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Annual Report
2020

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We mourn the loss of the following members of our staff

Manuela Kraus	3 January 2020
Jürgen Peter Elberskirch	19 May 2020
Norbert Hölscher	26 May 2020
Andreas Krug	22 June 2020
Christian Waller	14 July 2020
Vinzenz Theodor Linster	28 August 2020
Jürgen Schirmer	26 September 2020
Lutz Strelow	16 October 2020
Thomas Ernst Josef Ferger	24 October 2020
Silvia Katharina Haus	4 November 2020
Marion Herberg	27 November 2020
Manfred Johann Pregler	11 December 2020

We also remember the retired staff members
of the Bank who passed away in 2020.

We will honour their memory.

DEUTSCHE BUNDESBANK

Deutsche Bundesbank
Wilhelm-Epstein-Strasse 14
60431 Frankfurt am Main
Germany

Postfach 10 06 02
60006 Frankfurt am Main
Germany

Tel.: +49 (0)69 9566 3512
Email: www.bundesbank.de/kontakt

Internet: www.bundesbank.de

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p	Provisional
r	Revised
e	Estimated
pe	Partly estimated
…	Figure available at a later date
.	Figure unknown, not to be published or not meaningful
0	Less than 0.5 but more than nil
–	Nil

Discrepancies in the totals are due to rounding.

Bundesbank round-up

Bundesbank round-up

Dear Readers

2020 will go down in history as the year when the coronavirus pandemic struck: the year of a global public health crisis unprecedented in our lifetimes. Around the world, COVID-19 has already claimed the lives of more than two million people, and many more have fallen seriously ill. In one fell swoop, the pandemic transformed our daily lives to an almost unimaginable degree.

At the same time, it triggered a deep and global economic crisis. Among those affected were the European economies, which suffered severe downturns last spring. Fiscal policy is taking on a key role in the economic response to the fallout from the crisis, as it can provide direct financial support to the healthcare system and to enterprises and households. However, monetary policy must also play its part, as the price outlook in the euro area has deteriorated markedly. In addition, insufficient liquidity in the financial system could seriously exacerbate the crisis and ultimately put price stability at risk. In this crisis in particular, it is vital that banks continue to supply the economy with credit. For this reason, banking supervisors temporarily eased their requirements for institutions. Overall, the comprehensive government measures have so far prevented a macroeconomic downward spiral that could inflict severe and lasting damage. Complete economic recovery will only be possible once the pandemic has been overcome. The swift development of vaccines gives cause for optimism in this respect. However, there is still great uncertainty surrounding the future course of the pandemic and its economic repercussions. Government assistance will remain indispensable for the time being. What is also vital, though, is that all of these emergency measures are limited in duration. This applies not least to the emergency monetary policy measures, which are also reflected on the Bundesbank's balance sheet.

At the same time, the fallout from the crisis has affected the Bundesbank not only in its roles with regard to monetary policy, banking supervision and maintaining financial stability, but also in other tasks. In particular, the onset of the crisis saw a temporary spike in demand for cash. The Bundesbank ensured that the economy was supplied with cash at all times. In this context, it – like many institutions – had to reorganise its work in order to continue to perform its tasks under pandemic conditions. With a great deal of flexibility and effort, the Bundesbank's staff adapted to the new circumstances. As a result, in addition to managing the fallout from the crisis, the Bundesbank successfully pushed ahead with major projects – ranging from the Eurosystem monetary policy strategy review, through innovation in the digitalisation of the financial system and payment systems in particular, to the modernisation of the Bundesbank's Central Office campus in Frankfurt am Main. I would like to expand on these and other topics in more detail below. The impact of the pandemic is well at the fore – especially its effects on the economy, but also on the Bundesbank in its capacity as both Germany's central bank and as an employer.

Economic activity and price developments

Within the space of just a few weeks in March and April 2020, the global economy contracted to a historic degree. The coronavirus pandemic and the measures necessary to contain it brought entire economic sectors to a standstill around the world. Global trade saw a sharp, sudden drop, and international supply chains were disrupted. Due to shortfalls in intermediate goods, factories had to temporarily throttle or even suspend their production. However, the impact was particularly severe in services sectors that typically feature high frequencies of interpersonal contact: restaurants, cinemas, and institutions of education were closed, and trains and aircraft often remained empty. Alongside the government-mandated measures, a role was played by the fact that people also chose to refrain from social contacts in order to reduce the risk of infection.

After the first wave of infections tapered off, the containment measures were eased and the global economy saw a strong recovery in the middle of the year. However, in almost every country, economic output still remained below pre-crisis levels. One exception was the People's Republic of China, where the pandemic peaked earlier than elsewhere. Meanwhile, other countries suffered additional waves of infection. In the autumn, the situation deteriorated again, primarily in Europe and the United States; for this reason, the authorities stepped up the containment measures once again. As a result, public life was again noticeably restricted in some areas, and the economic recovery was markedly dampened. However, the impact was significantly weaker than in the first half of the year. In particular, industry and global trade appeared robust at the turn of the year. This was probably because, on the whole, the government restrictions were not as far-reaching or severe as they had been during the first wave of infections. In addition, households and enterprises had become better able to cope with the restrictions; in particular, industry no longer experienced significant interruptions to production.

The uncertainty surrounding the future course of the pandemic and its economic fallout remains high. Economic recovery will hinge on bringing the number of infections under control and overcoming the pandemic. Medical advances, and especially the swift development of multiple vaccines, give hope for an end to the public health crisis. Nevertheless, large-scale vaccinations will take time and will also have to prove to be effective against new variants of the virus. Furthermore, as the World Health Organization has highlighted, it is important that vaccines must be available around the world, including in developing countries with very low incomes.[1]

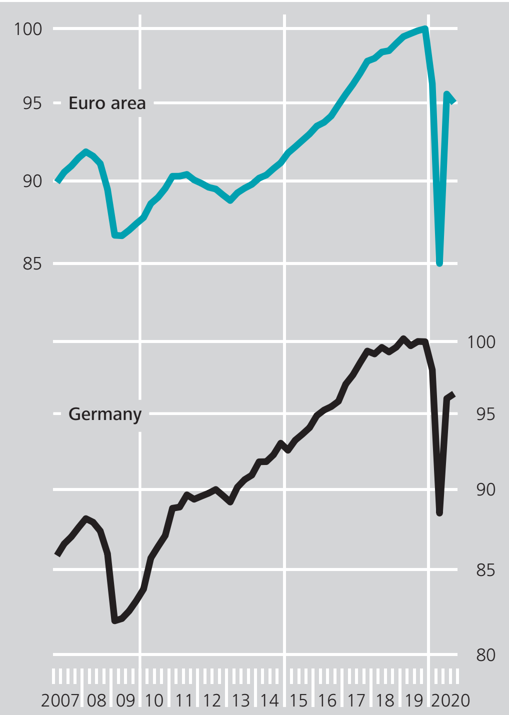
While the pandemic is affecting the world as a whole, many people are suffering more than others. Economic inequality could widen as a result. For example, in a multitude of countries, youth unemployment has risen especially sharply.[2] Moreover, international organisations are warning that school closures could lead to long-term learning losses, which could negatively affect pupils' lifetime earnings prospects.[3] In particular, younger children and schoolchildren from low-income households could ultimately fall behind.[4] This problem may weigh especially on developing and emerging economies, as these countries generally have relatively few years of schooling. In any case, these economies are faced not only with the direct repercussions of the pandemic, but also with knock-on effects such as lower income from commodity exports, declining remittances from migrant workers to their home countries, and the collapse in international tourism.[5] The World Bank has estimated that the number of people living in extreme poverty worldwide may have risen by between 88 million and 115 million in 2020.[6]

Germany, too, was not left unscathed by the crisis. The magnitude and speed of the economic slump were unprecedented in German

1 See T. A. Ghebreyesus (2020), COVID-19 anniversary and looking towards 2021, speech delivered on 30 December 2020.
2 See OECD, The global recovery remains partial and uneven, OECD Economic Outlook, Vol. 2020, No 26.
3 See E. A. Hanushek and L. Woessmann (2020), The Economic Impacts of Learning Losses, OECD Education Working Papers, No 225.
4 See F. M. Reimers and A. Schleicher (2020), Schooling disrupted, schooling rethought, How the COVID-19 pandemic is changing education, OECD.
5 See P. Baylis, P.-L. Beauregard, M. Connolly, N. Fortin, D. A. Green, P. Gutierrez Cubillos, S. Gyetvay, C. Haeck, T. L. Molnar, G. Simard-Duplain, H. E. Siu, M. teNyenhuis and C. Warman (2020), The Distribution of COVID-19 Related Risks, NBER Working Paper, No 27881.
6 See World Bank, Reversals of Fortune, Poverty and Shared Prosperity 2020.

Aggregate output*

Q4 2019 = 100, seasonally and calendar adjusted, log scale



Sources: Eurostat, Federal Statistical Office and Bundesbank calculations. * Real gross domestic product.
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post-war history: in the spring of 2020, economic output dropped by almost one-tenth. In particular, services sectors with high frequencies of interpersonal contact were badly affected as, in some cases, they were required to severely restrict or entirely suspend their business operations. At the same time, export-oriented industry suffered as a result of falling foreign sales as well as disruptions to supply chains. On the demand side, enterprises drastically reduced their investment, as key parts of their business had dried up and prospects had become highly uncertain. In macroeconomic terms, the massive reduction in household consumption had an even more significant impact, whereas incomes remained comparatively stable and were supported by government assistance measures such as short-time working benefits. For this reason, the household saving ratio shot up by an unprecedented amount, jumping from 11% in 2019 to more than 20% in the second quarter of 2020. Classic precautionary motives, such as concerns about future losses of work and income, probably played only a minor role here. Factors related directly to the pandemic are likely to have had greater significance, as shown by a survey conducted by the Bundesbank. Of the households that reduced their consumption as a result of the pandemic, one-half stated that this was because goods or services were simply unavailable. In addition, one-third of respondents reduced their consumption out of fear of infection. By contrast, the proportion of those who stated concerns of future income losses as a reason for reduced consumption was only around one-fifth.[7]

The Bundesbank now conducts monthly surveys of German households' economic assessments and expectations. These online surveys are one of the Bundesbank's initiatives to improve the body of information at its disposal (see the box on pp. 15 ff.). In this context, the rapid deterioration in the economic situation in the spring meant that it was vital to also draw on unconventional data sources alongside survey-based information for the purposes of business cycle analysis, for instance. Data on the truck toll or electricity consumption, for example, are available more quickly than standard economic indicators, which are usually published on a monthly basis and, in some cases, with considerable time lags. The weekly activity index for the German economy, which was developed by Bundesbank experts during the year of the pandemic, aggregates information that is available very quickly.[8]

The daily and weekly data also provided early indications that the economic situation in Germany was improving again after social distancing measures had been relaxed in May. And real gross domestic product (GDP) did indeed grow very strongly in the third quarter over the massively depressed second-quarter level. This shows how quickly the economy can pick up

7 See Deutsche Bundesbank, Households' saving behaviour during the pandemic, Monthly Report, December 2020, pp. 26 f.
8 See Deutsche Bundesbank, A weekly activity index for the German economy, Monthly Report, May 2020, pp. 68 ff.

