

## Euro area sovereign bond yields during the Covid-19 pandemic: What do they tell us?

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Sovereign bonds are very important capital market instruments. Their effective supply and creditworthiness results in a well-functioning and liquid secondary market with high levels of trading activity and narrow bid-ask spreads. Government bonds represent a key reserve asset for central banks and a very popular investment asset for retail and institutional investors. Bond yields are determined by investor expectations, and in particular, by economic expectations about future growth prospects. While there are many factors that can influence the yield on a specific bond, one of the most important is the behaviour of the sovereign yield curve. Examining the slope of the sovereign bond yield curve before and during the Covid-19 pandemic can help us to draw conclusions with regard to future growth prospects in the euro area. A first analysis of the euro area sovereign bond yield shows that a recession in the euro area is unlikely to occur in the near future, but instead there is an expectation that the eurozone economy will exhibit higher growth rates over the coming months. However, this would largely depend on the vaccines' effectiveness to bring the pandemic to an end.

The study of sovereign bond yields is very crucial from a capital markets perspective, as it affects investors' returns and portfolio rebalancing strategies. As the return on a bond portfolio is linked to movements in the yield curve, any changes in the latter will affect the mark-to-market return of the portfolio.<sup>1</sup> The yield curve is a visual illustration of the term structure of interest rates. It shows the relationship among yields of bonds with similar credit risk characteristics across the maturity spectrum.

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<sup>1</sup> This affects the capitalisation of banks, as major holders of sovereign debt, as well as the collateralisation in the repo market. Sovereign bond collateral accounts for over 90% of EU-originated repo collateral (based on ICMA's semi-annual survey of the European repo market).

## Yielding to the yield curve

Under normal conditions the yield curve is upward sloping, showing that long-term yields are higher than short-term yields.<sup>2</sup> Moreover, the prices of long-term bonds are more sensitive to interest rate changes than those of short-term bonds, thus making long-term bonds riskier, which implies that they must pay a higher yield to compensate investors. There are times when short interest rates rise higher than long interest rates and the yield curve tends to flatten. In such cases investors are reluctant to hold long-term bonds as they get lower returns by investing in 'riskier' securities. In extreme cases, where long-term yields are lower than short-term yields, the yield curve becomes downward sloping.

There is a large body of literature on the predictive power of the slope of the sovereign bond yield curve (i.e. term spread) for forecasting recessions (Fama, 1986; Harvey, 1988 and 1989; Estrella and Hardouvelis, 1991; Estrella and Mishkin, 1998; Rudebusch and Williams, 2009). Findings suggest that the term spread (the difference between yields of ten-year and two-year sovereign bonds) becomes negative before economic recessions. This means that short maturity yields exceed long maturity yields and the yield curve inverts, which is associated with periods of recession.<sup>3</sup> The term spread as a measure of steepness contains information about current and anticipated future monetary policy actions and its changes are often seen as indicators of turns in the business cycle (Benzoni *et al.*, 2018).

Using daily data of euro area sovereign bond yields, over a pre-Covid (2 January 2015 to 1 December 2019) and Covid period (2 December 2019 to 15 April 2021), several important conclusions can be drawn (see Figure 1. Par yields for euro area sovereign bonds (2015-2021)).<sup>4</sup> First, long maturity yields are higher than short maturity yields during the entire period (with a few exceptions for the 2- and 5-year AAA-rated bonds during the pandemic). Second, yields of all sovereign bonds have declined significantly during the Covid-19 pandemic compared to pre-pandemic levels. Third, the gap between long- and short-maturity yields has narrowed during the Covid-19 pandemic compared to pre-pandemic levels. Fourth, regardless of their maturity, yields of AAA-rated bonds have crashed into negative territory during the pandemic, whilst 20-year and 30-year benchmark bonds of lower credit ratings continue to offer positive yields.

