Box 4

DRIVERS OF RECENT DEVELOPMENTS IN EURO AREA LONG-TERM INTEREST RATES

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Since late 2021, both euro area and US long-term interest rates have increased sharply (see Chart 1). In the euro area, the 10-year OIS rate[1] rose by 95.5 basis points (bp) between 15 December, the day before the ECB's December monetary policy meeting, and 24 March. This increase is similar to that observed over the same period in the 10-year US Treasury yield (87.9 bp). Moreover, these changes occurred in a setting in which the euro area is in a comparatively less advanced cyclical position than the US economy and is experiencing more moderate inflationary pressures.

This box analyses the drivers of the recent developments in euro area long-term interest rates, distinguishing between internal and external drivers. The external drivers are primarily related to the US economy, which can influence European interest rates through various channels. For example, changes in US risk-free asset yields can affect their euro area equivalents through arbitrage mechanisms. In this respect, in recent decades there has been a high correlation between long-term risk-free yields on both sides of the Atlantic.

Analysis of the drivers of developments in long-term interest rates is generally based on daily comovements in the prices of different financial assets that contain a wealth of information as these prices react in real time to a multitude of macro-financial and geopolitical changes. Specifically, in this box a structural vector autoregression (SVAR) model is used for two economies – the euro area and the United States – to identify five shocks that underlie the developments in euro area long-term interest rates. In particular, a distinction is drawn between macroeconomic and monetary policy shocks – distinguishing between those originating in the euro area and in the United States, in both cases – and global risk shocks.[2]

Chart 2 shows the contribution of these five types of shocks to the cumulative change in euro area 10-year interest rates from 15 December 2021 to 24 March 2022. During this period, two distinct phases can be identified. In the first phase, before Russia's invasion of Ukraine, both macroeconomic and monetary policy developments in the euro area appear to have contributed to the rise in the 10-year OIS rate, with these factors accounting for more than half of the increase during this phase. These results are consistent with the better macroeconomic outlook for the euro area during this sub-period, as the impact of the Omicron variant of COVID-19 on activity was proving more moderate than initially expected. Moreover, the estimated influence of the ECB's monetary policy on the long-term OIS rate seems to be in line with the upward revision of analysts' expectations for euro area policy interest rates made during this period. In any event, beyond these internal factors, somewhat less than half of the increase in the 10-year OIS rate in the euro area during this first phase would owe to external factors linked particularly to changes in the macroeconomic conditions and monetary policy stance of the United States.

In the second sub-period, which began after the Russian invasion of Ukraine on 24 February, the 10-year OIS rate tumbled initially but regained its upward trend shortly afterwards. At first this phase was driven both by the increase in global risk and the deterioration in the euro area macroeconomic outlook. These factors were both conducive to an initial decline in euro area long-term risk-free yields, although they subsequently reversed, making their cumulative contribution during this second sub-period practically zero. Nevertheless, the US macroeconomic outlook continued to improve, contributing substantially to the increase in the OIS rate. The monetary policy expectations of the ECB and the Federal Reserve

1 In the euro area, the Overnight Index Swap (OIS) rate is the fixed leg of an interest rate swap contract where the floating leg is the 1-day €STR interest rate. Accordingly, the OIS rate reflects the expected path of the €STR throughout the duration of the contract (although it is not a perfect indicator of this path as it also includes term premia). The OIS rate is considered the benchmark rate for euro area risk-free interest rates.

2 The SVAR model is estimated in log differences, using daily data on the following five variables for the period between August 2005 and March 2022: euro area 10-year OIS interest rates, their spread over US 10-year Treasury yields, the bilateral nominal exchange rate between the euro and the dollar, and the EURO STOXX and S&P500 stock market indices. To identify the five types of shocks considered in the analysis, sign restrictions on the impact of these shocks on the above-mentioned variables are used. Specifically, it is assumed that a positive shock on the domestic macroeconomic outlook will simultaneously drive up long-term rates and the stock market index in its region of origin and appreciate its exchange rate. A contractionary domestic monetary policy shock is associated with the same effects on long-term rates and the exchange rate, but with a decline in the domestic stock market index. Lastly, an increase in global risk is associated with a fall in long-term interest rates and stock markets in both jurisdictions, and with appreciation of the dollar (insofar as it traditionally acts as a global safe-haven currency) against the euro. For more details on a similar version of this model, see L. Brandt, A. Saint-Guilhem, M. Schröder and I. Van Robays (2021), "What drives euro area financial market developments? The role of US spillovers and global risk", *Working Papers,* No 2560, European Central Bank.

also appear to have pushed in the same direction, albeit to a lesser extent than during the first phase. In any event, the high asset price volatility in international financial markets in recent weeks has made it more difficult to accurately identify the nature of the shocks. These results should therefore be interpreted with due caution.