Economic monitoring in times of COVID-19: increased need for timely and higher-frequency indicators

The speed and strength of the sharp decline in Germany's economic activity in the spring of 2020 as a result of the COVID-19 pandemic posed a major challenge for business cycle analysis – and thus also for the fiscal and monetary policy decision-making processes that are based on it. Not only has there been very little past experience of shocks of this kind, another particular difficulty was the need to assess the economic consequences of the pandemic and the impact of the measures taken to contain it in a reasonably timely and reliable manner. Traditional economic indicators are only available with a certain time lag. For example, monthly retail sales are not published until around 30 days after the end of the reporting period. Indeed, for industrial output, which is considered to be one of the most important short-term economic indicators, data are not available for just over five weeks. Results of economic surveys among businesses and households are available sooner. However, these indicators usually only provide qualitative results, and here, too, there is a certain time lag between the collection of survey data and their publication. For example, the results of surveys by the ifo Institute or the Gesellschaft für Konsumforschung available at the end of March 2020 were not yet able to capture the full extent of the economic slump from mid-March onwards as some of the responses had already been submitted in the first half of the month.

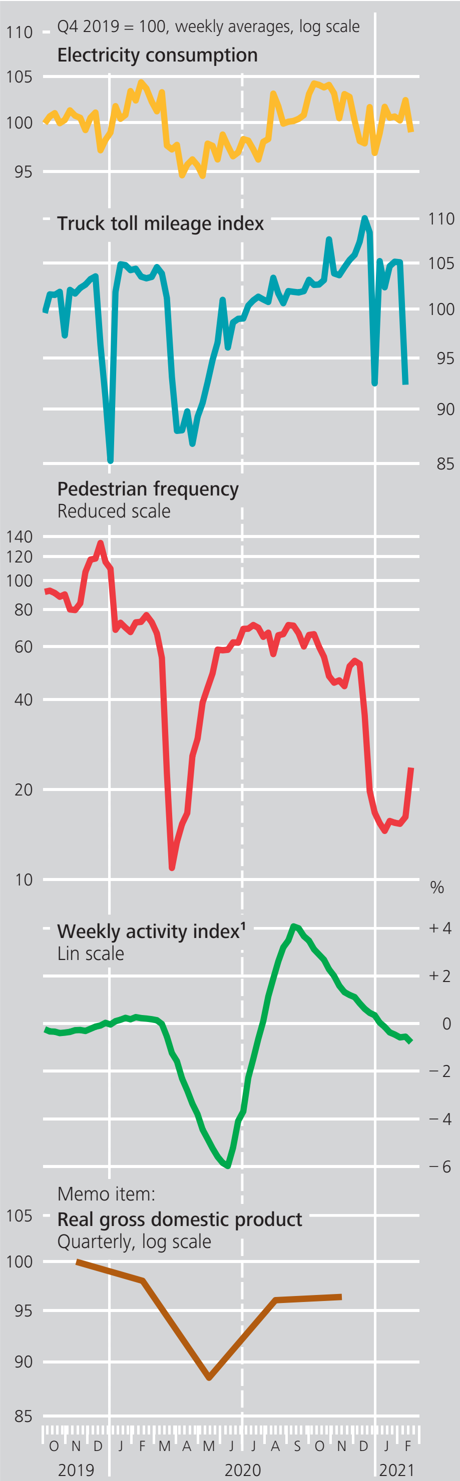
In order to be able to assess the economic situation in both a timely and yet relatively reliable manner, greater use was made of rapidly available daily and weekly data.[1] In addition to newly provided high-frequency data from the official statistics, data from private or other government entities that suggested a sufficiently close relationship with economic activity were also used. For example, realised electricity consumption is likely to go a certain way towards explaining industrial activities.[2] In principle, this is also likely to be the case for the truck toll mileage index, as both the intermediate inputs needed for manufacturing and the goods produced are primarily transported by road. In addition, the truck toll mileage index includes the transportation of capital and consumer goods imported from abroad. The number of pedestrians on selected inner-city shopping streets was used as an indicator of consumers' traditional purchasing habits. Another useful source was the search frequency of terms on the internet. Especially during the first phase of the pandemic, certain terms were entered more frequently into search engines in order to obtain information on topics such as short-time work and government assistance.

One challenge in interpreting these daily and weekly data is that they, just like monthly and quarterly data, contain regularly recurring intra-year patterns. These fluctuations obscure the underlying economic trend and thus make business cycle analysis more difficult. One example is daily electricity consumption, which contains two intra-year periodic patterns. The first pattern indicates seasonal fluctuations, with a low in

1 In this respect, digitalisation has boosted the availability of new kinds of data that central banks need in order to perform their tasks, and the pandemic has accelerated the collection of these data. See C. Biancotti, A. Rosolia, G. Veronese, F. Mouriaux and R. Kirchner (2020), COVID-19 and official statistics: a wakeup call?, Banca d'Italia, Occasional Papers, No 605.
2 For more information on the indicators listed here, see Deutsche Bundesbank, A weekly activity index for the German economy, Monthly Report, May 2020, pp. 68-70.

High-frequency indicators of economic development in Germany

Seasonally and calendar adjusted



Sources of unadjusted figures: Federal Network Agency, Federal Office for Goods Transport, Hystreet, Federal Statistical Office. **1** Trend-adjusted growth rate of economic activity over the past 13-week period compared with the preceding 13-week period.

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the summer and higher values in the winter. The second pattern shows the variation over the course of a week. Moreover, a calendar effect that tends to result in lower electricity consumption around (moveable) public holidays is apparent. One method of filtering out the economically relevant signal from a time series is seasonal and calendar adjustment. Unlike for monthly and quarterly time series, no established procedures or guidelines exist yet for weekly and daily data in the official statistics. However, Bundesbank experts have been able to methodologically refine and apply concepts that are currently in the testing phase. These concepts are based on earlier research work at the Bundesbank and initial experience in the adjustment of daily cash issuance.[3]

High-frequency indicators that are closely linked to economic activity fell abruptly and sharply from mid-March onwards.[4] This reflected the impact of domestic and foreign measures to contain the pandemic, interruptions to supply chains, particularly in the international exchange of goods, a slump in export demand and also more cautious behaviour among the general public. As the economic recovery set in amid the subsequent containment of the spread of the virus and the easing of protective measures, the indicators moved upwards again. The resurgence of the pandemic in autumn 2020 and the renewed tightening of restrictions had an impact on the number of pedestrians on inner-city shopping streets, but not – or only to a very limited degree – on electricity consumption and the truck toll mileage index. This mixed response reflected the fact that contact-intensive services,

3 See Deutsche Bundesbank, Experimental seasonal and calendar adjustment of daily economic indicators, Monthly Report, August 2020, pp. 67-70.
4 By contrast, the values of indicators that capture a stress or crisis situation to a greater degree, such as the number of search queries for certain terms on the internet, surged upwards.

in particular, were hit hard by restrictions, whereas industry was barely affected.

In order to obtain an assessment for the economy as a whole, Bundesbank experts compiled the individual indicators into an aggregate weekly activity index for the German economy, which is based on an index developed by the Federal Reserve Bank of New York. It depicts the estimated change in macroeconomic activity over the past 13 weeks compared with the preceding 13 weeks.[5] The rate may therefore be interpreted at the end of the quarter as a quarterly growth rate. This experimental macroeconomic activity index fell sharply from mid-March onwards, then recovered exceptionally strongly in the summer before stabilising again at the end of the year. It reflected movements in real gross domestic product fairly reliably and has the advantage of being available very quickly.

However, business cycle analysis is not the only area in which the COVID-19 crisis led to an increased need for additional information. There was also a growing need for broad and timely indicators in order to assess and respond appropriately to the impact of the pandemic on the banking sector and on the expectations of consumers and enterprises of relevance to monetary policy. The Bundesbank's Directorate General Statistics was able to meet these additional data requirements in part through first-time analysis of the granular credit database AnaCredit. Granular information on around ten million loans reveals which banks lend to which enterprises on what terms and what role promotional loans play. Work on AnaCredit is continuing to progress, which means that aggregate, no longer confidential data from this statistical survey can be made widely available in the future.

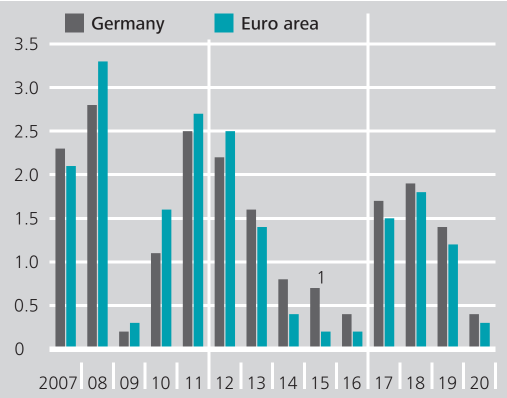
Last year, the Bundesbank's Research Centre launched both household and business surveys to enhance the pool of information on the formation of expectations. Since April 2020, the Bundesbank Online Panel Households has been collecting data on individuals' economic assessments and expectations every month. The results enabled changes in inflation expectations, as well as possible effects of income changes on consumption expenditure, to be identified at an early stage and taken into account in Bundesbank analyses. Furthermore, it was possible to determine the impact of communicating monetary and fiscal policy pandemic measures on individuals' assessments and expectations, which provided valuable information for central bank communication.[6]

In June 2020, the Research Centre, with the support of the Directorate General Statistics, launched the Bundesbank Online Panel Firms. Using this large-scale survey of enterprises in Germany, the Bundesbank aims to better understand the situation and expectations of firms. Initial results have been helpful in capturing the extent of liquidity and credit difficulties, the severity of the economic slump and the effects of policy measures on enterprises in Germany, and factoring these findings into Bundesbank decisions.

