Extending Quantitative Easing: Are There Additional Risks for Financial Stability?

Monetary Dialogue
February 2017

In-Depth Analysis
Extending quantitative easing: additional risks for financial stability?

Monetary Dialogue 6 February 2017

COMPILATION OF NOTES

Abstract

The notes in this compilation address the pros and cons associated with the extension of ECB quantitative easing programme of asset purchases. The notes have been requested by the Committee on Economic and Monetary Affairs as an input for the February 2017 session of the Monetary Dialogue.
This document was requested by the European Parliament's Committee on Economic and Monetary Affairs.

AUTHORS

Andrew HUGHES HALLETT (Department of Economics, Copenhagen Business School)
Salomon FIEDLER, Stefan KOOTHS, Ulrich STOLZENBURG (Kiel Institute for the World Economy)
Christophe BLOT, Jérôme CREEL, Paul HUBERT, Fabien LABONDANCE, Xavier RAGOT (OFCE, Observatoire Français des Conjonctures Économiques)

RESPONSIBLE ADMINISTRATOR

Dario PATERNOSTER

EDITORIAL ASSISTANT

Andreea STOIAN

LINGUISTIC VERSIONS

Original: EN

ABOUT THE EDITOR

Policy departments provide in-house and external expertise to support EP committees and other parliamentary bodies in shaping legislation and exercising democratic scrutiny over EU internal policies.

To contact the Policy Department or to subscribe to its newsletter please write to:
Policy Department A: Economic and Scientific Policy
European Parliament
B-1047 Brussels
E-mail: poldep-economy-science@europarl.europa.eu

Manuscript completed in February 2017
© European Union, 2017

This document is available on the internet at:

DISCLAIMER

The opinions expressed in this document are the sole responsibility of the authors and do not necessarily represent the official position of the European Parliament.

Reproduction and translation for non-commercial purposes are authorised, provided the source is acknowledged and the publisher is given prior notice and sent a copy.
CONTENTS

INTRODUCTION 4

1. EXTENDING QE: ADDITIONAL RISKS FOR FINANCIAL STABILITY? 7
   by Andrew HUGHES HALLETT

2. EXTENDING QE: ADDITIONAL RISKS FOR FINANCIAL STABILITY? 29
   by Salomon FIEDLER, Stefan KOOTHS, Ulrich STOLZENBURG

3. FINANCIAL STABILITY AND THE ECB 45
   by Christophe BLOT, Jérôme CREEL, Paul HUBERT, Fabien LABONDANCE, Xavier RAGOT
INTRODUCTION

Since March 2015, the ECB is engaged in an expanded asset purchase programme of private sector assets and sovereign bonds (so called quantitative easing or QE), which has been recently extended until December 2017, although at a slower pace. The aim of the programme is to ease monetary and financial conditions, making access to finance cheaper for firms and households. This tends to support investment and consumption and, ultimately, contributes to a return of inflation rates towards the ECB target.

Keeping short and long-term interest rates at very low levels for an extended period of time also helps to cushion the adverse effect of necessary balance sheet adjustment (deleveraging) stemming from the debt overhang. At the same time, maintaining this non-standard monetary policy may seed the roots for future financial fragilities once interest rates normalise.

An in-depth analysis of the pros and cons associated with the extension of ECB quantitative easing programme of asset purchases is provided in this compilation of notes. The papers prepared by the members of the Monetary Expert Panel have been requested by the Committee on Economic and Monetary Affairs as an input for the February 2017 session of the Monetary Dialogue. The main conclusions and policy options are summarised below.

According to Andrew Hughes Hallett (Copenhagen Business School) that quantitative easing (QE) carries the potential for creating financial instability is well understood. But whether a scaled down extension would create additional instability is more difficult to assess. The most popular concerns are the appearance of significant inflation, a lack of savings, asset price bubbles and volatility in the currency markets due to divergent monetary policies. This paper takes a wide view, covering both the possible instabilities in the financial markets and the instabilities that may be caused by imbalances or weak performance on the real side of the economy. The author finds that, while further instabilities remain a theoretical risk and danger, the risks appear small numerically with limited damage potential, relative to the need to consolidate recovery in the euro-area, because of countervailing movements in its constituent economies. This conclusion applies at the euro area level as a whole. The implication then is that concerns over emerging instabilities are often driven by the fact that they are unequally distributed: more severe in some places, but offset by their absence elsewhere. That is a matter for domestic policy, not QE.

According to Salomon Fiedler et al., (Kiel Institute for the World Economy) the time dimension is the crucial factor in assessing the riskiness of the most recent extension of the ECB’s quantitative easing (QE) programme. The 9-months extension as such is not a game changer in terms of financial stability, but it feeds into the accumulation of risks that evolve with the length of the extraordinary monetary policy stance in the euro area. While the nature of the risks can be demonstrated, they are extremely hard to quantify. Also, it is impossible to say within what time horizon they might materialize.

Allocative distortions escape the radar of macro-management. The ECB’s QE strategy aims at reducing capital market rates below the levels that would otherwise prevail to stimulate aggregate demand. The effectiveness of this macro-oriented approach is limited in a post-crisis environment. By contrast, the unintended distortive side-effects of artificially low interest rates grow with the passing of time. As the level of interest affects relative prices, the production structures tend to be skewed towards capital formation with longer durations. When interest rates normalize later, substantial parts of the production system may turn out to be unsustainable. A bank-based economy like the euro area is particularly prone to see its financial sector being destabilized as the discrepancies in the temporal
production structure stress the solvency of debtors in a systemic way. In an extreme case, another financial crisis could result.

Flatter yield curves trigger more aggressive maturity transformation. Maintaining the regime of extremely low interest rates challenges the business model of commercial banks. As their margins are squeezed from the revenue side, banks might engage in a more pronounced maturity transformation. In that situation, future rising interest rates will directly erode the value of their assets calling their solvency into question. If maturity transformation is done by investing firms, future rising interest rates will negatively affect their solvency which might also spill-over to the banking sector in the form of a rising share of non-performing loans. And indeed, data indicates that financial institutions in the euro area are increasing the duration of newly originated loans. The share of new loans with a maturity of ten or more years now is considerably higher than five years ago, both for mortgage loans and loans to non-financial corporations.

Cheap credit hampers the liquidation of uncompetitive firms. There is some empirical evidence that “zombification” is a problem in the euro area, a mechanism by which loose monetary policy can hinder the reallocation of capital towards its most productive use. If interest rates are very low, banks may be more inclined to extend further credit to legacy customers that are de-facto insolvent, especially if the bank itself is financially distressed and wants to avoid write-offs on non-performing loans. As a result, less productive firms stay in business, while potential new, more productive firms face considerable entry hurdles.

“Buying time” lets fiscal discipline and structural reform efforts wane. An extended period of low interest rates constitutes a prolonged window of opportunity for fiscal consolidation and structural reforms. However, the empirical evidence rather suggests that fiscal discipline became less ambitious as soon as the immediate threat of sovereign default vanished. Also, structural reform progress seems to have slowed down as soon as severe macroeconomic troubles appeared less pressing. As the willingness to implement reforms appears to be proportionate to economic troubles and refinancing restrictions, the introduction of QE in 2015 did certainly not induce Euro area countries to refocus on structural causes of the crisis; thus, an extension of QE seems to be unsuitable to trigger additional structural reform eagerness.

The paper by Christophe Blot et al., (Observatoire Français des Conjonctures Économiques) argues that the presence of asset price bubbles is not a major concern in the euro area so far. Besides, the change in the ECB balance sheet has not triggered an increase in the bubble indicator developed by the authors. However, it is suggested that the bubble indicator of the bond market reacts positively to unconventional monetary.

According to the authors, extending quantitative easing (QE) – at a lower monthly pace – is not expected to generate an overall bubble in the future. Keeping in mind that the bubble component of bonds’ prices has remained at a very low level, there may be some risks in the bond market. This is not a major concern for the pursuit of the QE but it might be for the phasing out of QE measures that should consequently be implemented very carefully.

As a matter of fact, the reversal in the ECB’s monetary stance might well have an impact on bonds’ prices in the future. To smooth that impact, the monetary stance needs to be incorporated in the information set of private agents so that it is finally reflected in the fundamental value of assets, rather than as a “surprise” of the bubble component. To achieve that, forward guidance applied to the end of QE will be central. It shall consist in clear and forward communication on a gradual exit from QE after 2017. As it has been shown that the measures taken by the ECB have contributed to increase bond prices, the phasing out of QE programmes would reduce bond prices and therefore push up sovereign
yields. It is then of crucial importance that once the QE programme is over, the ECB does not try to reduce the size of its balance sheet too rapidly by selling bonds. Considering that the ECB is aware of the risks, it may act cautiously and follow a strategy close to the one implemented by the Federal Reserve, which consists in maintaining its policy of reinvesting principal payments from its holdings of securities (agency debt, Treasury debt and asset-backed securities).
Extending quantitative easing: additional risks for financial stability?

Andrew HUGHES HALLETT

IN-DEPTH ANALYSIS

Abstract
That quantitative easing (QE) carries the potential for creating financial instability is well understood. But whether a scaled down extension would create additional instability is more difficult to assess. The most popular concerns are the appearance of significant inflation, a lack of savings, asset price bubbles and volatility in the currency markets due to divergent monetary policies. This paper takes a wide view, covering both the possible instabilities in the financial markets and the instabilities that may be caused by imbalances or weak performance on the real side of the economy. We find that, while further instabilities remain a theoretical risk and danger, the risks appear small numerically with limited damage potential, relative to the need to consolidate recovery in the euro-area, because of countervailing movements in its constituent economies. This conclusion applies at the euro area level as a whole. The implication then is that concerns over emerging instabilities are often driven by the fact that they are unequally distributed: more severe in some places, but offset by their absence elsewhere. That is a matter for domestic policy, not QE.
# CONTENTS

**EXECUTIVE SUMMARY**

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. LARGE-SCALE ASSET PURCHASE POLICIES: A RESTATEMENT</td>
<td>10</td>
</tr>
<tr>
<td>2. HOW EFFECTIVE IS QUANTITATIVE EASING AS A POLICY? A ROUND UP OF THE EVIDENCE</td>
<td>11</td>
</tr>
<tr>
<td>2.1 Quantitative easing by large-scale asset purchases</td>
<td>11</td>
</tr>
<tr>
<td>2.2 Impacts in the US and UK</td>
<td>11</td>
</tr>
<tr>
<td>2.3 Lessons learned from QE in the US</td>
<td>12</td>
</tr>
<tr>
<td>2.4 Impacts of QE in the euro area</td>
<td>13</td>
</tr>
<tr>
<td>3. RISKS TO ECONOMIC PERFORMANCE</td>
<td>14</td>
</tr>
<tr>
<td>3.1 Threats to economic performance</td>
<td>14</td>
</tr>
<tr>
<td>3.2 Excess liquidity and inflation risk</td>
<td>14</td>
</tr>
<tr>
<td>3.3 Threats to financial stability</td>
<td>15</td>
</tr>
<tr>
<td>3.4 Asset bubbles</td>
<td>16</td>
</tr>
<tr>
<td>4. TRANSMISSION FAILURES AND GLOBAL CYCLES</td>
<td>17</td>
</tr>
<tr>
<td>4.1 Why transmission mechanisms fail</td>
<td>17</td>
</tr>
<tr>
<td>4.2 What can be done to repair damaged policy transmissions?</td>
<td>18</td>
</tr>
<tr>
<td>4.3 Global cycles</td>
<td>18</td>
</tr>
<tr>
<td>5. WEALTH INEQUALITIES AND REDUCED SAVINGS</td>
<td>20</td>
</tr>
<tr>
<td>5.1 Savings</td>
<td>20</td>
</tr>
<tr>
<td>5.2 Intergenerational inequality and pensions</td>
<td>21</td>
</tr>
<tr>
<td>6. COORDINATION FAILURES</td>
<td>22</td>
</tr>
<tr>
<td>7. FINANCIAL INSTABILITY IN THE CURRENCY MARKETS?</td>
<td>24</td>
</tr>
<tr>
<td>8. CONCLUSIONS</td>
<td>25</td>
</tr>
<tr>
<td>REFERENCES</td>
<td>26</td>
</tr>
</tbody>
</table>
EXECUTIVE SUMMARY

Quantitative easing (QE) by Central Banks is a form of monetary policy in which market interest rates are reduced differentially at different maturities – lowering them at the maturities that affect investment and household consumption decisions. It is designed to stimulate spending by increasing liquidity, pushing up asset prices, producing wealth effects, lowering borrowing costs, and hence stimulating aggregate demand.

The experience of those who have tried quantitative easing in practice (the US Federal Reserve, Bank of England, Bank of Japan, ECB) is fairly uniform: small but significant increases in GDP of ¼%-½% each year; and 10-year interest rates lower by ¼%-⅜%. The impact on prices or inflation has been negligible (<0.1%) in each case.

Quantitative easing in Europe had been weaker at the start: output growth at ¼% on average and inflation at -0.05% from early 2015 to mid-2016. But since then output growth has advanced to 1.5%, unemployment has fallen, and inflation has increased to 1.1% on the back of a 25% depreciation of the Euro.

