Lyddon
CONSULTING SERVICES LTD
07939 132341
enquiries@lyddonconsulting.com
www.lyddonconsulting.com

The European Central Bank is bound upon a wheel of fire: it cannot raise interest rates or reduce its Asset Purchase Programmes without a risk of bankrupting itself

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#TARGET2, #ECB, #Asset Purchase Programmes, #Euro sovereign debt, #Eurosystem

Introduction

The Asset Purchase Programmes ("APPs") are the main plank's in the ECB's monetary policy regime. Through it the ECB uses the other Eurosystem members – the National Central Banks or "NCBs" - to buy assets and release cash into the banking system.

The programme has been running at €60 billion a month and for some time, and the cash side is settled through the TARGET2 system, the data on which gives an indication of the total size of the assets purchased: around €2 trillion.

No indication, however, is given of the marked-to-market value of the APP portfolio and that is a concern. The ECB's accounts do not show this, and if there is not already a substantial unrealized capital gain, even a small rise in yields on the bonds would create a loss exceeding the ECB's capital and reserves.

In fact, a 10 basis point rise in yields would be sufficient, the size of movement that can happen within the course of a trading day.

Latest TARGET2 data and how APP volumes are reflected in it

The latest data on TARGET2 imbalances has been published by the ECB. The figures just get bigger, because they are intertwined with ongoing capital flight from the Eurozone periphery and the APPs, the latter being an enabler of the former.

It is a perfect "round trip": APP assets are purchased from an investor by one Eurosystem member and then used as collateral for that Eurosystem member to raise the purchase amount from the Eurosystem member where the investor has its account, into which the proceeds of the asset sale are paid.

What is the size of the APP?

Monex Europe's morning report on 27th October 2017 confirmed the current balance as €2 trillion, the same amount as was extrapolated from the TARGET2 figures.

This equates to over 19% of Eurozone GDP (EU GDP = USD17.1 trillion or €14.6 trillion at a USD/EUR FX rate of 1.17; Eurozone GDP is 70.6% of EU GDP, so Eurozone GDP is €10.3 trillion. Source - Eurostat).

What is the trajectory of APP?

In the week of 23rd October 2017 the ECB announced that it planned:

1. to prolong APP until September 2018, instead of until March 2018;
2. to reduce the monthly purchases from €60 billion a month to €30 billion a month;
3. to reinvest the proceeds of maturing APP bonds.

This last statement is in many ways the most significant: it means that the balance of APP will continue to increase, and at €30 billion a month from €2 trillion now, up to €2.36 trillion at the end of September 2018.

By that time, and assuming that the Eurozone economy grows by 1.5% (or €154 billion) in that time to €10.47 trillion, the APP balance will have risen from 19.4% of the Eurozone economy to 22.5% of it. At any rate it is clear that APP has been expanding far quicker than the Eurozone economy.

European Investment Bank support for the Eurozone economy

While the transmission of the effect of APP into the real economy is approximate, it should not be overlooked that the EIB has, in parallel, been pursuing a policy of lend-and-spend into the Eurozone economy.

Loans disbursed into the EU in 2016 were €53.6 billion. The EIB 2016 Financial Report does not break out the disbursements by country, only the loan signatures.

Loan signatures in 2016 of €76.3 billion went explicitly for €62 billion into the Eurozone, plus a portion of €9 billion to "Other EU Member States", which we can be allowed to assign 70.6% into the Eurozone: another €6 billion, meaning that €68 billion out of the total of loans signed will be disbursed to Eurozone borrowers – that is 89.05% of the EIB's new loans.

We can apply that to the figure of €53.6 billion of loans disbursed in 2016, and extrapolate that the EIB made €47.8 billion of new loans into the Eurozone. The proceeds of these loans would have been spent in 2016 and added 0.463% to Eurozone GDP (€47.8 billion/€10.3 trillion).

The fact that over 89% of the EIB's loans are into the Eurozone, whereas the Eurozone is only 70.6% of the EU economy, shows how the EIB is being used as an even more direct tool to reflate the Eurozone than APP, and how much it exploits the support of non-Eurozone member states to support the Euro.

