# Benoît Cœuré: Bond scarcity and the European Central Bank's asset purchase programme

Speech by Mr Benoît Cœuré, Member of the Executive Board of the European Central Bank, at the Club de Gestion Financière d'Associés en Finance, Paris, 3 April 2017.

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*Accompanying slides*

*I would like to thank Fabian Eser and Niels Krieghoff for their contributions to this speech. I remain solely responsible for the opinions contained herein.*

I am grateful for the opportunity to speak here today at the Club de Gestion Financière.

In my remarks today I would like to address a topic that has received growing attention in recent months, namely the low level of short-term yields of the euro area's safest sovereign bonds and their apparent disconnect with those of overnight index swaps (OIS).

On the face of it, this is not the sort of topic that you would choose to discuss over breakfast. But despite its technical character, I intend to explain that such a disconnect evidences ongoing structural change in the euro area's bond market and could bear consequences for the transmission of our monetary policy.

In what follows I will argue that a confluence of factors – some of them of a temporary and some of them of a more permanent nature – is likely to have contributed to this disconnect. One of these factors, as I will show, is probably related to the ECB's asset purchase programme (APP), which raises the legitimate question of whether our purchases hamper the smooth functioning of financial markets.

My answer today will be that we see no such evidence, but that the Governing Council continues to monitor very carefully the developments in euro area bond and repo markets.

Let me start with the facts, however.

As you can see on slide 2, OIS rates and German government bond yields with a two-year maturity have been intimately connected in the past. The reason is that swap dealers tend to use positions in safe government bonds to hedge interest rate risk on swaps. And with securities issued by the German government generally perceived as bearing very little credit risk, we would expect them to be related to swap rates. This is true for all tenors by the way and is not specific to the two-year rate that I am showing as an example on this slide.

Now, why then have yields of high credit quality bonds – and I refer to German bonds merely for ease of exposition – why have they gradually decoupled from swap rates since about the middle of last year?

To facilitate and substantiate my answer, I would first like to show you on slide 3 a chart on the evolution of the spread between overnight index swaps and German Bunds for the 10-year tenor. You can see three things here:

- first, unlike the two-year tenor, the spread has been relatively stable over the past two years, although also here we have recently observed a slight downward trend; but the scale and scope are much more moderate, so this suggests that maturity-specific factors must currently be at play;
- second, you can see that there was a sharp and sudden drop in that spread in January 2015; incidentally, that drop occurred around the announcement of the ECB's APP;

- and third, the current level of the 10-year spread is far from being unusual from a historical perspective; in the summer of 2011, for example, spreads widened sharply on account of a sudden reversal in risk sentiment that brought the Euro Stoxx 50 down by nearly 30% in a matter of few weeks.

When we look at these last two episodes, it is probably easy to see that the swap spread – in one way or another – is likely to be related to differences in the relative supply and demand of government securities and interest rate swaps. Indeed, the supply of swaps is very ample and practically only constrained by the amount of credit risk which can be taken by market participants when entering into these contracts.

Government bonds, by contrast, are in more limited supply. So, when investors pile into government bonds because they are looking for safe and liquid assets, such as in the summer of 2011, demand temporarily increases, pushing up prices and driving down yields.

Announcements of central bank asset purchase programmes make this point even clearer: the sharp drop in the swap spread around the announcement of the APP in January 2015 reflected a re-pricing by investors of the future net supply of Bunds to the market – after the ECB's purchases – and the associated duration risk to be borne by private investors.

The current situation in the short-term segment of the bond and swap market resembles many of the aspects I just alluded to. Specifically, we think that the recent spread widening is by and large the result of a growing supply and demand imbalance that has contributed to the fall in short-term sovereign bond yields to the low levels we are currently seeing.

In what follows I will discuss in more detail: (i) the factors that we think have contributed to recent developments and (ii) what they may imply for policy. In doing so, I will also try to explain why we observed an immediate reaction of the 10-year swap spread to the announcement of the APP, while movements at the short end only seem to come to the fore as the implementation of the APP gradually proceeds.

## The demand for short-term safe government bonds

I see three main reasons for the growing demand for short-term safe bonds: regulatory factors, flight to safety as well as the direct and indirect effects of the APP.

