

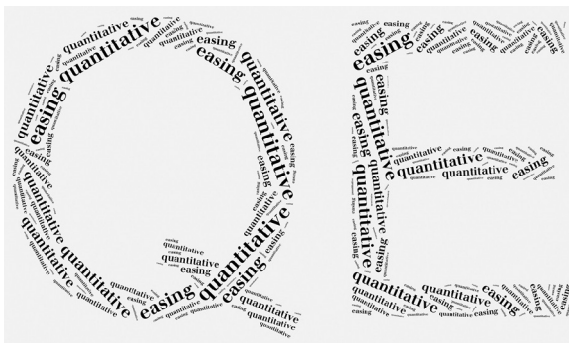
## The ECB's Quantitative Easing Early results and possible risks

### SUMMARY

In early 2015, at a time when most indicators of actual and expected inflation in the euro area had drifted towards historic lows, the European Central Bank (ECB) announced that it would launch a new asset purchase programme, which would be similar in many respects to the 'Quantitative Easing' (QE) programmes launched earlier by the United States Federal Reserve System, the Bank of England and the Bank of Japan.

Researchers have published extensively on issues relating to the programme. On one hand, empirical evidence from previous QE programmes (in the United States, the United Kingdom and Japan), shows that contrary to 'textbook' theory, the ECB's Public Sector Purchase Programme is expected to have negligible direct effect on the economy, contributing more through indirect effects. On the other hand, most researchers agree that the many concerns raised – e.g. there would be insufficient liquidity in the markets for the programme to have an impact; side effects would increase risks to financial stability or worsen income inequality; or that the risk-sharing arrangements could exert pressures on euro area solidarity in the event that a Member State declared bankruptcy – have not so far materialised. And, should they eventually come about, they would neither present significant risks to the euro area economy (in terms of direct losses or financial stability), nor create tensions between Member States, or between different population classes within a Member State. However, unwinding the current programme may present significant risks, so to avoid or at least mitigate them, careful planning of the timing and speed of the exit, complementing it with micro and macro-prudential supervision, as well as fiscal policy measures are all important.

*This briefing updates an [earlier edition](#) from the time of the ECB announcement.*



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### Glossary

**Quantitative Easing:** an 'unconventional' tool of monetary policy whereby a central bank creates new money to buy financial assets, such as government bonds.

**Collateral:** the asset(s) used as security for a loan, which can be seized by the lender(s) if the borrower defaults on repayments

**Asset-Backed Securities:** securities whose collateral is composed either of mortgage loans or from collections of other types of financial assets.

**Covered Bonds:** securities backed by assets such as mortgage loans. Characteristics that differentiate them from ABS are the dual recourse (against the originating institution's assets and the cover pool) offered to their holders, the asset segregation and dynamic cover pool obligations, as well as the strict legal and supervisory frameworks.

## Introduction – The ECB's Expanded Asset Purchase Programme

The European Central Bank's '[Expanded Asset Purchase Programme](#)', is composed of three separate programmes (Asset-Backed Securities Programme, Covered Bonds Purchase Programme and the Public Sector Purchase Programme) which were launched at different times and involve different levels of purchases for the underlying assets.<sup>1</sup> Nonetheless, they all share a common aim – to enhance the functioning of the monetary policy transmission mechanism, support financing conditions in the euro area, and facilitate credit provision to the real economy. They will all have a substantial short-to-medium term impact on the ECB's balance sheet.

### The (third) Covered Bonds Purchase Programme (CBPP3)

On 20 October 2014 the euro system started to buy covered bonds under a new covered bond purchase programme (CBPP3).

CBPP3 holdings	
€ million	139 923
Date	4 Dec 2015

### The Asset-Backed Securities Programme (ABSPP)

The asset-backed securities purchase programme (ABSPP) started on 21 November 2014 and will last for at least two years.

ABSPP holdings	
€ million	15 335
Date	4 Dec 2015

### The Public Sector Purchase Programme (PSPP)

The Public Sector Purchase Programme (PSPP) was launched on 9 March 2015. According to ECB Executive Board member [Benôit Cœuré](#), the programme was designed to strengthen the impact of the ECB's asset purchases already under way, by reducing the supply of securities available in the secondary market,<sup>2</sup> by affecting the prices of riskier securities,<sup>3</sup> and by complementing and increasing the horizon of the ECB's [forward guidance](#) on interest rates. Monthly purchases under the programme are intended to run 'until a sustained adjustment in the path of inflation towards 2% over the medium term' is visible.<sup>4</sup>

PSPP holdings	
€ million	461 913
Date	4 Dec 2015

Although all three purchase programmes constitute 'Quantitative Easing' (QE), this briefing focuses on the last programme (PSPP), because it is the most ambitious in size and because it has been more intensely debated than the other two.

