on the first wave on the new TLTROs on the 19th of September.

⁷ ECB Public sector purchase programme (PSPP) - Questions & Answers: <https://www.ecb.europa.eu/mopo/implement/omt/html/pspp-qa.en.html>



Finally, the ECB also introduced a two-tier system for reserve remunerations in its September package, through which the amount of a bank's reserves exempted from negative interest rates is equal to 6 times the amount of its required reserves. This was implemented in an effort to mitigate the potential side-effects of negative interest rates on banks' profitability and thus on their lending capacities. Preliminary studies suggest that this policy will alleviate the costs for banks associated with the NIRP in a meaningful way. This policy is estimated to cut the cost of negative rates to banks by approximately a third (Ducrozet and Gharbi, 2019). However, there is a trade-off between helping banks by reducing the negative impact of negative rates on their profits and the deposit rate having a strong transmission channel to the short-term market rate (EONIA, now €STR). Essentially, the larger the amount of exempted reserves, the less banks have an incentive to lend on the interbank market rather than just keep their excess liquidity and pay the deposit rate, which pushes the overnight rate up, away from the deposit rate. As a result, the transmission channel from the deposit rate to the market rate could be weakened to some extent.

Considering all of these elements, the main question today is whether the current toolkit will be sufficient for the ECB to face a new recession. As discussed, the zero lower bound is a major constraint on policy rates, the newly-restarted APP is limited by the ECB's self-imposed issuer limit, while the take up in the first wave of TLTRO III has been rather disappointing. While the tiering system on reserve remuneration may positively impact bank profitability, it may also weaken the transmission channel of conventional monetary policy, so its overall impact is still unclear. Given these concerns, what can the ECB do to prepare itself for the next European recession?

5.5. WHAT CAN THE ECB DO IF THERE IS A NEW RECESSION IN THE EURO AREA?

5.5.2. CAN THE ECB PUSH INTEREST RATES FURTHER INTO NEGATIVE TERRITORY?

The main tool the ECB has had to face economic slowdowns and too low inflation since its creation has been to cut rates. The issue today is that its main policy rate is already in negative territory. The effects of negative rates are not yet fully understood, but they will no doubt impact the way the ECB can react to the next recession. A BIS survey (Potter and Smets, 2019) suggests that, overall, central banks which have implemented negative rates have been satisfied with the policy's capacity to reduce market interest rates. They consider that the passthrough to most economies has been almost complete, but also recognize that this may only be the case because rates have only been slightly in the negative range and for a relatively short period of time. If these rates are lowered more significantly or if they stay negative for much longer, their effects might be different.

Broadly speaking, there are two main effects of negative rates, with opposite consequences. The first effect is that a negative policy rate reduces market interest rates and



interest rates on loans made by banks. This increases credit demand and, ultimately, investment and consumption. The second effect is supposed to be contractionary because negative rates tend to decrease the profitability of banks, which as a result might reduce the supply for credit. This is because it is difficult for banks to pass negative rate onto their customers, as households could switch to cash instead of depositing their money in banks. As a result, the spread between their funding rate and their lending rate could be reduced and their profits cut. For instance, Rognlie (2016) models the trade-off between the adverse effects of negative rates and their expansionary benefits and finds that there is indeed a reversal rate at which negative rates become contractionary.

The most crucial question is therefore to know which one of these effects dominate and at which level this reversal rate is situated. However, given the relative novelty of the issue, unsurprisingly, the economic literature is still far from having reached a consensus.

After two years of negative rates in the euro area, Jobst and Huidan (2016) assessed whether the ECB's adoption of negative rates in 2014 had an overall expansionary or contractionary effect by using a DSGE model calibrated on euro area data. Their study shows that while there has been a significant and negative effect on bank profits, especially for those with stickier rates paid to their depositors, higher asset values and stronger aggregate demand have offset the negative effect, allowing for a modest expansion in credit, and overall, an easing of financial conditions.

