

## RECENT DEVELOPMENTS IN CORPORATE RISK PREMIA AND THEIR DETERMINANTS

This box analyses the extent to which recent developments in corporate credit risk premia in the euro area and in the United States, both for the investment-grade and high-yield segments, are explained by the historical relationship with their fundamentals. This is done using corporate bond valuation models based on four factors: expected enterprise value, the uncertainty around this value, corporate sector leverage and the degree of investor risk aversion.<sup>1</sup> The risk premia are measured for each segment as the corporate bond yield spread over the swap curve in the euro area and in the United States.<sup>2</sup> The enterprise value is proxied by the average earnings per share expected by analysts for the firms comprising the corresponding area's stock market index (EURO STOXX 50 or S&P 500) in a 2 or 3-year time frame, while the uncertainty is captured using the standard deviation of the analysts' forecasts for those earnings. Leverage is measured through the debt-to-GDP ratio of the non-financial business sector in each area<sup>3</sup> and, lastly, investor risk aversion is proxied by the implied volatility of the stock market indices (VIX and VSTOXX).<sup>4</sup> The model is estimated at a monthly frequency for the period from January 2001 to March 2021. As was to be expected, the models estimated suggest that an increase in expected earnings leads to lower risk premia, while an increase in uncertainty, leverage or risk aversion causes the risk premia to rise.<sup>5</sup>

Charts 1 to 4 show, in deviations relative to the historical average and based on the models estimated, the breakdown of the credit risk premia for both segments (investment-grade and high-yield) and for both areas (euro area: Charts 1 and 2; United States: Charts 3 and 4) in 2020 and Q1 2021.<sup>6</sup> The results show that prior to the pandemic these risk premia stood below their historical average in most segments. The portion unexplained by the model<sup>7</sup> was negative in the United States and was larger in absolute size for high-yield bonds in that region. This

means that these risk premia stood below the values explained by their fundamentals, which is probably why some analysts viewed risk premia compression as a financial stability risk.

Following the outbreak of the crisis, most factors contributed to an increase in credit risk premia, especially investor risk aversion, particularly in the high-yield segments. With the exception of euro area investment-grade corporate bonds, the increases observed in these risk premia during the initial months of the crisis were more moderate than the historical relationship with their fundamentals would suggest. This is captured in the charts as a more negative unexplained component, which became very large in both market segments in the United States and in the euro area high-yield market.

Over the subsequent months, the explained component tended to gradually decrease, driven largely by the lower risk aversion and lower uncertainty, which has a larger impact in the high-yield segments. These changes in the explanatory variables appear to be partly linked to the support policies deployed by the economic authorities during the crisis. However, part of their impact, in particular the effect of the central bank asset purchase programmes, is not reflected, which would account for why the unexplained portion became more negative.

The latest figures show that those unexplained components, in absolute value, stood at around 15 bp and 112 bp in the investment-grade and high-yield segments, respectively, in the euro area, and at 115 bp and 185 bp in corresponding segments in the United States. In the US markets, these levels are close to the peak for the series since 2001 and are higher than those observed in the years prior to the global financial crisis.

In short, the current levels of credit risk premia are lower than might be expected judging by the historical

1 For further details on the model, see J. M. Gálvez and I. Roibás (2021), "Asset price misalignments in financial markets: an empirical analysis", *Working Paper*, Banco de España (forthcoming).

2 Specifically, the ICA Merrill Lynch high yield (B) and investment grade (AAA-AA) indices for the euro area and the United States are used.

3 For the United States, the corporate debt information published on the website of the Federal Reserve Bank of St. Louis (FRED) is used, and for the euro area, the corporate debt information published by Eurostat.

4 In particular, the first main component of the VIX and VSTOXX is taken, which explains 73% of the change in both.

5 The estimated coefficients for the corporate bond valuation models are significant at 1%.

6 The estimated value of the corporate credit risk premium is calculated as a weighted average of the value estimated by the various models, which include the explanatory variables of enterprise value and uncertainty over different time frames (2 or 3 years), where the weightings reflect the predictive power of each model (in terms of  $R^2$ ).

7 Although in the charts the portion not explained by the model is calculated in the form of deviations relative to the average, it is important to note that, by construction, the average of this component is close to 0.