5 See S. Eraslan and T. Götz, An unconventional weekly economic activity index for Germany, Deutsche Bundesbank, Technical Paper, No 02/2020; Deutsche Bundesbank, A weekly activity index for the German economy, Monthly Report, May 2020, pp. 68-70.
6 See O. Goldfayn-Frank, G. Kocharkov and M. Weber, Households' Expectations and Unintended Consequences of Policy Announcements, Bundesbank Research Brief, 34th edition – November 2020.

Consumer prices*

Year-on-year percentage change



Sources: Federal Statistical Office and Eurostat. * HICP. **1** Values for 2015 biased upwards by an ad hoc revision of German HICP in 2019.

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pace once the spread of the virus has been contained. Nevertheless, third-quarter aggregate economic output still fell short of its pre-crisis level by 4%, partly because some individual services sectors remained subject to restrictions. At the end of the year, the second wave of the pandemic caused the aggregate economic recovery to falter. On average over 2020, the German economy contracted by just under 5% and thus by almost as much as in 2009 during the global financial crisis.

Other countries in the euro area suffered higher numbers of infections and even more deaths than Germany. The economic impact of the pandemic was more severe in those countries as well. According to provisional calculations, real GDP in the euro area fell by just under 7% in 2020 as a result. At present, a high degree of uncertainty surrounds not only the future course of the pandemic, and thus the question of when economic output will return to its pre-crisis level, but also any long-term fallout from the crisis. This holds true for both potential lasting economic damage as well as for possible knock-on effects that could stimulate economic activity over the long term. For example, the marked push towards digitalisation observed in many areas could accelerate structural change and increase productivity.

Over the past year, the global economic crisis and, in particular, the restrictions on travel caused crude oil prices to plummet. Above all, the sharp drop in energy prices was a major reason why the Harmonised Index of Consumer Prices (HICP) in the euro area rose by only 0.3% in 2020, after climbing by 1.2% in 2019. If energy and food are excluded from the basket of goods, the HICP rate fell from 1.0% in the previous year to 0.7%. In this context, the temporary reduction in the rates of value added tax in Germany from July to December also dampened the rate of inflation. Now that the tax relief measures have expired, inflation will be higher again this year. In addition, Germany introduced CO_2 emissions certificates for the transport and building heating sectors at the start of 2021, which caused the prices of mineral oil products and gas to rise markedly. Beyond this, the pandemic has had an impact on the supply side, such as disruptions to supply chains and additional hygiene measures, which tended to push up costs and prices. On the whole, however, these effects were arguably not as significant as the generally weak level of demand. According to most forecasts, this is still likely to somewhat dampen the underlying inflationary pressures in the euro area over the coming years. Here, a role is also played by the fact that wage growth is being temporarily weakened by the crisis.

The damage inflicted directly on the labour market in the euro area has been relatively minor so far. The 3% fall in employment during the second quarter of 2020 thus seems moderate when viewed in comparison with the almost 12% collapse in GDP over the same period. The standardised unemployment rate in the euro area also rose distinctly, but not massively, from its record low level in February 2020. In fact, many countries rolled out comprehensive assistance programmes to protect jobs. In Germany, it was the standard stopgap measure of short-time working in particular that prevented job losses on a considerably larger scale. At its peak – in April – six million persons were in economically induced short-time work, representing 18% of all employees subject to social security contributions in Germany. By November, this figure had fallen to 2.3 million persons. Short-time working benefits are there to help enterprises retain their employees, who will be needed again once the crisis has passed. Without this measure, many people would have become unemployed and potentially been unable to find work for an extended period of time. Their skills and expertise could have then become outdated and their life prospects would have dimmed. Over the past year, short-time working benefits were made more attractive through various one-off arrangements, and the period of entitlement to these benefits was extended. However, the longer the crisis continues, the greater the danger is that short-time working will tie workers to what will become dead-end jobs. This highlights one of economic policy's most difficult tasks during the current crisis – supporting the economy without hindering structural change.

Fiscal policy

Fiscal policy was and is faced with particular challenges during the coronavirus crisis. Using its financial resources, it is supporting health protection and mitigating both the economic repercussions of the pandemic itself and the measures taken to contain it as well as the impact of the economic slump. Due to the uncertainty going forward, fiscal policy must be readjusted time and again.

In Germany, the government implemented an entire package of non-standard measures in order to financially support enterprises and households. For example, it was made easier for enterprises to lower their tax prepayments or defer levies. Furthermore, the government granted loan guarantees, expanded short-time working benefits, issued transfer payments – to compensate for lost revenue, for example – and, in individual cases, even injected capital into companies. Amongst other measures, households were granted a child bonus, unemployment benefit was extended in some cases, and access to the basic allowance was expanded. In the second half of 2020, the rates of value added tax were also lowered, as mentioned above. In addition, the automatic responses of the tax and social security system are having a stabilising effect: taxes and wage-dependent social security contributions are decreasing during the economic downturn, while government is increasingly paying out regular short-time working and unemployment benefits.

All in all, the comprehensive fiscal measures were necessary and correct in order to support households and enterprises, and thus prevent a macroeconomic downward spiral. During the pandemic, many enterprises and self-employed persons have lost out significantly on revenue, while their costs have not always fallen in equal measure. Without government assistance, these enterprises and self-employed persons – like many employees – would probably have had to considerably reduce their expenditure. Large revenue losses would have then occurred in a multitude of other areas of the economy, potentially triggering a downward spiral. Furthermore, temporary payment difficulties amongst enterprises that are fundamentally financially sound would have potentially created solvency issues. By making transfer payments, government is thus not least preventing insolvencies. It is stopping mass defaults on loans, which could potentially lead banks to excessively restrict their lending. Through its measures, the government is also indirectly mitigating risks to financial stability.

Although the provision of financial assistance has caused a sharp rise in government debt, that debt would have risen to an even greater extent – alongside a contraction in GDP – if the economy had entered a downward spiral. Overall, German public finances are in a good position to cope with the increase in debt, thanks, in part, to their favourable position at the start of the crisis. For example, before the outbreak of the pandemic, general government posted a budget surplus and its debt corresponded to around 60% of economic output. Then, for the crisis year of 2020, a deficit of just over 4% of GDP was recorded and, according to Bundesbank forecasts, the debt ratio is likely to have climbed to around 70%. However, Germany is still in a good position by international standards. Furthermore, the debt ratio remains significantly below its record high level of just over 82%, which it reached in the wake of the global financial crisis. All things considered, Germany has sufficient financial leeway to even expand its assistance to enterprises and households, if necessary.

The crucial factor will be for general government to return to a sound public finance footing after the crisis. To a large degree, this can be ensured by putting a time limit on the assistance measures. Moreover, the deficits will, in part, be automatically reduced as the economy recovers. The extent to which the crisis will nevertheless necessitate additional consolidation measures to ensure renewed compliance with fiscal rules over the coming years cannot be estimated with any certainty at present. In any case, European rules as well as Germany's extensive reserves with regard to the debt brake allow for a transition period. However, due attention must also be paid to other major challenges, such as the financial pressure on Germany's social systems due to demographic change, the benefits increases approved during recent years, and the planned additional expenditure on climate protection. Once the debt ratio has been lowered again, general government will also be better prepared to face a potential future crisis.

The financial situation in other euro area Member States was not as good as Germany's at the beginning of the pandemic, yet their economies still needed supporting. This did not contravene European fiscal rules, as an escape clause was temporarily activated. Overall, the European Commission estimates that the euro area deficit totalled almost 9% of GDP in 2020. This suggests that the debt ratio rose by just under 16 percentage points and exceeded the 100% mark for the first time.

In addition to the national measures, the European Union (EU) Member States agreed, back in the spring, to increase their collective financial support.[9] An initial aid package included low interest loans of up to €540 billion – for instance in order to finance short-time work. In July, an off-budget financing instrument called Next Generation EU was also agreed, from which Member States are to receive a total of €360 billion in loans and €390 billion in direct transfers.[10] The objective is to strengthen countries' resilience and competitiveness. The aid is to be financed not directly through contributions to the regular EU budget, as is customary, but initially through joint EU borrowing. However, such large-scale European debt – especially to finance transfers – is not unproblematic. It could lead to a kind of illusion as national debt levels do not include EU debt. If expenditure is financed through credit-financed EU transfers rather than national debt going forward, national deficits and debt will initially be lower. EU debt is more likely to be overlooked and is, moreover, not subject to the fiscal rules. Ultimately, however, European debt, too, must be serviced by taxpayers in the Member States. And this burden can be palpable: for example, Germany's share of European debt could amount to around €280 billion in 2026, which would represent 8% of Germany's 2019 GDP.[11]

Large-scale borrowing at the European level would likewise not be compatible with the EU's agreed governance framework, under which, in principle, Member States are responsible for their own finances. Joint liability on a larger scale would require a major step towards further integration, something that is currently not on the horizon. Large-scale borrowing at the EU level should consequently remain an exception.

9 See Deutsche Bundesbank, Current fiscal developments in the euro area, Monthly Report, May 2020, pp. 85-90.
10 See Deutsche Bundesbank, EU budget: Agreement on multi-annual financial framework for 2021 to 2027 and one-off "Next Generation EU" instrument in response to the coronavirus pandemic, Monthly Report, August 2020, pp. 78-82.
11 See Deutsche Bundesbank, The informative value of national fiscal indicators in respect of debt at the European level, Monthly Report, December 2020, pp. 37-47.

Looking to the period after the crisis, it should also be ensured that the very high national debt ratios are brought back down and that Member States establish sound finances. One way to help make this happen would be to reform the European fiscal rules to give them more bite, including making them more transparent again. The existing rules have become too complex and thus opaque. Moreover, implementation has not always been consistent in the past.[12] Sound public finances, however, make it easier for monetary policy to safeguard price stability.

Monetary policy

In the current crisis, monetary policy, too, is making an important contribution to stabilising the economy. The monetary policy stance had to be loosened because the economic downturn was markedly dampening the inflation outlook. Another factor at the start of the pandemic was that the high level of uncertainty was also affecting the financial markets and that financing conditions were deteriorating. Moreover, a lack of liquidity in the financial system could have further exacerbated the economic crisis if, for instance, banks had significantly curtailed their lending to sound enterprises. Such adverse feedback loops between the financial system and the real economy could potentially have contributed to a downward spiral and ultimately jeopardised price stability. The Governing Council of the ECB consequently acted rapidly and resolutely at the beginning of the crisis by adopting an entire raft of non-standard measures. As the pandemic progressed, it adjusted monetary policy several times (see the chronology on pp. 37 ff.).