A year later, Eggertsson, Juelsrud and Wold (2017) argued, on the contrary, that the negative effect of NIRP dominates. Using bank-level data from Sweden, Denmark, Switzerland, Japan, Germany and the euro area since 2008, they find that there is an empirical zero lower bound on rates paid by banks on deposits. Based on this finding, they build a DSGE model, with an embedded banking sector and find that because of NIRP and the strict lower-bound on deposit rates, the spread between banks' deposit rates and their borrowing rates has been diminished, mechanically leading to a drop in their profits. As a result, the authors argue that in their model, NIRP automatically has a contractionary effect on the economy.

However, a recent study by the OECD (Stráský and Hwang, 2019) which uses quarterly consolidated bank level data from approximately 50 banks supervised by the Single Supervisory Mechanism finds opposing evidence. They estimate that there is only weak empirical evidence that bank profitability has been significantly negatively impacted by NIRP, and that reduced bank profits in times of negative policy rates can actually largely be explained by overall weakened macroeconomic conditions. This implies that NIRP has an overall expansionary effect since bank profits are only weakly affected by it.

This is also what Altavilla *et al.* (2018) conclude based on a micro analysis they run on euro-area bank-level data. They find that policy easing, including NIRP, actually tends to have a positive effect on bank profits because it reduces loan loss provisioning by improving borrowers' capacity to repay their debt and increasing the quality of assets held in banks' portfolios. This offsets the loss in net interest income in their model, and confirms the expansionary effect of policy easing and NIRP.

In addition to this discussion on the opposite effects of NIRP, there is also the question of the power of the transmission channel. Eggertsson, Juelsrud and Wold (2017)



assume a breakdown of the interest rate transmission channel as soon as negative policy rates are introduced – since commercial deposit rates cannot follow policy rates and go below zero in their model. This is also what Eggertsson *et al.* (2018) argue. In their paper, they include a discussion on the dispersion effects of policy rates once they turn negative, driven by differences in banks' financing structure. According to their research, banks with a higher level of deposit financing are more affected by negative policy rates, causing them to have slower credit growth in a negative rate environment.

Other authors do not believe the effect of negative rates on the transmission channel is so clear cut. For instance, Brunnermeier and Koby (2018) defend the argument that as rates are lowered, their marginal effect on the real economy does decrease, but the reversal rate at which monetary policy is no longer transmitted is not obviously set at the zero-percent threshold. This reversal rate is actually dependent on several factors, including banks' fixed-income holdings, the strictness of capital constraints, the degree of pass-through to commercial deposit rates and the initial capitalization of banks. Altavilla *et al.* (2018) also consider that negative rates do not automatically break down the transmission channel and that this actually heavily depends on bank health. Sound banks, (characterized by lower CDS spreads and a lower level of non-performing loans) are more likely to set negative deposit rates than unsound banks. However, in periods of NIRP, there is also a higher demand for safe assets, which means these sound banks end up receiving more deposits than unsound banks, further reinforcing their capacity to follow policy rates into negative territory. As such, there is a higher likelihood of the breakdown of monetary policy transmission channels for unsound banks, but it is never a complete breakdown.

Another area of concern is the impact that negative rates may have on the risk-taking behavior of banks and ultimately on financial stability. Evidence from Heider *et al.* (2018) seems to point to the fact that once rates go negative, banks that mainly rely on deposit funding take on more risk and lend less than banks which rely on other sources of funding. As a result, NIRP could be less accommodative than initially thought and additionally increase financial instability if lending from high-deposit banks significantly increases.

Finally, from an empirical perspective, recent data released by the ECB (2018), shows that there are signs of cash hoarding by banks as a result of negative deposit rates – even if the sums at stake are still small compared to the overall amount of excess reserves.

Overall, the ECB could try to cut its deposit rate further to reduce short-term market rates. However, even if debates on the effects of negative rates are not yet fully settled, the literature discussed above suggests that the ECB might already be near its effective lower bound and that it might be difficult to go well below it in the future.

