Let me begin by saying thank you to the World Bank and the Agence France Trésor for inviting me to speak today.

The speed of change during the financial crisis, and of the regulatory responses to it, has particular resonance for borrowers who think in long time scales, such as governments. Six years have now passed since the famous Pittsburgh G20 communiqué, where many initiatives for the ongoing regulatory agenda to prevent similar crisis in the future were launched. Some of those initiatives have already had a profound impact on global interest rate markets, such as those related to derivatives clearing and market transparency. Yet six years is also significantly shorter than the average new issuance maturity for the government borrower members present here today. This implies that many bonds issued in 2010 will be rolled over in very different markets – from level, structural and regulatory perspective – from those that we knew at the time. And that is not to mention the ultra-long bonds recently issued by several governments, including France’s latest 50 year issuance.

In some cases, for instance for trade reporting and transparency, the crisis simply provided the necessary catalyst for overdue improvements in market practices. In others, related for instance to risk-taking by banks or the rigging of benchmark rates, the bad practices of the past had to be curbed by regulatory fiat. A third group of changes, such as the rise of electronic trading, were happening already before the crisis. While it is straightforward to see the steady-state benefits of all these developments, the potential side effects and transition problems are more difficult to assess. As a result, a holistic assessment of their impacts on systemic stability and economic efficiency is needed. But that is beyond the scope of my remarks today.

What I would like to focus on is one issue in particular, namely the impact of recent policy interventions on market functioning. Specifically, I would like to discuss three areas: the impact of unconventional monetary policy measures; the impact of regulatory developments; and the role of private–public partnerships in financial market reform.

1. **The impact of unconventional monetary policies**

Starting with *monetary policy*, the key issue is as follows. Efficient price formation requires that large transactions can be rapidly executed at low cost with limited price impact – i.e. that markets are liquid. But are unconventional measures, such as negative interest rates and asset purchases, positively or negatively affecting market liquidity conditions and thereby that price formation mechanism? It is of course difficult to disentangle the individual effects of each of the policy measures we have taken in the recent years, as they have all been introduced as
part of wider policy packages. Still, there are some points that can be made about the tools in isolation.

First, negative interest rates on our deposit facility. Beyond some initial hesitation, the transition to negative rates has happened smoothly in both capital and money markets. The technical challenges related to the implementation of negative rates, notably in terms of market infrastructures, have been well anticipated and addressed by market participants, and we now have proof that market functioning below zero does not imply different logics and mechanisms. Or as I said elsewhere, there is life below zero.\(^1\) In particular, possible adverse effects of negative rates on general trading activities seem to have been limited. While volumes in the euro money markets have been declining,\(^2\) they have been also impacted by the significant increase in excess liquidity as well as regulatory developments.

A case in point is the volumes traded in the Eonia market, which did fall substantially after the deposit facility rate was cut below zero in 2014, but are up 60\% since the beginning of this year. In addition, negative rates have been accompanied by receding fragmentation in the unsecured overnight money market, at least for the higher-rated counterparties. For example, the spread between rates paid by banks with an investment grade credit rating in formerly stressed and non-stressed jurisdictions is close to its pre-Lehman level and significantly improved since mid-2012. The secured money market and security lending market have also been fairly resilient, and repo markets in formerly stressed jurisdictions have seen noticeable increases in trading activity, thanks to an overall improving environment. These developments are all the more important for us at the ECB since we take great care to ensure that our exceptional policy measures do not have an irreversible impact on market structures.

More generally, we have not yet seen negative rates have a major impact on market makers themselves – in particular via the topical channel of banks and their profitability. I can only repeat here what the ECB has already said on several occasions, namely that banks’ profitability has actually improved when you look at the overall impact of our monetary policy, thanks to a combination of lower funding costs, increased lending volumes and lower loan-loss provisions, which dominates by far the direct cost of negative rates. To be sure, this would not necessarily remain true if the deposit facility rate were to be set at significantly lower levels. But this is why I have said elsewhere that we would not take it to absurdly low levels.\(^3\) If anything, the smooth changeover to negative rates has only underlined the adaptability of market participants to this new environment, especially the money market funds industry.