In short, the results of this box suggest that, since the start of the Russian invasion of Ukraine, the US macroeconomic outlook and the monetary policy expectations of the ECB and, to a lesser extent, of the Federal Reserve, have been the main drivers of the increase observed in euro area long-term interest rates. Considering a longer time frame (from late 2021), a substantial part of the cumulative increase in the euro area 10-year OIS rate appears to be explained by the changes in macroeconomic conditions and monetary policy in the United States. These appear to have led to a greater tightening of financial conditions in the euro area during this period than would have arisen from domestic euro area macroeconomic and monetary policy developments alone.

Chart 1
EURO AREA AND US 10-YEAR INTEREST RATES

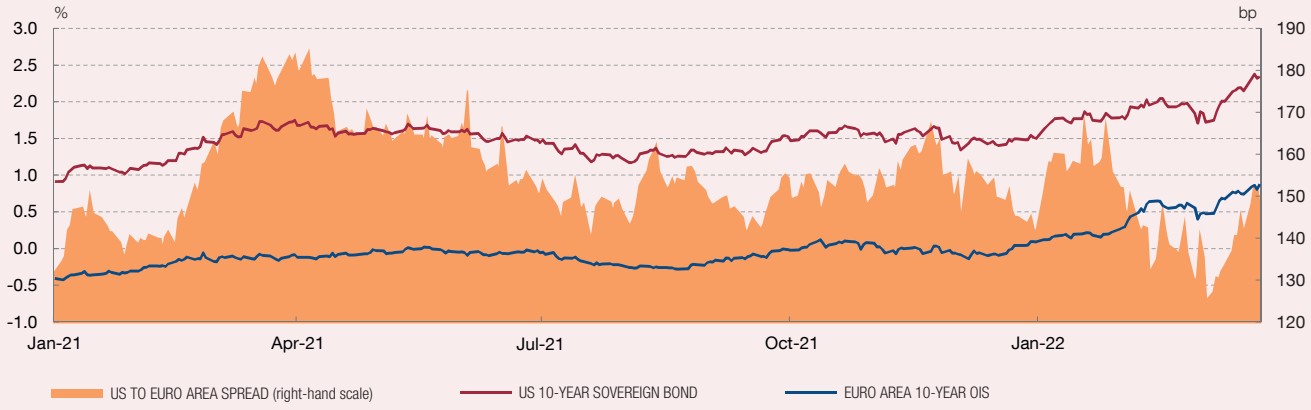
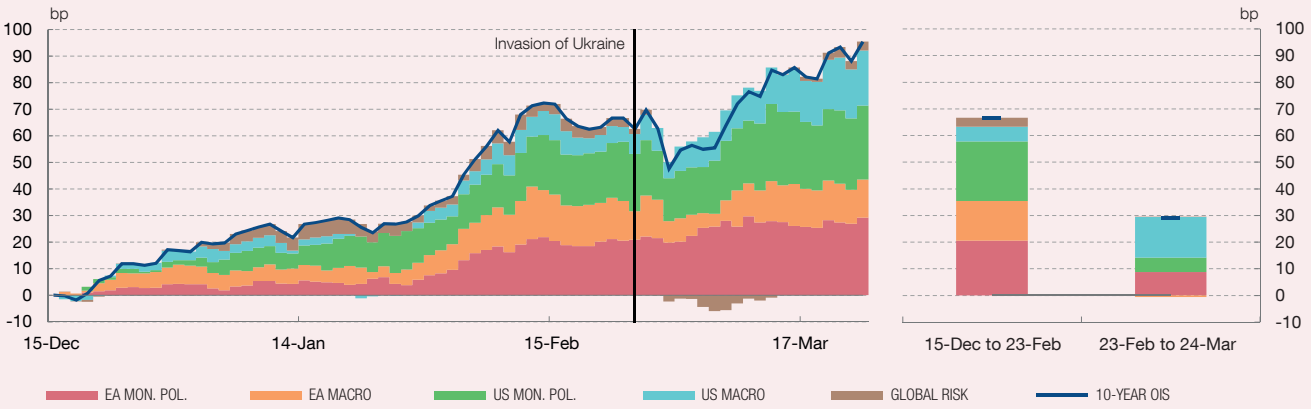


Chart 2
BREAKDOWN OF THE DRIVERS OF DEVELOPMENTS IN THE EURO AREA 10-YEAR OIS RATE. CUMULATIVE CHANGE SINCE 15 DECEMBER 2021 (a)



SOURCES: Refinitiv Datastream, ECB Survey of Monetary Analysts and Banco de España. Data updated as at 24 March 2022.

a SVAR two-country model including the euro area 10-year OIS rate, euro area and US equity prices, the bilateral nominal $/€ exchange rate and the spread between the euro area 10-year OIS rate and US Treasury yields. Identification using sign restrictions on the impact, based on Brandt et al. (2021), estimated on daily data from 2005 to 2022.