In the short run, these factors can all affect market prices if the supply of these bonds is inelastic. I will come back to this later.

### *Regulation*

Regulation is the first factor that could have contributed to the strong increase in the demand for safe and short-dated assets, although not for the reasons one might think of at first.[1] Regulation, as you know, does not happen overnight. It is a long and often strenuous process. But in recent years several new regulations have come into force.

For example, a number of liquidity regulations affecting banks such as the net stable funding ratio (NSFR) and the liquidity coverage ratio (LCR) require banks to hold a sufficient quantity of high-quality liquid assets. So, it is natural to think that these regulations would bump up demand for government bonds. But it is not so trivial. Indeed, there is currently well over €1.5 trillion in excess liquidity in the euro area banking system. And because central bank reserves count as high-quality liquid assets, these regulations are unlikely to be the main driver of demand by banks for high-quality liquid safe bonds in large quantities. Central bank reserves and very safe government bonds of short duration are in many ways close substitutes.

By implication, therefore, it seems likely that mainly regulations other than the LCR, the NSFR or

the leverage ratio (LR) have created incentives to hold an increasingly larger share of government bonds, which in particularly seem to affect actors other than banks.

Solvency II, for example, has made it more attractive for insurers to hold cash-like securities, such as AAA-rated bonds, rather than holding cash in a bank account.

Also, the mandatory posting of collateral for uncleared derivatives, as governed by the European Market Infrastructure Regulation (EMIR), entered into force at the beginning of the year, and from 1 March 2017, all in-scope counterparties are obliged to post variation margins with a phased-in implementation for initial margins from 1 September 2017 through to 1 September 2020.

Collateralising financial transactions that weren't collateralised before will naturally create additional demand for safe and liquid government bonds. Central counterparty (CCP) data, for example, suggest that a significant share of assets pledged as collateral for meeting initial margins consists of government bonds. However, as yields on bonds have fallen relative to the remuneration on cash, more cash is used for initial margins than used to be the case. This elasticity of bond collateral is important to bear in mind when trying to assess the impact of central clearing or bilateral margining of derivatives transactions on collateral demand.

Taken together, regulatory factors can to some extent explain why some investors seem relatively price-insensitive with regard to their demand for safe short-term government bonds. This can best be seen by those who do have an economic alternative: euro area banks with access to the deposit facility. Recall that German three-month and six-month bills currently trade around –1%, well below the rate on the deposit facility. The fact that banks still hold sovereign bills strongly points to a non-pecuniary motive.

***Flight to safety***

Let me now turn to the second factor: flight to safety.

I showed you earlier that it is typical for spreads between swaps and quasi-credit risk free sovereign bonds to widen on account of risk aversion. As for the summer 2011 case, one would normally expect such flight to quality to be temporary, with the spread eventually returning to its pre-crisis level after some time. So flight to quality would tend to amplify, at times, the more secular trends arising from regulation.

This, however, is not what we have observed recently at the short end of the curve. For example, after the UK referendum on EU membership in June 2016, the two-year German sovereign bond-OIS widened as investors sought safety in short-term German sovereign bonds or equivalent safe assets. By the way, swap rates also fell in this instance as markets expected the ECB to ease its monetary policy stance further. But while OIS rates cheapened again as investors understood that policy rates would remain unchanged, German sovereign bond yields never really recovered from the Brexit-induced fall. You can see this on slide 4.

This is puzzling at best, but it could mean that Brexit was merely a catalyst for a more general re-evaluation by markets of the amount of short-term government bonds available to investors, possibly related to expectations of central bank purchases or in anticipation of perceived political risks, such as the US election, which was just a few months away.

Events in recent months also have proved surprisingly persistent. Market intelligence generally pointed to the re-emergence of perceived political risks in the euro area as a prime reason for the renewed marked drop in short-term yields of German bonds in February. You can see on slide 5 that this drop indeed coincided with a widening of sovereign credit spreads.

But again, doubts on the importance of the flight-to-safety nature also remain here. For example, over the most recent period of spread widening, stock markets worldwide rallied, also in those

euro area Member States where political risks are perceived to prevail. Here in France stocks have gone up by nearly 7% since early February, barely a sign of increased risk aversion.