Who buys what under an APP operation and how do they pay for it

A typical APP operation would involve an investor that is not in the Eurozone periphery selling a bond issued by a borrower that is in the Eurozone periphery, and selling it to the Eurosystem member in the borrower's Eurozone periphery country. If the country is Spain, the Banco de Espana buys the asset and settles the trade by making a TARGET2 payment to the investor's commercial bank in their account with their respective NCB, such as the Bundesbank.

How the Banco de Espana raises the money to pay for it

The Banco de Espana not having the money to make the payment, it borrows it from the beneficiary Eurosystem member (in this example the Bundesbank) and thereby increases both its drawings as a borrower in TARGET2, and the other Eurosystem member's balance as a depositor in TARGET2.

In order to be allowed to borrow from the other Eurosystem member Banco de Espana needs to pledge collateral to it. It pledges the asset it just bought under APP and lodges it to the order of the other Eurosystem member through the Correspondent Central Banking Model ("CCBM"). The CCBM, established when TARGET was first set up in 1999, defines the legal arrangements whereby Eurosystem members can borrow from one another against eligible collateral.

What assets can be used for APP and as TARGET2 collateral

The ECB issues a list of all bonds that are eligible as collateral for monetary and payment operations within the Eurosystem. There are 30,000 bonds on it and the ECB stipulates the "haircut" applicable to each bond. This is the security margin for the lender. If a bond is allocated a 2% haircut, the lender need not advance more than 98% of the bond's value.

In order to be eligible for APP – a Eurosystem "monetary" operation – a bond must be on the ECB list, and then, being on the ECB list, it is also eligible for securing a Eurosystem "payment" operation – which TARGET2 is.

The net results of this can be clearly seen in the table of TARGET2 NCB Net Positions as at 31st August 2017:

Borrower NCBs	€ billions	Depositor NCBs	€ billions
Belgium	22.1	Germany	852.5
Greece	67	Estonia	0
Spain	384.4	Ireland	5.8
Italy	414.2	France	9.3
Latvia	6.5	Cyprus	6.2
Lithuania	2.4	Luxembourg	183.5
Austria	38	Malta	3.4
Portugal	79	Netherlands	107.5
Slovenia	0.6	Finland	65.5
Slovakia	9.7	Non-Eurozone	3.1
	1023.9		1236.8
Matching Balance	1023.9		
Imbalance shown as "ECB"	212.9		

Netting of original figures to reach the figures in the table
The figures on TARGET2 that the ECB publishes are large enough, but these figures are already netted down once, from the original balances on the 552 current accounts that the NCBs hold with one another in order to clear and settle cross-border payments.

Whilst these accounts may now sit on the TARGET2 single shared platform, the account structure is no different from the original TARGET, and was confirmed in the 30th December 2005 ECB Guideline for TARGET.

The gross capital amount behind all of this can be discerned firstly by comparing the aggregate balance sheet of the Eurosystem members with the Eurosystem's consolidated balance sheet: positions held between Eurosystem members are eliminated upon consolidation. The difference is currently around €3 trillion.

If we compare that to the monthly amount of the APPs (currently €60 billion), annualise that and work out for how long the ECB has been pursuing APP, we come to broadly €2 trillion of the gross TARGET2 positions having been caused by APP, with other drivers of capital flight accounting for the remaining €1 trillion.

Gross imbalance of €3 trillion and netting documentation
The figures in the ECB's TARGET2 table can be taken to reflect original balances of €3 trillion assigned to the ECB and netted down by them, under documentation that is not public but which, to be effective, must enable the ECB to construe the TARGET2-participating NCBs as the same counterparty.

Put another way, the TARGET2-participating NCBs must have at least signed a declaration of joint and several liability for one another's TARGET2 debts for the ECB's accounting to be justified.

Of course, we know they haven't, and that the ECB's accounting would not be justifiable for a commercial bank. In fact each TARGET2-participating NCB has naked credit risk on the others, even if they nominally have collateral.

The main collateral pledged by Banco de Espana will be government bonds issued by the Kingdom of Spain, to which it has easy access.

The bonds represent the exact same credit risk as the Banco de Espana itself because Banco de Espana - a central bank - acts as agent for the Kingdom of Spain - its government: the Kingdom of Spain is the backer behind the obligations of Banco de Espana, a perfect example of what is known as "Correlation" between the credit quality of an obligor and a guarantor.