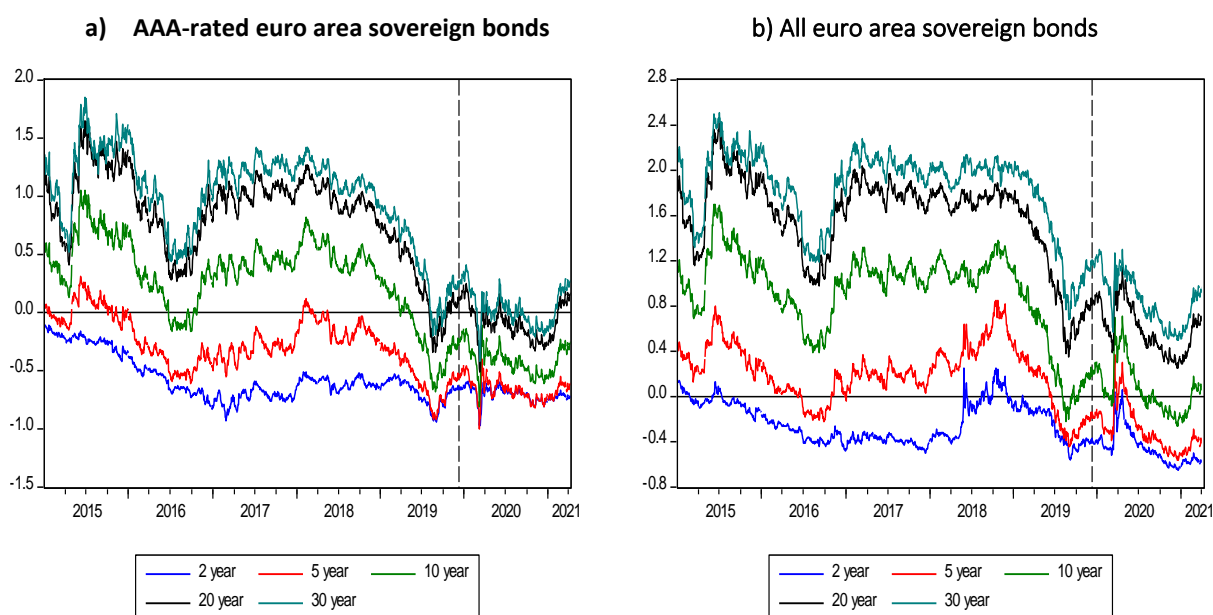
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<sup>2</sup> This is the case when investors require higher premiums on longer-term bonds to tie-up their funds for longer periods, in accordance with the Liquidity Preference Theory (O'Sullivan and Papavassiliou, 2020).

<sup>3</sup> A flattened yield curve, although a less extreme case, is also associated with a sluggish economy in which growth is declining.

<sup>4</sup> Daily data of all euro area government bonds are obtained from Eurostat, while par yields (which denote the coupon rate for which the price of a bond is equal to its nominal value) are obtained from EuroMTS Ltd. Par yields are calculated for only benchmark bonds with an outstanding amount of at least €5 billion. The dataset includes fixed-coupon bearing bonds with finite maturity and zero coupon bonds, including STRIPS (Separate Trading of Registered Interest and Principal Securities). Sovereign bonds with a maximum bid-ask spread per quote of three basis points are only included in the dataset.

Figure 1. Par yields for euro area sovereign bonds (2015-2021)