Risks to financial instability from extending the current QE programme can be analysed under different headings:

i) Threats from poor economic performance and QE fatigue
ii) Inflation, excess liquidity and threats to financial stability
iii) Transmission failures and global cycle effects
iv) Side effects: redistribution and increasing inequalities
v) Increasing coordination failures

Public debate is most concerned about financial consequences in the form of inflation, a lack of savings and the possibility of asset price bubbles. However, they seem relatively unlikely to appear on any scale given the deleveraging, increased financial regulation, popular risk aversion now present – although inflation will remain a risk in the absence of a credible exit strategy.

The weakening of QE effects over time (QE fatigue) is a common feature due to the diminishing quality of assets and decreased scope for QE around the zero interest rate lower bound. The stabilising financial effects of better liquidity provision remain.

Threats to financial stability nevertheless come from institutional investors (pension funds and insurance companies) adopting increasingly risky investment strategies to increase the yields needed to finance long-term liabilities. This risk is driven by the extension of QE: by the duration of the QE operations, rather than by QE per se.

There are also likely to be increases in non-performing loans, currency instability and larger trade imbalances with trade and investment partners as the euro area continues to diverge from its partners in monetary policy.

A more serious difficulty is a breakdown in transmission between increased liquidity or cheap credit and loans, investment and spending. This is caused by debt deleveraging, superimposed austerity, and risk aversion, poor incentives in a weak recovery, non-performing loans and tighter bank regulation.

QE policies also have strong redistribution and inequality effects. The risk here is that, together with the extra liquidity that QE provides, these effects may lead to asset price bubbles and financial instability. However, with scaling down the extension of QE and deleveraging past debt, the chances of that are relatively limited.
1. LARGE-SCALE ASSET PURCHASE POLICIES: A RESTATEMENT

Quantitative easing (QE) policies are based on the idea that central banks can stimulate an economy, even when conventional monetary policy has become ineffective, by intervening to change long-term market rates. In short, monetary policies can still lower market rates directly by purchasing large-scale asset at long maturities; or by purchasing corporate bonds; or by direct loans to businesses and firms to lower their borrowing costs.

QE therefore aims to stimulate spending by increasing broad money holdings, pushing up asset prices, creating wealth, and lowering borrowing costs to stimulate spending. This portfolio rebalancing process, triggered by the ECB’s asset purchases, lowers the spread of long-term interest rates over short-term policy rates and the returns on risky assets over risk-free assets. Portfolio rebalancing is the main mechanism that gives QE policies their power. But there are others: the signalling channel (a commitment to keep future policy rates low); the liquidity-credit channel (the translation of extra liquidity into new credit and loans); and the exchange rate channel (depreciations of the exchange rate to boost export demand). Since these additional channels operate in parallel to portfolio re-balancing, they produce different combinations of impacts around the main thrust of QE.

Yet quantitative easing may not be sufficient to spark a recovery in output or prices after a recession. Lower interest rates at the maturities that would normally persuade businesses to invest, or consumers to buy durable goods, does not guarantee they will want to invest or consume. Faced with declining incomes and/or high levels of debt, if they are risk averse they may prefer to conserve what resources they have to pay off past debts. The pass-through/transmission from cheap credit to borrowing and new spending is impaired by this reluctance. Similarly, banks will not wish to lend if they fear more non-performing loans, or tighter regulatory constraints on lending, or austerity policies that limit income growth. Similarly, consumers will prefer to save rather than spend if there are significant risks that incomes will fall or unemployment rise because the economy fails to recover.

In other words, to revive investment or consumption, businesses and consumers have to believe in the prospect of rising incomes, rising profits and higher prices, alongside available credit, low borrowing costs and sufficient liquidity, before they will invest or consume their way out of recession and into recovery. Thus unimpaired transmission channels lie at the heart of QE, and transmission failures are the principle risk posed by the extended use of QE policies. Correspondingly, excess unused liquidity increases the risk of inflation, asset price bubbles, nonperforming loans and risky investment behaviour by firms.
2. HOW EFFECTIVE IS QUANTITATIVE EASING AS A POLICY? A ROUND UP OF THE EVIDENCE

We have seen several asset purchase programmes in recent years, principally in the US (to 2014), UK (to 2014), Japan (restarted in 2013), and in the euro area (since 2015). Any assessment of how effective or successful these programmes have been must include an analysis of their impact on the targets of economic policy. Since the ECB’s programme has been in operation only 24 months, the full impact is not yet clear. But general lessons and likely impacts can be inferred from results elsewhere.

2.1 Quantitative easing by large-scale asset purchases

The basis of unconventional monetary policies is that financial markets are neither perfect nor complete. Therefore, arbitrage tends to work imperfectly, depending on expected future interest rates as well as on the preference for short-term over long-term assets.

In such circumstances, monetary authorities can purchase sufficient quantities of longer dated Treasury securities, or mortgage-backed securities, or corporate bonds to raise bond prices and lower interest rates at that maturity. These effects then extend to other longer-term assets as investors who just sold securities to the central bank, invest in substitutes that are closer to the asset just sold than cash in order to maintain their preferred portfolio balance. This adds further downward pressure on interest rates along the yield curve or in neighbouring markets. Using this portfolio balance or “ripple” effect, the central bank is able to influence the spread of long-term interest rates over policy rates (term premium) and the return on risky assets over risk-free assets (risk premium). It can therefore steer the interest rates most relevant to consumption and investment spending.

2.2 Impacts in the US and UK

The policy process described above is an example of the QE implemented by the US and UK after the financial crisis. Available data confirm the impact of this policy channel. In the US, before QE, there was an average excess term premium of almost 200 basis points for securities with a 10 year over a 9-year term. This premium then dropped by 75 basis points as a consequence of QE. In the UK, QE reduced the spread of corporate bonds over gilts by between 2000 (for high yield bonds) and 200 basis points (for investment-grade, non-financial bonds), and reduced the yield on 10-year gilts from 5% to 2% (Miles, 2012). The ripple effect on nearby markets and other maturities was quite strong.

How much did those changes translate into gains in output and employment, or increases in inflation? A range of estimates for the US, reported in Williams (2011), suggest that these QE policies reduced interest rates by between 0.15% and 0.3% points in this period – which corresponds to having increased GDP by similar amounts each year. That is valuable, but not large. There was no perceptible impact on inflation, or inflation expectations, before the programme ended.

In the UK, QE is estimated to have added 3% to the level of GDP over the 6 years since 2009 compared to what would have happened otherwise, with negligible effects on inflation [0.1% or less]. Thus real output was higher by ½% on average each year; equivalent to an extra 0.4% on the growth rate. However, unemployment typically follows output with a one to two year delay. Hence, QE operations have taken two years or more to achieve their full effect on the economy.


2 The results for output (but not inflation) were less favourable in Japan where circumstances were different. QE has also been effective in other countries by stabilising the financial sector, making credit and borrowing conditions more reliable.
2.3 Lessons learned from QE in the US

The Federal Reserve in the US has conducted three rounds of QE. The first ("QE1") lasted from 2008 to 2010 and involved asset purchases of $2.1tn; the second ("QE2", from 2010-12) added a further $2.05tn assets initially at the rate of $30bn a month; and the third ("QE3", 2012-14) bought assets at $85bn a month before being tapered to $65bn, then $50bn a month, and terminated in late 2014.

In total, the three QE programmes amounted to $4.5tn or 25% of GDP. This is large. But in proportion to output, it is the same as in the UK; but larger than the current programme for the euro area, which at €80bn per month to 2016 amounts to 16% of euro-area GDP.

2.3.1 Financial effects, the risk of QE fatigue:

Early estimates suggested that QE had been able to reduce long-term market interest rates by 30 to 100 basis points, depending on the type of security (Gagnon et al., 2011). Subsequent studies of QE1 and QE2 found similar results (Williams 2011), as did the corresponding studies undertaken for the UK. But later studies from the QE2-QE3 era (Chen et al., 2012, for example) reduced these interest rate reductions to 30-40 basis points, or 4-9 basis points per $100bn of assets purchased.

There are several explanations for this risk. First and most important, there may have been “QE fatigue” as the supply of good quality assets available for purchase began to fall. There have been clear instances of that: the Bank of England failed to meet its purchases target in 2016, and the ECB was mooted to have failed to fill its quota for certain national bonds and had to buy German bonds instead. Second, repeated applications of QE inevitably create expectations of inflation, which undermine the downward pressure on interest rates further along the yield curve. Third, adherence to the zero lower bound means that interest rate reductions, per unit of QE, will be smaller the lower are market interest rates at the start of policy. Any one of these factors would lead to declining impacts as QE progresses.

A second risk is that QE will impact other variables – most importantly risk premia, as opposed to term premia. To the extent that QE reduces the risk premia in corporate bonds, or in bank borrowing, or on bank loans, it will have an impact on the cost of borrowing and the progress of the economy – over and above what can be achieved by manipulating market-wide interest rates. Many think that this is the major advantage of QE (Gagnon et al., 2011) and that QE operations should be matched to the specific interest rates you wish to reduce (LeRoy and Lucotte, 2016).

This point follows from the pattern of liquidity provision, and QE’s ability to stabilise fragile, dysfunctional financial markets. But it also raises the question: which assets should the ECB buy? Evidently it should buy beyond government bonds and include corporate bonds and those of the distressed governments if it wishes to have the maximum effect in lowering commercial borrowing costs, in particular real interest rates in regions or sectors where risk premia or deflation are strongest. But it should focus on a spread of bonds if the priority is to revive a deflating euro area economy as a whole.

A third risk is that, by reducing market interest rates, QE will cause an economy’s exchange rate to depreciate. On one hand, this is useful as it will boost net exports (so long as other economies do not use QE at the same time) and add to the recovery. On the other hand, it is unhelpful because it may induce a capital outflow which will lower asset prices and raise interest rates again. These two effects will tend to offset each other, reducing QE’s overall impact.
2.3.2 Macroeconomic effects:

Early estimates of the output and price effects of QE operations in the US were optimistic: the drop in long-term interest rates of ½% point in QE1 was thought to raise GDP by 3% in the short run, and prices by 1%, all else equal. Later estimates from the QE2 period reduced those figures to GDP increases of 0.4%-0.5% a year over 5 years with a minimal upward impact on prices (Chen et al 2012), driven by a smaller fall in interest rates (about 0.2% points) spread over a longer period. These results emphasize the value of maintaining continuity and credibility in QE.

These results are in line with those found in other OECD economies. In fact, longer periods of commitment to low interest rates seem to increase the gains in GDP sharply; but at the cost of extra inflation. That introduces a trade-off and a need for careful timing. Signaling policy intent (forward guidance), along with a clear plan for an exit strategy, appears to be crucial for lowering the risk of unsuccessful QE policies.

2.4 Impacts of QE in the euro area

How do the results in the euro area match up with those in the US and UK? The ECB’s asset purchasing programme appears to have had a limited impact on the euro-area economy, with output growth averaging at 0.3% and inflation -0.05% from 2014 through 2015. This may be because the programme is smaller (just 70% of the US and UK programmes); or because long interest rates fell by less (½% on average), having started from a lower level.

By 2016 however, the outcomes were larger. Output growth reached 1.5%, unemployment was lower (10.5%) and the trade surplus rose to 2% of GDP on the back of a 25% fall in the Euro. But whether these results are due to QE is moot; more likely they are driven by the exchange rate depreciations set in motion by QE. That may also be the explanation for the uptick in inflation: from 0.2% in 2015, to 0.5%-1.1% in 2016, and projected rates of 1.5-1.7% for 2017 to 2019. All these figures fall well short of the ECB’s 2% inflation target.

That said, a few comments can be made on the risk that further QE will have a relatively limited impact on the real economy. The first is that monetary policy has had to act alone; it has not been able to take advantage of fiscal expansions at the same time or exploit lower borrowing costs directly or refinance past debt. Only Italy seems have done that systematically, to be rewarded with small gains in relative performance. This suggests QE programmes will be more effective when conducted together with other policies (section 6).

Second, low levels of private sector lending seem to have been a problem everywhere. In surveys, 85% of the banks report that QE programmes have had no effect on lending. That suggests difficulties with the transmissions between liquidity provision and credit uptake. Investment spending is still below its 2008 peak; real interest rates remain high; and many small businesses and consumers still prefer to pay down debt.

Third, also important, non-performing loans have increased and now average 9% of GDP, and reach 20% in some places, which makes the banks reluctant to lend.

Each of these factors represents a risk that progressively reduces the effectiveness of the ECB’s quantitative easing policies over time.
3. RISKS TO ECONOMIC PERFORMANCE

There are a number of general risks in any QE programme that will apply to the ECB’s extension. The remaining sections of this paper list and assess them under five headings:

- Threats from poor economic performance and QE fatigue
- Inflation, excess liquidity and threats to financial stability
- Transmission failures and global cycle effects
- Side effects: redistribution and increasing inequalities
- Increasing coordination failures

3.1 Threats to economic performance

The most obvious risk in extending the ECB’s QE programme is that its impact on economic performance may fall short of popular expectations, and of what has been experienced in the recent past. Section 2.4 has made it clear that the improvements in output growth and jobs, per unit of assets purchased, have been rather modest and not enough in themselves to create a significant recovery. Part of the reason for this must be the relatively small size of the programme (as a proportion of GDP) compared to what has been achieved by more successful programmes elsewhere. And with the reduction in the size of the programme from €80bn to €60bn assets purchased per month, this sense of not having achieved very much for large expansions in the ECB’s balance sheet can only get deeper. That in turn could lead to disagreement over the trade-off between the risk of creating increases in inflation or inflation expectations for small gains in output and employment. Indeed it may have already done so.