Risk taken on by the ECB through its Asset Purchase Programmes
The subject of this article is not the size of the imbalances per se so much as the risk that the ECB and the Eurosystem have taken on, and particularly as a result of the APPs.

The €2 trillion of APPs have put the ECB at high risk of bankruptcy if it ever decides to signal that Euro interest rates are going to rise, let alone if it actually raises them.

The most recent ECB council meeting in the week of 23rd October 2017 served to keep interest rates at their current low levels – by prolonging APP and by undertaking to reinvest the proceeds of maturing APP bonds.

This means that the new APP investments of €30 billion a month plus the reinvestment of maturing bonds will be occurring when interest rates can only go up.

Who is taking the risk
The APP operations are transacted by the NCBs. However they are being done as ECB-mandated operations.

This is important because such operations are subject to an absorption of profits and losses between the NCBs and the ECB. The profits or losses that any such NCB makes on APP are not their own, but are first allocated back to the ECB and then redistributed out to all Eurozone NCBs in accordance with their ECB capital keys (the portion of the ECB's capital that the respective NCB subscribes).

Profits and losses are booked against the capital account held by every Eurozone NCB. Profits are distributed; losses are absorbed – of course until such time as the capital is wiped out.

The timing is also important: the profit or loss is only allocated back when it is realised. In the case of APP that would be the point when a transaction is unwound and a bond re-sold, or when a bond matures.

There is no mechanism for the value of assets to be periodically marked-to-market and the unrealised profit or loss – residing in the books of an NCB – to be reflected in the ECB's accounts.

Involvement of non-Eurozone NCBs like the Bank of England
All of the central banks of EU member states are shareholders in the ECB. All central banks of Eurozone member states must participate in TARGET2. Five non-Eurozone NCBs participate in TARGET2 voluntarily and they are collectively net depositors of €3.1 billion, and so they would lose this amount if the system folded.

In other words non-Eurozone NCBs may participate in Eurosystem payment operations, but they do not participate in Eurosystem monetary operations, and do not participate in the profit-and-loss absorption arrangement.

Non-Eurozone NCBs, according to the ECB's annual report, "are not entitled to receive any share of the distributable profits of the ECB, including income arising from the allocation of euro banknotes within the Eurosystem, nor are they liable to fund any loss of the ECB", which means they are not part of the profit-and-loss-absorption arrangements for the Eurosystem's monetary policy operations even if, when it comes to payment operations, five of them are participants in TARGET2.

Mechanics of APP transactions in secondary bond markets

The ECB's APPs involve the Eurosystem members buying - as the ECB's agent - financial assets of Eurozone periphery countries from investors. The assets are predominantly "seasoned" bonds, for example a bond originally issued for 10 years but now with 7 years' remaining life. Problems with doing this arise when interest rates have reached the bottom, where the ECB has made sure they have reached.

Such a bond – issued when nominal interest rates were higher – rises in price as the difference between its coupon increases compared to the coupon the same issuer would have to pay to raise new money for the same term now. A typical new issue would be priced so that the investor would pay slightly under face value e.g. the coupon would be set so that the underwriters could sell the bonds to investors at 99.8 when the nominal issue price less the fees is 99.6, leaving them with a 20 basis point profit.

An example 7-year new issue in Euro now might be priced so as to pay a coupon of 1% p.a., cost the investor 99.8, and thus deliver to the investor a Yield-to-Maturity ("YTM") of 1.02975%. Seasoned issues for the same term and the same issuer, though, would most likely have coupons of 1.5% or 2.0% or more, if interest rates had been falling since their issue, which they have done.

Bond prices in perfect secondary markets

In a perfect secondary market, all these issues – same issuer, same maturity - would trade at prices delivering the same YTM as the new issue:

Coupon	YTM	Price
1%	1.02975%	99.8
1.5%	1.02975%	103.16
2.0%	1.02975%	106.52
2.5%	1.02975%	109.88
3.0%	1.02975%	113.24

The problem is that institutional investors holding the seasoned bonds risk booking a capital gain if they sell at a premium above par, which may have unwanted tax consequences. For that reason bonds that would trade at a premium above par are less liquid, and normally trade at a higher YTM/lower price compared to bonds whose coupon ensures they trade near to or just below par.