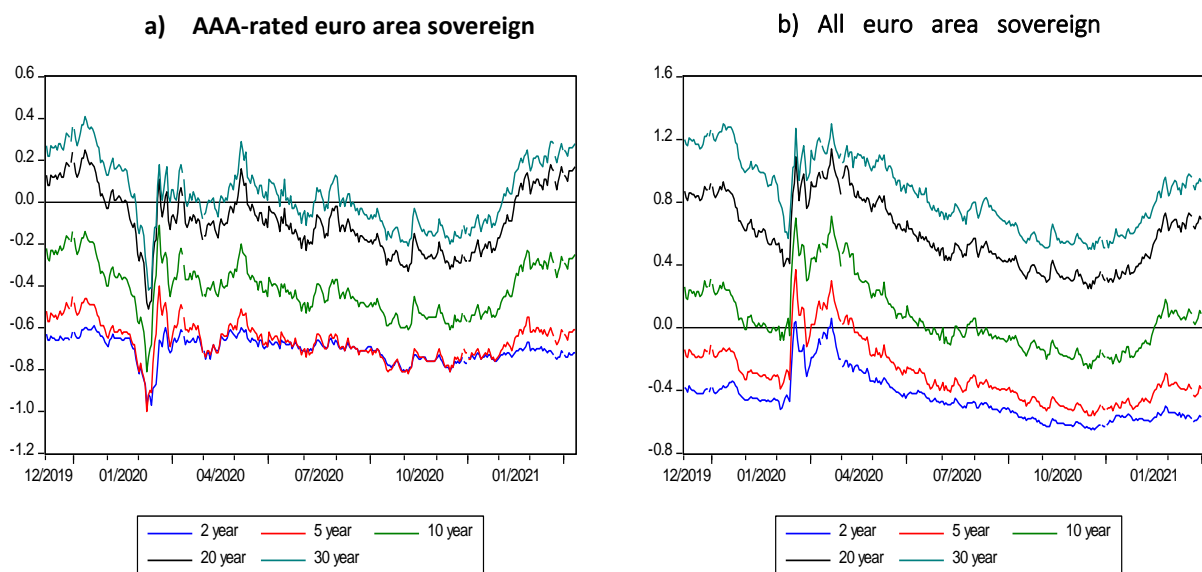


Notes: a) refers to par yields for AAA-rated euro area sovereign bonds across the 2-, 5-, 10-, 20-, and 30-year maturity segments. b) refers to the corresponding par yields for all euro area sovereign bonds across the 2-, 5-, 10-, 20-, and 30-year maturity segments. The sample period extends from 2 January 2015 to 15 April 2021. Par yields are expressed in annual percentage terms. Vertical dashed lines correspond to the start of the Covid-19 pandemic (i.e. 2 December 2019). The euro area consists of the following 19 countries: AT, BE, CY, DE, EE, ES, FI, FR, EL, IE, IT, LV, LT, LU, MT, NL, PT, SK, and SI. According to Fitch, the countries with AAA-rated sovereign bonds are: DE, LU, and NL (as of 15 April 2021).

Source: Author's own calculations based on data from Eurostat.

Some comments are required here following the previous notes. First, borrowing money long-term is more expensive than short-term borrowing even amid the Covid-19 pandemic – the yield curve as a sentiment indicator on the future growth prospects of the euro area is upward sloping. Second, although bond yields have declined significantly during the pandemic, they have been rising steeply since January 2021, signalling that investors expect economic expansion in the coming months as Covid-19 vaccination gets underway in Europe (see Figure 2 which provides a clearer picture of sovereign bond yields during the pandemic).

Figure 2. Par yields for euro area sovereign bonds (Covid-19 pandemic)



Notes: a) refers to par yields for AAA-rated euro area sovereign bonds across the 2-, 5-, 10-, 20-, and 30-year maturity segments. b) panel refers to the corresponding par yields for all euro area sovereign bonds across the 2-, 5-, 10-, 20-, and 30-year maturity segments. The sample period extends from 2 December 2019 to 15 April 2021. Par yields are expressed in annual percentage terms. The euro area consists of the following 19 countries: AT, BE, CY, DE, EE, ES, FI, FR, EL, IE, IT, LV, LT, LU, MT, NL, PT, SK, and SI. According to Fitch, the countries with AAA-rated sovereign bonds are: DE, LU, and NL (as of 15 April 2021).  
 Source: Author's own calculations based on data from Eurostat.