Put differently, the risk here is that QE turns out to be more effective in preventing a bad situation from getting worse than it is in generating a substantive recovery. As a result the ECB’s extension to its QE programme could be mistimed. Applying QE asset purchases to an already recovering EU economy would be at best wasted, but inflationary at worst.

That said, the more serious risk is that QE fatigue will actually reduce the gains in economic performance, per unit of assets bought or per unit of extra inflation created. This would risk extending the disagreements over the direction of policy and ultimately undermine the credibility of the QE programme as a whole – which depends on expectations of success to trigger demand for new loans, investment and spending. This is not to say that extensions to the QE programme were misguided, only that the risk of creating diminished economic outcomes will reduce the probability of success.

3.2 Excess liquidity and inflation risk

The case that QE asset purchases increase money holdings and will therefore ultimately increase inflation or inflation expectations is well taken – especially as there is no publically articulated exit strategy.

A carefully formulated, tested and announced exit strategy is the standard way to deflect this tendency to create inflation since it signals that the increased monetary aggregates are temporary and will soon be reversed. In its absence, it is remarkable that so little inflation emerged in the US, UK, Japanese or ECB QE programmes – except perhaps in the euro area where inflation reached 1.1% by the end of 2016. However three points about that increase: i) it still falls short of the 2% euro-wide target (the mandated ECB target); ii) it is unclear if this inflation was the result of QE per se, more likely it was caused by the Euro depreciation during 2016 and/or loose, excess wage bargains in Germany compared to other euro-area economies; iii) this extra inflation is distributed very unevenly, 0.8% in the average euro-area economy, but 1.7% in Germany. Hence a more nuanced view is that this new inflation
is a German, not a euro-area-wide problem; and is likely to be a temporary artefact due to Euro depreciation, not QE per se. It will also be short lived because if energy and food price movements are stripped out, the euro-area inflation rate increased very little (0.1%) over the same period. Core inflation remains subdued and not much influenced by QE. Hence the risk of inflation is projected to remain small, although a theoretical possibility. The real risk here, if there is one, is the absence of an explicit exit strategy to demonstrate how the expanded liquidity/money aggregates will be eliminated.

3.3 Threats to financial stability

The conventional argument is that an important benefit of QE, and the ECB’s extension, is increased financial stability. This matters because financially weak banks and financial institutions still operate in the euro-area economies. QE’s liquidity injections provide financial support and stabilise stressed banking systems and financial markets economy-wide.

But there are also risks. A clear downside is that long term investors, in particular pension funds and insurance firms, will typically make riskier investments in a search for higher yields to match their long term liabilities. Lower quality investments carry the potential to destabilise the financial system again.

Reasons why financial instability could increase:

a) A reduced default rate among firms means less creative destruction as QE eases the depression, leaving a trail of unreformed “zombie” firms and nonperforming loans. If the recovery is slow to arrive the financing of the zombie firms may collapse or be withdrawn, a risk to future stability. Similarly, structural reforms are likely to be postponed.

b) If non-performing loans rise to a significant proportion of banks’ loan book, the banks will be reluctant to make new loans, causing losses (if not a breakdown) in the transmission from extra liquidity to new loans and spending, and hence losses in outcomes (section 4)

c) Mortgage and other lending decline because the central bank takes so many bonds out of the market that banks and/or firms cannot retain enough high quality bonds to act as collateral for their loans. This is important because it will damage investment spending, in particular that which embodies new technology, low costs, or promotes productivity growth.

d) Investors, specifically insurance or pension companies, enter into riskier investments in search of higher returns to fund their long term liabilities, QE having lowered the yields on safe investments. Likewise, speculation on higher asset prices creates a serious risk of an asset bubble (especially in housing³). Prudential regulation and higher capital ratios are needed to counter that effect.

e) QE may rescue average or stronger regions and sectors where there are high yields or greater security, leaving the weaker with financial insecurity, stagnation or collapse. The risk here is that risk premia and interest rate spreads do not reduce with the result that extending QE becomes ineffective if not destabilising.

f) There is a risk that the central bank will run out of quality bonds to buy to force interest rates down. This happened at the Bank of England in 2016, when it could not fulfil its quota and had to offer excessively high prices to buy the bonds it did get. The ECB is thought to face a similar problem, but argues that this is no longer the case. A drying up in the supply of bonds also risks creating a price bubble in the asset concerned or near substitutes, and in the financial markets if there is a bust in supposedly safe assets.

³ Feldstein, 2016.
The risk of default on an asset held by the central bank creates a possible loss on the ECB’s balance sheet, instead of on the balance sheet of an already indebted government. Two points here:

i. The changes to income flows wash out: the interest payments made to the ECB would cease, but the extra profits paid to national governments by the ECB also cease.

ii. The write down of the ECB’s assets need have no implications for taxpayers since central banks do not have to maintain capital/asset ratios to function. Even if the ECB felt the need to repair its capital base, it can ask shareholder governments for extra capital to be supplied in the form of bonds – in effect replacing QE assets with new interest payments. No implications for taxpayers. The real risk here is different. If the defaulted bond is not replaced, there will be no bond to sell back into the market in the exit strategy. Realising this, private agents will expect additional inflation in the future.

Notice the risks highlighted in this section are all long term, rather than short term, risks.

3.4 Asset bubbles

The possibility of asset price bubbles is the form of financial instability that causes greatest concern in popular discussion. Rather like inflation, the provision of ample liquidity, easy or cheap credit, very low borrowing costs (interest rates) and easy opportunities to leverage a financial position certainly pose a risk that asset bubbles could be the outcome of extending the current QE programme. But the current programme has been in place for some time already and, like inflation, asset bubbles have shown little sign of emerging at the euro area level. There are some regions and some sectors where asset bubbles may emerge (certain regions of the German housing market for example), but the ECB policies must be directed at the euro-area average rather than particular cases. In that sense asset bubbles are a possible but unlikely risk to financial stability. The main reason for that view is that, if the grounds for risk aversion, or preferences/need to deleverage prevail, or banking regulations tighten, see section 4.1 below, there will be no appetite for large asset positions. It would be too risky, and a well-articulated exit strategy would underline those risks.
4. TRANSMISSION FAILURES AND GLOBAL CYCLES

Asset purchases, liquidity provision and low borrowing costs may not be sufficient to spark a recovery in output or prices in bad times or when a recovery is needed. Lower interest rates at maturities that would normally persuade businesses to invest, or consumers to buy durables, do not guarantee they will be used. Faced with declining incomes and high levels of debt, people firms may prefer, and have in practice preferred, to save and pay off past debts as protection against future recessions. The pass-through (transmission mechanism) from cheap credit to actual borrowing and new spending is held back by this reluctance. This is to be expected. Why would a business invest if the prospect of being able to profit from rising incomes appears remote? Or if there are significant insolvency risks from past debt obligations if earnings growth were to slow up? Similarly, consumers will prefer to save than spend if they think incomes would fall or jobs be lost should the economy fail to recover – the more so, the more they are indebted.

4.1 Why transmission mechanisms fail

Risk aversion: Experience in recent asset purchase programmes has been that businesses and consumers have been reluctant to invest or spend on the scale needed to trigger a firm recovery, despite the extra liquidity, partly because of the risk of continued stagnation and soft prices, and partly because banks fear increasing non-performing loans in an extended recession – especially in periods when bank credit is tightly regulated.

In the euro area, this has happened because businesses, consumers and banks have paid off past debt at a time when no other stimulus measures were available to counteract this deleveraging. That would explain a good part of why transmission mechanisms appear to have weakened or failed in the euro area economies. Second, to make things worse, the ECB has faced the difficulty of austerity policies imposed on top of this deleveraging process. Third, rising interest rates in the US are signals of the recovery to come. But low rates in the euro area signal low expectations for recovery, implying a damaged policy transmission from cheap credit to higher spending.

Incomplete pass-through: Of greater concern is the impact of changes in pass-through. The impact of any policy change comes in two parts: first, the change in market rates that comes from a unit change in the policy rate (the pass-through); second, the change in the economic variables that we want to influence per unit change in market rates (the transmission). It appears both have fallen in the EU since the financial crisis. Before 2007, each 1% change in the policy rate was matched by a 1% change in market rates. But since then, market rates have changed by much less each time. This will happen if investors prefer to invest their funds in equities, meaning banks have to offer higher interest rates to retain funds to lend. So market rates fall by less than the policy rate when the latter is reduced. Or because investors or firms prefer to hoard their excess funds rather than deposit them in banks whose financial health they distrust, or do so to avoid low or negative interest rates. Again, the link to market rates is broken.

The break in transmission mechanism is more easily illustrated by the difficulty of getting the banks to lend on funds deposited with them in bad times. This may be risk aversion: the banks regard their clients as too risky, either individually or generally because the economy is contracting. Or it may be because firms and consumers are paying off their debts or downsizing in a contracting economy; or because investors prefer to hoard their cash or put it into equities for a higher return rather than deposit them in a risky bank; or because the banks prefer not to lend or risk new nonperforming loans. However it happens, the target variables are not boosted as they should be.
4.2 What can be done to repair damaged policy transmissions?

**Negative interest rates:** Negative interest rates are not usually a part of unconventional monetary policy, but they are the logical extension – especially when the need to repair ineffective transmission mechanisms becomes a central issue.

Negative interest rates come into play for one of two reasons: i) to deter capital inflows, exchange rate appreciations or a loss of competitiveness; ii) to expand expansionary monetary policies, to generate a recovery or avoid deflation. We are not concerned with the first case, but the second creates big risks for banks, depositors and policymakers, and hence for the economy as a whole, which are discussed in Hughes Hallett (2016c).

**Term funding at the Central Bank:** These schemes are a form of credit easing, but with the added twist that the banks are given a direct financial incentive to lend on the extra liquidity they receive. In short, the accent is on persuading the banks to lend on the cheap credit rather than using those funds to pay down past debt or underpin financial stability.

The Bank of England introduced its “funds for lending” scheme in 2012-15, and effectively reintroduced it as term funding in 2016. Here banks borrow directly from the central bank, either in Treasury Bills or direct loans, at below market rates. Credit based on these loans can then be lent on to the private sector at market rates, with the margin retained by the lender so long as lenders can demonstrate this extra credit has been used for additional spending. If they cannot, the banks are charged a penal interest rate for the original loan, rendering the whole transaction unprofitable. This option seems to have been successful in both episodes, which would offset many of the risks inherent in extending QE.

**Helicopter money:** Helicopter money is defined as money created by the central bank, but distributed as cash or liquidity to banks, firms or households directly; or as loans or in payment for some service – as if scattered from a helicopter. This approach is an extreme form of “funds for lending”, but without the penalty clause if the new money is not lent on. Hence it would suffer the same drawbacks as QE: there is no certainty that firms or households would want to borrow the new money to invest or spend, or that the banks would risk making the new loans. It does not get round the transmission problem.

4.3 Global cycles

Some recent papers focus on the reason why financial and trade integration reduces an economy’s ability to control inflation or reverse deflationary pressures (Rey 2013, 2015). The argument here is that financial integration world-wide means that assets of all kinds, risky and otherwise, have developed common components in prices or yields. Given free capital flows, that means that credit flows in different economies show similar pro-cyclical patterns and volatilities. This can be seen in the data (Rey 2013). As a result there are strong global cycles which lead to excess credit growth in boom periods and credit collapse in bad times, moderated perhaps by that country’s cyclical position relative to the global cycle but unaffected by the exchange rate regime in place. This tendency will be strengthened if national cycles become more synchronised through the globalisation of trade and finance. The implication is that world financial cycles will constrain domestic monetary policies, increasing the risk that the outcomes of the extended QE programme will fall short of expectations and the risk that inflation and financial instability will reappear in the recovery.

We can deal with this problem in a number of ways: targeted capital controls; policies undertaken to restrain the drivers of the world financial cycle (this would require explicit coordination between the major economies); macro-prudential policies to restrain cyclical increases of credit and leverage in recipient economies; domestic policies to weaken the transmission of excess credit/leverage using financial regulation or to weaken the transmission of world financial cycle by slowing down the monetary transition mechanism.
If we ignore the first as inconsistent with financial integration, and the second as unrealistic, the remaining three options are all possible. The third is already part of the Basel III banking regulations. The fourth is implied by the new supervision and financial regulation arrangements in the euro area policy framework. The last is discussed in Hughes Hallett (2015).

The novel feature about this approach is that it deals with inflation in financially integrated markets by attacking the root cause of inflation or deflation directly by regulating the credit markets, rather than by using market forces to create space for new monetary policies.
5. WEALTH INEQUALITIES AND REDUCED SAVINGS

Any extension of QE can be expected to change the distribution of income and wealth – generally, but not always, in the direction of the owners of capital, houses and financial assets; but away from employees, savers and pensioners. However, since the current QE extension is smaller than its predecessors, any new changes will be smaller than those already in place. The dangers of excess liquidity, inflation or asset bubbles will be winding down.

