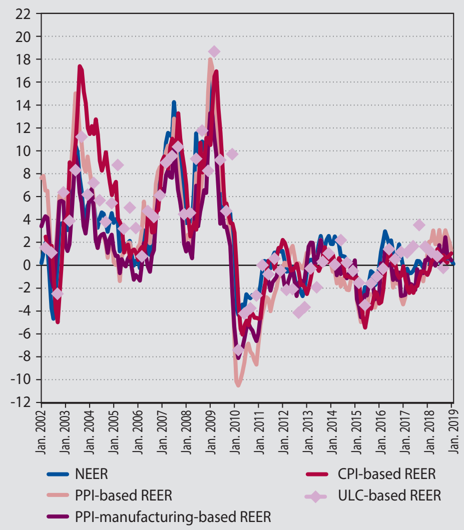
with Germany (with an impact of 0.3 percentage point), the Czech Republic (0.2 percentage point), and Italy (0.1 percentage point). The joint impact of the nominal exchange rate and inflation differential vis-à-vis a given trading partner is captured by the bilateral real exchange rate (RER) with that country. The RERs that had the largest positive impact on the REER's appreciation in 2018 were those vis-à-vis Germany (0.3 percentage point), China, South Korea, Russia, the United States, Italy and France (each 0.1 percentage point), while the RER vis-à-vis the Czech Republic made the largest negative contribution (-0.2 percentage point). With the REER's estimated equilibrium path still appreciating (due largely to equilibrium labour productivity growth being higher in Slovakia than in its trading partners), the year-on-year rate of increase in the REER's undervaluation continued to moderate in 2018, despite the REER's appreciation. The REER's undervaluation continued to support the price competitiveness of domestic firms and enabled a return to growth in Slovakia's market share (measured as the ratio of exports to foreign demand).

The REER based on unit labour costs (ULC-based REER) increased in the first three quarters of 2018 by an average of 0.6% year on year. The RERs contributing most to that appreciation were those vis-à-vis the United States (with an impact of 0.3 percentage point), Germany, Poland and South Korea (each 0.2 percentage point). The RER against the Czech Republic had the largest dampening effect on the ULC-based REER, with a contribution of -0.9 percentage point.

Chart 9 Slovakia's NEER and REER (calculated with respect to 15 trading partners; annual percentage changes)



Source: NBS calculations.
Note: Appreciation and depreciation of the NEER and REER indices are denoted by positive figures and negative figures respectively.

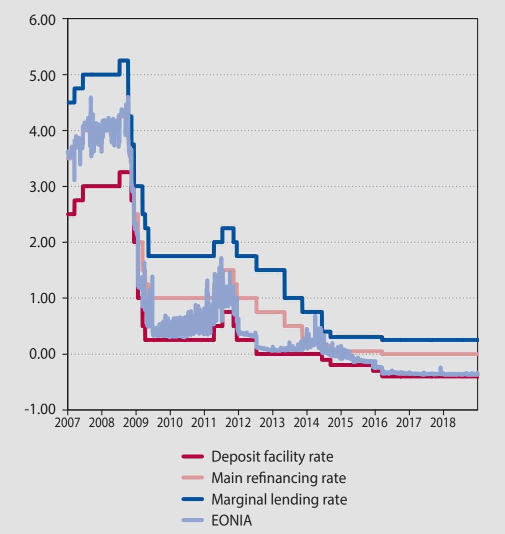
2 EUROSYSTEM MONETARY POLICY

2.1 MONETARY POLICY OPERATIONS

In 2018 the European Central Bank (ECB) maintained the accommodative monetary policy stance that it had been pursuing since 2014. Euro area economic trends over the past decade have called for the implementation of several non-standard monetary policy measures, contributing to a marked increase in the European banking sector's liquidity position. At the same time, these measures have supported changes in the liquidity-providing monetary policy operations used by the banking sector. Furthermore, the ECB Governing Council's forward guidance on monetary policy has played an auxiliary but important role in the implementation of that policy.