5.5.2. HOW TO LIMIT THE NEGATIVE SIDE EFFECTS OF NEGATIVE RATES?

Given all these issues and the uncertainty tied to the use of NIRP in the euro area, the ECB cannot wait for research to conclusively determine whether the reversal rate of interest has already been reached, and if not, at exactly what point in time this will be

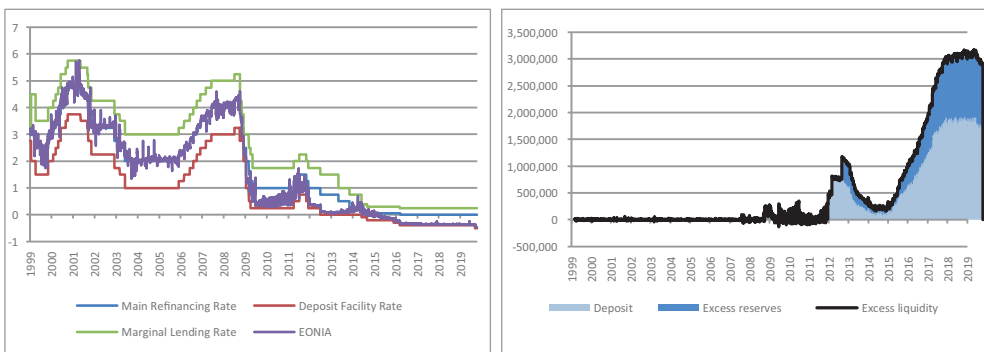


the case. Instead, it must adapt its policies so that they adequately respond to both possibilities. This means finding ways to mitigate the potentially negative effects of NIRP and maximizing its expansionary benefits.

A first step has already been taken in this direction with the new two-tier system the ECB announced in September, to be applied as of the 30th of October 2019. As discussed above, this will provide significant relief to banks as the amount of their reserves which is exempted from the cost of negative deposit rates is increased sixfold. While this will no doubt strengthen the expansionary effect of NIRP, it may also weaken the deposit rate's impact on the EONIA rate, as discussed previously. Indeed, the more reserves are exempted from negative interest rates, the less banks are incentivized to be active on the interbank market instead of simply depositing their excess liquidity at the ECB. This implies that the ECB faces a trade-off between reducing the side-effects of negative rates on banks and the economy and ensuring that the level of the deposit rate is reflected in short-term market rates (EONIA, now €STR).

This is particularly important given that the deposit rate has been the main determinant of the level of the EONIA in the past few years. Thanks to high levels of excess liquidity in the euro area since 2012 (Figure 5, RHS), the EONIA has remained stable and very close to the deposit facility rate (Figure 5, LHS), making it the ECB's most important policy rate in terms of monetary policy transmission. As such, the implications of a breakdown in this rate's transmission to overnight market rates would impact the way the ECB conducts monetary policy during the next recession in a significant way. That is why the ECB will have to monitor very closely how both bank profits and market rates are affected by the new tiering system.

**FIGURE 5: THE EONIA RATE (IN %) AND EXCESS LIQUIDITY
IN THE EURO AREA (IN € MILLION)**



Source: ECB via Bloomberg. Note: Excess liquidity is defined as deposits at the deposit facility net of the recourse to the marginal lending facility plus current account holdings in excess of those contributing to the minimum reserve requirements.

Another way the ECB could continue to cut its rates and have a more expansionary stance without lowering its deposit rate further (and thus avoid the negative impact on



banks and bank lending) would be to cut the TLTRO lending rate below the deposit facility rate, conditional on banks reaching a benchmark volume for loans. As of now, the TLTRO rate can only go as low as the deposit rate, but not below it. If this were the case however, it would allow banks to take out long-term loans from the ECB at a rate lower than what they would pay to deposit excess liquidity there. This would allow them to give out more loans, which in turn would mechanically increase their reserve requirements since these are calculated as a ratio of a bank's liabilities – mainly its customers' deposits. Considering the new tiering system on reserve remuneration, their exempted reserves would also be increased, even more than proportionally. This ultimately could create a virtuous cycle for bank profitability and incentivize banks to lend to the economy despite negative policy rates (or more precisely thanks to a negative TLTRO rate).