To an extent, spending from these wealth effects can mitigate the underlying deterioration in income or employment. In other words it matters what the recipients do with their gains. However, it is important to be careful of the comparisons being made. Compared to history, low interest rates and abundant liquidity will benefit investors, banks, firms, mortgage holders more than savers, employees, or pensioners. But compared to what would happen without a QE extension, most people would be better off: unemployment would be higher, more firms would close and growth would be lower in its absence. That would damage employees, savers and pensioners even more.

That said, the level of savings depends on the ECB’s short run policy rate (not part of QE) and available estimates show that asset purchases have pushed the prices of equities and similar assets up by as much as bond prices. This implies the ripple effect is strong and that most of the impact of QE on consumption and saving comes through wealth effects.

5.1 Savings

The two big influences on savings and consumption spending have been the loss of jobs (reduced earnings) and expectations of inflation. In practice QE has limited both – meaning that savings deposits are healthier and more secure than they would have been otherwise. Beyond that, lower interest rates reduce both interest income, and interest payments on mortgages and on personal or small business loans. Since most savings deposits are at short-term rates, but QE operates at long rates, the net effect is that income gains from saving under QE are small but positive, meaning households gain a little in income – but have little incentive to save except as a precautionary measure. This is confirmed by Bank of England (2012, Table 1). Nevertheless that would be preferable to even lower savings without the QE extension because earnings and growth would be lower.

More important are the direct effects. Rising asset prices (falling interest payments) will boost dividend payments and reduce defaults/bankruptcies. So the larger is the share of assets in household or corporate portfolios, the greater the gains from QE and the greater the boost to the economy from increased consumption or investment. However in individual cases it depends if the individual is a net asset holder (those later in the life cycle) or a net liability holder (those early in the life cycle). So even if QE brings gains for the economy as a whole, there will be rising intergenerational transfers and inequalities behind the scenes.

These transfers and shifts in wealth inequality may be large numerically, dwarfing the small savings rate effect. For the UK, the gains in net wealth from QE are estimated to have been 13 times larger for the rich than the poor; and 26 times larger for the older generation than the younger generation (Hughes Hallett, 2016b).
5.2 Intergenerational inequality and pensions

The likely impact of the ECB’s QE extension on wealth is comparatively easy to understand, at least conceptually. But analysing the effects on pensions or taxation is more difficult.

There are two types of funded pension schemes: defined benefit (the payout is defined by final salary and length of service) and defined contributions (the payout is defined by the market value of the contributions made during employment). Both may place a lump sum in a fund on retirement whose value is not much affected by QE since higher asset prices at the moment of buying imply a bigger fund but a lower net present value of the yields to be paid out later. These effects net out.

**Defined benefit pensions:** Assume the scheme is fully funded. When QE starts, the value of the fund’s assets will increase. But so will the net present value of the liabilities needed to pay future pensions since the yields on those assets will have gone down. Since the fund holds assets that remain not bought by QE (paying pre-QE yields) while arbitrage means asset prices will rise for all asset classes, the value of the assets will rise more than the fund’s liabilities. The fund will move into temporary surplus but once the historical assets mature, the fund returns to balance. In the long term QE has no effect. However, in the short term there is a potential redistribution of wealth to current pensioners at the expense of future pensioners. The pension firms may also buy riskier assets to increase their yields, shifting the risks onto future pensioners.

**Defined contribution pensions:** Here the story is the same on the asset side. But there is no obligation to pay specific sums out, the future payouts being the market value of the fund at that point. If asset values rise with QE, then the market value of the fund goes up, but the yield on existing investments goes down. Those two factors net out in efficient markets. Since QE increases the efficiency of the bond markets, Steeley (2015), the value of the fund should be unaffected.

**Risk to taxpayers:** We can get an idea of the impacts of QE on taxpayers and investors, and on the costs of operating government, from a paper by Steeley (2015). Steeley finds that, initially, there is asset mispricing, thus excess profits and transfers to investors. This implies an increased burden on taxpayers who have to foot the bill. But, over time, these *pricing inefficiencies are competed away and potential excess profits fall below the cost of trading* and vanish. Trading costs are also reduced by increased competition in a larger and more liquid market for asset trades. Consequently, whereas initially there was a transfer to investors from taxpayers; later on, as bond markets become more efficient, there is a transfer back from investors to taxpayers because opportunities for excess profits were removed and because more efficient pricing leads to lower trading costs.

The bottom line is that, by expanding the size of the market for asset trades, QE increases competitive pressure in the asset markets, lowers trading costs, reduces mispricing, and lowers the cost of government (in addition to reducing debt servicing costs).

---

4 This summary is taken from Hughes Hallett (2015); Miles (2012), Bank of England (2012), and Steeley (2015).
6. COORDINATION FAILURES

If transmission mechanisms are weak or ineffective, there is a case for strengthening them by coordinating with other expansionary policies to offset the effects of deleveraging, inflation, tighter bank regulation and the risk of financial instability. Structural reform aside, which is a long term proposition and designed to make the recovery self-sustaining rather than trigger a recovery, the natural partner is expansionary fiscal policy. Fazi (2015), for example, argues that the inability to take advantage of a coordinated package of fiscal and asset purchases is the main reason why the ECB’s QE programme has only had a limited impact. It is the combination of the two which is important in this context.

There are many reasons why fiscal policy has not been used, extended deficits and the debt crisis being principle among them. But these constraints do not affect all countries. It is fairly easy to create a coordinated package of fiscal policies on a national basis with GDP-linked bonds to support the asset purchase programme, without Eurobonds or inter-country loans being imposed at an EU-wide level to direct the spending to where it is needed.

The key point here is that even countries with large fiscal imbalances could contribute to a supporting fiscal expansion by exploiting the fall in borrowing rates that QE has made possible. Refinancing debt would enable the average euro-area country increase spending or reduce taxes by 0.45% of GDP as a result of the ½% interest rate fall in QE, without increasing its debt or deficit ratio. For France the contribution might be 0.5% of GDP; for Germany 0.4% and so on. The contribution from the high debt countries could be higher, depending on how much QE has lowered local risk premia. For Italy, the contribution could be 0.7% or more. Italy and Portugal have already exercised this option; whereas, reversing the argument, half the improvement in Germany’s deficit ratio since 2014 represents a fiscal stimulus withdrawn.

This option can be made systematic by introducing GDP-linked bonds. With these bonds, interest payments are adjusted down according to an agreed formula whenever GDP growth is below trend or potential output; and up when GDP growth rises above trend (potential) output. That makes the adjustments symmetric5, with no systematic bias or loss of discipline in the long term because it forces governments to “save for a rainy day” in good times. It also means the interest rate applied to determine repayments varies up and down as growth varies above or below its trend or potential – expanding the fiscal space available for new fiscal interventions in bad times, but requiring debt to be paid down in good times.

A formal analysis of how these bonds would work is given in Bank of England (2016). Several observations follow from existing research: i) extra fiscal space will always open up in times of low borrowing costs, allowing additional fiscal stimulus to be applied at the cost of little or no extra debt; ii) but if these bonds are used on a case-by-case basis, they have to depend on good luck (random external events) to be effective; iii) GDP-linked bonds make the opportunity to exploit extra fiscal space systematic because they reduce the variability of debt for any permitted or required change in the primary deficit. Hence, GDP bonds make this fiscal coordination automatic rather than opportunistic.

That said we must distinguish two cases: a) where interest rates and growth are negatively correlated so borrowing costs rise whenever growth falls – the conventional case for high debt countries; and b) where they are positively correlated – meaning lower interest payments and budget savings if growth falls. GDP bonds institutionalise the latter, not only for new issues but also the entire debt stock if the latter is refinanced. And the markets know in advance that this can be expected. Hence GDP bonds reduce the risk that debt becomes unsustainable, by using fiscal expansions to boost the impact of unconventional monetary

5 We assume zero repayments if growth turns negative
policies. This lowers the probability that extending the QE package would impose additional risks to financial stability, or of extra inflation, since much of the QE effect would now be supplied without expanding the ECB’s balance sheet or the money supply.\footnote{The Bank of Japan has used a similar technique to get the effects of QE without creating the costs or risks of an expanded balance sheet.}
7. FINANCIAL INSTABILITY IN THE CURRENCY MARKETS?

Given the possible financial risks, it is tempting to conclude that the exchange rate channel offers a more effective route for the QE extension to benefit the home economies.

The exchange rate channel operates as follows: lower asset yields in the QE economy will prompt capital outflows, a depreciation of the domestic currency and hence extra exports. Imports from trade partners with an appreciating currency in one of their export markets will be reduced. This is clear to see in the euro area. Since QE was announced in late 2014 the Euro has depreciated, aided by a secular appreciation of the US dollar. This is likely to be the cause of the upturn in growth in the euro area in 2015-16. We can bypass damaged transmission mechanisms and reduce the size of the QE interventions by exploiting this exchange rate channel.

Most of the literature on the exchange rate channel has focussed on the damage to others. However, if QE is successful in the euro area economy, then domestic demand will not fall as much as it might have done and the demand for imports is sustained.

Nevertheless there are financial risks. Investors, seeing falling yields at home, will look for higher yields and hence more risky investments elsewhere; hence transferring risk to, and easing monetary conditions in the recipient economies. The risk to the euro-area meanwhile is that it will have to live with divergent monetary policies, meaning more volatile exchange rates (vs. the dollar at least) and consequent financial changes. Trade imbalances are likely to become larger and the QE responses weaker.

The same will be true within the euro area; the exchange rate gains will accrue to the more competitive economies. Hence the QE extension needs to be carried out in conjunction with structural reform – a long term proposition that imposes a dilemma, for some, between short run costs and long run benefits.

---

7 Hughes Hallett, 2016b.
8. CONCLUSIONS

That QE implies a risk creating financial instability at the same time is well understood. But whether a scaled down extension would create additional instability is difficult to assess. The most popular concerns are the appearance of significant inflation, a lack of savings, asset price bubbles and volatility in the currency markets.

This paper takes a wide view, covering instabilities in the financial markets as well as instabilities that may be caused by imbalances or weak performance on the real side of the economy. We find that, while further instabilities remain a theoretical risk and danger, the risks appear small numerically with limited damage potential, relative to the need to consolidate recovery in the euro area, because of countervailing pressures in the constituent economies. As a result the potential instabilities are unevenly distributed – a matter for domestic policy to deal with.
REFERENCES


Extending quantitative easing: additional risks for financial stability?

Salomon FIEDLER, Stefan KOOTHS, Ulrich STOLZENBURG

IN-DEPTH ANALYSIS

Abstract
The ECB’s decision to extend its quantitative easing (QE) programme for another 9 months is not a game changer but grosso modo “more of the same for longer”. Thus, the time dimension plays a crucial role for assessing the risks of unintended side-effects of QE policies designed to stimulate the economy. We widen the view beyond the purely macroeconomic perspective and highlight the importance of the level of interest for the production structure (rather than the level of production) and the distortive consequences of artificially low interest rates. Based on theoretical deliberations linking distortions in the real economy to financial stability, empirical evidence is explored with respect to more aggressive maturity transformation, “zombification” and the eagerness to push through structural reforms and fiscal consolidation in times of easy access to financing by governments.
**CONTENTS**

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXECUTIVE SUMMARY</td>
<td>31</td>
</tr>
<tr>
<td>1. INTRODUCTION</td>
<td>33</td>
</tr>
<tr>
<td>2. MONEY, TIME AND CAPITAL</td>
<td>34</td>
</tr>
<tr>
<td>3. RISKS IN THE EURO AREA FINANCIAL SECTOR</td>
<td>36</td>
</tr>
<tr>
<td>3.1. Maturity transformation</td>
<td>36</td>
</tr>
<tr>
<td>3.2. Zombification</td>
<td>38</td>
</tr>
<tr>
<td>4. A WINDOW OF OPPORTUNITY FOR REFORMS</td>
<td>40</td>
</tr>
<tr>
<td>5. CONCLUSIONS</td>
<td>42</td>
</tr>
<tr>
<td>REFERENCES</td>
<td>43</td>
</tr>
</tbody>
</table>
EXECUTIVE SUMMARY

Despite some modifications in terms of monthly purchasing volumes and eligibility criteria, the ECB’s extension of its quantitative easing (QE) type 2 programme is basically a “more of the same for longer”. Thus, the time dimension is the crucial factor in assessing the riskiness of this policy approach. Any risk assessment in this respect is necessarily of a qualitative nature. All that economic theory and empirical evidence can provide is to indicate the direction of maladjustments. The 9-months extension of the ECB’s QE programme as such is not a game changer in terms of financial stability but it feeds into risks that evolve with the length of the extraordinary monetary policy stance.

The bottom line of the ECB’s QE approach is to reduce capital market rates below the levels that would otherwise prevail. The underlying rationale sees the level of interest primarily as an instrument of macro-management. However, as the key coordination mechanism between the present and the future, the level of interest plays an important role in shaping the production structure of an economy (rather than just the level of production that a purely macroeconomic perspective would suggest).