In order to ensure an ample supply of liquidity to banks, the Governing Council introduced, as one of several measures, a series of pandemic emergency longer-term refinancing operations (PELTROs). It also made the conditions for targeted longer-term refinancing operations (TLTRO-III) more favourable. The fourth such operation, which was settled in June, met with record demand and reached a volume of €1,308 billion – the highest allotment amount to date in a single Eurosystem refinancing operation. A key reason for the high demand was probably the very favourable interest rate, which is 50 basis points below the average interest rate on the deposit facility prevailing over the same period, and will in any case not be higher than -1%, between June 2020 and June 2021, provided banks reach a specified lending performance threshold. In addition, the Governing Council adopted temporary collateral easing measures, including a waiver of the minimum credit quality requirements for Greek government bonds and reductions in collateral valuation haircuts. Further measures were intended to prevent rating downgrades from unduly constraining the availability of collateral.

However, it is the asset purchase programmes in particular which have been at the centre of public attention. In March 2020, the Governing Council of the ECB expanded the asset purchase programme (APP), which has been running since 2015, by €120 billion until the end of 2020. It also adopted the pandemic emergency purchase programme (PEPP) – which was at first also limited until the end of 2020 and had an initial envelope of up to €750 billion; in June, the programme was topped up to €1,350 billion and extended to the end of June 2021. Both programmes involve the purchase of large volumes of bonds issued by euro area Member States; within the APP, this is conducted under the public sector purchase programme (PSPP). Large-scale purchases of government bonds can be an effective and legitimate monetary policy instrument. They do, however, risk blurring the line between monetary and fiscal policy, a particularly important distinction in the monetary union. I am consequently convinced that large-scale purchases of government bonds should be reserved for exceptional situations. The pandemic is just such an exceptional situation.

12 See Deutsche Bundesbank, European Stability and Growth Pact: individual reform options, Monthly Report, April 2019, pp. 77-90.

Nonetheless, even – and especially – in times of crisis, it is vital that monetary policy gets the scale right, chooses suitable instruments and configures programmes prudently. In this context, constant weighing-up is essential – with the reason for using an instrument and the desired effects in one balance and the risks and undesired effects in the other.

Even before the onset of the pandemic, the extensive government bond purchases under the APP had made the Eurosystem the Member States' largest creditor. Interest paid on the assets purchased accrues to the central banks and, from there, in the form of profits, flows back into public coffers. This means that the financing costs of large parts of government debt are decoupled from the capital market, and the disciplining effect of the markets on fiscal policy is weakened. In order to contain the risks this involves, the Governing Council has staked out important safeguards in the PSPP. These precautions are intended to help ensure that monetary policy maintains a sufficient distance from monetary financing of government.

In its judgement of 5 May 2020, Germany's Federal Constitutional Court likewise emphasised the importance of the PSPP's design features in their entirety. Overall, the Federal Constitutional Court found no manifest violation of the prohibition of monetary financing of government. However, it was not ascertainable to the court that the ECB Governing Council had sufficiently weighed up, based on proportionality considerations, the anticipated advantages in terms of achieving the monetary policy objectives against the undesired economic policy impact the PSPP could have. The Federal Constitutional Court therefore ruled that the Bundesbank would be allowed to continue to participate fully in the PSPP only if the Governing Council of the ECB demonstrated the proportionality of the programme within a period of three months. The account of the Governing Council meeting of early June 2020, which is published on the websites of the ECB and the Bundesbank, documents that such weighing-up took place. In addition, the Governing Council of the ECB authorised the release of documents to the Bundesbank to pass on; on the basis of these documents, the German Bundestag, or lower house of parliament, and the Federal Government declared that the provisions of the Federal Constitutional Court had been met. Against this backdrop, the Bundesbank continues to participate fully in the PSPP.

The Governing Council has designed the PEPP to be more flexible than the PSPP in order to allow it to respond to the specific monetary policy challenges of the pandemic. For instance, temporary deviations from the ECB capital key are permissible when making government bond purchases. Although this flexibility for the PEPP can be justified on monetary policy grounds during the crisis, it is important to ensure that monetary policy does not become harnessed to fiscal policy. According to the Governing Council's current policy, the stocks of government bonds purchased under the PEPP ultimately shall be guided by the capital key again.

After the second wave of the pandemic hit the euro area, the Governing Council again significantly expanded its monetary policy support measures at the end of the year. In particular, it increased the envelope of the PEPP by €500 billion to €1,850 billion. This total represents just over 15% of 2019 euro area GDP. The monetary policy stance did need adjusting because the medium-term inflation outlook for the euro area as described in the inflation forecast had been lowered once again. In my opinion, it is key, however, that the share of outstanding government bonds held by the Eurosystem should not get too big. Otherwise, the Eurosystem will run the risk of acquiring a dominant market influence that would further weaken the market's disciplining effect. This risk could be exacerbated by the renewed large increase in the PEPP envelope.

At its December meeting, the Governing Council also lengthened the net purchase horizon under the PEPP until at least the end of March

2022. When the programme was introduced, it was particularly important to me that the PEPP have a time limit and be explicitly linked to the crisis: after the crisis, the emergency monetary policy measures must be phased out again and the associated financial risks to central banks' balance sheets reduced. In addition, monetary policy as a whole must be normalised if required by the inflation outlook. Fiscal policymakers in the euro area should not expect a normalisation to be avoided out of consideration for government debt or that interest rates will be kept so low permanently. After all, the Eurosystem's mandate is clear: the primary objective is to maintain price stability in the euro area.

To continue to fulfil this mandate in the best possible way now and going forward, the Governing Council of the ECB last year launched a review of its monetary policy strategy. One aspect that it is looking into is what role other considerations can play in fulfilling its mandate – financial stability, say, or climate protection. The strategy was last reassessed in 2003. Profound changes to the economic environment – such as the decline in trend growth, climate change, globalisation, progress on digitalisation and changing structures in the financial system – are all reasons to ask some fundamental questions. It is important to learn the monetary policy lessons – not just from the past years of low inflation and low interest rates, but also from the financial crisis. The process was initially scheduled for completion by the end of 2020. However, the pandemic meant that acute crisis management took priority, and the strategy review will consequently run until into the second half of 2021. The process is comprehensive and based on an open-minded approach. Under the motto "we will leave no stone unturned", 13 work streams were established in which representatives of the ECB and the national central banks work together, among them numerous Bundesbank experts.

It is central to the strategy especially how the Governing Council defines price stability and how it narrows down its monetary policy aim. At present, the Governing Council defines price stability as a year-on-year increase in the HICP for the euro area of below 2%. Within this framework, the Governing Council aims to keep inflation rates below, but close to, 2% over the medium term. An important argument for this is that if inflation is too low, monetary policy has little room to lower policy rates without hitting the lower bound. As real interest rates have trended downwards in recent decades, numerous studies suggest that the scope of traditional interest rate policy may have fallen across the board since the last strategy review – in other words, even when economic performance is normal. Against this backdrop, there is a discussion, amongst other things, about the desired rate of inflation, as well as symmetry and the time horizon over which the aim should be achieved. A suitable benchmark is needed for monetary policy to maintain price stability. The HICP, which is used to measure inflation, is consequently also under review. Monetary policy further requires a well-stocked toolkit. And finally, the strategy review is also focusing on communication, because the more broad-based and comprehensible central banks' communication is, the more effective their monetary policy will be.

Anyone wishing to communicate well must also listen. Particularly when reviewing monetary policy strategy, it is important to incorporate input from academia, politics and society as a whole. At the Bundesbank Listens online event, I listened to the representatives of 14 organisations – trade unions and industry associations as well as environmental organisations – present their views on the Eurosystem's monetary policy strategy. This revealed a wide range of opinions – especially on the questions of how central banks should contribute to growth, employment or environmental protection and, in particular, climate protection. In some cases, the adverse effects of a persistent low interest rate environment on pension provision were also addressed. However, one thing participants agreed about was that safeguarding price stability should remain the Eurosystem's primary objective. I will bring the insights gained from the event to the table at further Governing Council discussions on the monetary policy strategy.

This is also true of my impressions from the discussion with around 200 young people at the Euro20+ event, which the Bundesbank has now hosted for the third time – this time in a virtual format. One key takeaway was how much young people, in particular, are concerned about the climate of our planet. Climate protection is one of the most urgent tasks of our time, and one to which central banks should also contribute within the framework of their mandate.[13] Both climate change and climate policy can have an impact on various central bank tasks, including monetary policy, banking supervision and financial stability. This is because climate change and climate policy can influence macroeconomic and financial market variables, such as growth, inflation, interest rates and asset prices, and at the same time they alter the basic structure of our economies. It is consequently crucial for central banks to have a comprehensive understanding of the implications for the functioning of the economy and the financial system. We need to incorporate climate-related developments and risks into our analyses and to strengthen our analytical and forecasting tools accordingly.

In addition, I believe that an important place to start can be to take adequate account of climate-related financial risks when managing risk in our securities holdings. To this end, it would be justified, with respect to the risk management of our monetary policy portfolios, in future to require certain climate-related reporting obligations from securities issuers and ratings by external credit assessment institutions into which climate-related financial risks are appropriately and transparently incorporated. The same could apply to the collateral accepted for monetary policy operations. In this way, central banks would help improve transparency in the financial markets, thus potentially acting as a catalyst for greening the financial system. They would thereby support the climate policies pursued by the Member States and the EU, without any conflict with their own tasks. Banking supervisors already expect commercial banks to identify, assess and adequately incorporate climate-related financial risks into their risk management within existing risk categories.

Banking supervision and financial stability

Banking supervisors, too, turned much of their attention to the coronavirus crisis last year. Unlike the global financial crisis, the current problems did not originate in the financial system, but in the real economy. However, it is likely that a spill-over to the banking sector could have considerably exacerbated the economic slump. Due to huge losses in revenue, many enterprises were reliant on bank loans to avoid payment difficulties. In order to ensure that banks were able to continue lending smoothly and adequately, regulatory and supervisory authorities took a number of measures quickly and unbureaucratically. For example, arrangements permitting general payment moratoria at credit institutions ensured that a credit moratorium did not automatically lead to higher capital requirements for the affected credit amounts. In addition, the criteria for calculating market risk were eased, for instance. The aim of this measure was to mitigate the impact of increased market volatility – which occurred at the start of the pandemic in particular – in calculating the capital requirements for market risk. Furthermore, supervisors encouraged institutions to use their capital and liquidity buffers if necessary in order to maintain the flow of lending. They also lowered the countercyclical capital buffer to 0%.