The main caveat would come from the fact that the ECB would actually be losing money on these operations. However, this should not be a major source of concern, given that, as discussed in Chiacchio, Claeys and Papadia (2018), while it is preferable for central banks to achieve profits rather than to record losses, they are not profit-maximizing institutions and their overriding mandate is price stability. As such, recording losses in the short-to-medium term when seeking to fulfil its macroeconomic function should not stop the ECB from using such a policy.

Finally, a more extreme solution to deal with the lower bound could include taxing paper currency (as suggested by Agarwal and Kimball, 2015; or Kimball, 2015) or abolishing it altogether (Rogoff, 2016). But this solution would be highly unpopular in some Member States, and, again, the potential side-effects on bank profitability and lending capacity could reduce such an instrument's effectiveness in stimulating growth and inflation in a bank-based financial system.

5.5.2. WILL THE ECB BE ABLE TO USE ITS ASSET PURCHASE PROGRAM IN THE NEXT RECESSION?

Considering the secular decline in the euro area's neutral rates, traditional monetary policy tools could be constrained by the zero lower bound for more frequent and longer-lasting periods of time. This makes its other policy instruments, namely asset purchases, all the more important in dealing with the next European recession.

This means that the ECB will have to be ready to use this tool more often and not to confine it to extreme situation. The peculiar institutional arrangement of the EMU and the reluctance of some countries to use such a policy have caused delays in the implementation of asset purchases in the last crisis, as the ECB program was launched 6 years after that of the Fed and the Bank of England.

It is true that the effects of this unconventional policy are not yet fully understood and that asset purchases are more difficult to calibrate than simple rate cuts. In particular it is difficult to know if their marginal effects remain significant when yields are already very low or even negative, as argued for instance by Coppola (2019). However, sovereign bond purchases are also a way to better coordinate with fiscal authorities. Indeed, even



if additional asset purchases have smaller marginal effects on the yield curve and financing conditions, they also allow fiscal policy to be more expansionary in bad times. Some might fear that this could reduce the independence of the ECB, enshrined in Article 130 of the Treaty on the Functioning of the European Union (TFEU). However, it could also be argued that the ECB cooperating more closely with fiscal authorities in the pursuit of a common goal does not have to lose its independence and could even lay the grounds for better coordination between fiscal and monetary policies, as long as the decision to launch QE is coming from the ECB.

From a more practical perspective, as already mentioned, the main problem for the ECB to use QE during the next recession is that its program is currently constrained by its (self-imposed) issuer limit. The ECB is already quite close to the limit in several countries, in particular in the Netherlands and Germany. In the current setup, this implies that purchases will have to be stopped in a few months. The most obvious answer to this would be to increase the issuer limit once again, even if the ECB does not seem inclined to do this for the moment. In a recent press conference, President Draghi stated that *“there was no appetite frankly to discuss the limits for one good reason, because we have relevant headroom to go on for quite a long time at this rhythm without the need to raise the discussion about limits”*⁸.

This reluctance to change the issuer limit can also be explained by the ECB’s concern about monetary financing. If it owns a large enough share of some bond issues to have a blocking minority, the ECB would theoretically be in a position to block a vote on the restructuring of a euro area country’s ECB-held debt. Not blocking this vote could be considered as monetary financing. However, one could question whether the current issuer limit strikes the right balance between running the risk *ex ante* of monetary financing and the ECB not meeting its primary objective of maintaining price stability. For instance, there would be very little risk of monetary financing in AAA-rated governments such as Germany or the Netherlands, given the near-zero probability of them needing to restructure their debt in the next few years. As such, the ECB should waive its issuer limit, at least for well-rated countries in order to allow for this policy to be used as much as necessary in the next European recession.

Considering the uneasiness some members of the ECB’s Governing Council still have with the purchases of sovereign debt securities, another option for the ECB could be to buy other classes of assets, like bank loans or even equity.