The distortive allocative side-effects of artificially low interest rates grow with the time span during which expansionary monetary policy interventions like the ECB’s QE programme are maintained. As each specific price in the market system contains an interest component that depends on the specific good’s temporal distance from its use for final consumption, the production structure in the economy tends to be skewed towards longer durations. When interest rates normalize later, substantial parts of the production system may turn out to be not sustainable as they cannot earn the yields that have then to be paid as refinancing costs to continue the investment projects started in the period of extremely low interest rates.

In a bank-based economy like the euro area, discrepancies in the temporal production structure have far reaching repercussions on financial stability and the monetary system. If – in a short-sighted response to flattening yield curves – commercial banks engage in more aggressive maturity transformation, future rising interest rates will directly erode the value of their assets calling their solvency into question. If the maturity transformation takes place by investing firms, future rising interest rates will negatively affect their solvency which might also spill-over to the banking sector in the form of significantly higher non-performing loans.

Financial institutions in the euro area are increasing the duration of newly originated loans. For non-financial corporations, the share of new loans with a maturity of ten or more years now stands at about five percent which is roughly twice as large as their share five years ago. Mortgage loans, too, exhibit increasing time to maturity: by now, more than half of all new loans will run for more than ten years. While the trend towards longer durations did not kick-start with the implementation of QE policies (but had started earlier already) the latter might have accentuated it in the most recent past.

“Zombification” describes a mechanism by which a loose monetary policy hinders the reallocation of capital towards its most productive use. If interest rates are very low, banks may be more inclined to extend further credit to legacy customers that are de-facto insolvent, especially if the bank itself is financially distressed and wants to avoid write offs on non-performing loans. As a result, old, less productive firms stay in business, while potential new, more productive firms face considerable entry hurdles. There is some empirical evidence for zombification being a problem in the euro area.

An extended period of cheap credit constitutes a prolonged window of opportunity for fiscal consolidation and structural reforms. However, the empirical evidence rather suggests that fiscal discipline became less ambitious as soon as the immediate threat
of sovereign default vanished. Also, structural reform progress seems to have slowed down as soon as severe macroeconomic troubles appeared less pressing.

- As the willingness to implement reforms appears to be proportionate to economic troubles and refinancing restrictions, the introduction of QE in 2015 did certainly not induce Euro area countries to refocus on structural causes of the crisis; thus, an extension of QE is most likely no suitable way to trigger additional structural reform eagerness.
1. INTRODUCTION

In its December 2016 meeting, the Governing Council of the European Central Bank (ECB) has decided to extend the horizon of its ongoing QE programme for another 9 months until the end of 2017. From April 2017 onwards, the amount of monthly asset purchases will be reduced from 80 billion euro to 60 billion euro. In its communication, the ECB stressed that its QE operations are open-ended and that the reduction in its monthly asset purchases shall not be interpreted as tapering. While the ECB has somewhat relaxed the purchasing criteria to extend the pool of eligible assets (the maturity range has been extended to 1-30 years after 2-30 in the current programme, and bonds yielding below the deposit rate are also eligible in the extended programme) the overall approach is basically a "more of the same for longer". Therefore, this paper focuses on the time dimension with respect to the risks that coincide with an extraordinarily expansionary monetary policy stance.

QE programmes are broadly categorized as either emergency liquidity provisions in the eye of the storm of a financial crisis (QE type 1) or as macroeconomic stimulus programmes in the aftermath of a financial crisis (QE type 2). While there is vast consensus among economists that QE type 1 measures are necessary to prevent a confidence crisis within the financial sector from causing systemic illiquidity, the effectiveness of QE type 2 programmes is much more controversial (Gern et al 2015). Clearly, the ongoing Asset Purchase Programme of the ECB falls into the QE type 2 category. The bottom line of this monetary policy approach is to reduce capital market rates below the levels that would otherwise prevail. This raises the question to what extent the unintended side-effects of such a monetary policy stance depend on the very time span during which this policy is maintained. Given the complexity of the economic system, this question cannot be answered in a crisp numerical sense. Consequently, the risks involved with the extension of the ECB’s current QE programme are not specific to it being extended by (at least) nine extra months. All that theory and empirical evidence can provide is to highlight the nature of the risks that increase as the ultra-expansionary monetary policy stance continues.

The time dimension is also relevant for the indirect intended consequences of QE type 2 policies. The ECB has declared over and over again that she can only "buy time" for structural reforms and fiscal consolidation to be pushed through by national or European policy makers, but that she is unable to take any action that would make these reforms dispensable. Clearly, these reforms take time to be implemented which would suggest not to stop QE support to governments prematurely. However, this approach is a double-edged sword as lower refinancing costs for governments thanks to the ECB’s QE interventions may also dampen the political willingness to carry out unpopular structural reforms as pressure from capital markets eases.

This paper first presents some theoretical insights with respect to the role of interest in a market economy below the macroeconomic surface stressing the linkages between the real economy and the financial sector (section 2). Section 3 discusses increasing risks for the latter arising from more aggressive maturity transformation and extended zombification. Section 4 looks at whether the intended window of opportunities that the ECB constantly urges policy makers to make use of has been seized already or whether so far the opposite response dominates.

1 Apart from empirical evidence, the different assessment of the two types of QE policies reflects also theoretical considerations. By means of QE type 1 programmes the central bank takes action against short-term liquidity shortages within the financial sector, something that a central bank can effectively do as in today’s monetary system she is the ultimate producer of liquidity. By contrast, stimulating economic activity is much less straight-forward for a central bank as the monetary authority exerts her influence only indirectly and in a much less predictable way. Plus, there are obstacles to economic activity (like structural discrepancies or a dysfunctional regulatory framework) that are completely out of reach for monetary policy makers. The attitude towards the effectiveness of QE type 2 programmes therefore depends crucially on the diagnosis for the underlying reasons causing unsatisfying macroeconomic dynamics.
2. MONEY, TIME AND CAPITAL

In the prevailing monetary policy debate, the interest rate is primarily considered as an instrument of macro-management. In line with this view, the market interest rate should be lowered by expansionary central bank interventions whenever the economy is in a recession to stimulate aggregate demand (accordingly, in a boom phase the opposite monetary policy response applies). Apart from this mechanism being typically less reliable in a post-crisis environment (Bech et al. 2014; Jannsen et al. 2015), the macro perspective overlooks far reaching implications of artificially low interest rates for the production structure (rather than for the overall level of production) in the economic system (Garrison 2001).

These implications stem from the fact that

(1) in a market economy, the allocation of resources depends on relative price signals for all goods (including services and production factors) and that

(2) the value of any economic good or activity is derived from its contribution to final (private or public) consumption however indirect this link may be.²

Consumption marks the end of each production chain and is thus the ultimate source of value. Therefore, the appreciation of consumer goods is the starting point of all economic valuation: The prospective importance that consumers attach to various consumer goods is pushed backwards through the production process and thus determines at every stage the value of intermediate products and the inputs of primary production factors (inverse value imputation). As long as a good has not been absorbed for consumption it remains part of the capital stock of the economy. This capital stock is not a homogenous fund, but rather constitutes a structure of the as-yetunfinished intertemporal plans (Lachmann 1956, Kirzner 1966).

Within the price mechanism of the market system, the level of interest plays the key role for the time profile of the production portfolio by coordinating the time preference of households and investment opportunities of firms. Each individual price in an economy contains an interest component. The further away an economic good is from its contribution to final consumption, the higher is the share of interest in the price of that good and the more responsive its price is to changes of the interest rate.³ The lower the interest rate, the higher the relative price of long-term capital goods. This shifts the production structure towards a profile that will serve temporally more distant consumption needs. Thus, it is not only the aggregate level of investment but also the composition of investment that matters with respect to the interest rate. These allocative consequences are not limited to the physical capital stock as the structure of human capital is also affected to the extent that qualifications are specific to the production of goods whose valuation varies with the interest rate.⁴

Clearly, adjustments of the production structure to a modified level of interest do not happen overnight. Physical capital formation is a time-consuming process that progresses at a pace limited by what gross investment can be financed out of depreciation and (domestic as well

---

² The term “final use” as applied in the National Accounts refers to the use of goods from the perspective of the reporting period only, not to the underlying position of a good in the value creating production process. E.g. a rolling mill that is produced in period t is accounted for as “final use for investment” in the National Accounts of the same period, but it is valuable only to the extent that it directly or indirectly supports the production of consumer goods in the future. If there was no such channel to final consumption this rolling mill would be worthless.

³ For this reason, house prices are particularly responsive to changes in interest rates. As it takes typically several decades until dwelling capital goods are transformed into housing services (i.e. final consumption) the interest component in the price for construction goods is much higher than for those goods whose useful life is markedly shorter (like cars or TV sets).

⁴ To continue the example of the previous footnote, a higher valuation of dwelling capital goods (induced by lower interest rates) gives incentives to shift more production factors into the construction industry thus also affecting the product-specific skill composition of the labor force.
as foreign) savings. Alike, the skill-structure of the labor force adjusts only gradually. Therefore, distortive allocative side-effects of monetary policy are normally considered as less important. As long as the central bank responds to short-term business fluctuations (and, ideally, only mimics market interest rates) no serious misallocations are to be expected. However, in the case of a prolonged period of massive monetary interventions targeted at lowering interest rates and flattening their term structure the risk of a deformation of the production structure gains weight. This is particularly true as a long-lasting period of poor economic performance does not fit the pattern of a cyclical phenomenon but rather points to serious structural economic discrepancies (depressed aggregate production due to pervasive mismatch problems, not because of a lack of demand).

Given the complexity of the micro-economic system, structural maladjustments are hard to gauge (even more so in real-time) as the counter-factual is unknown. What is known, however, is the direction of maladjustments and that the harmful misallocations are all the more severe the longer the period of ultra-low, policy-induced interest rates prevails.

In a bank-based economy like the euro area, the dependency of the temporal production structure (i.e. the capital structure) on the level of interest has repercussions on financial stability. In fact, a serious financial crisis can be interpreted as the flipside of a pervasive capital stock distortion of the affected economy that has developed in the run-up to the financial crisis due to excessive credit creation (and, accordingly, a subdued interest rate). Once it becomes evident that the investment projects carried out in the past are to a large extent not in line with the preferences of the consumers (as their profitability depended on an artificially low interest rate), the solvency of the investors comes under pressure because those projects can no longer earn the yields in the real economy that are necessary to satisfy the financial claims once issued to finance these projects. If the counterparty of these financial claims (bonds and loans, in particular) is the banking sector a serious financial crisis results. While commercial banks can deal with idiosyncratic mal-investments of individual investors (which are perfectly normal in a market economy) by calculating adequate risk premia in their credit business, they cannot cope with systemic risks that stem from the fact that a large number of investors has been systemically misled to non-sustainable investments. As these (now non-performing) financial claims belong to the assets that back up outstanding deposits of the banking sector, the crisis threatens the stability of the monetary system. Financial imbalances are therefore deeply rooted in the production structure of an economy that to a substantial degree responds to the monetary environment. If this monetary environment influences the interest rate as the most important relative price in the capitalist system (price of present goods relative to future goods) for a prolonged period of time, the likeliness of distortions in the production structure and a subsequent financial crisis increases (or, as Roger Garrison once phrased it, “capital gives money time to cause trouble”).
3. RISKS IN THE EURO AREA FINANCIAL SECTOR

3.1. Maturity transformation

One of the ways in which banks generate earnings is maturity transformation, that is by repeatedly borrowing money short-term and lending it out over longer periods of time at higher interest rates. However, in conjunction with the prolonged period of monetary policy easing by the European Central Bank (ECB), interest rates have shifted in recent years. Figure 1 shows yield curve data for euro area government bonds. While interest rates have come down across the whole range of maturities, the effect was most pronounced at the longer end of the spectrum: in 2016, average interest rates on ten-year bonds were just 1.1 percent higher than those on one-year bonds – less than half the spread of only three years ago. One important reason for this flattening of the yield curve is that the short end of the curve is increasingly pressed against the effective lower bound of nominal interest rates.

Figure 1: Euro area government yield curve
(par yield in percent, bonds of all ratings)

Source: ECB Statistical Data Warehouse

For banks, this development poses two problems: first, a flatter yield curve means that the margins that can be earned through maturity transformation will be lower. Second, when the turn-around comes such that interest rates rise again, banks will have locked in the current low long-term rates but will have to refinance at the then higher short-term rates. To prop up their earnings potential, banks may decide to increase the degree of maturity transformation, either by a reduction of the average maturity of their liabilities or an increase in the average maturity of their assets. There is some evidence that this has been happening for some time now: figure 2 shows new loans to non-financial corporations (NFC) and to households as mortgage loans.

5 Government bond yields are taken as the benchmark rates for the whole economy. While yields for private debt issuers also fell in recent years, full yield curve data is less readily available for them.

6 It could conversely be argued that banks have in the past profited from their holdings of legacy high-yield assets when interest rates fell. However, these one-off windfall profits fade out the longer the period of low interest rates prevails.

7 Note that data on new business cannot be converted one-to-one into information on outstanding stocks of loans. For example, an investment of size \( x \) with a horizon of 10 years could be financed by one loan of size \( x \) that also has a maturity of 10 years.
In recent times, financial institutions in the monetary union have increased the duration of newly originated loans. For NFCs, the share of new loans with a maturity of ten or more years now stands at about five percent which is roughly twice as large as their share five years ago. Mortgage loans, too, exhibit increasing time to maturity: by now, more than half of all new loans will run for more than ten years. However, the increase in the maturity of housing loans seems to have been an ongoing trend that started well before the financial crisis. In addition to loans, the distribution of bonds also shifted towards more long-term instruments recently (figure 3, left panel). But here, there was a visible break in trends: for the whole time between 2006 and 2014 the duration of euro area government bonds remained quite close to about 6.5 years. Since then it has increased rapidly and now stands at 7.5 years.