There are therefore legitimate doubts about whether recent developments in bond markets reflect a general, widespread flight to safety across different asset classes. Instead, portfolio rebalancing seems to have been specific to euro area bond markets, with some bond investors shifting out of markets where political risks are perceived to be large and into traditional safe haven markets, thereby contributing to a widening of short-term swap spreads.

***The direct and indirect effects of the APP***

Let me now turn to the ECB's asset purchase programme.

Here it is helpful to distinguish *direct* effects from the purchases on yields from *indirect* effects.

Direct effects relate to those effects that can be attributed to the ECB, through its purchases, reducing *directly* the amount of short-term bonds available to private investors.

Indirect effects, by contrast, are those that may arise because of the excess liquidity that our purchases create. You can see this on slide 6.

As I said earlier, euro area banks can, in principle, store their liquidity safely in the ECB's deposit facility. By contrast, non-euro area banks and other investors have no access to our facilities. And often they cannot place large amounts of unsecured cash with banks either, due to their risk control frameworks. As a result, investors without access to the Eurosystem's deposit facility are typically forced to park excess liquidity in the most liquid and safest available storage facility, most often in bonds issued by the safest sovereigns. So, these investors tend to be fairly price-inelastic.

We find evidence for such a mechanism, for instance, in the fact that especially non-euro area investors are increasingly holding a larger share of bonds issued with an original maturity of up to two years. You can see on slide 7 that when we started the APP in March 2015, non-euro area investors were holding around 70% of these bonds – already an appreciable amount. In the third quarter of last year – the latest available data – they held nearly 90%.

The liquidity holdings by such investors are, of course, not invariant to our asset purchases. After all, non-euro area residents are large sellers of securities to the Eurosystem. Should they wish to keep their exposure in euro, they may decide to park, possibly temporarily, the receipts from our purchases in high credit quality short-term sovereign bonds. Expectations of increasing long-term interest rates globally may have further contributed to keeping the duration of such liquidity holdings short, so as to limit exposures to duration risk. This mechanism can thus be considered an indirect, technical implication of our monetary policy measures.

Moreover, the structure of euro area financial markets implies that business models that typically attract more holdings of excess liquidity, such as investment banks, clearing and depository institutions and custodians, are predominately located in core euro area countries.[2] Also, the capacity or willingness of banks in financial centres to accept additional deposits or reserves at attractive rates might diminish over time as excess liquidity grows.

All this could contribute to a recycling of excess liquidity into government bonds in these jurisdictions. And these effects might be highly non-linear, as the previous slide 6 suggests. This also means that establishing a direct, causal relationship between excess liquidity and swap spreads is inherently difficult.

Let me now turn to the potential *direct* effects of our asset purchases.

By definition, our asset purchases reduce the amount of assets available in the market. As you

know, the Eurosystem aims to distribute its purchases in a market-neutral manner. However, before the Governing Council in December decided to allow purchases also below the rate on our deposit facility, actual purchases of German short-term bonds and of those from other safe jurisdictions were often limited as bonds tended to trade more expensively.

This suggests that direct effects were likely to have been only of a limited nature throughout most of the programme. You can also see this from the very loose relationship between our total purchases of German bonds and the two-year swap spread on the left side of slide 8.

Of course, we cannot rule out that the shift in the maturity composition of our public sector purchase programme (PSPP) since the removal of the lower floor for purchases – and the associated change in the market's expectations of the future availability of short-term bonds – have accelerated the fall in rates at the front end of the curve in recent weeks.

But when we announced on 8 December 2016 that purchases below the deposit facility would in principle be allowed, the short end of the yield curve, where such purchases could be expected to be more intense, reacted only little, as you can see on the right side of slide 8, which compares the German curve shortly before and after the announcement.

So, unlike the announcement effect on the 10-year tenor that I showed you at the beginning, the announcement of 8 December seemed to contain limited news for investors. This could mean that investors had already priced in, to a large extent, the possibility that we would allow purchases below the DFR. Indeed, in the weeks before our 8 December meeting we had seen a marked widening of the two-year swap spread that you can see if you go back to slide 4. But because this period coincides with the aftermath of the US election, we cannot be entirely sure if it was the anticipation of our policies, flight to safety or a combination of both that contributed to the widening of spreads.