5.5.3. REVIEWING THE ECB’S MONETARY POLICY FRAMEWORK WOULD ALSO HELP

Operating in a ‘zero lower-bound world’ means the ECB should also review its monetary policy framework, and especially its definition of price stability, to increase the flex-

⁸ European Central Bank. (2019, October 15). Introductory statement to the press conference (with Q&A). Retrieved October 15, 2019, from European Central Bank website: <https://www.ecb.europa.eu/press/pressconf/2019/html/ecb.is190912~658eb51d68.en.html>



ibility it has when dealing with a new recession. The ECB's official mandate of maintaining price stability is not explicitly defined in the European Treaties: there is no numerical target, time horizon or particular variable which are mentioned. These elements were decided by the Governing Council in 1998 and then clarified in 2003, This means that they could be changed again. As explained in detail in Claeys *et al.* (2018), we think that the ECB's definition of inflation should be changed from "*below, but close, to 2 percent over the medium term*" to "*around 2 percent, on average, over the long run*". This would have many advantages.

First, the current definition of price stability implies that the ECB implicitly targets inflation that is smaller than 2 percent. It is unclear why the central bank keeps this room for interpretation around its inflation target, which we believe adds unnecessary noise to its operations and does not allow for a clear and well-defined target around which markets can realistically form expectations (Demertzis and Viegi, 2008). Changing the definition to make it two-sided, "around 2 percent", is a way of correcting this downward bias without having to go very far from what is currently communicated. Additionally, it would be important to set numerically defined tolerance bands around the 2 percent target within which inflation is considered to be acceptable. These would need to be carefully chosen so that the target still remains a good signal, and the definition of price stability is clarified (Demertzis and Viegi, 2010).

Second, the period over which price stability is measured could arguably be lengthened from its current 18 months to 3 years – the general definition of "medium term" – to a longer time frame, like the course of a business cycle⁹. If implemented successfully, not only could this help avoid too-rapid reversals in policy, it would also allow the ECB to let the economy overheat for some time after periods of undershooting its inflation target. If economic agents expect the ECB to act in this way, real rates would be further lowered during downturns and potential time inconsistencies in the ECB's forward guidance communication could be avoided. Indeed, in the current situation, the ECB could be seen as lacking credibility when it states it will keep rates low for a long period of time if market participants know that it may have to react quickly to maintain inflation below 2 percent. Having inflation defined *on average* would strengthen the role of inflation expectations as an automatic stabilizer to alleviate the problem caused by the zero lower bound (as formalized by Nessen and Vestin, 2002). In practice, this means that monetary policy, provided it is credible, will have long term expectations anchored at the inflation target, which then allows the medium-term expectations to deviate from this target by as much as needed to account for shocks. For example, in the case of a deflationary shock, medium-term expectations will increase above the target, and thus real rates will decrease which will help eliminate the effects of the shock. By contrast, in the current regime, credible monetary policy implies medium-term expectations are anchored at

⁹ While the typical length of a business cycle has been quite variable in the euro area since the 1970s, according to the CEPR business cycle dating committee, it has been around 9 to 10 years. See <https://cepr.org/content/euro-area-business-cycle-dating-committee>. The exact calibration of the time-horizon would have to be evaluated through experimentation on a number of models.



the target and therefore the change in the real rate will not help as much. We appreciate that lengthening the horizon can reduce the “controllability” of the instrument, in other words the ability of the monetary policy to control the way its instrument achieves the desired result. However, helped by clear communication which anchor expectations at the right level, this problem can be tamed.

Third, these changes should be accompanied with a move to systematically target core inflation, rather than headline inflation. The ECB’s recent decision to give more focus to core inflation by including it in its forward guidance is a first step in this direction and should be followed-up on. In addition, in the ‘average inflation targeting’ framework that we suggest, targeting headline inflation could have detrimental effects: temporary supply shocks to energy and food prices would automatically have to be compensated by lower inflation in the following periods.

Our proposed changes to the ECB’s definition of price stability are not as radical or complex as other proposals, such as an outright increase in the target or a move to nominal GDP targeting for instance. This means they do not risk damaging the central bank’s credibility or de-anchoring inflation expectations. On the contrary, they would reinforce the weight attached to its forward guidance on inflation as well as make it easier for economic agents to plan long-term investments and reduce risks linked to long-run contracts.