A further risk factor is the decreasing share of floating rate loans (figure 3, right panel). This trend has been especially pronounced for housing loans where it has been ongoing for more than a decade: while ten years ago, about half of all loans for house purchases in the euro area came in the form of floating rate contracts, nowadays they make up less than one sixth. Insofar as the introduction of the Euro stabilized inflation and nominal interest rates in a number of euro area countries, the increased reliance on fixed rate loans might seem justified. Nonetheless it exposes banks to higher risks because the lower the share of floating rate loans, the harder it will be for them to adjust once interest rates start to rise again.

Alternatively, it could be financed by loans of size x with a maturity of 1 year which are rolled over annually. In the second case, over time cumulated new business would rise by 10x. It is therefore unsurprising that loans of very short duration make up a big percentage of new business even though they make up less of a share in the balance sheet volume of banks.

8 Duration is a slightly different concept than maturity: while maturity only looks at when the final payment on a bond will be made, duration weighs all payments. Since interest payments received before the maturity date can be reinvested at conditions prevailing in the future, duration should give us a more accurate picture when considering the interest rate risk associated with maturity transformation. In any case, the presented developments in government bond duration are broadly in line with the data on their maturity.
Policy Department A: Economic and Scientific Policy

Figure 3: Government bond duration and variable rate loan shares
(left panel: duration of euro area government bonds in years; right panel: share of floating rate loans of total loans in percent)

Sources: Citigroup World Government Bond Index, ECB Statistical Data Warehouse

All in all, both the reduced current earnings potential due to the flatter yield curve and the risks associated with a reversal of interest rate developments pose challenges to the banking sector. The relevant increase in government bond duration that coincided with the QE interventions pronounced these risks for the financial sector, as well as those risks that stem from trends that precede it, such as the increasing reliance on long-term fixed-rate housing loans. These factors exacerbate the problems that banks would have to face in any case should short-term refinancing rates rise again in the future after having now locked in very low long-term rates on their assets. Thus, from the perspective of financial stability, an exit from the ultra-expansionary monetary policy stance becomes more difficult the longer this period lasts.

3.2. Zombification

Zombification describes a mechanism by which a loose monetary policy can hinder the reallocation of capital towards its most productive use. If interest rates are very low, banks may be more inclined to extend further credit to legacy customers that are de-facto insolvent ("evergreening"), especially if the bank itself is in financial trouble and wants to avoid write offs on loans to distressed companies: the "zombie bank" takes a "gamble for resurrection" on the "zombie firm". This means that old, less productive firms stay in business while potential new, more productive firms face considerable entry hurdles. This impairs an economy’s ability to produce the types and quantities of goods that would best satisfy consumer preferences.

While accommodative monetary policy can support balance sheet repair in the short term, it can also, if prolonged too much, cause problems by reducing the incentives to deal with banks’ impaired assets, reducing the opportunity costs of carrying non-performing loans, and potentially distorting banks’ assessments of repayment capabilities (Bank for International Settlements 2012).

The Extended Asset Purchase Programme (EAPP) is only one of the more recent entries in the list of easing measures adopted by the ECB since the crisis. Albertazzi and Marchetti (2010) already found some evidence for evergreening by small Italian banks very shortly
after central banks reacted to the Lehman event. Later, Acharya et al. (2015) look at the announcement of the Outright Monetary Transactions (OMT) programme. Using firm-level data, they show that peripheral countries’ banks’ windfall profits from this programme supported an increase in loans to those firms whose credit servicing ability was below the average and who usually already were debtors of the banks in question. Nevertheless, they were charged lower interest rates on these new loans than firms in core countries with very high credit ratings. Clearly, these loans did not provide any stimulus to the economy, as they were neither used for investment nor for job creation.

The continuation of the EAPP is likely to further contribute to those zombification side-effects.
4. A WINDOW OF OPPORTUNITY FOR REFORMS

For governments, an extended period of cheap credit constitutes a window of opportunity for consolidation and structural reforms. Zero interest rate policy in combination with central bank purchases of public debt translates into favourable financing conditions for governments. Figure 4 (left) shows that interest payments on public debt have been on a decreasing trajectory over the last few years, despite the fact that in most countries, debt ratios have increased considerably at the same time. Availability of cheap credit gives euro area governments time to fix their problems in calmer waters, in particular to consolidate public finances without the need to rely on harsh spending cuts, to retain low financing costs for some time and to conduct proper structural reforms that put their economies back on solid ground.

**Figure 4: Interest Payments (left) and Structural Primary Balance (right)**

*(In percent of GDP at current prices)*

![Interest Payments Graph](image1)

![Structural Primary Balance Graph](image2)

*Source: European Commission, AMECO, own Calculations.*

However, fiscal discipline weakened as soon as the immediate threat of sovereign default vanished. There is no mechanism ensuring that governments actually take the opportunity brought about by an extended period of cheap credit for consolidation. Instead, governments often use reduced interest payments to cover additional expenditures (Tkavec and Vilerts 2016). Such lack of fiscal discipline is even more likely to occur if the impression is popular among decision makers – rightly or wrongly – that the economy suffers from weak demand, so that available money is immediately spent rather than used to repay debt. Figure 4 (right) depicts structural primary balances (i.e. the cyclically adjusted fiscal balances without interest payments) of several euro area countries. After a period of rigorous fiscal tightening until 2012/2013, structural primary balances deteriorated in Italy, Spain and to a lesser extent also in Portugal. Although the French balance continued to improve slowly, it remained on a rather high level judged by applicable fiscal rules. Only Ireland managed to hold the structural primary balance fairly stable since 2013, while considerably reduced interest payments kept on consolidating their budget. Germany saw its structural primary balance deteriorate a bit, but given its surpluses, the increase in spending is in line with requirements of the fiscal framework.
Retaining favourable financing costs by issuing long-term debt securities can be beneficial to fiscal sustainability, but creditors bear the consequences. Generally, fiscal sustainability can be improved with reduced interest payments on the stock of debt. Whenever government bonds reach maturity, they can be rolled over with new long-term issues of securities at currently very low yields, so countries can preserve favorable financing conditions for the future. This way, governments act like a sponge for cheap liquidity and can benefit from extending QE. Once monetary policy normalizes, interest payments remain on a fairly low level for some time. Obviously, the flip-side of the coin is that those economic players who tend to hold large amounts of government debt (e.g. banks, pension funds, life insurances, and also central banks) will have to deal with continuously weak flows of revenue out of these assets, combined with losses to the book value of securities once interest rates are back on the rise. Financial sector players may run into severe problems if interest rates remain longer on the current level, as long as their business model requires a steady flow of non-negligible interest revenue. Apart from such problems of creditors, governments may nevertheless be able to benefit from locking-in cheap financing conditions. If, however, government spending is increased in parallel, this behavior will probably backfire in the future. Once monetary policy is normalized and interest rates are back to “normal”, each debt instrument that reaches maturity will have to be refinanced at higher interest rates. Given the vastly increased debt levels in some countries, this continuous process of debt rollover will probably be accompanied by a steady need for consolidation to maintain fiscal sustainability. If fiscal discipline is suspended today, a continuous and repeated process of spending cuts probably awaits in the future.

Similar to weakening fiscal discipline the structural reform progress slowed down as soon as severe macroeconomic troubles appeared less pressing. Conventional wisdom argues that a three-pillar approach is required to boost long-term growth in the euro area: supportive monetary policy, careful fiscal consolidation and structural reform (OECD 2015). However, political pressure and support to conduct unpopular structural reforms is weakened immediately once the deep crisis appeared to be over. Has the window of opportunity for structural reforms been wasted? This question is obviously difficult to answer in general terms, since reform progress can hardly be assessed on a strictly numerical scale, and since the political support to implement reforms differs from country to country. Nevertheless, an attempt to capture the pace of reform progress among country groups is the reform responsiveness index (RRI) (OECD 2016). The RRI is based on the share of OECD “going for growth” recommendations that have been addressed by economic policy makers during a certain period, so that it ranges between 0 and 100 per cent. According to this proximate assessment, the pace of reform implementation for a group of “euro area deficit countries” (France, Estonia, Greece, Ireland, Italy, Portugal, Slovak Republic, Slovenia and Spain) has decelerated considerably. In 2011/2012, the reform pace for this country group was very high at more than 60 percent, went down to about 40 per cent in 2013/2014 and fell further to roughly 25 per cent in 2015. Reform progress in “surplus countries” (Austria, Belgium, Germany, Finland, Luxembourg and the Netherlands) was considerably slower over all three periods considered and also decelerated further to less than 20 per cent in 2015. Therefore, willingness to implement reforms appears to be proportionate to economic troubles, and there is a clear correlation between unemployment and reform responsiveness as measured by the OECD. Overall, the introduction of QE in 2015 did certainly not induce euro area countries to refocus on structural causes of the crisis; and an extension of QE is most likely no suitable way to trigger additional structural reforms.
5. CONCLUSIONS

**Time matters.** The time dimension is the crucial factor in assessing the riskiness of the most recent extension of the ECB’s quantitative easing (QE) programme. The 9-months extension as such is not a game changer in terms of financial stability, but it feeds into the accumulation of risks that evolve with the length of the extraordinary monetary policy stance in the euro area. While the nature of the risks can be demonstrated, they are extremely hard to quantify. Also, it is impossible to say within what time horizon they might materialize.

**Allocative distortions escape the radar of macro-management.** The ECB’s QE strategy aims at reducing capital market rates below the levels that would otherwise prevail to stimulate aggregate demand. The effectiveness of this macro-oriented approach is limited in a post-crisis environment. By contrast, the unintended distortive side-effects of artificially low interest rates grow with the passing of time. As the level of interest affects relative prices, the production structures tend to be skewed towards capital formation with longer durations. When interest rates normalize later, substantial parts of the production system may turn out to be unsustainable. A bank-based economy like the euro area is particularly prone to see its financial sector being destabilized as the discrepancies in the temporal production structure stress the solvency of debtors in a systemic way. In an extreme case, another financial crisis could result.

**Flatter yield curves trigger more aggressive maturity transformation.** Maintaining the regime of extremely low interest rates challenges the business model of commercial banks. As their margins are squeezed from the revenue side, banks might engage in a more pronounced maturity transformation. In that situation, future rising interest rates will directly erode the value of their assets calling their solvency into question. If maturity transformation is done by investing firms, future rising interest rates will negatively affect their solvency which might also spill-over to the banking sector in the form of a rising share of non-performing loans. And indeed, data indicates that financial institutions in the euro area are increasing the duration of newly originated loans. The share of new loans with a maturity of ten or more years now is considerably higher than five years ago, both for mortgage loans and loans to non-financial corporations.

**Cheap credit hampers the liquidation of uncompetitive firms.** There is some empirical evidence that “zombification” is a problem in the euro area, a mechanism by which loose monetary policy can hinder the reallocation of capital towards its most productive use. If interest rates are very low, banks may be more inclined to extend further credit to legacy customers that are de-facto insolvent, especially if the bank itself is financially distressed and wants to avoid write-offs on non-performing loans. As a result, less productive firms stay in business, while potential new, more productive firms face considerable entry hurdles.

**“Buying time” lets fiscal discipline and structural reform efforts wane.** An extended period of low interest rates constitutes a prolonged window of opportunity for fiscal consolidation and structural reforms. However, the empirical evidence rather suggests that fiscal discipline became less ambitious as soon as the immediate threat of sovereign default vanished. Also, structural reform progress seems to have slowed down as soon as severe macroeconomic troubles appeared less pressing. As the willingness to implement reforms appears to be proportionate to economic troubles and refinancing restrictions, the introduction of QE in 2015 did certainly not induce Euro area countries to refocus on structural causes of the crisis; thus, an extension of QE seems to be unsuitable to trigger additional structural reform eagerness.
REFERENCES


Abstract
For nearly two decades, the policy debate has focused on the attitude of central banks regarding financial stability and asset price bubbles. This debate is resurfacing with the recent episodes of expansionary monetary policies implemented through unconventional measures. The aim of this policy brief is to feed reflections on the risks for financial stability associated with the extension of quantitative easing (QE) by the ECB. We first recall that the theoretical and empirical literature does not provide a clear consensus on the influence of monetary policy on asset price bubbles. Then, we propose indicators of asset price bubbles for the euro area and we discuss the effect of monetary policy on these indicators. So far, there is no evidence of presence of asset price bubbles in the euro area. Besides, the change in the ECB balance sheet would not trigger bubbles in the stock and housing markets. However, it may be a concern for the bond market. From this, we argue that a gradual decline in ECB’s balance sheet would be important to limit the risk of a new banking crisis in the euro area.
EXECUTIVE SUMMARY

• The recent extension of the ECB’s quantitative easing (QE) raises concerns on its impact on financial stability. Stated briefly, does the protracted monetary stimulus generate financial bubbles?