The Governing Council left the key ECB interest rates unchanged throughout 2018, with the main refinancing rate standing at 0.00%, the marginal lending facility rate at 0.25%, and the deposit facility rate at -0.40%. At its monetary policy meeting in June 2018, the Governing Council enhanced its forward guidance on the key ECB interest rates, saying it expected to keep them unchanged at least through the summer of 2019 and in any case for as long as necessary to ensure the evolution of inflation remained aligned with its expectations of a sustained adjustment path. The more detailed forward guidance on the key interest rates had the effect of keeping market interest rates unchanged for the rest of the year. The overnight interest rate for unsecured deposits remained just above the

Chart 10 Key ECB interest rates (percentages)



Source: Bloomberg.

deposit facility rate, which in 2018 determined the level of the shortest market rates. Amid ambiguous incoming economic data for the euro area during the year, the timing of the next increase in key ECB interest rates as implied by OIS (Overnight Index Swap) interest rates was gradually put further back. By the end of 2018, the next increase was not envisaged before the end of 2019.

Looking at the ECB's use of standard monetary policy instruments in 2018, liquidity continued to be provided through the main refinancing operations with a maturity of one week and through longer-term refinancing operations with a maturity of three months. The share of these operations in overall liquidity provided to the European banking sector was very small, since banks received most of their liquidity through the ECB's asset purchase programme (APP), comprising the third covered bond purchase programme (CBBP3), the asset-backed securities purchase programme (ABSPP), the public sector purchase programme (PSPP), and the corporate sector purchase programme (CSPP).

Monthly purchases under the APP were reduced from €60 billion to €30 billion from January 2018, under a decision taken by the ECB's Governing Council in October 2017. As regards monetary policy measures, the Governing Council's two most significant meetings in 2018 were in June and December.

At its meeting in June 2018, the Governing Council enhanced its forward guidance not only on key interest rates but also on the ECB's net purchases under the APP. According to its post-meeting statement, net purchases would be made at a monthly pace of €30 billion until the end of September 2018 and then reduced to €15 billion until the end of December 2018, when they would be discontinued. At the same time, the Governing Council announced its intention to continue reinvesting the principal payments from maturing securities purchased under the APP for an extended period of time after the end of its net asset purchases. In September the Governing Council reiterated that purchases would be reduced to a monthly pace of €15 billion in the fourth quarter. After its December meeting, the Governing Council confirmed that APP net purchases would end in December 2018 and announced a further enhancement of its forward guidance on reinvestment: the Eurosystem would continue reinvesting the principal payments from maturing securities purchased under the APP for an extended period of time past the date when the key ECB interest rates started to be raised. The ECB therefore plans to proceed in this way for as long as is necessary to ensure its monetary policy objectives. According to statements of ECB representatives, the ending of net purchases does not imply an end to the expansive cycle of monetary policy. An accommodative monetary policy stance is expected to accompany economic expansion for a certain time.

Liquidity provided to the banking sector through monetary policy operations and purchase programmes

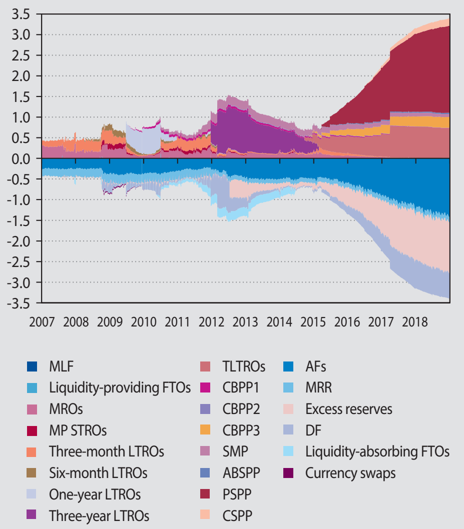
The outstanding liquidity provided by the Eurosystem to euro area banks continued to increase in 2018 and reached a new historical high of €3.4 billion. The ECB's asset purchase programme accounted for most of the new liquidity, but owing to the reduction in the monthly pace of APP purchases, the growth rate of outstanding liquidity moderated. Looking at the euro area banking sector's outstanding liquidity at the end of 2018, 78% of it came from purchase programmes and 21% from non-standard targeted longer-term refinancing operations (TLTROs) conducted in 2016 and 2017. The share of MROs and three-month operations remained at less than 1% in 2018. Since June 2018, in accordance with the ECB's pre-announced schedule, participants in the second series of TLROs (TLTRO-II) have had the option, on a quarterly basis, of early repayment of their TLRTOs. The uptake of this option among euro area banks has been muted and of the total amount made available to them through TLTRO-II, less than 2% had been repaid by the year-end. Furthermore, the last repayments of funds provided under TLTRO-I have been made. European banks lowered the considerable liquidity surplus through the deposit facility.