Now investors may welcome a chance to get out of an investment if they have doubts about the credit quality of the security or if they are having problems in other portfolios and can use the capital gain to disguise them. Normally they would then have to accept the higher YTM/lower price that the secondary market offers.

ECB has overpaid for the assets it has purchased and fueled capital flight

But what the ECB's APP has done is to make the holders of seasoned bonds an offer they cannot refuse, by paying a price reflecting the full YTM applicable to newly-issued bonds. What the ECB has done is buy the bonds at a much higher price than the investor could have expected in normal markets, and in enormous quantity – much higher quantities than would normally trade in secondary markets.

The ECB has allowed investors to quietly dump Eurozone periphery bonds at top prices both (i) compared to bonds with current rather than historical coupons, and (ii) in terms of furnishing investors with a capital gain, because the ECB has continued buying all the way down to where interest rates have hit rock bottom.

The ECB has created a false secondary market by overpaying and by acting in such size. It has acted in the same way the Bank of England did on Black Wednesday when the pound was eventually withdrawn from the ERM, except the ECB has sustained its actions for much longer. The ECB's actions have probably been profitable so far – because the size and persistence of its actions have reduced interest rates and increased the premium above par of the bonds it has bought.

Accounting of the unrealized profit as interest rates have fallen

APP has probably been profitable so far whilst interest rates have been falling. Some of the bonds bought by the NCBs, particularly earlier in the programme, should be showing a mark-to-market gain.

However, no trace of any such gains is shown in the ECB's accounts even though the bonds are owned at its risk. Paper profits attributable to the ECB have not flowed through into the ECB's accounts. If the bonds were re-sold, though, the profits - or losses - would flow through.

The ECB's problem is that it now acknowledges that it cannot reduce rates any further and that it should at least reduce the monthly size of its APPs. At some stage it should go further and reverse the APPs – by selling out of the assets it has bought. What it cannot avoid is that some bonds bought under APP mature.

Market value of bonds eligible for APP

By way of illustration we have selected eight bonds that are both seasoned and eligible for APP.

Seven have been selected for their high coupons, which make their market price well above par. The final one has been selected to show a bond with a coupon nearer to the "on-the-run" coupon – the coupon that the same issuer would have to pay to raise money for the same term now. The coupon on the Rabobank issue – below 1% - makes it trade below par, showing that the yield required by investors for that issuer and for that term has risen since the bond was issued in March 2015.

The prices are the "Last price traded" shown against the respective bond on the Bloomberg's system at close-of-business on 30th October 2017:

Issuer	ISIN	Coupon	Issued	Matures	Price
DEPARTEMENT DE L ESSONNE	FR0010917740	3.3570%	02/07/10	02/07/20	110.082
KLEPIERRE	FR0013030038	2.1250%	20/10/15	22/10/25	107.894
Santander UK PLC	XS0250729109	4.2500%	12/04/06	12/04/21	115.045
Caisse d'amortissement de la dette sociale	FR0010767566	4.2500%	10/06/09	25/04/20	111.895
Infraestruturas de Portugal, SA	PTCPECOM0001	4.0470%	16/11/06	16/11/26	114.661
HSH Nordbank AG	DE000HSH4M99	3.1700%	20/11/13	20/11/26	106.042
Bremer Landesbank Kreditanstalt	DE000BRL3124	2.0700%	02/10/13	04/10/22	109.365
Coöperatieve Rabobank U.A.	XS1206451533	0.9550%	20/03/15	20/03/25	98.725

If an NCB were to buy those bonds now, it would have to pay the market value and, in order to raise the purchase price from other Eurosystem members, the haircut would have to be applied on the market price, not the face value.

The bonds issued by Departement de Lessonne have a haircut of 2.5%; if applied to the market price of 110.082 it leaves a difference of only the haircut for the French central bank to find to raise enough money from another Eurosystem member to complete the APP transaction. Were the haircut to apply to the face value, the shortfall would be 12.582%. As it is they can borrow 107.582 on the market value of 110.082.