**RECENT DEVELOPMENTS IN CORPORATE RISK PREMIA AND THEIR DETERMINANTS (cont'd)**

Chart 1  
BREAKDOWN OF CORPORATE RISK PREMIA (a)  
INVESTMENT GRADE. EURO AREA

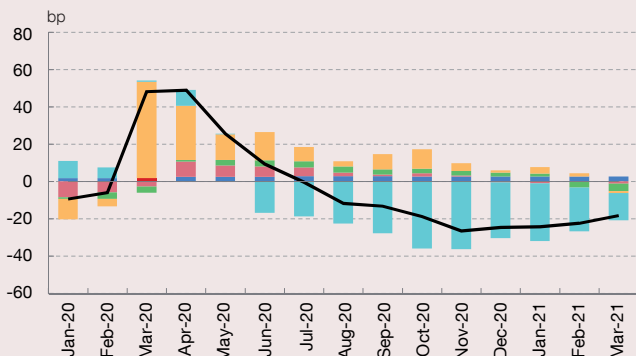


Chart 2  
BREAKDOWN OF CORPORATE RISK PREMIA (a)  
HIGH YIELD. EURO AREA

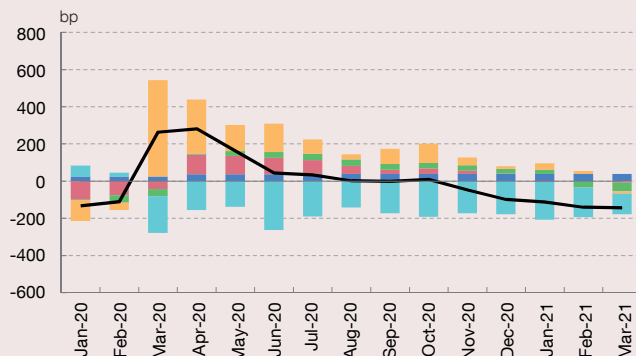


Chart 3  
BREAKDOWN OF CORPORATE RISK PREMIA (a)  
INVESTMENT GRADE. UNITED STATES

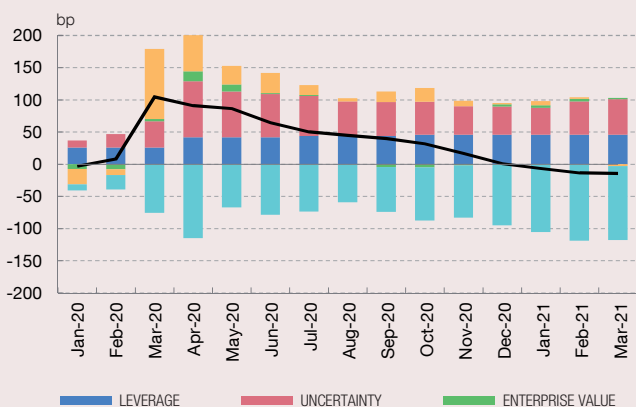
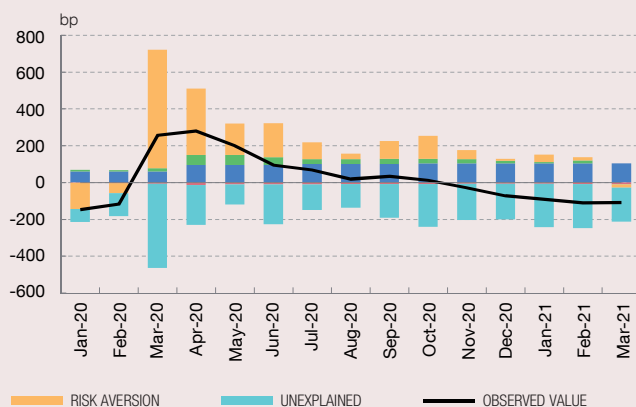


Chart 4  
BREAKDOWN OF CORPORATE RISK PREMIA (a)  
HIGH YIELD. UNITED STATES



LEVERAGE    UNCERTAINTY    ENTERPRISE VALUE    RISK AVERSION    UNEXPLAINED    OBSERVED VALUE

SOURCE: Datastream.

a The breakdowns are based on a weighted average of different corporate bond valuation models. Risk aversion is the first component of VIX and VSTOXX. The unexplained factor is the difference between the observed value and the value predicted by the corporate bond model. The observed value of the risk premia and the breakdowns are calculated as deviations relative to the historical average of the period January 2001 to March 2021 (for the United States) and the period November 2001 to March 2021 (for the euro area).

relationship between these and their explanatory variables, particularly in the case of US corporate bonds and those of the euro area high-yield segment. Much of this could be attributable to the public support measures, monetary policy in particular, or more optimistic expectations for future economic growth than those reflected in the variables of the models used. Thus, any

potential adverse changes to investor expectations regarding the economic performance or the duration of the public support measures could lead to corrections in corporate bond prices, which would have a negative impact on the financing conditions for the issuers of these securities and on the value of bondholders' portfolios.