In view of the relief measures, the ECB recommended that the larger institutions under its

13 See Deutsche Bundesbank, The significance of climate change for the Bundesbank's tasks, Annual Report 2019, pp. 22 ff.

direct supervision not distribute dividends for 2019 and refrain from share buy-backs. German supervisors, too, called for restraint, advising institutions under their direct supervision to distribute profits only if they had a sustained positive earnings forecast and sufficient capital buffers. Supervisors made this recommendation because they wanted institutions to strengthen their capital positions in order to be able to absorb potential losses or grant loans.

The banking sector also benefited from government support measures for the real economy, with legislation being passed temporarily allowing a statutory deferral of payments on consumer credit, and also temporarily suspending the obligation for enterprises to file for insolvency. Both measures helped to prevent an immediate increase in loan defaults, in spite of the higher risks. Furthermore, the Federal Government, together with the development bank KfW (originally Kreditanstalt für Wiederaufbau), provided a guarantee for bank loans to enterprises covering up to 100% of the credit risk. In order to assess the impact on financial stability of the far-reaching fiscal measures in Europe, an international working group of the European Systemic Risk Board (ESRB) chaired by Bundesbank Vice-President Professor Claudia Buch launched an ongoing monitoring exercise. According to its research, the measures have indeed buttressed private lending.

Overall, the pandemic has not had a strong impact on the banking sector to date. For one thing, German banks are better capitalised than before the global financial crisis. This is likely to be a result of the banking regulation reforms over the past decade. As this report went to press, the aggregate tier 1 capital ratio of the German banking sector stood at around 17%. Furthermore, the number of corporate insolvencies has remained low thus far thanks to the extensive economic policy measures, and the share of non-performing loans in the banking sector has therefore been correspondingly low. Against this background, the tier 1 capital ratio has actually risen by half a percentage point since the onset of the pandemic.

To be fair, once the assistance measures for the real economy come to an end, the number of corporate insolvencies will probably go up and more loans will default. However, from today's perspective, the resulting loss allowances are likely to be manageable for the banking sector. Nevertheless, banks should prepare for an increasing number of credit defaults, both in terms of their risk provisioning and in terms of their business capacity to deal with non-performing loans.

That good preparation pays off can also be seen in the efforts made by the institutions and the supervisory and regulatory authorities with regard to the UK's exit from the EU (see the box on p. 26). Thus far, the end of the Brexit transition period has not led to any serious disruptions in the financial market or at banks.

Given the rise in private and public sector debt as well as continued low interest rates that favour a search for yield and an underestimation of credit risk, the financial system needs to be sufficiently robust. It is therefore essential to continue with the reform agenda of the past few years unerringly and without any watering down. At the international level, a working group reviewed the effects of the too-big-to-fail reforms and published its consultation report last year (see the box on pp. 28 f.). According to the report, the reforms contributed to progress and also had a positive impact on the economy as a whole. At the same time, the study emphasises that more action is still needed to fully implement reforms. Only robust banks that are sufficiently capitalised can fulfil their macroeconomic function, in particular by lending to enterprises and households.

Brexit from the perspective of banking supervision

The United Kingdom (UK) left the European Union (EU) at the end of January 2020, but remained part of the single market and customs union until 31 December 2020. Financial institutions therefore had to complete their preparations for the end of this transition period over the course of the year. Following intense negotiations, the EU and the United Kingdom reached an agreement in December that broadly shapes their future relationship in many areas of economic life.[1] However, the agreement contains only a small number of provisions on financial services.

From a regulatory perspective, the United Kingdom thus became a third country once the transition period expired. Since January 2021, UK-based financial service providers have no longer been able to use European passporting arrangements, which had previously granted them access to the entire European Economic Area (EEA). Financial institutions domiciled in the United Kingdom had to establish a branch in an EEA country by the end of the transition period in order to be allowed to continue conducting cross-border activities in the EEA, henceforth from this new location. Financial institutions set up a total of more than 50 entities in Germany in connection with Brexit. Applications for authorisation can still be submitted.

The United Kingdom's change of status vis-à-vis the EU means that the supervisory legislation in each economic area is now only applicable in that area. However, through unilateral equivalence decisions, the European Commission and the UK Treasury can recognise the rules of the other economic area as equivalent, such as the temporary equivalence decision on central counterparties. The EU and the United Kingdom announced that they would conduct an appropriate dialogue on regulatory initiatives and their implications for equivalence status by exchanging analyses and assessments with each other. To this end, the EU and the United Kingdom plan to agree on a cooperation framework between their regulatory authorities in the financial services sector by March 2021.

As financial institutions and regulators on both sides of the Channel were well prepared on the whole, the end of the transition period did not cause any serious disruptions in the financial market. Nevertheless, the adjustments to the new situation have not been fully completed and will continue to keep the relevant institutions and authorities occupied over the next few months as well.

1 The agreement entered into force on 1 January 2021, initially on a provisional basis. As this report went to press, the European Parliament had not yet decided on the ratification of the agreement and thus its permanent application.

Cash and cashless payments

The pandemic has also had implications for payment transactions in Germany. Demand for cash picked up sharply for a while at the beginning of the pandemic in particular, much like in the fourth quarter of 2008 during the global financial crisis.[14] In the third week of March 2020 alone, Bundesbank branches issued banknotes with a total value of more than €10 billion net – several times higher than the average of the previous weeks. In the following week, too, net issuance was still significantly elevated, before subsequently returning to normal. In total, the branches issued just over €71 billion net worth of banknotes in 2020, up €12.6 billion on the previous year.

Bundesbank surveys show that despite increased cash holdings, consumers paid with cash less frequently following the onset of the pandemic. According to one study at the end of the third quarter, consumers still paid using cash 60% of the time, but the use of cards, which accounted for around 30% of transactions, was much higher than it had been three years earlier. Contactless payments using cards enjoyed particular growth in popularity.[15] The great uncertainty about how the novel coronavirus is transmitted, particularly at the beginning of the pandemic, was potentially a factor in this surge. However, studies commissioned by the ECB, with the Bundesbank's involvement, have shown that the risk of infection when using cash tends towards zero. According to these studies, cash is a safe and popular means of payment, even during the coronavirus pandemic.

Whether the change in payment behaviour during the pandemic will be permanent remains to be seen. However, a trend towards direct debits, credit transfers and, above all, card payments was already evident in the preceding years. The proliferation of digital payment options is being driven, among other things, by new bigtech solutions that are frequently based on card systems. Bigtech firms integrate payments into the purchase process and their platforms in a largely seamless manner, satisfying customer preferences. After all, in a digital environment too, consumers want to pay in a convenient, secure, cost-effective and quick manner – and to be able to do so across borders.

Traditional cashless payment instruments offered by private payment service providers in the euro area run the risk of no longer adequately meeting the needs of consumers or of enterprises. While there have been innovations in the traditional banking industry in recent years, these are often constrained by national borders. As a result, a number of European banks and payment service providers have joined forces to form the European Payments Initiative (EPI), with the aim of developing a European solution. In mid-2020, they agreed to set up a joint company for this purpose. The Bundesbank, the Eurosystem and the European Commission are encouraging stakeholders to make progress on this front.

With TARGET Instant Payment Settlement (TIPS), the Eurosystem has already been enabling the settlement of customer payments in real time for more than two years. Payments in euro can be executed securely, immediately and with finality, 24 hours a day. To date, however, the volume of real-time credit transfers in Europe has been small, in part because payment service providers often do not have Europe-wide coverage. The ECB Governing Council adopted a package of measures in 2020 to improve the situation so as to make real-time credit transfers an important component of Europe's digital payment system going forward and enable their increased use for innovative payment options.

Not a few observers see a central bank digital currency (CBDC) available to the general public as the answer to the new technological

14 See Deutsche Bundesbank, Demand for cash and payment behaviour during the coronavirus crisis, Monthly Report, June 2020, pp. 36 f.
15 See Deutsche Bundesbank, Payment behaviour in Germany in 2020 – making payments in the year of the coronavirus pandemic.

Evaluation of the too-big-to-fail reforms of the G20 countries

The failure of very large or highly interconnected banks – systemically important banks – can threaten the stability of the financial system as a whole. This, amongst other things, was highlighted by the global financial crisis of 2008-09. Given the potentially far-reaching impact of such failures, governments have often stepped in to support systemically important banks in the past, thus giving the impression that these institutions were too big to fail and creating implicit government guarantees. However, if governments are expected to intervene in the event of a crisis, this can weaken the disciplining effect of the financial markets. This then results in funding cost advantages for systemically important banks, for example, because lenders consider defaults to be unlikely – broadly irrespective of the risk profiles or capital adequacy of these banks. The weakening of market discipline can, in turn, increase incentives for systemically important banks to take greater risks while holding smaller risk buffers (in the form of equity capital).

Limiting these distorted incentives and systemic risks has therefore been a focal point of the financial market reforms adopted by the G20 countries over the past decade. The ultimate aim of these too-big-to-fail reforms was to shield the real economy and the taxpayer more effectively from the risks caused by systemically important banks in distress. Systemically important banks now have to meet higher capital requirements and are also subject to stricter supervision, which is intended to strengthen their resilience and reduce the likelihood of failure.

In addition, special resolution regimes have been created under the reforms. If systemically important banks run into trouble despite their increased resilience, they can be restructured – and undergo orderly resolution, if necessary – using the new regimes. The aim is to mitigate the negative impact on the financial system and the real economy.