However, what I can rule out is that the intensity of our purchases has played a decisive role on a day-to-day basis, as the daily purchase amounts have been fairly constant. Interestingly, when we started purchases of sovereign bonds with yields below the deposit facility rate, yields at the short end actually increased. Over the past three weeks, too, we have seen short-term yields increasing despite continued Eurosystem purchases.

***The supply of short-term safe government bonds***

Let me now briefly turn to the other side of the coin – the supply of safe assets.

Typically, debt management offices have some flexibility in their issuance behaviour. But for some of them the funding plans are relatively stable. This means that supply often tends to be inelastic in the short term and a sudden build-up of demand can cause an increase in prices.

Moreover, we have witnessed a more general decline in the supply of safe and liquid government bonds in recent years that may increasingly put pressure on yields as demand soars. This is particularly true for bonds with a maturity of less than five years.

There are three factors behind this observation:

First, as you can see on slide 9, the financial crisis has led to a downgrade of several sovereigns, thereby significantly reducing the quantity of global and euro area bonds rated AAA. Moreover, the amount of euro area short-term public debt of the highest credit quality is much smaller, relative to the economic size of the monetary area as measured by GDP, than, for instance, in the United States.

Second, more recently, net issuance of some AAA-rated sovereigns, such as Germany and the Netherlands, has been negative. In other words, consolidation of public finances of AAA-rated

sovereigns has led to a gradual decline in the stock of outstanding safe and liquid bonds. This you can see on slide 10.

And third, because interest rates are at historically low levels, we have also seen sovereigns shifting issuance towards longer maturities with a view to locking in low financing costs for a longer period. In Germany, for example, while the share of bonds with maturities between two and five years accounted for more than 17% of the total outstanding back in 2012, today it amounts to only 11%.

In sum, we see growing demand chasing declining supply. In this environment, it is not surprising to see prices go up and yields down. What is important for policymakers, however, is to understand whether these conditions are likely to prevail and whether they could affect the transmission of monetary policy or bear risks for financial stability.

## Spillovers from the repo market and securities lending

Before I give tentative answers to these questions, allow me to briefly address another market segment, which is different but related. Historically, not only did safe bond yields and OIS rates trade closely together, the same was also true for rates on repurchase agreements (repo). Recently, repo rates, too, have come to trade significantly below OIS rates, which raises the question of whether repo rates might be contributing to the drop in short-term bond yields.

It is well known that repo markets are widely used for cash market intermediation to finance long positions and as a means to borrow securities to deliver into short positions. So, at face value, price actions in one market could spill over to the other. But identifying the direction of spillover is not always easy.

For example, there is evidence of a spillover from repo markets to bond markets in the US: declines in the supply of collateral, for example as a result of central bank asset purchase programmes, lead to a decline in Treasury special collateral rates, which also passes through to Treasury market prices.[3] Interestingly, the authors find that these impacts are larger for short-term securities.

So bonds that trade special in the repo market should also trade at a premium in the cash market. But this is not what we always observe in the euro area.

Indeed, for the euro area it has proven difficult to establish a robust link between developments in the repo and the cash bond market. Although swap spreads are the largest at the short end of the curve, Bund specialness in the repo market is concentrated at the medium to long end of the curve. This is shown on slide 11.

This suggests two things: first, scarcity at the front end of the Bund cash market, as signalled by the wide swap spread, does not seem to have led to a rise in the specialness premium of short-dated bonds in the repo market of equal proportion. Second, the specialness of medium to long-term bonds in the repo market has not translated into a similar spread widening between Bunds and OIS in the cash market.

One way to make sense of these developments is to look at how bonds are channelled back into the (repo) market.

For example, it could be that holders of short-term German government bonds – mainly non-euro area investors, as I mentioned earlier – are generally willing to provide them in sufficient quantity in the repo market. This might explain why short-term Bunds tend to trade less “special”.