Turning to the longer end of the yield curve, can the same upbeat assessment by made about our asset purchase programme? As of 2 May, the ECB had purchased EUR 733 billion of securities under its Public Sector Purchase Programme (PSPP). Theoretically, such large-scale asset purchases by the central bank could have either a positive or a negative effect on market liquidity. On the one hand, the willingness of the central bank to purchase assets reduces market risk for potential buyers – that is, the risk that they are unable to sell the assets later on when needed to obtain liquidity. Such investors might therefore be ready to buy those assets at a somewhat higher price, which compresses the standard measure of market liquidity, the bid-ask spread. This situation is more likely in cases where investors fear that markets might become disrupted and demand dries up.

On the other hand, with central bank purchases the risk that potential sellers might be unable to sell at a later point in time is also reduced. Those investors may therefore be ready to sell now only at a somewhat higher price, which makes the bid-ask spread wider. Moreover, if the

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\(^1\) See Coeuré, B., “Life below zero: Learning about negative interest rates”, Presentation at the annual dinner of the ECB’s Money Market Contact Group, Frankfurt am Main, 9 September 2014

\(^2\) See for instance European Central Bank, “Summary of the discussion of the Money Market Contact Group”, 9 September 2015

\(^3\) See Coeuré, B., “Interview with Politico”, 30 March 2016
central bank holdings of a particular security are sizeable relative to the total amount issued, that security becomes scarcer. This can translate into longer inventory holding problems and higher trading costs and this case investors will be more reluctant to hold those securities.

In other words, the impact of the PSPP on market liquidity remains an empirical question. And looking at the available data, we do not see evidence of significant disruptions in market functioning.

First, price discovery appears to be smooth and issuers are able to place new securities to the market in large volumes. Trading volumes have not fallen systematically as a result of PSPP. Based on TradeWeb data, trading volumes in core markets such as Germany are roughly 5% lower than two years ago. However, trading volumes in Italian, Spanish and Portuguese bonds on that platform are around 20% higher. That said one should not draw hasty conclusions from what remains a fragile set of indicators. Too little is known of the liquidity offered by dealers to end-investors. And therefore, the ECB will monitor market liquidity carefully as our asset purchase programme is further rolled out.

Second, it is important to learn from Arthur Conan Doyle and note ‘the dogs that didn’t bark’. We have witnessed several shocks since we began our purchase programme that, in other conditions, might have led to substantial market volatility. For example, the major realignments of global FX reserve portfolios in the summer of last year passed without a significant increase in euro area yields or yield volatility. In this sense, the presence of PSPP has aided market functioning by providing a constant source of demand in the market and by flexibly directing this demand towards particularly oversold securities. At the same time, the spike in sovereign yields in Portugal earlier this year shows that our monetary policy has not suppressed market discipline.

Finally, as general remark, one should always keep in mind that our combined measures are designed to prevent growth and inflation from being too low for too long. If we allowed such a situation to materialise, the impact on banks and investors would be much more severe than the impact our measures are said to have.

2. The impact of regulation

Alongside monetary policy, the new regulatory environment is a second key policy parameter affecting market functioning. The most prominent regulations cited by dealers as having had an impact on market liquidity are the leverage ratio, the liquidity coverage ratio (LCR), the net stable funding ratio (NSFR), as well as structural bank reforms (e.g. the Volcker rule). While it is difficult to definitively identify a causal link – some observers note that banks and dealers are in the process of re-allocating business between risk-weighted asset and leverage ratio constrained lines of business – there are some reasons to suggest that market behaviour is consistent with the dealer behaviour mainly being constrained by the leverage ratio.

The implied reduction of balance sheet available to trading desks, however, does not have a straightforward effect on liquidity. Instead of a general widening of bid-offer spreads, which would be consistent with a general drop of liquidity, the reduction of available balance sheet has had two salient features in recent years. First, liquidity has been rationed to a larger degree in the sense that dealers have had to deploy their balance sheet selectively towards the most profitable businesses. Second, liquidity itself has become more volatile and unevenly distributed across market segments, leading to greater market segmentation.