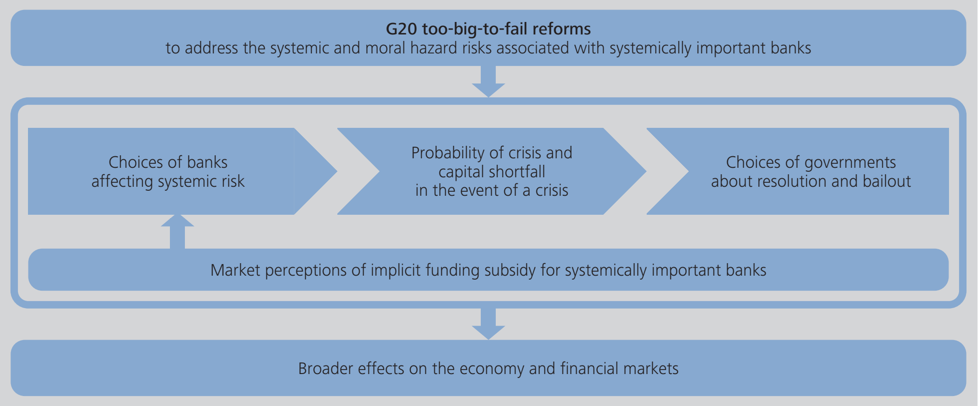
The Financial Stability Board (FSB) has evaluated the success of these reforms at the G20 level. In June 2020, an international working group chaired by the Bundesbank presented a consultation report on this topic.[1] The final report is scheduled to be released at the beginning of April 2021. The evaluation focused on the 30 institutions classified as global systemically important banks by the FSB; in Germany, Deutsche Bank belongs to this group. Furthermore, domestic systemically important banks were taken into account; of the 132 banks from around the world in this group, 12 were domiciled in Germany at the end of 2018.

In short, the evaluation concludes that the reforms are taking effect and having a positive macroeconomic impact, but there is still a need for action. Specifically, it finds that global systemically important banks have significantly boosted their equity capital over the past decade. Their lending has not declined overall, but they have lost market share. Global systemically important banks still hold less capital compared to other banks and in relation to their total assets.

Substantial progress has been made in establishing new resolution regimes for systemically important banks. The authorities now have far better options for dealing with ailing banks. Losses can be absorbed to a greater extent by creditors, because in addition to stricter capital requirements, systemically important banks must also have sufficient loss-absorbing and recapitalisation capacity

1 The FSB working group is chaired by Bundesbank Vice-President Professor Claudia Buch.

Impact of the G20 too-big-to-fail reforms



Source: Financial Stability Board.
Deutsche Bundesbank

to implement a resolution – without any negative repercussions for the financial system or the real economy. Global systemically important banks' loss-absorbing and recapitalisation capacity has increased significantly overall.

Moreover, the aforementioned funding cost advantages for systemically important banks have lessened on the whole. Nowadays, banks' financing costs reflect their risk profiles and capital adequacy more accurately, and rating agencies perceive the implicit guarantees to be smaller. Ultimately, the risk of the taxpayer having to shoulder the losses of systemically important banks should be lower.

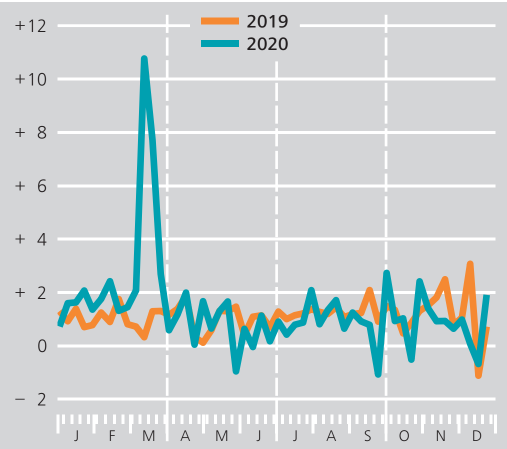
More equity capital and reduced funding cost advantages can push down the return on equity of systemically important banks. Lower returns on equity may therefore be a consequence of the reforms and are not necessarily at odds with a more stable financial system. At the same time, reduced profitability can indicate that competition is relatively intense and that pressure on margins is high. The too-big-to-fail reforms can now smooth the way for a structural transition to an international financial system that is stable over the long term.

A number of these findings hold true for the German financial system. In particular, German banks' capital adequacy has improved, although larger and systemically important banks tend to have lower (non-risk-weighted) capital ratios than smaller banks. However, there are also differences in comparison to the international findings. For instance, looking at the German banking system as a whole, there is no clear indication that the funding cost advantages of systemically important banks have diminished.

The fact that the German financial system has so far proved to be fairly robust during the coronavirus pandemic is probably partly attributable to the reforms. The reforms introduced over the last few years must continue to be implemented consistently if the financial system is to be able to perform its function of financing the real economy in the long term, too. This would strengthen the resilience of individual banks and the financial system as a whole. Besides the global systemically important banks, attention must be paid to the domestic systemically important banks. Another crucial element will be to take a closer look at the risks that have shifted from the banking sector to other financial institutions.

Net issuance of banknotes in Germany

€ billion, weekly data, seasonally and calendar adjusted



Deutsche Bundesbank

challenges in the payments field. Thus far, citizens and enterprises have only been able to hold central bank money in the form of banknotes. A CBDC would, in particular, enable them to pay with public money in a digital environment as well. Furthermore, a CBDC could help make payments more efficient. In addition, it could encourage firms to develop new products, including those that would only become feasible or worthwhile to produce in the first place as a result of this new payment option. However, the introduction of a CBDC also harbours risks, for example with regard to the functioning of the banking system and financial stability. A CBDC should therefore be designed in a way that allows its potential benefits for citizens to be realised as far as possible and, at the same time, its risks controlled. A high-level task force has intensified work in the Eurosystem on a CBDC. Experts from the ECB and national central banks are currently conducting more in-depth analyses of the potential impact of a possible introduction. In addition, they have launched initial experiments to better understand the possibilities of its technical implementation. The Eurosystem has not yet made a decision for or against the introduction of a CBDC. Further investigations must show whether it is the right instrument for the current challenges in the payments field. It also needs to be clarified whether other approaches, such as programmable central bank money exclusively for existing counterparties of central banks, would not also deliver benefits but with fewer risks.

One possible rationale for creating a CBDC would be to enable payment settlements via smart contracts – program codes that are executed automatically once certain pre-defined criteria are fulfilled. The Bundesbank is working on a different solution for such automated payment settlements that entails programming a technical connection between a smart contract and the TARGET2 system, i.e. a trigger solution. The smart contract triggers a payment via the conventional payment system and the entire transaction is only settled in central bank money once the payment system operator has confirmed the payment.

To advance innovations like this, the Bundesbank is increasingly working together with central banks and other institutions. In particular, the Bank for International Settlements (BIS) is setting up an innovation centre in Frankfurt and Paris in collaboration with the Eurosystem, as part of its global BIS Innovation Hub network (see the box on p. 32). By working at the cutting edge of technology and modernising their own infrastructures, central banks can also help private actors develop and provide innovative payment solutions for consumers and businesses.

Central bank infrastructures are the backbone of payment systems, which makes their reliability and security crucial. In October, the TARGET2 settlement system experienced a system failure, a matter that the Bundesbank is taking very seriously. A thorough, independent investigation of the incident is essential and is underway. It is important to learn the right lessons and take appropriate measures to ensure that the Eurosystem continues to provide highly efficient and reliable infrastructures.

Working under pandemic conditions

In order to be able to continue to fulfil our tasks during the pandemic, it was important to reorganise the Bundesbank's work. At the beginning of March 2020, a crisis management team was set up to coordinate all measures and adapt them as needed to the changing incidence of infection on an ongoing basis. The focus is on maintaining the Bundesbank's operability whilst at the same time also protecting the health of its employees to the greatest extent possible. Like many other institutions, the Bundesbank had to implement new working models, sometimes almost instantaneously. As a result, the Bundesbank has been able to maintain agency at all times.

As of March 2020, the principle of working from home (WFH) where possible and on-site where necessary was also implemented at the Bundesbank. In the second quarter of 2020 already, there were times when more than half of the Bank's staff were working from home. However, there are some business units where the bulk of the work has to be carried out on-site. The supply of cash at the branches is a particular challenge under pandemic conditions. To reduce contagion risks, our branch staff work in split teams in separate shifts and in accordance with additional measures designed to prevent the spread of infection. Only services that are not absolutely necessary for the cash cycle, such as the exchange of Deutsche Marks for euro or the issuance of collector coins, were temporarily restricted.

The flexibility of our employees was crucial for the smooth transition in working practices. They had to reinvent numerous workflows. Meetings were largely conducted virtually, and staff recruitment interviews and training activities were frequently conducted online. At the same time, many employees had to reconcile their work with additional demands at home, such as looking after children. The Bundesbank supported its employees with a variety of assistance measures to help them adapt to these changes. These included remote management and measures aimed at further improving the health awareness of employees who work from home. The transition to WFH was also made easier by the fact that many employees in various business units already had longstanding experience of remote working, such as through dedicated telework agreements.

The Bundesbank also benefited from the fact that its IT infrastructure was already in good shape prior to the pandemic. In a short period of time, it was possible to greatly expand and protect the Bank's IT infrastructure, despite a considerable increase in cyberattacks. For example, the Bundesbank fended off distributed denial of service attacks, as well as ransomware attacks and attempts at manipulating staff via emails and telephone calls. In the WFH context, the vigilance of our employees has played a key role in IT security.

Digital infrastructure and virtual formats have also made it possible to keep in touch with the public during the pandemic, allowing us to pick up on their concerns and advance the debate. One issue of key importance for the Bundesbank is to enhance the public's understanding of the legal mandate of the Eurosystem's central banks as well as their tasks and instruments. This is particularly important in times in which central banks around the world are having to take exceptional measures. Virtual workshops and presentations, for example in the context of the Forum Bundesbank series, helped to convey central bank topics to the public last year. The Bundesbank has been offering more and more of its economic education materials to teaching staff and school pupils in digital form for some time already. The "Price stability" media package for upper secondary pupils was supplemented in 2020 by the "Managing money" media package for lower secondary pupils. In addition, a dedicated website has been created for the Bundesbank's standard textbook "Money and monetary policy". The Bundesbank was also able to use online seminars to stay in touch

The new BIS innovation hub centre in Frankfurt and Paris

Collaboration with international networks is becoming an ever more prominent feature of the Bundesbank's work to develop and assess digital financial innovations for the world of central banking. The Bank for International Settlements (BIS) is setting up an innovation hub centre in cooperation with the Eurosystem. Located in Frankfurt and Paris, this new innovation hub centre will form part of the BIS Innovation Hub, a global network launched and run by the BIS. In future, the network will link not only a headquarters in Basel but also a further seven nodes: alongside the Eurosystem BIS Innovation Hub Centre in Frankfurt and Paris, further innovation hub centres in Toronto, London and Stockholm are set to join the centres already operating in Hong Kong, Singapore and Zurich. A strategic partnership with the Federal Reserve Bank of New York is also planned. The international network is tasked with identifying key trends in financial innovations pertinent to central banks and exploring ways in which new public goods can enhance the functioning of the global financial system. The network also seeks to support collaboration across the globe between central bank experts in the field of financial innovation. Applications and technologies developed in this global network are then to benefit the international central banking community. To support its cooperation in the BIS Innovation Hub, the Bundesbank is opening up its own innovation workshop, called "InnoWerk". It is currently being set up in Frankfurt with the intention of serving as a fulcrum for the Bundesbank's innovation-related efforts in partnership with other institutions too. The members of this new technology lab will be looking at a broad array of topics, including the future of banking and financial supervision, the application of artificial intelligence, cyber security and central bank digital currencies.

with many of the nearly 100 central banks and monetary authorities worldwide with which we maintain professional exchanges in the framework of international central bank dialogue. All in all, 2020 showed that virtual education and discussion offerings can reach people, and that in the pandemic they are just as indispensable as WFH. That said, distance formats cannot replace face-to-face interaction.