## Results of the Quantitative Easing exercises led by other central banks

[Andrew Hughes Hallett](#) is of the view that past QE programmes (led by the US Federal Reserve, the Bank of England and the Bank of Japan) have had relatively consistent and measurable results, i.e. a yearly increase in GDP of around 0.25%-0.5% and a negligible increase (less than 0.1%) in prices. Since these effects are trivial, he argues that indirect effects – such as liquidity provision, market stabilisation and lower uncertainty – are

probably the most significant benefit of QE. [Daniel Gros et al.](#) note that it is difficult to measure the overall impact of the various asset purchase programmes, because each of them constitutes a special case, impacting on different economies at different times (a point shared by [Christophe Blot et al.](#) who note that, in the US and the UK, QE measures started when inflation was present in the economy, whilst the opposite was the case for Japan and the euro area).

## Expected gains from the Public Sector Purchase Programme

### Gains from lower interest rates

According to [Ramaprasad Bhar et al.](#), asset purchase programmes were expected to work by lowering interest rates,<sup>5</sup> which reduce the debt-servicing burden for individuals or corporations thus allowing them to spend or invest more. Yet they note their effect is rather limited: three rounds of QE in the US had only a marginal impact on long-term interest rates;<sup>6</sup> similarly, [Peter Sinclair and Colin Ellis](#) – who focus on the UK – show that QE had a small effect on interest rates, since most of the downward shift in [yields](#) at the time of QE reflects global trends also seen in other advanced economies.

### Profits to the ECB

[Grégory Claeys et al.](#) indicate that, apart from the aforementioned gains for the euro area economy, there should also be gains for the ECB – and national Treasuries, when they are ultimately [repatriated](#) – resulting from the purchase of sovereign bonds and supranational debt securities, as well as from the increase in excess reserves induced by the programme. Nevertheless, the authors note that these profits will be lower than in the case of the other QE programmes: profits from the purchase of sovereign bonds and supranational debt securities – estimated at €3.978 billion and €0.28 billion respectively – will be lower than in the USA or UK due to the fact that euro area government bond yields are already at a very low level,<sup>7</sup> while profits from the excess reserves held by banking institutions at the ECB will also be modest (€1.9 billion).<sup>8</sup>

## Open questions / potential risks

### Insufficient liquidity

[Monika Blaszkiwicz-Schwartzman](#) notes that one of the key issues with regards to euro area QE relates to the potential scarcity of the sovereign bonds to be purchased under the programme over the period up to September 2016, which could limit its effectiveness by reducing the impact on inflation and lead to significant distortions in bond markets, with supply insufficient for demand. More specifically, Blaszkiwicz-Schwartzman notes that, according to estimates there is an imbalance between the supply and demand of newly issued bonds amounting to €102 billion, and that countries most likely to struggle with a shortage of bonds are Germany, France, Austria, Netherlands, Belgium, Portugal, Finland and Slovenia. She notes however that, until June 2015, these problems had not yet materialised and, should they materialise before the end of the programme, the ECB has the possibility to tackle them by changing the issue limit or enlarging the list of eligible agencies in countries in danger of reaching the limits before the programme expires. [Daniel Gros](#) provides another reason why this risk should not materialise: the difference between [face and market value](#) of bonds purchased. At the time of his calculations (summer 2015), the market value of most government bonds in the euro area was about 20% above their nominal value, and given that the target of bond purchases announced by the ECB relates to the amounts it intends to commit for the purchases and not the value of the bonds purchased, this means that – if market values remain at those levels – the €1 100 billion earmarked for

the Public Sector Purchasing Programme would serve for the purchase of around €900 billion in bonds.

### Financial stability

Concern was raised that QE may have side effects that could result in [a situation](#) where the financial system can no longer fulfil its [main functions](#) with sufficient resilience to potential disruption. This can happen in many ways. As explained above, asset purchase programmes work by lowering interest rates. This, however, may lead financial institutions to take more risks,<sup>9</sup> something which could increase financial stability risks. With regard to this issue, [Grégory Claeys and Zsolt Darvas](#) do not see dangers, at least in the short term; first because the results of QE in the USA and UK do not show a direct link between these programmes and excessive risk-taking by banks; and also because banks in the euro area are still cautious in supplying credit to the real economy.