By the end of 2018 overall APP purchases amounted to €2.6 trillion. Národná banka Slovenska has been participating in the PSPP – encompassing purchases of sovereign debt securities and securities issued by supranational institutions and the CBPP3. The market value of NBS's holdings in its monetary policy portfolio at the end of 2018 stood at €21.8 billion, while the value of domestic government bonds in the Eurosystem's portfolio was €12 billion.

Impact of monetary policy operations on the Eurosystem balance sheet

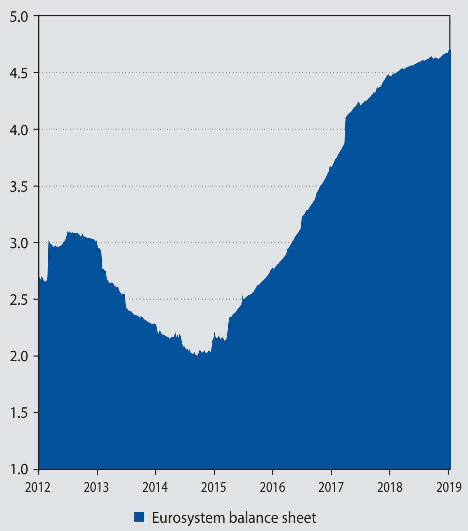
In 2018 the Eurosystem's total assets reflected the impact of the slower pace of monthly purchases under monetary policy programmes, full repayment of TLTRO-I funds, as well as early repayments of TLTRO-II funds. Nevertheless, the ECB's balance sheet expanded and by the year-end stood at a new historical high of €4.7 trillion, €0.2 trillion higher than its level at the end of 2017. Monetary policy assets made up 73% of the total assets.

Chart 11 Liquidity position of the Eurosystem (EUR trillions)



Sources: ECB and NBS calculations.
Note: MLF – marginal lending facility; FTO – fine-tuning operation; MRO – main refinancing operation; MP STRO – special-term refinancing operation with a maturity of one maintenance period; LTRO – longer-term refinancing operation; TLTRO – targeted longer-term refinancing operation; CBPP – covered bond purchase programme; SMP – Securities Markets Programme; ABSPP – asset-backed securities purchase programme; PSPP – public sector purchase programme; CSPP – corporate sector purchase programme; AF – autonomous factor; MRR – minimum reserve requirement; DF – deposit facility.

Chart 12 Total assets of the Eurosystem (EUR trillions)



Sources: Bloomberg and NBS calculations.