A future-oriented working environment geared towards interaction and cooperation is precisely what the Bundesbank's project to modernise and expand its Central Office is intended to create. As things currently stand, around half of the Bundesbank's Frankfurt-based Central Office employees work at various locations in the city centre, while the other half work on the campus in the north of the city. With a view to the future, all of these employees are to be brought together on the campus. In spite of the pandemic, a number of the project's key milestones have still been attained. In particular, the international architectural competition for the planned new buildings was concluded in the second quarter of 2020. A jury consisting of renowned architects, representatives of the city of Frankfurt am Main and the Bundesbank selected six winners from the submitted designs. In line with the Bundesbank's commitment to minimise its environmental footprint and to make a contribution to environmental and climate protection, high sustainability standards have been set. The site's heating and cooling systems, for example, are to be climate-neutral. First prize was awarded to the design submitted by the Basel-based architects Morger Partner Architekten AG. It builds on the urban design framework developed by the architecture firm Ferdinand Heide Architekt which was selected by the Bundesbank at the end of 2018. The submitted designs and the results of the competition were also presented to the public in an exhibition at the German Architecture Museum in Frankfurt, where they attracted considerable interest. Another milestone this year will be the

Diversification of foreign currency reserves

The Bundesbank holds and manages Germany's foreign reserves, which, alongside gold, special drawing rights (SDRs) and the reserve position in the IMF, also include foreign currency.[1] These foreign currency reserves generate appreciable interest income, which contributes to the Bundesbank's profit.[2] Beyond business policy aspects and risk considerations, foreign currency reserves may be held for three fundamental purposes: interventional, transactional and precautionary purposes. This box provides a brief outline of these specific purposes and the recent shifts that have occurred within the foreign currency reserves.

The choice of foreign currency and the type of investment is intended, in particular, to ensure that the Bundesbank is able to meet its foreign currency obligations fully and independently at all times – even in times of market stress. These obligations arise, first, from the fact that the Bundesbank forms part of the Eurosystem and has close ties with international institutions. Under European law, for example, the European Central Bank (ECB) can require Eurosystem national central banks, where necessary and provided that the ECB's reserves have been exhausted, to transfer additional reserves. To be able to meet this obligation, the Bundesbank holds particularly liquid and secure foreign currency reserves; this broadly falls under the category of reserve holding for interventional purposes.[3]

Second, payments in foreign currency can arise from the Bundesbank's role as the fiscal agent of the Federal Government. The Bundesbank needs to be able at all times to make these payments smoothly and with minimal market impact. This can be interpreted as holding foreign currency reserves for transactional purposes.

Finally, the Bundesbank holds foreign currency reserves for precautionary reasons, to be able to bridge any foreign currency shortages experienced by domestic financial institutions, particularly in phases of extreme stress in the financial system, and thus to help maintain financial stability.

In view of these purposes, the Executive Board of the Bundesbank regularly reviews the foreign currency reserves for their currency composition and orientation in terms of risk. In its most recent review, the Executive Board decided to continue moderately diversifying the foreign currency reserves and to adopt two new investment currencies: the Canadian dollar and the Chinese currency, the renminbi.

The Canadian dollar is a common reserve currency in the global financial system and meets the Bundesbank's high requirements for the liquidity and security of foreign currency reserves. In addition, its risk/return profile improves the structure of the portfolio as a whole via a diversification effect.

By contrast, the Bundesbank's new investment in renminbi reflects the currency's increased importance in the global financial system. In 2016, the International Monetary Fund (IMF) added the renminbi to the basket of currencies which forms the basis for the SDRs. This means that the IMF could potentially require the Bundesbank to trade renminbi for SDRs. Furthermore, the economic

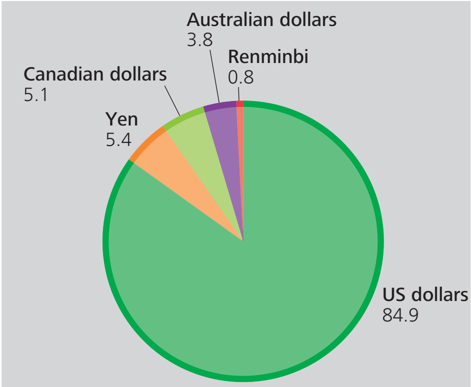
1 Foreign currency reserves are defined as liquid claims in foreign currency. See "The Deutsche Bundesbank: key figures" on p. 78 for information on the value of the individual assets.
2 See p. 69 for information on the level of interest income in foreign currency.
3 Consequently, the Bundesbank has only indirect interventional purposes. The ECB's foreign currency reserves would be used first in any intervention in the foreign exchange market.

ties between Germany and China are significant, e.g. the brisk goods trade and closer financial links. This includes the settlement of renminbi payments via a clearing bank in Frankfurt. On the other hand, the renminbi is still not fully convertible. The Bundesbank has therefore limited its investment in renminbi to a comparatively small share of the foreign currency portfolio, which stands at around 1% currently.

Overall, the vast majority of the foreign currency reserves (around 85%) remain invested in US dollars, in keeping with the great importance of the US dollar in the global financial system. In the future, the Bundesbank will continue to regularly analyse and, where necessary, adjust the structure of the foreign currency reserves in view of its obligations, the overall conditions in the international monetary system and the risk/return profile.

Distribution of German foreign currency reserves as at 31 December 2020

%



Deutsche Bundesbank

relocation of around 2,000 employees from the campus to transitional office space in the Frankfurt city centre before the renovation work and construction of the new buildings can begin.

In a constantly changing environment, the Bundesbank's Strategy 2024 establishes guideposts for its work over the next few years. In order to ensure that the Bundesbank continues to perform its tasks efficiently in the future, it is rising to the challenges posed by four fundamental trends: digitalisation, demographics, sustainability, and an evolving international environment. This fourth trend is reflected, for example, in the Bundesbank's decision to rebalance its foreign exchange reserves in 2020, partly owing to the growing importance of China (see the box on pp. 33 f.). The Executive Board adopted Strategy 2024 at the end of last year, which meant that it was possible to incorporate initial insights and experiences from working in the pandemic.

Acknowledgements

Owing to the pandemic, we all had to cope with restrictions last year. We had to take care to protect not only our own health, but also the health of others. Many were placed under a great deal of personal strain. Given these circumstances, what we have managed to accomplish collectively is therefore all the more remarkable. The fact that the Bundesbank was able to make it through the pandemic year 2020 in such good shape is above all thanks to our employees. Whether WFH or in on-site split teams, they all adapted to the new conditions and contributed to the Bundesbank's collective accomplishments through their individual efforts. I would like to express my respect and sincere thanks to the entire staff – on my own behalf as well as that of the Executive Board. I am confident that this dedication and team spirit will also see the Bundesbank through the months of the pandemic that still lie ahead.

Frankfurt am Main, February 2021

Sincerely yours

Dr Jens Weidmann

President of the Deutsche Bundesbank

Chronology of monetary policy decisions

23 January 2020

The Governing Council of the European Central Bank (ECB) decides to launch a review of the Eurosystem's monetary policy strategy. The review will focus in particular on the quantitative formulation of price stability, the monetary policy toolkit, economic and monetary analyses and communication practices. The Governing Council intends to complete the process by the end of the year.

12 March 2020

At its regular monetary policy meeting, the ECB Governing Council passes a package of monetary policy measures in response to the economic turmoil and increased uncertainty resulting from the spread of the coronavirus. It decides to add a temporary envelope of additional net asset purchases totalling €120 billion to the existing asset purchase programme (APP) until the end of the year in order to ensure a strong contribution from the private sector purchase programmes. In combination with the existing net asset purchases under the APP at a monthly pace of €20 billion, this is intended to support favourable financing conditions for the real economy in times of heightened uncertainty.

In addition, the terms of the third series of targeted longer-term refinancing operations (TLTRO-III) are eased. The maximum total amount that TLTRO-III counterparties will be entitled to borrow is raised from 30% to 50% of their stock of eligible loans as at 28 February 2019. Furthermore, the interest rate on these operations was lowered by 25 basis points for the period from June 2020 to June 2021. The interest rate for all participating banks in this period will thus be a maximum of 25 basis points below the average main refinancing rate. For banks whose eligible net lending exceeds the lending performance threshold of 0%, the interest rate may be as low as 25 basis points below the average interest rate on the deposit facility.

The Governing Council supplements these modifications to TLTRO-III with a series of additional longer-term refinancing operations (LTROs) designed to immediately bridge the euro area financial system's liquidity needs until the fourth TLTRO-III operation is settled in June 2020. These operations, which will begin on 18 March, are allotted on a weekly basis and all mature on 24 June. Their interest rate is equivalent to the deposit facility rate.

15 March 2020

The Eurosystem, along with other major central banks, announces a coordinated action to enhance the provision of liquidity through standing US dollar liquidity swap line arrangements. From 16 March, the Eurosystem will offer weekly US dollar operations with an 84-day maturity in addition to its existing one-week operations. The pricing of all US dollar operations is to be lowered to the US dollar overnight index swap (OIS) rate plus 25 basis points. These changes are to remain in place for as long as appropriate to support the smooth functioning of US dollar funding markets.