Another concern is that QE programmes might lead to an increase in leverage in the financial sector,<sup>10</sup> which in turn could increase financial instability. Again, Claeys and Darvas note that data for the largest banks in those economies that underwent asset-purchase programmes provide evidence that banking-sector leverage has declined since the crisis, and has remained at relatively low levels despite those purchase programmes, probably due to the regulatory reforms undertaken during the crisis, as well as the increased supervision of the banking and financial sector in the aftermath.

Yet another concern is that, together with lowering interest rates, asset purchase programmes work by [raising asset prices](#),<sup>11</sup> so they may eventually lead to the creation of asset bubbles, especially if those policies are maintained for long periods. Although the authors carefully note that the answer to this issue especially for stock exchanges depends on the indicators used,<sup>12</sup> they are of the view that data relative to house prices – a sector which could indirectly trigger financial instability, as in the global financial crisis – do not suggest that bubbles emerged in the other countries that have launched asset purchase programmes.

Finally, there is a concern that, as the Extended Asset Purchase Programme will increase stock (and other asset) prices, the end of the programme may have the opposite effect, thus exerting negative pressures on an already fragile euro area economy. [Miguel Villanueva](#) notes that in the USA, although QE has put downward pressure on long-term rates, its link to stock prices is more complicated, because of other factors<sup>13</sup> that operate simultaneously and account for most of the variation in stock returns before and after the financial crisis. These results, he argues, provide an explanation as to why stock prices continued to rise *after* the Federal Reserve started gradually winding down activities ([tapering](#)) in January 2014, and led him to observe that, 'if the positive effects of Quantitative Easing on the stock market are less strong than commonly believed, the negative effects from a gradual shrinking of the Fed's balance sheet may not be as bad as commonly feared'.

### Uncontrolled inflation

Another concern with QE programmes is that the large-scale asset purchases have [significantly increased](#) the amount of excess reserves in the banking system, which could lead to inflation if banks use those reserves to fund lending, thereby increasing [money supply](#). [Karl Whelan](#) addresses this criticism, pointing out that contrary to classic economic models, expansion of the monetary base does not automatically translate into proportional increases in money supply – on the contrary, where such programmes have been implemented, money multipliers have fallen sharply. Furthermore, he notes,

'there is very little evidence in modern economies for a direct link between the growth rate of the money supply and either nominal GDP growth or inflation'.

#### **Side effects on income distribution (and thereby inequality)**

Since QE operates through asset prices by creating investment and wealth effects, there is the concern that it may increase already existing wealth/income inequalities. [Andrew Hughes Hallett](#) notes that lower interest rates and abundant liquidity 'will benefit investors, banks, firms, mortgage holders more than savers, employees, or pensioners'. Furthermore, he claims there are important direct effects on wealth, which will be different depending on whether the individual is a net asset holder (typically those later in life) or a net liability holder (earlier in life). This means that, notwithstanding any gains QE may bring to the economy as a whole, there will be important intergenerational transfers and rising intergenerational inequality.<sup>14</sup>

After investigating the effects of similar large-scale asset purchase programs in the USA, the UK and Japan, [Kerstin Bernoth et al.](#) adopt a more nuanced view: whereas in the short run the ECB's purchases are likely to exacerbate any existing income and wealth inequalities,<sup>15</sup> in the long run the effects on income and wealth distribution will be less pronounced, especially if the programme is successful in bringing inflation back to target, promoting economic development and lowering unemployment.

Finally, presenting evidence from the USA, [Karl Whelan](#) suggests that QE also increases the net wealth position of middle-class households through increasing house prices, while lower interest rates 'reduce unemployment and boost wages at the lower end of the income distribution', thereby reducing inequality.

#### **Risk-sharing**

Given that QE programmes imply that the central bank<sup>16</sup> takes additional risks on its balance sheet and that, in the case of the euro area, those risks include sovereign default, some have suggested that the existing risk-sharing arrangements could, in the case of a sovereign default, threaten the unity of the euro area. [Jens Boysen-Hogrefe et al.](#) find that the probability of these risks materialising currently seems to be relatively small, and the loss-absorption capacities of the national central banks and the ECB appear sufficient to deal even with the worst case of sovereign default. Nonetheless, they note that if this probability were to increase,<sup>17</sup> the ECB and national central banks could find themselves under increasing political pressure,<sup>18</sup> which in turn may weaken the institutional structure underlying monetary policy in the euro area. Similarly, [Angel Ubide](#) argues that the programme is well designed<sup>19</sup> and calibrated for the characteristics of the euro-area bond market, and that the risk-sharing and accounting arrangements, as well as the ECB's loss-absorption capabilities, look adequate<sup>20</sup> for the potential risks of the programme. Although central banks [can operate with negative capital](#), if losses were to materialise, a prompt recapitalisation would be desirable to maintain the credibility of monetary policy and the independence of the European Central Bank.