5.5.4. THE ECB SHOULD BE READY TO USE OMT IF NEEDED

Mario Draghi’s “*whatever it takes*” promise in 2012 proved to be instrumental in settling the euro area sovereign debt crisis. Faced with a rapid increase in interest rates and the risk of re-denomination related to a potential break-up of the EMU, the ECB stepped in and announced its Outright Monetary Transactions (OMT) program. This program was a potentially unlimited but conditional purchase program for euro-area government bonds, aimed at “*safeguarding an appropriate monetary policy transmission and the singleness of the monetary policy*”. This broke the cycle of the self-fulfilling liquidity crisis which had taken hold of the euro area sovereign debt market, and the spreads between different countries fell once again, though they never returned to their pre-crisis levels, as market participants realized that there were still differences in credit risks within euro area countries.

What this case illustrates is that, in 2012, markets were fully convinced that the ECB had both the tools and the will to intervene to protect the integrity of the euro. This level of clarity and credibility needs to be maintained at all cost for the ECB to be able to face its next recession. As a key pillar in the euro area architecture, this means that the OMT needs to be strengthened and reaffirmed.

The first step to doing this is that the ECB should reconfirm that the central bank is fully ready to use its OMT program in order to avoid liquidity crises in the sovereign debt markets. It will need to remain very clear that the ECB is willing and capable of acting as a lender of last resort for sovereigns in case of self-fulfilling liquidity crises.



As a second measure, the OMT's architecture should also be re-evaluated to ensure its soundness. In its current setup, the precondition to accessing the ECB's OMT is a government's involvement in a European Stability Mechanism (ESM) program. This conditionality aims to avoid any moral hazard, as the involvement in an ESM program requires a neutral assessment by the European Commission of the sustainability of a government's fiscal position, as well as the political backing from the ESM board. However, in the original press release by the ECB which set out the framework for its OMT (ECB, 2012), there was some ambiguity regarding the exact pre-conditions under which a government could access the program. As explained in Claeys and Mathieu Collin (2018), the ECB explicitly mentions the ESM's precautionary programs – which include its Precautionary Conditioned Credit Line (PCCL) – and primary market purchases – which are possible under the PCCL – but it also singles out the (more difficult to obtain) Enhanced Conditions Credit Line, without making a mention of the PCCL. The ECB should clarify its stance on this subject by stating that the PCCL is considered a sufficient pre-condition to access an OMT program, in view of making its OMT more credible in the case of a new liquidity crisis.

5.5.5. BE READY TO INNOVATE (AGAIN) IF OTHER TOOLS ARE INSUFFICIENT

Finally, we recommend that the ECB be prepared to innovate in its use of unconventional monetary policy. Its current toolkit could indeed become insufficient in a new recession: 1) policy rates could reach the reversal point at which their overall effect becomes contractionary, leaving the ECB without its main monetary policy instrument; and 2) quantitative easing could also be a limited option, both because of the current issuer limit and because of potential diminishing returns. In that case, the ECB will have to be prepared to use different kinds of policy, with some idea of the way they work and the risks associated with them.

As such, while the ECB should first and foremost focus on adapting its existing tools to the economic situation and possible emerging risks and constraints (as discussed above), it should also at the very least begin evaluating potential alternative tools which may help it in dealing with the next recession. At this point, it is useful to remember that at the time of their implementation, asset purchases were considered an experimental policy, for which effects and risks were virtually unknown (see for example Giles, 2014 and Choyleva, 2014). This signals that the ECB is capable, and willing, to innovate when this is needed.

“Helicopter money”, as theorized by Milton Friedman (1969), could be such a policy innovation. The premise for it is that the ECB directly injects a volume of cash into the economy calibrated to bring inflation back towards its target by distributing it on an indiscriminate and equal basis to all households. It could serve as a solution to the drying up of credit during times of crisis, when conventional tools such as rate cuts and quantitative easing are no longer a sufficient boost to aggregate demand.