Third, narrowing yield gaps during the pandemic indicate that the yield curve has flattened. A flattening yield curve can be due to short-term rate increases by the European Central Bank (ECB) as a necessary shift in monetary policy. Fourth, investing in euro area sovereign bonds today is extremely expensive due to negative yields which are below the ECB negative policy rate.<sup>5</sup> As seen in Figure 2b, the par yields of short maturity benchmarks are those most affected by negative interest rates in the euro area. Nevertheless, all AAA-rated benchmark bonds regardless of their maturity segment exhibit negative yields, as a result of 'flight-to-quality' effects that have taken place in eurozone sovereign bond markets. Rising demand for those bonds by international investors who seek for less risky assets, has increased their prices and subsequently has dropped their yields below zero. Thus, intensifying the negative interest rate phenomenon (see Figure 2a).

### The impact of negative interest rates

Negative interest rates in the euro area are partly the result of low inflation in recent years and of demand pressures stemming from the ECB's Asset Purchase Programmes (APP) launched in mid-2014. Whether or not negative rates are sustainable in the longer term has been a matter of debate which depends on growth prospects and the willingness of market participants to tolerate negative yields (Guffens, 2019; De Vijlder, 2020; Schnabel, 2020). Investors may

<sup>5</sup> The ECB has set its key short-term policy rate at negative levels to encourage lending, boost exports and domestic demand. However, amid negative policy rates sovereign bond yields have also dropped below zero.

include bonds with negative yields in their portfolios for various reasons, including for institutional and regulatory requirements as well as for speculation.

The existence of negative interest rates in the long-term can have a number of side-effects. First, via the ECB's APP, eurozone banking institutions have accumulated high levels of reserve balances. This is due to the fact that these assets were purchased on credit that was provided to the reserve accounts of those banks held with the Eurosystem (Demertzis and Wolff, 2016). The existence of negative interest rates has incentivised euro area banks to only hold the minimum amount of reserves needed to satisfy reserve requirements. At the same time, these banks rebalance their portfolios towards riskier assets, such as long-term government bonds, or they try to push the excess liquidity off their balance sheets by creating new loans – the so called 'hot-potato effect' (Ryan and Whelan, 2019). This ultimately increases the money supply in the economy as the new loans are re-deposited with other banks, which can lead to an increase in consumer spending and nominal output. However, all else being equal, a higher money supply will keep interest rates at low levels.

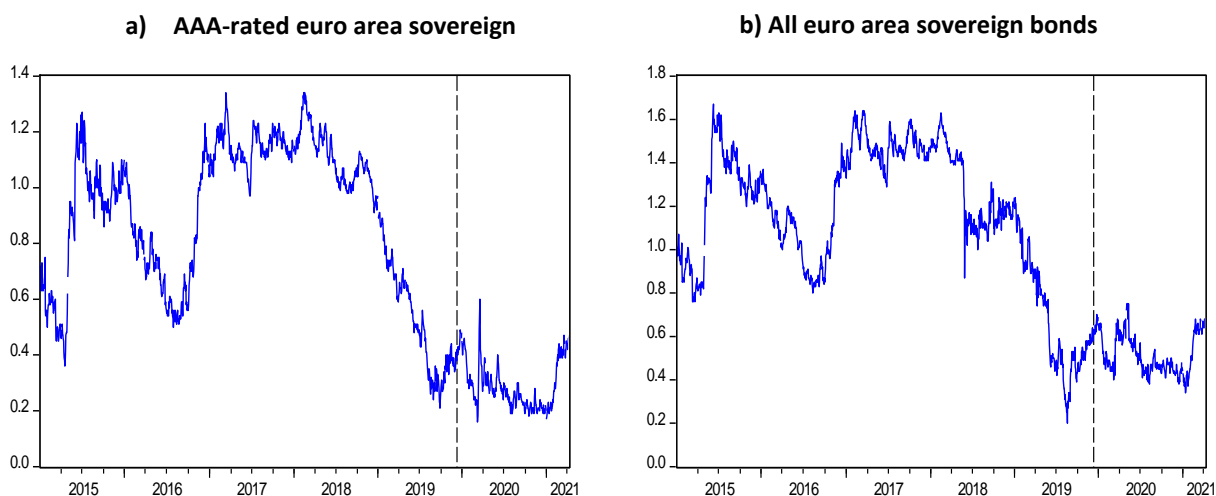
Second, since banks are reluctant to pass on negative interest rates to their customers (for competitive reasons), their interest margins are negatively affected and hence their profitability – as their lending rates are diverged from their deposit rates. Third, negative interest rates can have an effect on banks' risk-taking behaviour (Schnabel, 2020). A recent study shows that as a result of negative interest rates, high-deposit banks (more so than low-deposit banks) strive to increase their positions in securities that offer higher returns, something that can raise concerns for financial stability (Bubeck et al., 2020).