Even worse in the case of Infraestructuras de Portugal, where the haircut is 24%: were the haircut to be applied to the face value, the Portuguese central bank would have to raise 38.661% in order to complete the APP transaction. As it is they have to find 24% and can only borrow 90.661 against the market value of 114.661.

Once these bonds are on the ECB eligible list, the French and Portuguese central banks can demand that any Eurosystem member lend against it at these valuations.

We can conclude that:

- APP is being conducted by NCBs paying well over face value for APP assets;
- NCBs are then borrowing on those assets in some cases at above their face value, in spite of the haircut.

Accounting for the premium paid over par

Where an investor pays above par for the bond, their accounting should in the normal way be to amortise the premium-above-par as an expense, and equally over the remaining life of the bond.

This has the effect of offsetting the high receipt of interest on the annual coupon, and delivering an annual return-on-investment that is even over the life of the bond.

If only the coupon was booked through the profit-and-loss account each year, the annual profit would be inflated by the coupon in each year until the year of maturity, leaving the premium-above-par to be taken as a lump-sum expense together with the final coupon: the bond repays its par value only, not the premium that the investor paid.

We hope – but do not know – that the NCBs are adopting the proper accounting treatment: we will not know until NCBs re-sell the bonds or the bonds mature. If they are not adopting this treatment, the profits that they might now be attributing to APP will be greatly inflated.

Reduction of the loan-to-value of the bond up to maturity

Just as the premium paid on an APP investment should be amortised over its remaining life, so should the valuation of the bond as collateral within the Eurosystem.

An NCB should not be able to keep borrowing at the original purchase price less the haircut right until the bond matures because, again, the bond will only pay out par.

If an NCB is borrowing par plus 4% against it on the maturity date and the bond pays out its par or nominal value, the NCB would have a residual unsecured overdraft of 4% - which is against ECB rules.

Risks of selling out the APP positions

The ECB and the NCBs collectively will be hoping that all maturing APP bonds do pay out their nominal value, allowing direct reinvestment of the proceeds without any loss of capital up to October 2018, and possibly beyond – even if the programme of new purchases is stopped at that time.

The ECB and the NCBs will be hoping that there will be no necessity to run down the APP balance other than through bonds maturing after October 2018, because selling out APP bonds, with interest rates at the bottom, presents considerable risks:

1. In case of a deterioration in the relative credit quality of the bonds purchased, e.g. if Spanish government bonds dropped in value but interest rates as a whole were steady;
2. Because, when the ECB tries to sell the bonds back into the secondary market, it will not be able to gain from the relative inducement it made to investors when it bought the bonds: the ECB will have to accept the higher YTM/lower price because the bonds are trading above par;
3. Because absolute interest rates in Euro will rise once the ECB starts to sell – a self-fulfilling prophecy;
4. Because there may not be a sufficient secondary market to buy back the bonds in such quantities: the sheer scale of the unwind risks pushing down prices and increasing YTMs.

Modelling the potential loss on APP unwind

We know that the APPs have been a consistent €60 billion per month for some time, and we can posit that the ECB paid a price for the bonds that represented a YTM that was 10 basis points too generous compared to that which would be normal for seasoned bonds carrying a sizeable premium over par.

Thus we can model the acute risks that the ECB now has by putting a potential yield give-up of 10 basis points per annum against each of three factors when the ECB re-sells the bonds:

1. We assume that the ECB bought 10-year bonds with an original remaining life of 7 years and a YTM of 1%, and has held them for 2 years so that the current remaining life is 5 years;
2. We do not put in a figure against point (4) above – the lack of liquidity – but restrict ourselves to modelling the loss that each of points (1) to (3) above could cause, then any two combined, and lastly all three;
3. Nevertheless we need to recognise that a lack of liquidity could inhibit the ECB from getting out of its positions at all or at a reasonable price: here the realities of secondary bond trading would start to bite, if interest rates were rising and the largest market participant was known to be wanting to unload a huge position;
4. Would a bank taking the ECB's phonecall make its normal Bid-Offer price when it knew that the ECB would inevitably hit the Bid and in big size? Where would the bank lay off the position, when the ECB has been the number one buyer in the market and for years? Might the bank start to make an Offer-only price to the ECB, or else move both its Bid and Offer down knowing that the ECB will never lift the Offer because its interest is always in the same direction, as the Bank of England's was on Black Wednesday?