Box 1

EURO SHORT-TERM RATE (€STR)

Under the EU Benchmarks Regulation (BMR),[4] which entered into force on 1 January 2018, benchmark administrators are required to bring existing benchmarks into line with the BMR. After the administrator of the EONIA benchmark rate – the European Money Mar-

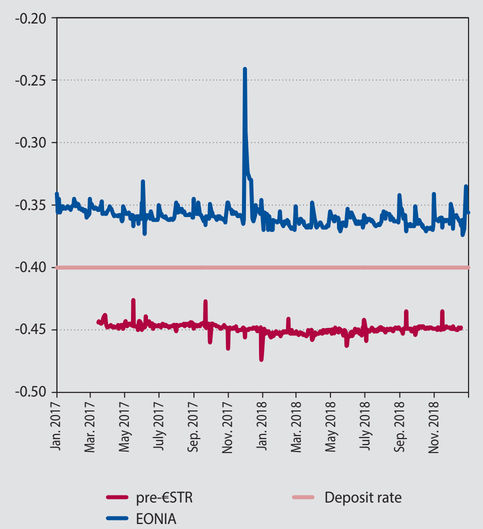
4 *Regulation (EU) 2016/2011 of the European Parliament and of the Council of 8 June 2016 on indices used in financial instruments and financial contracts or to measure the performance of investment funds and amending Directives 2008/48/EC and 2014/17/EU and Regulation (EU) No 596/2014.*

kets Institute (EMMI) – found the EONIA[5] and EURIBOR methodologies to be non-compliant with the BMR, an extension to the transition period for becoming BMR-compliant was granted to them (the BMR comes into full force on 1 January 2020). In 2018, EMMI suspended its review of the EONIA methodology and announced that the EONIA would not meet the requirements of the BMR by 1 January 2020. From that date, unless the transition period is extended, it will no longer be possible to use EONIA as a reference rate in new commercial contracts. The result of the review of the EURIBOR methodology will be announced during 2019.

It was in this context in 2018 that the ECB continued its intensive preparations for a new euro unsecured overnight interest rate, known as €STR (Euro short-term rate), which will be published on a daily basis by October 2019 at the latest. €STR is calculated from actual unsecured deposit transactions and reflects overnight borrowing costs in the European money market. The calculation includes all overnight transactions in which selected banks – 50 banks that are reporting agents for the ECB's money market statistical reporting (MMSR) dataset – borrow from credit institutions and other financial institutions. The rate is calculated as a weighted average, excluding transactions subject to market interest rates outside the range of the 25-75 percentiles. The calculation also includes transactions undertaken with non-bank institutions. A major advantage of €STR over EONIA is that it is based on a higher volume of transactions and a greater number of participating banks. €STR is less volatile owing to the lower weight of individual transactions and the exclusion of transactions in the outer percentiles.

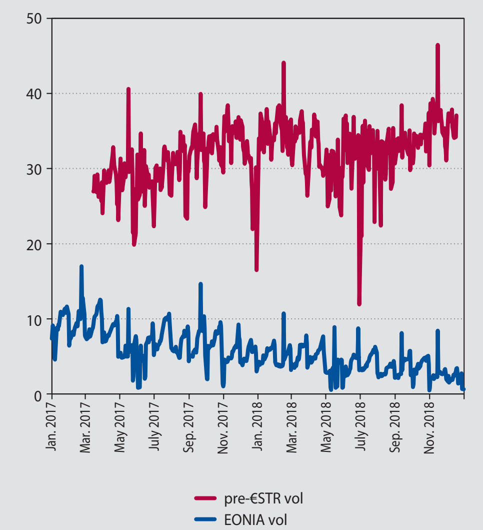
€STR will be published by no later than 09:00 on each TARGET2 business day and will be based on transactions from the previous day. From June 2018 the ECB began publishing the 'pre-€STR', as a way of giving market participants preliminary information about the level of the new benchmark. A working group on euro risk-free rates, in which the ECB has the role of secretariat, helped prepare recommendations for ensuring the smoothest possible transition of European market participants from the EONIA to €STR benchmarks. These recommendations were published at the end of 2018.

Chart A Unsecured money market interest rates (percentages)



Sources: ECB, Bloomberg.

Chart B Traded volumes included in the interest rate calculation (EUR bn)



Sources: ECB, Bloomberg.

5 Euro overnight index average – a measure of the effective interest rate prevailing in the euro interbank overnight market. EURIBOR – a benchmark calculated daily for interbank deposits with a maturity of up to 12 months.