Policymakers quite often make decisions based on expectations about future growth prospects as reflected in the slope of the sovereign bond yield curve. Looking at *Figure 3*, which shows the ten-to-two-year term spread for euro area benchmark bonds over the entire sample period, the term spread is positive. The upward sloping yield curve indicates an expectation for the eurozone economy to grow over time. That is, market participants expect that the ECB will raise interest rates in the future.<sup>6</sup> Although the term spread has been volatile during the pandemic, it has become steeper since January 2021 showing that the gap between long and short-term yields tends to widen, thus minimising possibilities of an inversion that can lead to a recession. As the term spread tends to predict future economic activity well, an increasingly steeper term spread for the euro area transmits positive signals with regard to economic growth.

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<sup>6</sup> The term spread for AAA-rated bonds reached its highest level on 10 March 2017 and on 12 February 2018 at 134 basis points, whilst it peaked at 167 basis points on 10 June 2015 for all euro area bonds, including those of lower credit ratings. The term spread has fallen by more than 75 basis points since early 2018.

Figure 3. Ten-to-two-year term spread for euro area sovereign bonds (2015-2021)



Notes: a) panel refers to the ten-to-two-year term spread for AAA-rated euro area sovereign bonds. b) panel refers to the corresponding ten-to-two-year term spread for all euro area sovereign bonds. The sample period extends from 2 January 2015 to 15 April 2021. Vertical dashed lines correspond to the start of the COVID-19 pandemic, i.e. 2 December 2019. The euro area consists of the following 19 countries: AT, BE, CY, DE, EE, ES, FI, FR, EL, IE, IT, LV, LT, LU, MT, NL, PT, SK, and SI. According to Fitch, the countries with AAA-rated sovereign bonds are: DE, LU, and NL (as of 15 April 2021).

Source: Author's own calculations based on data from Eurostat.

## Conclusions

An upsurge of economic growth has a beneficial effect on capital markets (Bekaert and Harvey, 1998). That is, economic prosperity goes hand in hand with well-functioning capital markets. Efficient capital markets can promote economic growth by mitigating moral hazard, increasing productivity, and fostering the efficient allocation of resources and technological innovations (Levine, 1997). By analysing the euro area sovereign bond yield, it seems that a recession is unlikely and there is an expectation that the eurozone economy will exhibit higher growth rates in the near future. However, this would depend on the rollout of Covid-19 vaccines as well as on the vaccines' effectiveness against the Delta variant of the coronavirus.

The ECB's recovery measures have mitigated the adverse effects of the pandemic. For instance, the ECB has initiated additional asset purchases via APP and the recently launched pandemic emergency purchase programme (PEPP), which is a non-standard monetary policy measure aimed at countering the various risks to the outlook of the euro area posed by the pandemic. Moreover, the ECB has introduced a number of bank lending programmes on favourable terms, as well as various supervisory measures and liquidity injection initiatives. All of these measures have stabilised financial markets, have protected the supply of credit to the euro area economy, and have helped to limit financial fragmentation.

European policymakers have also acted promptly and have launched a number of European support measures, such as the temporary SURE (Support to mitigate unemployment risks in an emergency) scheme, the European Investment Bank (EIB) loan guarantee scheme, and the European Stability Mechanism (ESM) credit facility (Borgioli *et al.*, 2020). These measures have reversed the deflationary pressures caused by the pandemic and have contributed towards the

emergence of a reflationary environment in the euro area, which is a positive development for financial markets. Although recovery in the euro area is still fragile, a vigorous economic rebound is under way due to the aforementioned large and timely monetary stimulus.

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