In particular, it is now more difficult for dealers to use cross-market positions to bridge liquidity across the sub-segments of the euro area bond market, because it is more expensive to carry spread positions. Volumes in the bond futures market provide a good example. Before the crisis, only three German government bond contracts on Eurex were reasonably liquid and the bellwether 10 year Bund contract saw trading of around one million contracts a day. Today, daily trading volumes in that contract have fallen to around 600,000, while around 100,000 10 year BTP contracts and 80,000 10 year OAT contracts trade every day. Neither of these
contracts even existed before the crisis. Bearing in mind that the locus of trading has shifted from cash bonds towards futures, these volume developments show that trading activity has decreased overall at the same time as it has splintered across markets.

To give another example of this trend, we can recently observe that it has become more expensive to borrow certain securities, such as those issued by the German government, over the quarterly balance sheet closing dates. Other securities borrowing markets, however, show the more established behaviour of cheapening around the same period. This divergence may be being caused by increased focus on sufficient high-quality collateral holdings (linked to the LCR) on part of some banks rather than the usual focus on cash funding. The concurrent tightening of bank leverage rules may also have restricted the ability of banks to engage in collateral transformation, further exacerbating temporary collateral demand and supply imbalances in specific cases. Importantly, the Eurosystem is helping to alleviate these collateral shortages by making all securities purchased under the PSPP available for securities lending, both by national central banks and by the ECB.

But what is the longer term solution to the side-effects of regulation? In the policy discussion, the focus is now turning from designing the next piece of regulation to assessing the compounded impact of what has been done and implemented so far. In my view there is scope to fine-tune and streamline the regulatory landscape to iron out some of these unintended consequences. But even if costs are identified, that would not justify rolling back the core tenets of what has been achieved. I can only agree with New York Fed President Bill Dudley that “even if higher capital and new liquidity requirements were found to result in greater transaction costs, these costs would need to be assessed against the benefits of having a more robust and resilient financial system and a reduced risk of financial crises in the future.”

Remember that in the run up to the financial crisis, there was an illusion that liquidity could be provided for free to issuers and investors. Such liquidity was a mirage created by distorted risk assessments and hidden cross-subsidisation across capital market activities. So even if we now legislate to prevent the risks we know, we will not abolish the risks we don’t know. On the contrary, the more we eliminate the obvious risks, the higher the conditional probability of experiencing a crisis stemming from a non-obvious source. That is why upholding legislation to make the financial sector more resilient – in particular stronger bank capital – is such an important complement to stronger market regulation. Better regulated markets may mean that banks bear less risk, but it does not mean they should not be strongly capitalised.

3. The role of private-public partnership in financial market reform

The new market environment, however, is not only being shaped by official regulation, but also by quasi self-regulation – that is reform initiatives adopted by market participants, with the public sector giving it the initial impetus and a strong steer. This brings me to the third part of my remarks. While such changes are by definition less spectacular, what could appear as "soft developments" can sometimes lead to considerable improvements in terms of market safety and reliability. Take the example of the reference rates, notably in interest rate or FX industry. Over the last years, a number of scandals have illustrated that relying purely on

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4 Last 31 March, the repo rate on German general collateral traded as low as -60 basis points while the overnight rate on some specific German bonds reached -4%.

5 The ECB publishes every week on its website the ISINs of the bonds available for lending in the context of the PSPP and the Securities Market Programme. Securities lending arrangements of the ECB.


market practices in order to calculate benchmarks was not necessarily optimal, and in some specific cases, detrimental to financial stability.

In reaction, the private sector has been active in improving the benchmark-setting process. Codes of conduct have been developed by the benchmark administrators to better control the rate-setting process and clarify the responsibilities of contributors. The governance of the benchmark administrator itself was also clarified so as to avoid interest conflicts. For some benchmarks, audits are regularly performed to verify the reliability of the contributions to a benchmark. Additionally, private initiatives to rethink market needs and identify alternative benchmarks are taking place.

But the public sector has not been absent in the genesis of these market changes: since 2013 the FSB and the International Organisation of Securities Commissions (IOSCO) have worked on a reform process of benchmarks,8 accompanying and steering the efforts of private market participants to define more robust and reliable benchmarks and related "best practices". In addition, in the European Union the public sector has supported the process with legal texts. Indeed, the final draft of an EU Regulation on financial benchmarks was voted by the European Parliament on 28 April.9 A wide range of benchmarks will now be covered by the new regulation, improving the reliability of the benchmarks, complementing and supporting the "soft law" of market practices.