• It is important that two key points are kept in mind. First, overall evidence of the impact of monetary policy shocks on asset price bubbles is not clearly established. Second, the identification of bubbles remains a strong empirical challenge. Separating the fundamental value of an asset from its bubble component remains a difficult and disputable task.

• As neither theoretical, nor empirical literature has reached a consensus on how to identify a financial bubble, we identify financial bubbles following an agnostic approach consisting in averaging the most commonly used models. Although none of these models has reached a consensus, we assume that altogether they can capture the main properties of asset price bubbles.

• Our data on the euro area show that the recent increase in stock prices is not characterized by a bubble. There is also no sign of a bubble in the bond market in the recent period. However, since 2015, a period of asset overvaluation has begun in the housing market.

• We estimate the possible impact of monetary policy on the computed bubble component of asset prices. Our results suggest that the unconventional monetary policy implemented by the ECB did not inflate stock market and house market bubbles. There may be some impact on the bond market, where most operations related to the QE are now realized through the public sector purchase programme (PSPP). Consequently, results suggest that there is no strong and stable causal link between monetary policy and asset price bubbles, except on the bond market.

• Summing up, the presence of asset price bubbles is not a major concern in the euro area so far. Besides, the change in the ECB balance sheet – limited to the use of unconventional policies via SMP, CBPP, ABSPP and PSPP 1 – has not triggered an increase in the bubble indicator of the stock and the housing market. However, it is suggested that the bubble indicator of the bond market reacts positively to unconventional monetary. QE – implemented at a lower monthly pace – should not create an overall bubble in the future. However there may be some risks in the bond market. This is not a concern for the pursuit of the QE but it might be for the phasing out of QE measures that should consequently be implemented very carefully.

• A gradual decline in ECB’s balance sheet would be important to limit the risk of a new banking crisis in the euro area. A rapid reduction in ECB’s balance sheet under financial frictions may trigger a bubble burst on the bonds’ market which would have negative and dangerous spillovers on banks and, by contagion, on the real economy.

• We also recommend a close cooperation between monetary and fiscal policies to limit the risk that the phasing out of QE measures produces a higher perceived risk of public debt unsustainability. Forward guidance on the terms and conditions of the end of QE could help in this respect. It would give information on ECB’s inflation and output forecast and help plan future optimal fiscal policies in the euro area.

---

1 Securities Markets Programme (SMP), https://www.ecb.europa.eu/pub/pdf/other/mb201006_focus01.en.pdf; For Covered Bond Purchase Programme (CBPP), Asset-Backed Securities Purchase Programme (ABSPP) and Public Sector Purchase Programme (PSPP), see https://www.ecb.europa.eu/mopo/implement/omt/html/index.en.html
1. INTRODUCTION

The planned extension of ECB’s quantitative easing (QE) until the end of 2017 has raised concerns about the current and forecast economic situation of the euro area – the extension signals that the ECB continues to have doubts on its ability to reach its inflation target in the mid-run; meanwhile it has raised concerns about the consequences of a protracted monetary stimulus on financial stability.

Financial stability is now clearly a critical issue for policy makers and especially for central banks. Financial history has shown that episodes of financial crises are costly as they notably trigger deeper and longer recessions (Bordo et al., 2001, Claessens et al., 2008 & 2011, and Bordo, 2014). However, literature has not yet provided a clear consensus on the way central banks, through monetary policy should deal with it (see Smets, 2014). A central issue in this debate is related to the connection between asset prices and the conduct of monetary policy. Does expansionary monetary policy contribute to the emergence and growth of asset price bubbles? And can monetary policy tightening reduce the size of bubbles? This debate has recently resurfaced with the QE programmes implemented after 2008 by the major central banks, fuelling the fear that unconventional monetary policies could be too expansionary and feed asset price bubbles. Some commentators in the financial press were notably prompt to see asset price bubbles when stock prices soared again.

These fears were motivated by the correlation between the purchase of securities by the Federal Reserve – the US central bank – and the stock market index (S&P 500) in the United States (Figure 1). While the argument may sound convincing at first glance, the facts still need to be discussed and clarified. First, it is useful to remember that correlation is not causation. Secondly, an increase in asset prices is precisely the scope of both conventional and unconventional monetary policy. Finally, an increase in asset prices cannot be treated exclusively as a bubble: developments related to fundamentals need to be distinguished from purely speculative changes.

These fears largely echo a policy debate which emerged at the end of the nineties. According to a first view, central banks had weak responsibility in the build-up of asset price bubbles and should not try to burst them. This view formed the “Jackson Hole” consensus and was built around two pillars. It was first argued that financial stability was correlated with price stability. Central banks focusing on price stability would therefore also deliver financial stability. Second, Bernanke and Gertler (1999, 2001) suggested that it was optimal for central banks to intervene after a burst, rather than before it. Two reasons were put forward: first, bubbles are hard to identify and, second, central banks are supposed to be able to cushion financial crises efficiently – cleaning afterwards – through an appropriate monetary policy easing. This view was challenged by Borio and Lowe (2002) and Cecchetti et al. (2003) who promoted a “leaning against the wind” approach claiming that central banks should strive to reduce asset price bubbles.2 Regarding the recent episode of expansionary monetary policy with unconventional measures, Borio and Zabai (2016) fear that the risks of financial instability could outweigh their benefits. Juselius et al. (2016) advocate the adoption of an effective “leaning against the wind” approach and revive the debate on the attitude of monetary policy makers towards asset prices. Adrian and Liang (2016) argue that the “leaning against the wind” approach could have higher benefits than costs, under conditions that Svensson (2017) considers as highly unrealistic. Svensson (2017) keeps on arguing that a “leaning against the wind” approach would not be optimal.

The debate on the potential side-effects of QE echoes the criticisms raised by Taylor (2009) who suggested that the sustained period of low interest rate in the United States between 2001 and 2004 fuelled the boom in the housing market and caused thereafter the subprime crisis.

---

2 See White (2009) for a survey.
The global financial crisis has undoubtedly illustrated that price stability was not a sufficient condition for financial stability. As regards the ability for monetary policy to influence effectively asset price bubbles, the theoretical literature has not reached clear-cut conclusions. It notably depends on the intrinsic properties of bubbles.

In this policy brief, we first review theoretical and empirical literature on the link between monetary policy and asset price bubbles. Though financial stability does not boil down to asset prices and the existence of bubbles, the price of financial assets is clearly a key indicator to assess the risk of financial instability. Then, we propose simple indicators for the euro area of asset price bubbles that may help to assess some risks over financial stability. In the third section, we discuss the effect of monetary policy on these indicators. In the fourth section, we discuss about the risks that fiscal policy, on the one hand, and banks' balance sheet, on the other hand, put on financial markets and on QE’s effectiveness. Section five concludes and draws some policy recommendations.

**Figure 1. QE and stock market prices in the US**

*Note:* $2010 = 100$, $y$ _axis in Bn$. Dividends paid shows strong seasonality and have been smoothed by a 12-month moving average.

*Sources:* Datastream, Federal Reserve and Bureau of Economic Analysis.

---

3 See Blot et al. (2015) for empirical evidence.
2. MONETARY POLICY AND ASSET PRICE BUBBLE: A SURVEY

If the ultimate goal of central banks is macroeconomic stability, the transmission of their decisions to the target variables (inflation and growth) takes place through various channels, some of which are explicitly based on changes in asset prices. Thus, the effects expected from QE are supposed to be transmitted in particular by so-called portfolio effects. By buying securities on the markets, the central bank encourages investors to reallocate their securities portfolio to other assets. The objective is to ease broader financing conditions for all economic agents, not just those whose securities are targeted by the QE programme. In doing this, the central bank’s actions push asset prices up. It is therefore not surprising to see a rise in equity prices in connection with QE programmes. The main issue is then whether the impact of monetary policy goes beyond this expected effect and creates or contributes to the growth of asset price bubbles. It might be helpful to first review theoretical literature as it emphasizes that theoretical models on bubbles have not delivered a clear consensus on the role of monetary policy. On the empirical side, the evidence is also mixed and the identification of bubbles remains a strong empirical challenge.

2.1. Asset price bubbles: a brief review of theory

The theoretical assumptions related to the nature of the bubble have different implications regarding the role of monetary policy. Actually, an asset price bubble is an unobserved component of an asset price. The other component is the fundamental value and is also unobserved. Theory provides some insights on the decomposition between the fundamental value and the bubble component. The standard asset price model states that the fundamental value of a given asset corresponds to the discounted sum of expected cash-flows. For stocks, the expected cash-flows are given by futures dividends that will be paid to the owner of the shares. It must be noticed that there is uncertainty on the future dividends. It explains why this fundamental value cannot be observed. From this simple representation of an asset, the bubble component is the deviation of the asset price from the fundamental value.

There have been two different strands of literature regarding financial bubbles. The first strand assumes rational behaviour, as e.g. Blanchard and Watson (1982). Under this assumption of rational expectations, it is noteworthy that the role of monetary policy remains highly debated. In the rational bubble à la Blanchard and Watson (1982), the bubble grows with the real interest rate. According to Gali (2014), a restrictive monetary policy can fuel instead of deflating a bubble. Thus, there would be no rationale for central banks to try to “lean against the wind”. Such a policy would even be counterproductive.

5 The three main transmission channels of QE are the expectations’ channel, the segmented markets’ channel and the duration risk channel (or portfolio-effect channel) (see Yu, 2016, for a presentation and discussion). The traditional theory of the term-structure of the interest rates draws on an economy without frictions and according to it, QE measures like purchasing large amounts of long-term bonds should not affect long-term rates. Once some frictions intervene, like banking regulations (e.g. solvency ratio), market segmentation (e.g. some investors are prone to hold extensively long-term assets to match their long-term liabilities, like life insurance companies) and risk tolerance (e.g. some investors are willing to hold risky assets and when the central bank buys those assets, investors tolerate a longer exposure to risk and accept lower risk premia on long-term bonds), QE may impinge on long-term rates.

6 Discounting financial flows takes into account the fact that receiving 1 euro today is not the same as receiving 1 euro in 1 year. The current value of one euro received next year is depreciated as the investor loses the opportunity to invest today one euro at the given interest rate. The discount or depreciation factor of 1 euro received next year is therefore the real interest rate.

7 For housing asset, the future revenues are future rents perceived by the owner. Finally, for bonds, future cash-flows are known and correspond to the coupon associated to the bond.
However, this view is very specific and relies on strong hypotheses and notably the absence of financial markets imperfections. Consequently, other authors like Allen and Gale (2004) suggest that expansionary monetary policy would feed bubbles through the credit dynamics. In the same vein, Christiano et al. (2010) claim that central banks that would only focus on inflation would amplify the cycle and create boom-bust cycles in the stock market. They consider the case of positive news on productivity that would reduce inflation. Observing that inflation is reducing, the central bank would decrease the policy rate to bring the inflation rate back to the target. This would stimulate credit, investment and consumption amplifying the economic and financial cycles. If the initial positive news turns to be less favourable than expected the promising returns on investments are not realized triggering a decrease in asset prices.8 They argue that monetary policy has therefore been too much expansionary. The bust of credit follows the boom and amplifies the decrease in stock prices.

The second strand of literature on bubbles questions the rational expectations’ hypothesis. There, models do not give much role for monetary policy. The behaviour of private agents is the key determinant of bubbles. They may arise also after positive news, generally technology innovations, triggering a rise in the fundamental value. The role of interest rate is of minor importance as the bubble mainly grows because of irrational agents, overconfident investors and coordination failures. Kindleberger (2005) and Schiller (2015) have largely documented those episodes in financial history where exuberant increases in asset prices have been observed after technological booms.

2.2. Empirical evidence on monetary policy and asset price bubbles

Empirically, the link between monetary policy and asset price bubble has received much more attention. For Taylor (2009), it is clear that interest rates in the US had been too low for too long after 2001 hence triggering the housing boom in the United States. However, Taylor (2009) does not explicitly identify the bubble term but rather assumes it. His diagnosis and conclusions have been challenged by Dokko et al. (2009) who show that monetary policy after 2001 has not been that expansionary in contrast with past episodes of monetary policy expansions. Besides, according to model’s simulations, they suggest that the housing market dynamics would not have been strongly modified had interest rates been more in line with usual indicator of monetary policy stance (following a Taylor rule).9 Del Negro and Otrok (2007) also concluded that monetary policy weakly contributed to the housing price dynamics in the United States.

The empirical literature has often focused on the correlation between excessive changes in asset prices and the stance of monetary policy. By observing the relative path dynamics of several variables (inflation rate, interest rates notably) during the period preceding the burst in asset prices, Bordo and Wheelock (2007) provide evidence of a weak correlation between interest rate and stock prices. The correlation was not systematically observed after 1970 in the United States and for other countries. Contrasting Bordo and Wheelock (2007) results, Ahrend, Cournède and Price (2008) find that asset prices, and notably house prices, increase when monetary policy is expansionary, that is when the policy rate is below the level suggested by a Taylor rule. There is yet no systematic correlation with stock prices as significant increases of asset prices are also observed when monetary policy stance is not expansionary. But it must be stressed here that the authors consider the house price and

---

8 Financial history has illustrated several episodes where technical innovations were expected to generate higher future profits, which did not materialize. The dot.com bubble is the most striking evidence of such a common belief on the stock market.