Adverse price movement on a 5-year bond

We start by modelling an original 10-year bond with a 2% coupon that an NCB bought under APP with 7 years remaining, when the YTM was 1% - for €100,000 nominal the NCB would have paid €106,728.19. We assume for convenience that all the purchases and sales are made directly after the annual coupon was received by the then-current owner. The NCB has received two interest coupons of €2,000 each in the meantime: one year after purchase and now two years after purchase.

Were the YTM to be the same now with 5 years remaining, the ex-coupon price would be €104,853.43, but if the YTM increased by 10 basis points to 1.1%, the bond's price would fall to €104,355.23.

Thus the bond loses €498.20 for every €100,000 of nominal value owned, given a 10 basis point per annum rise in YTM. This becomes €4,982,020 for every €1 billion of nominal.

The NCBs have been buying €60 billion per month under APP, and we use that figure as an anchor point to extrapolate over one and three years.

Potential losses on 1 month's APP

We start by calculating the potential losses on one month's APPs of €60 billion of 5-year bonds:

Loss component	Basis point loss per annum	Adverse price movement	On €60 billion
Credit quality	10	0.498%	€299 million
Price above par	10	0.498%	€299 million
Absolute rates	10	0.498%	€299 million
Any two combined	20	0.996%	€598 million
All three	30	1.494%	€897 million

Potential loss annualized and then scaled over multiple years

Then we can multiply that up to one year and three years:

Loss component	Basis point loss per annum	Loss on 1 month's APP	Loss on 1 year's APP	Loss on 3 years' APP
Credit quality	10	€299 million	€3.59 billion	€10.7 billion
Price above par	10	€299 million	€3.59 billion	€10.7 billion
Absolute rates	10	€299 million	€3.59 billion	€10.7 billion
Any two combined	20	€598 million	€7.2 billion	€21.5 billion
All three	30	€89.7million	€10.7 billion	€32.3 billion

Comparison with ECB's capital and reserves

The ECB's subscribed capital as at 31/12/16 was €10.8 billion. Eurozone members have fully paid in their subscribed capital of €7.6 billion. The remaining €3.2 billion has been subscribed by the non-Eurozone shareholders, but only €120 million (3.75%) of it has been called up and paid in. The remaining €3.1 billion is a recourse fund on the non-Eurozone shareholders, and the largest of these by far is the UK with a recourse liability of €1.48 billion.

The ECB had its 2016 profit of €1.19 billion on its balance sheet as at 31/12/16 but this is distributed, as was 2015's profit in about the same amount, so there is no cushion of accumulated Profit&Loss Account.

The only reserves are the Revaluation Reserves of €28.63 billion, comprising:

Element	Amount
Gold	€13.93 billion
Foreign currency	€14.15 billion
Securities	€0.75 billion
Post-employment benefits	(€0.20) billion
Total	€28.63 billion

Accounting for unrealised gains on APP purchases

The Revaluation Reserve at the ECB apparently does not take account of unrealised gains on the securities purchased under APP, presumably because the securities are held by other Eurosystem members and even though they are held at the ECB's risk and under the profit-and-loss absorption arrangement.

This is an anomaly: if the ECB has been buying all the way down, there should be unrealised gains but we cannot see them in the ECB's figures. We do not even know what accounting treatment is being applied at the NCB level.

There should firstly be clarity that NCBs are amortising any premium they paid above par and evenly over the life of the bonds. Then there should be an annual, notional mark-to-market at each NCB to show unrealised profits and losses. Lastly the ECB's Revaluation Reserve should be adjusted for these unrealised profits and losses at the NCB level which are actually attributable to the ECB. Otherwise it is not possible to assess the full risks bearing upon the ECB's capital.

The vital information about the current marked-to-market value of the APP portfolio is opaque because the bonds are held by other Eurosystem members.

Furthermore, the marked-to-market value would have to be regarded with some scepticism because, as explained above, the Eurosystem members might be hard put to sell out of the entire portfolio at the prices used for the valuation.