One condition for this policy to fulfil its objectives of price stability is that injections need to be credibly permanent, meaning that households must believe that once they receive this transfer, the central bank will not later implement contractionary policies to reduce the higher inflation it created. This is similar to what Krugman described as a central bank being “*credibly [...] irresponsible*” (2011) by committing to creating higher inflation. If the transfers are credibly permanent, households will be more inclined to spend the extra income rather than save it in wait of a future form of taxation.

Two main issues stand out when considering the implementation of helicopter money in the euro area, (as also discussed for instance by Pisani-Ferry, 2019). The first regards the legality of this policy – would the ECB be acting within its mandate? Some could consider this policy to be monetary financing, which is illegal under the TFEU’s Article 123(1). However, the case may not be quite so straightforward. First, article 123(1) does not ban operations such as helicopter money, as long as it would not be done through “*Union institutions, bodies, offices or agencies, central governments, regional, local or other public authorities, other bodies governed by public law, or public undertakings of Member States*”. The ECB should thus find a way to circumvent fiscal authorities to interact directly with European citizens. Second, in order to fulfil the ECB’s primary mandate to maintain price stability, the Governing Council may define new instruments to achieve this mandate through a two-thirds majority vote – as enshrined in article 20 of the Protocol on the State of the European System of Central Banks and of the ECB. These two elements could give the ECB the sufficient freedom to implement some form of helicopter money which would not be considered monetary financing, such as direct transactions to all citizens of the euro area for instance¹⁰.

This brings us to the second issue, which is more operational – how can the ECB transfer a lump sum of money to every single person in the euro area, especially considering that some might not have bank accounts and that there are significant differences in income between euro-area countries? These issues of equity are of no small importance and would need to be addressed by the ECB when discussing this policy, even if helicopter money could actually be more equitable than QE, as the central bank would be directly supplying money to households instead of going through the channel of public and private sector security purchases which might affect different sections of the population differently.

More generally, while innovative solutions will be crucial to give the ECB more space to act, the merits of new tools need to be assessed against what constitutes a good macroeconomic policy mix. The benefits of ‘overextending’ monetary policy may be easy to match if fiscal policy were to contribute to managing the macroeconomic cycle.

¹⁰ In addition, if more clarity is needed on the exact actions prohibited from article 123, and thus on the legality of helicopter money, according to article 125(2) of the TFUE, the European Council may “*specify definitions for the application of the prohibitions referred to in Articles 123 and 124*”, on proposal from the Commission and after consulting the European Parliament.

5.6. CONCLUDING REMARKS

Though their effects are not yet fully understood, “low-for-long” interest rates are increasingly constraining the ECB’s monetary policy and may well present an unparalleled challenge when the next European recession hits. Given that interest rate cuts will probably be constrained by the lower bound, be it at the zero-percent threshold or lower, the ECB will have to find new ways to adjust its policy stance.

We have argued for several changes in its toolkit and its framework, which do not drastically depart from its current form but would give it more flexibility and leeway to approach future crises. First, the ECB should work on mitigating the potentially negative impacts of its NIRP, as these will be at the root of any contractionary effect this policy may have. Second, it should rethink its issuer limit on the APP, either by relaxing the issuer limit itself (at least for well-rated public debt securities) or by enlarging its list of eligible assets, to get more space to be able to continue its APP as much as possible. Third, it should change its framework to target inflation on average over a longer period of time and with a symmetric rather than a one-sided target of 2%. Fourth, to retain its credibility and ensure against a new liquidity crisis in the sovereign debt market, the ECB should also review the details of the OMT program so it is fully ready to be used if necessary. Finally, as was the case in the early 2010s, the ECB should look into new ways to conduct its monetary policy if its current toolkit is not sufficient to deal with the next recession.

The role of communication will continue to be pivotal in informing and guiding markets and broader audiences in forming their expectations. However, one important realization is that as the environment in which the ECB operates is highly uncertain, communication will become less about what will happen in the future and more about how to manage alternative outcomes in the future.

We believe that these changes will allow the ECB to manage some of the uncertainty it is facing and provide it with a credible strategy in the case of a new European recession.

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