9 The Taylor rule is a usual indicator to measure the monetary policy stance. It relates the policy rate to the output gap (the gap between the real GDP and the potential GDP) and the gap between the inflation rate and the inflation target. All else equal, when the inflation rate is below the inflation target, the central bank is expected to reduce the policy rate.
do not provide clear evidence that the rise in asset price can be considered as “excessive”. More recently, Gali and Gambetti (2015) suggest that monetary policy tightening in the US may increase asset prices confirming Gali’s (2014) result that a rise in the policy rate would increase the stock market bubble rather than deflate it.

Overall evidence of the impact of monetary policy shocks on asset price bubbles is not clearly established. Moreover, empirical evidence has not yet reached a consensus on the identification of bubbles, an issue which blurs conclusions on the role of monetary policy.
3. NOT ALL ASSET PRICE VARIATIONS ARE BUBBLES

The correlation between asset price and monetary policy easing cannot be considered as an indicator of a growing bubble per se as not all asset price increases can be considered as bubbles. Separating the fundamental value from the bubble component remains a major empirical challenge since asset price bubbles are not observed. The choice of identification reflects theoretical controversies, which are illustrated by Brunnermeier (2008): “Bubbles are typically associated with dramatic asset price increases followed by a collapse. Bubbles arise if the price exceeds the asset’s fundamental value”. Two interpretations of bubbles emerge from this definition. Bubbles would either rely on the notion of a fundamental value or on excessive variations in asset prices. In what follows, we consider alternative specifications, stemming from several approaches. None of these models has reached consensus, however altogether they may capture the main properties of asset price bubbles.

On the one hand, rational expectations models provide a first theoretical framework where the fundamental value is determined by the discounted sum of future cash-flows and where rational bubbles (movements in asset prices which are not related to the fundamental component) may also arise. Bubbles may also be represented in models where not all agents behave rationally. On the other hand, an empirical literature has relied on statistical definitions of bubbles where the latter are considered as excessive – positive or negative – changes in asset prices beyond given thresholds, or related to boom or bust periods which are identified either through a statistical filter or from methods determining turning points (peaks and troughs).\(^\text{10}\)

As neither theoretical, nor empirical literature has reached a consensus on this issue, Blot, Hubert and Labondance (2017) propose an agnostic approach consisting in averaging the most commonly used models (see appendix for details). The figure 2 presents the results of the methodology applied in the euro area for three types of assets: stocks, bonds and house prices. An overall bubble indicator for all three markets is also computed. It shows that the recent increase in stock prices is not characterized by a bubble. As for the housing market, there would be a positive bubble but its size remains low in contrast with the period before the global financial crisis. Finally, the bond market is characterized by a negative bubble since 2015. The bubble indicator of the bond market was even declining at the beginning of this year. It has increased recently and is close to zero at the end of the sample (June 2016). There is therefore no sign of a bubble in the bond market in the recent period. Finally, the overall bubble indicator shows that since 2015, a period of asset overvaluation has begun; this overall bubble is mainly driven by the housing market.

\(^{10}\) See Bordo and Wheelock (2007) and Jorda, Schularick and Taylor (2015).
Figure 2. Bubbles in the EA

Note: Bubbles’ indicators are represented by the blue bold lines. Each underlying models used to compute the indicators are represented by the other thin lines.

Source: Blot, Hubert and Labondance (2017)
4. DOES EXPANSIONARY UNCONVENTIONAL MONETARY POLICY CREATE ASSET PRICE BUBBLES?

We wonder whether unconventional monetary policy can be made responsible for increases in bubble components of asset prices and we also give an appraisal on the ability of this policy to smooth the bubble component. We assess the impact of unconventional monetary policy on the three bubble indicators using Jorda (2005)’s Local Projection method. Monetary policy shocks are measured following the Romer and Romer (2004) approach and using the amount of securities purchased by the ECB for monetary policy purposes as the policy instrument (the item 7.1 in ECB’s weekly financial statements, which includes the Securities Market Program, the three Covered Bond Purchase Programs, the Asset-Backed Securities Purchase Program and the Public Sector Purchase Programme).

To analyse the risks associated with the recent QE episode implemented by the ECB, we focus on the impact of unconventional monetary policy after July 2008 and until June 2016, also accounting for the effect of long-term refinancing operations that have played a major role in the implementation of ECB unconventional monetary policy. It should be kept in mind that the whole period was not characterized exclusively by QE-type measures. Here we only consider expansionary shocks in the EA, which may be easily justified by the stance of monetary policy since 2008 (figure 3). The response of the overall bubble indicator to an expansionary monetary shock is positive but only weakly significant. The decomposition across markets shows that this is driven by the bond market. It would have no effect on the housing market bubble and the response of the bubble component turns negative after 14 months for the stock market. Consequently, our results suggest that the unconventional monetary policy implemented by the ECB did not inflate stock market and house market bubbles. There may be more risks on the bond market, where most operations related to the QE are now realized through the PSPP. Figure 2 has illustrated that there was no bubble in bond market since 2015, i.e. since the launch of the QE programme. But in June 2016, the bubble indicator was increasing, though being still close to zero. With the pursuit of QE since June 2016, it might be possible that the bond market is now characterized by a bubble since the indicator reacts positively to expansionary monetary policy.

Overall, our results suggest, first, that there is currently no clear evidence of bubbles due to ECB’s QE programme, and, second, that there is no strong and stable causal link between monetary policy and asset price bubbles, except on the bond market.
Figure 3. Bubble responses to an expansionary shock of unconventional policies
Euro area

Note: Shaded area represents the 90 per cent confidence interval. The red line plots the linear response of bubble components to shocks to unconventional policies.

Source: Blot, Hubert and Labondance (2017).
5. FINANCIAL RISKS IN THE EURO AREA

The fact that our data show a limited risk of a bubble on euro area financial markets does neither mean that there are no financial risks nor that these potential risks may not have an impact on the effectiveness of QE.

Indeed, the recent rise in sovereign bonds’ interest rates of euro area countries (see figure 4) may signal higher perceived risk on the sustainability of public debts, at a moment when economic recovery remains elusive (IAGS, 2016).

Figure 4. Long-term interest rates on 10-year public bonds

It must be kept in mind though that long-term interest rates remain at very low levels in historical terms in the euro area. Consequently, the risk of public debt unsustainability should not be overstated. Besides, the recent rise in sovereign yield may not reflect a higher perceived risk but a rise in expected inflation. The announcements of a large public investment plan in the United States may also increase the future supply of sovereign bonds pushing up interest rates in the US but also in other bond markets.

Moreover, the current euro-area policy mix of a broadly neutral fiscal stance and still expansionary monetary policy reduce debt sustainability risks (in 2017 and beyond). As a matter of fact, QE should contribute to lift inflation expectations (to their pre-crisis levels), to rise inflation towards the ECB target and spur the recovery. Higher inflation and growth would in turn help to curtail the debt dynamics.

The higher perceived risk on sovereign bonds may fuel some financial instability, not directly on debt sustainability as we have just argued, but indirectly. The fact that private banks continue to hold public bonds whose prices are declining with the increase in interest rates may deteriorate their balance sheets and even prompt a ‘balance-sheet’ crisis. This is all the more true in countries where the share of non-performing loans in total gross loans is already high and weakens the domestic banking system. We can think of Italy as a case in point where the deterioration of banks’ balance sheets may require a public intervention, further increasing government debt and thus putting debt sustainability at risk...

What have these indirect effects got to do with QE? Since QE has been able to curb long-term interest rates, its planned extension ought to hold back deteriorations of balance

Source: OECD, monthly data.
sheets. Symmetrically, the end of QE will require close scrutiny to banks’ balance sheets in order to remove the risk of a new bank crisis.
6. CONCLUSIONS

The former sections have shown that the presence of asset price bubbles is not a major concern in the euro area so far. Besides, the change in the ECB balance sheet – limited to the use of unconventional policies via SMP, CBPP, ABSPP and PSPP – has not triggered an increase in the bubble indicator of the stock and the housing market. However, it is suggested that the bubble indicator of the bond market reacts positively to unconventional monetary.

We can infer from that that extending QE – at a lower monthly pace – is not expected to generate an overall bubble in the future. Keeping in mind that the bubble component of bonds’ prices has remained at a very low level, there may be some risks in the bond market. This is not a major concern for the pursuit of the QE but it might be for the phasing out of QE measures that should consequently be implemented very carefully.

As a matter of fact, the reversal in the ECB's monetary stance might well have an impact on bonds' prices in the future. To smooth that impact, the monetary stance needs to be incorporated in the information set of private agents so that it is finally reflected in the fundamental value of assets, rather than as a “surprise” of the bubble component. To achieve that, forward guidance applied to the end of QE will be central. It shall consist in clear and forward communication on a gradual exit from QE after 2017. As it has been shown that the measures taken by the ECB have contributed to increase bond prices, the phasing out of QE programmes would reduce bond prices and therefore push up sovereign yields. It is then of crucial importance that once the QE programme is over, the ECB does not try to reduce the size of its balance sheet too rapidly by selling bonds. Considering that the ECB is aware of the risks, it may act cautiously and follow a strategy close to the one implemented by the Federal Reserve, which consists in maintaining its policy of reinvesting principal payments from its holdings of securities (agency debt, Treasury debt and asset-backed securities).

A gradual decline in ECB’s balance sheet would also be important to limit the risk of a new banking crisis in the euro area. A rapid reduction in ECB’s balance sheet under financial frictions may trigger a bubble burst on the bonds’ market which would have negative and dangerous spillovers on banks and, by contagion, on the real economy.

Finally, our argument that a change in the ECB’s monetary stance should not jeopardize debt sustainability draws on two assumptions.

First, we assumed that there can be coordination between fiscal and monetary policies in the euro area. This is a strong assumption since there is no such institutional coordination in the current framework. Coordination at the euro area level must be the result of discretionary behaviour: it may or may not happen. In order to reduce perceived risk on debt sustainability in the euro area, coordination of fiscal and monetary policies is necessary. The recent plea by the Commission in favour of a euro area fiscal stimulus during a period of weak recovery is the very example of a lack of rule for fiscal, not fiscal and monetary, coordination. The plea has been interpreted as a discretionary appeal to those countries having some fiscal space to act. Concerned countries have replied that this is not part of the current fiscal rules. If the ECB took the role of the lender of last resort for euro area member states, an institutional framework for ex-ante coordination of fiscal and monetary policies to dampen the risks of debt unsustainability would become feasible.

The second assumption relates to the behaviour of the ECB. When we depicted the rise of the policy rate after 2017, we have assumed that the stance of monetary policy depends on inflation expectations and the output gap, following some kind of non-mechanical Taylor rule. A rise in the policy rate would be a reaction to a rise in inflation expectations and an improvement in the output gap, with the change in the three variables having a broadly

Financial stability and the ECB
neutral impact on debt sustainability. Though this assumption may seem reasonable, it remains open to discussion and interpretation. A central bank with a clear mandate, a variety of instruments and a transparent strategy may well take optimal decisions for the euro area. Therefore, it would remove the fears that its policy might be detrimental to some at the benefits of others. At this stage, the mandate of the ECB and the variety of its instruments are well-known and clear. However, two caveats are worth mentioning. The first relates to the ECB mandate: shall the ECB focus more on financial stability issues, its mandate should be clarified. It should also be made clear whether the ECB fulfils a “leaning against the wind” policy or not. The second caveat relates to the horizon of the strategy: beyond 2017, the ECB’s monetary stance is unclear. Tapering or not, this is a question to be answered soon by the ECB to provide a clear signal to both the real economy and financial markets on the monetary policy stance.
REFERENCES


APPENDIX: IDENTIFICATION OF FINANCIAL BUBBLES

Following Blot, Hubert and Labondance (2017), bubbles are identified on three different financial markets: stock, bond and housing, by focusing on the common component from different bubble models, using euro area data from January 1999 to June 2016. These models are the following:

1. Cash-flow model adjusted for risk-premium (estimated with OLS and ECM)

2. Full-information price model (estimated with OLS and ECM) yielding the best prediction of the fundamental value from a set of macro and financial variables

For the previous models, the bubble component is defined as the sum of the (Christiano-Fitzgerald) filtered residuals, as long as these residuals have the same sign.

3. Statistical approach, where the boom (resp. bust) period is defined as a deviation from the trend above (resp. below) 1.5 standard-deviation

From these models 5 series of bubble for each asset price (stock, bond and housing) in the euro area can be identified. Using Principal Component Analysis (PCA), Blot et al. (2017) estimate the first component of the 5 series for each asset class and consider it as a bubble indicator. With such an approach, the bubble indicator maximizes the common variance among the 5 series, with no prior about which bubble model is best, and drops idiosyncratic evolutions specific to each bubble model. This procedure should be seen as model averaging with estimated weight (the PCA eigenvalues).
Role

Policy departments are research units that provide specialised advice to committees, inter-parliamentary delegations and other parliamentary bodies.

Policy Areas

- Economic and Monetary Affairs
- Employment and Social Affairs
- Environment, Public Health and Food Safety
- Industry, Research and Energy
- Internal Market and Consumer Protection

Documents

Visit the European Parliament website:
http://www.europarl.europa.eu/supporting-analyses