How the ECB could cope with losses in unwinding the APP

The ECB will be hoping that, because APP began when nominal interest rates were higher, unrealised gains since the point of purchase on some bonds will offset any losses on those purchased more recently.

If prices of the bonds drop 2% from where they are now, there could be some bonds purchased much earlier in the APP cycle on which the purchase price was more than 2% lower, so that on that portion of the portfolio there could be a break-even result or even a profit.

Were, however, the ECB to be faced with a loss on unwinding the APP, it has at its disposal its first line of defences which are its paid-in capital of €7.7 billion, its Revaluation Reserve for Securities of €0.75 billion (assuming it has not been eroded by the same movements as affect the APP portfolio), and its P&L account for the current year (which could be €1.0 billion if it has been earning in line with the full-year 2016 profit).

That adds up to first-line defences of €9.5 billion.

Possible losses on APP compared to ECB first line defences

The first-line defences are less than the loss on the adverse price movement caused by a 10 basis point increase in YTMs on the €2 trillion APP portfolio.

A 10 basis point adverse movement in yields does not appear by any means implausible given the many risks: one only has to look at the rise in YTMs on Spanish government bonds immediately after the unofficial Catalonia independence referendum to see how quickly prices can move.

On 2nd October 2017 the Financial Times reported on the weakness of Spanish government bonds, “where the yield on the benchmark 10-year bond jumped 9 basis points to 1.69 per cent. A potential constitutional crisis was enough to rattle the debt of periphery Europe, with the yield on the Italian bond climbing 5bp to 2.16 per cent and that on the Portuguese 10-year bond rising 4bp to 2.43 per cent”.

A change of YTM of 9 basis points on a 10-year bond is sufficient to move the cash price by 0.83%, so it can be seen that the size of adverse price movements modelled above sit within the range of what can happen in one day’s trading.

The calculations given above assume an average remaining life of 5 years on the APP portfolio. Were the remaining life to be longer, the same 10 basis point increase in YTM would have an even bigger adverse effect on the bond’s price.

Possible losses on APP compared to ECB second line defences
In the second line of defence the ECB has its Revaluation Reserves for gold (€13.93 billion) and for foreign currency (€14.15 billion) totalling €28.08 billion, assuming that prices of those reserves had not gone against it in the meantime.

The small cushion of first-line resources would make it almost a certainty that the ECB would have fall back on these reserves in the event of a loss on the APP.

There is a further cushion available of €3.1 billion in the shape of the subscribed-but-not-called capital from the non-Eurozone shareholders, but it would be a major political act to call that up in order to neutralise losses from Eurozone-related operations. As well, if the call came after March 2019, the UK's liability could no longer be called upon.

The total of these second-line defences is €31.18 billion, sufficient to buffer adverse price movements caused by a further 30 basis point increase in YTMs on the APP portfolio but at the price of a complete liquidation of the ECB's gold and foreign currency holdings.

Principal defence – unrealised gains on historical purchases
Lastly - but actually firstly - the ECB can hope that losses incurred by Eurosystem members in unwinding the APP positions are covered because so much APP paper was bought at lower prices when interest rates were higher.

This is a very high-risk peg for the ECB to hang its hat on.

The APP needs to liquidate itself and at a profit in order for the ECB not to put itself severely at risk.

ECB policy constrained by its own APP
Now the interest rate cycle has reached the bottom – thanks in no small measure to the ECB's interventions – and the ECB cannot allow interest rates to rise without a risk of bankrupting itself.

Its most recent action was on the surface one of tightening – the reduction in the amount of the monthly purchases – but on closer inspection was a continuation of loose monetary policy demonstrating its own lack of confidence in the Eurozone recovery:

- APP extended by 6 months;
- Funds from maturing bonds to be reinvested in APP.

Only the ECB itself knows whether the maturities over the next year will actually exceed the €30 billion a month by which it purports to have cut its new purchases.

As a result it can be seen that the ECB is actually bound upon a wheel of fire: it cannot wind down, let alone stop, APP or, heaven forbid, sell out its APP positions, because even giving the markets a signal in that direction could be enough to:

- send yields up;
- eliminate any unrealised gains on APP bonds held by Eurosystem members;
- put the APP portfolio into a position of an unrealised loss.