#### **Unwinding Quantitative Easing**

Although the other central banks have yet to exit their respective programmes and the ECB purchases under the PSPP are scheduled to run until next year (September 2016), the matter of 'unwinding' QE – i.e. the process of reversing private-asset purchases realised under the programme – and more specifically, *how* and *when* it can be done, as well as *at what cost*,<sup>21</sup> is raising concerns.

*Exiting the first Japanese Quantitative Easing*

According to [Adrian van Rixtel](#), the exit from the first QE programme in Japan (in 2006) was a success, and its experience may serve as a useful example for other central banks. To reach this positive result, the Bank of Japan rapidly reduced its amounts in one asset class on its balance sheet<sup>22</sup> – through direct operations with the banking sector – to match the rapid decline in the amount of excess reserves. Furthermore, it reduced its holdings of Japanese government securities very moderately, in order not to distort supply and demand conditions in Japanese bond markets. And it implemented certain additional liquidity-providing operations, in order to promote the proper functioning and stability of interbank money markets – which play a [crucial role](#) for the conduct of monetary policy and which could be subdued as an undesirable side effect of unwinding.

*Current Japanese Quantitative Easing and possible associated costs*

[Hiroshi Fujiki and Hajime Tomura](#) have simulated the cash flows and balance sheet of the Bank of Japan, before and after exit from the current [Quantitative and Qualitative Monetary Easing](#) (QQE) under various scenarios. Their simulations show that Japan will record significant accounting losses after exit – because it is acquiring a large amount of Japanese government bonds at very low interest rates during QQE, the interest payments on which will be insufficient to cover interest expenses on excess reserves after exiting QQE – which will translate to fiscal costs for Japan, as they represent increased interest expenses to the public. However, their simulations also show that the losses will decrease if the Bank of Japan conducts tapering (gradual winding down of activities)<sup>23</sup> after the end of QQE.

*In the USA, timing and size are of the essence*

[Yi Wen](#) examines the likely impacts of the unwinding of US Quantitative Easing on the economy. His paper shows that three aspects of the Federal Reserve's exit strategy matter for achieving maximum gains in aggregate output and employment under QE: (i) the timing of exit, (ii) the pace of exit (a one-time exit is likely to work better than a gradual exit, provided the timing of the exit is not too early compared with the optimal timing), and (iii) the private sector's expectations of when and how the Federal Reserve will exit (everything else being equal, an unanticipated exit would work better than an anticipated exit).

*The case of the euro area*

[Claeys and Darvas](#) note that exit from the current mix of 'loose' conventional and unconventional policies could have a number of negative side effects,<sup>24</sup> which could be compounded or mitigated by inflationary and output developments, and the duration of those policies. Therefore, they recommend complementing the unwinding with micro- and macro-prudential supervision, as well as fiscal policy measures, to mitigate the potential risks.

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- H. Fujiki, H. Tomura, [Fiscal Cost to Exit Quantitative Easing: The Case of Japan](#), September 2015.
- Y. Wen, [QE: When and How Should the Fed Exit?](#), July 2014.