At the same time, PSPP purchases in Germany have long been concentrated in medium to long-term maturities due to the restriction not to conduct purchases below the DFR. As early as April

2015, securities purchased under the PSPP have been made available for lending in a decentralised and cash-neutral manner by Eurosystem central banks.[4]

But I think it is fair to say that the initial restriction on lending bonds only against other securities was too penalising and is likely to have contributed to the growing specialness premium in that segment of the yield curve where the Eurosystem was intervening most heavily last year.

The Governing Council's decision of last December to open the facility also for lending against cash, up to a maximum of €50 billion currently, was therefore an important step towards alleviating market pressure. We have seen a swift pick-up in the usage of lending against cash collateral and the requests to borrow securities tend to be concentrated in those ISINs which also trade "special" in the repo market.

So, over time we would expect that our new cash collateral facility will help reduce tensions. At the same time, it is no panacea. Our securities lending facilities are generally only available to banks. That means that non-bank investors that also have a strong demand for short-term German government bonds are not able to borrow these bonds directly from the Eurosystem. And bond scarcity due to regulatory constraints and low or negative net supply of bonds has become a structural, standing feature of this market.

## Conclusion

Let me conclude.

We have recently observed a widening of the spread between yields of two-year sovereign bonds of core jurisdictions and the OIS curve. We think this is likely to reflect a confluence of factors, namely regulatory factors, flight-to-safety flows as well as the direct and indirect effects of our purchase programmes.

The relative contributions of each of these components are inherently difficult to assess. But the combination of growing excess liquidity and the need of investors without access to our deposit facility to park these holdings in a safe and liquid storage vehicle are likely to have been a measurable driver of recent developments. The direct impact of the Eurosystem's purchases below the DFR is probably more limited.

Whether or not these developments should be a source of concern for policymakers depends largely on how persistent these effects will likely prove, as well as their implications for market functioning, and ultimately the transmission of monetary policy. Temporary blips can be safely ignored. But a silent and lasting decoupling of the short end of sovereign curves from our key policy rates warrants close monitoring by policymakers.

For monetary policy, the prevailing financial conditions should remain consistent, as they have been so far, with the monetary policy stance intended by the Governing Council. For financial stability, very depressed funding rates may incentivise sovereign bond holders to engage in more risk-taking, and banks to tilt their funding structures towards less stable wholesale funding.

These risks have not materialised so far. Now, how likely are they to materialise? In other words, how persistent could current conditions prove?

Some factors, such as regulatory demand for safe assets, are of a structural nature. They can be expected to persist. Other factors, which have driven short-term sovereign bond yield to record lows, are likely to be of a more temporary nature. In this regard, there is hope that the perceived political uncertainty, which has triggered flight-to-quality flows, will gradually dissipate and that investors rebalance their short-term fixed income again towards other bond markets.

To the extent that our asset purchases have contributed to this development, the reduction of our

monthly purchase pace from €80 billion to €60 billion as of today will provide some relief. At the same time, increasing liquidity in the hands of investors without access to the deposit facility will continue creating demand for safe assets. For the time being, these factors are therefore likely to continue exerting a certain degree of downward pressure on short-term bond yields.

What I can say with reasonable confidence today is that, as I suggested at the beginning of my remarks, so far we see no evidence that the current constellation of interest rates bears risks for the smooth functioning of markets, nor to financial stability or the transmission of our policy.

The Governing Council will continue to monitor carefully these developments.

Thank you for your attention.

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1 See also CGFS (2013), "Asset encumbrance, financial reform and the demand for collateral assets", Report submitted by a Working Group established by the Committee on the Global Financial System, Paper No 49.

2 Germany's role as a financial centre pre-dates the financial crisis. See, for example, Cabral, I., F. Dierick and J. Vesala (2002), "Banking integration in the euro area", ECB Occasional Paper Series, No 6.

3 See d'Amico, S., Fan, R. and Kitsul, Y. (2014). "The scarcity value of Treasury collateral: Repo market effects of security-specific supply and demand factors", Finance and Economics Discussion Series Paper No. 2014–60.

4 See Securities lending of holdings under the expanded asset purchase programme (APP) .