The loss would not have to be large in percentage terms to exceed the ECB's capital and reserves.

How Eurosystem members would have to behave to keep the ECB solvent

The ECB – given the accounting treatment of unrealised gains – could remain solvent on paper as long as the losses were not realised, and as long as the NCBs have been applying the correct accounting treatment to the bonds. If they have not, the maturing of bonds would trigger a significant loss in their accounts which would feed through to the ECB.

Assuming the accounting is correct and no crisis is triggered by APP bonds maturing, and that losses remained unrealised, the ECB's remaining solvent on paper presupposes that the Eurosystem members were willing to continue to hold the APP positions and continue funding one another through TARGET2.

Holding the APP positions would mean that Eurosystem members might end up with portfolios that not only no longer showed a capital gain, but were deep underwater. In those circumstances a sell-off of the bonds would give the respective Eurosystem member a large claim on the ECB through the profit-and-loss absorption mechanism.

Were the claim's size to escalate, it would exceed the Eurosystem member's capital owned in the ECB, and then possibly the whole capital of the ECB. If the latter occurred, the respective Eurosystem member would be relying on the other Eurosystem members to step in and cover their loss, once it had been allocated through to the ECB, by paying extra capital into the ECB.

Opinions of the Eurosystem members

The ECB would be reluctant to unwind the APP now, when it might be able to get out whole, because that would be sending a message to the market that it has been very reluctant to send.

The ECB would like to wait and hold all the strings in its hands, but if rates started moving against it and threatening the value of the APP portfolio, it might find a degree of impatience amongst the Eurosystem members, who might not see waiting as beneficial.

They would be holding the APP positions with a risk of unrealised losses and with the market going against them. They would surely start to question whether the profit-and-loss absorption arrangement through the ECB could be made to work in the case of losses exceeding the ECB's capital and reserves.

They might feel that they had to unwind the APP as a duty to their owner, outranking their duty to the ECB and the Eurosystem, because they could not be sure that:

1. the ECB or the other Eurosystem members would pay out their losses;
2. there would be a secondary market large enough to absorb all the bonds they might have to sell for their own account, if prices were threatening to go against them.

Summary

These are issues that it would benefit all parties not to have to put to the test.

The Eurosystem has been spinning a very big wheel and at its heart is the ECB where all profits and losses will come to reside in the first instance, and the ECB has only a very thin cushion of equity to buffer it against losses.

It has exposed the Eurosystem to a colossal risk via the APPs' size, through the nature of the assets purchased, by the prices paid and by the point in the interest rate cycle at which the interventions were made.

The Eurozone economy is supported on this huge air cushion of cheap credit, both extended through the ECB and also through the European Investment Bank and its offshoot the European Fund for Strategic Developments.

Since it has been made clear that interest rates cannot go any lower, there is only one way they can go. Indeed Eurosystem members who are net depositors in TARGET2 are already asking why they should continue to lend into it when they receive a negative interest rate in return.

It would be surprising if Eurosystem members were not also asking themselves whether they are content to hold large APP positions, noting that they are probably unaware of the full extent and characteristics of the APP portfolio, as it is held across several Eurosystem members.

The accounting treatment applied to the APP is also opaque, and may not be identical at all Eurosystem members:

- are the bonds marked-to-market at least annually?
- How is any variation in value treated?
- How is any premium above par treated that was paid for the bonds?
- Are there any instances where the premium is held back such that it will be realised as a loss at maturity?

In sum the ECB cannot let YTMs rise by whatever it is that, given the size of the APP and the prices at which the bonds were originally bought, erodes the ECB's own front-line and second-line resources on paper, even if the APP positions continue to be held in the books of the NCBs, are not unwound and there is no flow-through of unrealised profits or losses into the ECB's accounts.

If there is no unrealized gain on the APPs now, it would only require an adverse movement of 10 basis points in yields to produce a loss greater than the ECB's first line of defences.

It would then only require a further adverse movement of 30 basis points in yields to exceed the ECB's second line of defences as well.

The kind of movement in YTMs that would precipitate a crisis around APP can happen within minutes and so the ECB is treading on extremely thin ice.

Bob Lyddon
London
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