## Endnotes

- <sup>1</sup> Asset-backed securities for the ABSPP, covered bonds for the CBPP3, and central government bonds and bonds issued by recognised agencies, international organisations and multilateral development banks for the PSPP.
- <sup>2</sup> Thereby increasing asset prices and lowering their yields through the creation of scarcity.
- <sup>3</sup> Since the compression of interest rates will create incentives for investors to re-balance their portfolios away from low-risk securities.
- <sup>4</sup> The duration of the programme has been modified slightly: in March 2015, the position of the ECB was that purchases under the programme would continue until the [end of September 2016](#) (18 months in total), or beyond, if necessary (until inflation picks up), while six months later, in December 2015, the ECB said that the programme will continue until the [end of March 2017](#) (24 months in total), or beyond if necessary.
- <sup>5</sup> Quantitative Easing works through the [portfolio re-balancing channel](#) (by impacting bonds' [term premium](#), it lowers their long-term real interest rates).
- <sup>6</sup> They were lowered on average by 0.2-0.3%.
- <sup>7</sup> As a comparison, when QE started in the USA (November 2008) and the UK (January 2009), 10-year yields were still about 4% in the USA and about 3.5% in the UK. The Federal Reserve generated US\$80.5 billion in interest income on its large-scale asset purchases in 2012 alone, while the Bank of England Asset Purchase Facility's net interest income was equal to £8.1 billion (equivalent to 0.5% of UK GDP) during that year.
- <sup>8</sup> The increase in assets resulting from the asset purchase programmes [should result](#) in an increase of euro system liabilities – either in banknotes in circulation, or in the reserves of credit institutions, which will eventually have to be deposited at the ECB. The fact that the ECB currently applies a *negative* deposit rate on reserves held in these two facilities that exceed the minimum reserve requirements, means that the banks will have to pay the ECB to keep their deposits. The authors calculate that extra profit at €1.9 billion.
- <sup>9</sup> In fact, [Andrew Hughes Hallett](#) notes that in the current environment investors, specifically insurance or pension companies, enter riskier investments in search of higher returns to offset lower yields on safe investments.
- <sup>10</sup> Through a reduction of the cost of holding reserves as collateral which, according to [Gabriel Chodorow-Reich](#) can lead to larger portfolios and higher leverage, or through low volatility which, according to [Markus Brunnermeier and Yuliy Sannikov](#) will affect the value-at-risk models of banks and encourage them to increase their leverage.
- <sup>11</sup> According to Claey's and Darvas, 'Bond prices increase because of falls in interest rate and also possibly because of falls in risk premiums. Stock prices increase because of the effects of portfolio rebalancing from bonds to stocks, and also because of improved corporate profits, the reduction in the equity risk premium and the lower discount rate used to calculate the present value of future profits'. As for housing prices, [Anna Zabrodzka](#) from Moody's

Analytics notes that, the PSPP will depress 'the yields on the government debt of countries viewed by investors as safe', which may 'encourage investment in the property market, which yields a higher return'.

<sup>12</sup> The authors use two standard indicators of equity valuation, the [book/market ratio](#) and the [price/earnings ratio](#), which do not signal a very rapid increase in prices generally. They note that [Ted Berg](#), who instead used the [cyclically adjusted price/earnings ratio](#) and the [Q-ratio](#), argues that the market could become turbulent.

<sup>13</sup> Among others, the performance of stock markets in the rest of the world, the performance of the country's currency, or the fact that the funds rate dictated through 'conventional' monetary policy is close to zero.

<sup>14</sup> To give an idea of the scale of the changes, the gains to the top 5% in wealth distribution in the UK were 13 times bigger than the gains for the other 95%. And the older generation (over 45) gained 26 times as much as the younger generation.

<sup>15</sup> In this context they note that the appreciation of asset values observed since the introduction of the programme is quite substantial.

<sup>16</sup> In the case of the euro area, the euro system.

<sup>17</sup> In the case where future economic circumstances lead the ECB to considerably tighten its monetary policy stance.

<sup>18</sup> See also Claudia Schwarz et al. '[Why accounting matters – a Central Bank perspective](#)'. The authors note that 'If the financial health of a central bank deteriorates, it might seek recapitalisation from the government, which then might try to influence the central bank's decisions in return for committing public money. Alternatively, the central bank might try to avoid situations where recapitalisation is required, for fear of government intervention or political pressure. Therefore, the central bank might find itself in a situation where monetary policy objectives are not the only goal pursued and, as a result, a sub-optimal monetary policy might be implemented (e.g. an excessively inflationary policy aimed at generating more revenue for the central bank)'.

<sup>19</sup> Angel Ubide notes that, 'Under most scenarios, the current design should be successful in its implementation, although the restrictions imposed by the ECB on the eligibility of bonds could become binding for Germany if yields were to decline abruptly from current levels or the program had to be extended further beyond September 2016. In that case, the ECB could easily modify the rules to be able to ease monetary policy as much as needed'.

<sup>20</sup> 'Even under the very extreme assumption of a debt restructuring in several countries similar in size and extent to that of Greece in 2012, the shared ex-ante losses and potential ECB recapitalization needs would be small'.

<sup>21</sup> If monetary injections can increase aggregate output and employment, will the reverse action undo these effects, or can Central Banks minimise its impact by following a particular strategy?

<sup>22</sup> i.e. the amount of its bills' purchased from private banks, an asset considered by the author more 'flexible' than government securities.

<sup>23</sup> The effect of which will be 'significantly stronger if there is no safety channel for the long-term interest rate'.

<sup>24</sup> Among others, an increase interest rates, a decrease in stock, bond and housing prices, an increase in risk-aversion, or a weakening of public debt sustainability.

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