On these topics, the ECB has been strongly committed to the improvement of the relevant benchmarks for the euro.10 While the ECB was always of the opinion that financial benchmarks should be private initiatives to best suit private needs, we have also helped the private sector in some of the benchmark reforms given the tremendous consequences of certain benchmarks for proper market functioning.

In particular, we are closely accompanying the transition of the Euribor from a quote-based to a transaction-based index. We have been involved in the discussions for some time as, together with the Euribor administrator, we launched data collections in 2012 and 2013 to analyse the feasibility of a transaction-based reference rate. Now the transition to the transaction-based methodology, with a pre-live phase starting this summer, is foreseen by the Euribor administrator for early 2017. The small size of the panel of contributors, however, remains a risk for the continuity of this reference rate. For that reason, the ECB expects banks as active users of Euribor to take responsibility for the benchmark and to stand behind its production as contributors with the launch of the new calculation methodology. If the private sector fails to assume responsibility for the benchmark, given the major consequences at stake, the ECB would support the possibility of mandating the banks judged as relevant to contribute to the benchmark under the newly voted EU Regulation.11

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8 See IOSCO, “Principles for financial benchmarks: Final report”, FR07/13, July 2013, and “Review of the Implementation of IOSCO’s Principles for Financial Benchmarks”, OR02/2015, February 2015. The 19 IOSCO Principles are a set of recommended practices that should be implemented by Benchmark Administrators and Submitters. They are covering four areas (governance, quality of the benchmark, methodology, accountability). While not superseding existing laws, IOSCO members were encouraged to support the implementation of the Principles including through regulatory action where appropriate. IOSCO regularly reviewed which the Principles have been implemented by obtaining the input of Stakeholders, Market Authorities and, as appropriate, Benchmark Administrators.

9 See European Parliament News, Interest rates: final vote to ensure robust and transparent benchmark setting.


11 While the competence to make Euribor contributions mandatory lies with other EU and national institutions (NB: the Belgian supervisory authority and other supervisors forming a college of supervisors following an act of the European Commission to establish a list of critical benchmarks), the ECB is willing to provide all necessary
Regarding FX benchmarks, the ECB has also been active in the recommendations of the Foreign Exchange Benchmark Group of the FSB, along with other central banks and regulators. In particular, the ECB took the lead by reforming its own FX reference rates framework so as to discourage market participants' trading activity related to it. Given that ECB reference rates are provided as a public good for individual citizens and institutions, it is essential to safeguard a high level of integrity.

4. Concluding remarks

Let me conclude.

Policy interventions are undoubtedly having an impact on market functioning today. The key question, however, is what is the sign and magnitude of those impacts, and whether the trade-offs they present are worth it.

In the case of the ECB’s monetary policy, our ongoing monitoring so far does not suggest impairments to the price discovery process. But even more importantly, our measures are essential to restore a more robust economic environment where inflation is in line with our mandate. That environment is the most important variable for dealers and investors and therefore for market functioning.

What is more, it is important to remember that not only policy interventions affect market liquidity. For example, high frequency electronic trading has been blamed for various rapid market moves and charges have been brought against some uses of such technology. Though innocuous in certain situations, such technology can also raise barriers to some investors’ access to liquidity, which would narrow the range of trading interests and could exacerbate volatility spikes when no market participant is there to “catch a falling knife”.

So to return to my initial question of how changes in market structure will affect the funding strategies of long-term borrowers, the best answer I can provide is that the interests of regulators, issuers and investors are aligned. All want markets to be able to absorb debt without large dislocations and price formation to be orderly and transparent. This requires that we continue the direction set in Pittsburgh in 2010.

From regulatory developments to best practices, market structures are progressively changing, evolving to a new market environment that is more constrained but also more resilient. At the same time, more safety is not a substitute but a complement to well-capitalised banks and sound public finances.

Thank you very much for your attention.

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12 See for example The US Department of Justice: Futures Trader Charged with Illegally Manipulating Stock Market, Contributing to the May 2010 Market 'Flash Crash' (21 April 2015).