18 March 2020

The ECB Governing Council passes a new temporary purchase programme with an overall envelope of €750 billion. The aim of the pandemic emergency purchase programme (PEPP) is to counter the risks to the monetary policy transmission mechanism and the Eurosystem's objective of price stability posed by the outbreak and escalating diffusion of the coronavirus. Purchases under the PEPP comprise all asset categories eligible under the APP. For the purchases of public sector securities, the benchmark allocation across jurisdictions will continue to be the capital key of the national central banks. At the same time, purchases under the PEPP are conducted in a flexible manner. This allows for fluctuations in the distribution of purchase flows over time, across asset classes and among jurisdictions. Securities issued by the Greek government may likewise be purchased under the

PEPP due to a waiver of the eligibility requirements. The Governing Council will terminate net asset purchases under the PEPP once it judges that the coronavirus crisis phase is over, but in any case not before the end of 2020. At the same time, it decides to expand the range of eligible assets under the corporate sector purchase programme (CSPP) to include non-financial commercial paper.

Finally, the Governing Council announces an easing of the collateral standards by adjusting the main risk parameters of the collateral framework.

2 April 2020

The ECB Governing Council decides to extend the timeline for the review of its monetary policy strategy on account of the acute challenges posed by the coronavirus pandemic. The conclusion of the strategy review will be postponed from the end of 2020 to mid-2021.

7 April 2020

The ECB Governing Council elaborates on the announcement of 18 March by introducing temporary collateral easing measures. First, it eases various requirements under the additional credit claim (ACC) frameworks. Second, it adopts general easing measures on the conditions for using credit claims as collateral and a waiver of the minimum credit quality requirements for Greek government bonds to be accepted as collateral in Eurosystem credit operations. Third, the Governing Council decides to temporarily increase its risk tolerance level in credit operations through a general reduction of collateral valuation haircuts.

22 April 2020

The ECB Governing Council supplements the decisions of 7 April with measures to mitigate the impact of possible rating downgrades on collateral availability. To this end, it will grandfather the eligibility of marketable assets used as collateral in Eurosystem credit operations until September 2021. Marketable assets (with the exception of asset-backed securities (ABSs)) and issuers of these assets that met the BBB- minimum credit quality requirement for collateral eligibility on 7 April 2020 will continue to be eligible in case of rating downgrades as long as their rating remains at or above credit quality step 5 (equivalent to a rating of BB) on the Eurosystem harmonised rating scale. These measures, including the decisions taken on 7 April, are to apply until September 2021.

30 April 2020

Following its regular monetary policy meeting, the ECB Governing Council lowers the interest rate on TLTRO-III operations by a further 25 basis points from June 2020 to June 2021. The interest rate for all participating banks in this period will thus be a maximum of 50 basis points below the average main refinancing rate. For banks whose eligible net lending exceeds the lending performance threshold of 0% in the newly defined lending assessment period of 1 March 2020 to 31 March 2021, the interest rate applied from June 2020 to June 2021 will be 50 basis points below the average interest rate on the deposit facility.

Moreover, the Governing Council decides to conduct a new series of pandemic emergency longer-term refinancing operations (PELTROs). These operations are intended to provide liquidity support to the euro area financial system and contribute to preserving the smooth functioning of money markets after the expiry of the additional longer-term refinancing operations announced on 12 March. The interest rate will be 25 basis points below the average main refinancing rate applicable over the life of the respective PELTRO. The operations have decreasing tenors and different maturity dates. For example, the first operation has a tenor of 16 months, the last just 8 months.

4 June 2020

At its regular monetary policy meeting, the ECB Governing Council decides to expand the PEPP in response to the pandemic-related downward revision to inflation over the projection horizon. First, it increases the envelope for the programme by €600 billion to a total of €1,350 billion. Second, it extends the horizon for net purchases under the PEPP to at least the end of June 2021. In any case, net asset purchases under the PEPP will continue to be conducted until the Governing Council judges that the coronavirus crisis phase is over. Third, it decides to reinvest the maturing principal payments from securities purchased under the PEPP until at least the end of 2022. In any case, the future roll-off of the PEPP portfolio will be managed to avoid interference with the appropriate monetary stance.

19 June 2020

In view of the improvements in US dollar funding conditions and the low demand at recent seven-day maturity US dollar liquidity-providing operations, the Eurosystem and other major central banks jointly decide to reduce the frequency of such operations from daily to three times per week. This operational change will be effective as of 1 July 2020.

25 June 2020

The ECB Governing Council sets up a new facility called the Eurosystem repo facility for central banks (EUREP) for non-euro area central banks. EUREP is introduced as a precautionary backstop. Under EUREP, the Eurosystem will provide euro liquidity to a broad set of central banks outside the euro area against adequate collateral, consisting of euro-denominated marketable debt securities issued by euro area central governments and supranational institutions. EUREP complements the ECB's bilateral swap and repo lines and will be available until the end of June 2021.

20 August 2020

In view of continuing improvements in US dollar funding conditions and the low demand at recent seven-day maturity US dollar liquidity-providing operations, the ECB and other major central banks jointly decide to further reduce the frequency of these operations from three times per week to once per week. This operational change will be effective as of 1 September 2020.

10 December 2020

At the last monetary policy meeting of the year, the ECB Governing Council decides to increase the envelope of the PEPP by a further €500 billion to a total of €1,850 billion. It also extends the horizon for net asset purchases under the PEPP to at least the end of March 2022. If favourable financing conditions can be maintained with asset purchase flows that do not exhaust the envelope, the envelope need not be used in full. Equally, the envelope can be recalibrated if required to maintain favourable financing conditions to help counter the negative pandemic shock to the path of inflation. The reinvestment of the principal payments from maturing securities purchased under the PEPP is extended until at least the end of 2023.

The Governing Council also recalibrates the conditions on TLTRO-III operations again. The period over which considerably more favourable terms will apply is extended by 12 months, to June 2022. Furthermore, the Eurosystem will conduct three additional operations between June and December 2021. Moreover, the total amount that counterparties will be entitled to borrow in TLTRO-III operations is raised from 50% to 55% of their stock of eligible loans. In order to provide an incentive for banks to sustain the current level of bank lending, the recalibrated TLTRO-III borrowing conditions will be made available only to banks that achieve a new lending performance target.

The Governing Council also expands the PELTROs and, over the course of 2021, will offer four additional operations allotted on a quarterly basis, each with a tenor of approximately one year and at unchanged terms.

The collateral easing measures adopted on 7 and 22 April 2020 are extended until June 2022.

Furthermore, EUREP and all temporary swap and repo lines with non-euro area central banks are extended until March 2022.

Finally, the Governing Council decides to continue conducting its regular lending operations as fixed rate tender procedures with full allotment at the prevailing conditions for as long as necessary.

Annual accounts of the Deutsche Bundesbank for 2020

Balance sheet of the Deutsche Bundesbank as at 31 December 2020

Assets

			31.12.2019
		€ million	€ million
1 Gold and gold receivables		166,904	146,562
of which: gold receivables €571,005.50			*(0)*
2 Claims on non-euro area residents denominated in foreign currency			
2.1 Receivables from the IMF	22,156		(20,693)
2.2 Balances with banks and security investments, external loans and other external assets	30,066		(32,039)
		52,222	52,732
3 Claims on euro area residents denominated in foreign currency		456	1,362
4 Claims on non-euro area residents denominated in euro		1,455	1,065
5 Lending to euro area credit institutions related to monetary policy operations denominated in euro			
5.1 Main refinancing operations	193		(1,911)
5.2 Longer-term refinancing operations	341,089		(73,950)
5.3 Fine-tuning reverse operations	–		(–)
5.4 Structural reverse operations	–		(–)
5.5 Marginal lending facility	152		(0)
		341,434	75,861
6 Other claims on euro area credit institutions denominated in euro		2,360	2,248
7 Securities of euro area residents denominated in euro			
7.1 Securities held for monetary policy purposes	789,230		(568,254)
7.2 Other securities	–		(–)
		789,230	568,254
8 Claims on the Federal Government		4,440	4,440
9 Intra-Eurosystem claims			
9.1 Participating interest in the ECB	2,256		(2,254)
9.2 Claims equivalent to the transfer of foreign reserves to the ECB	10,635		(10,644)
9.3 Net claims related to the allocation of euro banknotes within the Eurosystem	–		(–)
9.4 Other claims within the Eurosystem (net)	1,135,555		(895,458)
		1,148,447	908,356
10 Items in course of settlement		1	1
11 Other assets			
11.1 Coins	1,162		(1,004)
11.2 Tangible and intangible fixed assets	931		(918)
11.3 Other financial assets	12,086		(11,852)
11.4 Off-balance-sheet instruments revaluation differences	5		(13)
11.5 Accruals and prepaid expenditure	5,059		(4,648)
11.6 Sundry	367		(528)
		19,610	(18,964)
		2,526,558	1,779,846

Liabilities

				31.12.2019
			€ million	€ million
1	Banknotes in circulation		347,905	313,774
2	Liabilities to euro area credit institutions related to monetary policy operations denominated in euro			
	2.1 Current accounts	793,755		(480,230)
	2.2 Deposit facility	225,003		(80,001)
	2.3 Fixed-term deposits	–		(–)
	2.4 Fine-tuning reverse operations	–		(–)
	2.5 Deposits related to margin calls	–		(–)
			1,018,758	560,231
3	Other liabilities to euro area credit institutions denominated in euro		7,473	3,614
4	Liabilities to other euro area residents denominated in euro			
	4.1 General government deposits	195,996		(51,737)
	4.2 Other liabilities	13,701		(36,200)
			209,697	87,937
5	Liabilities to non-euro area residents denominated in euro		256,804	179,986
6	Liabilities to euro area residents denominated in foreign currency		0	0
7	Liabilities to non-euro area residents denominated in foreign currency		–	–
8	Counterpart of special drawing rights allocated by the IMF		14,213	14,880
9	Intra-Eurosystem liabilities			
	9.1 Liabilities related to the issuance of ECB debt certificates	–		(–)
	9.2 Net liabilities related to the allocation of euro banknotes within the Eurosystem	473,098		(435,764)
	9.3 Other liabilities within the Eurosystem (net)	–		(–)
			473,098	435,764
10	Items in course of settlement		0	0
11	Other liabilities			
	11.1 Off-balance-sheet instruments revaluation differences	–		(–)
	11.2 Accruals and income collected in advance	1,697		(918)
	11.3 Sundry	1,946		(2,164)
			3,643	3,082
12	Provisions		27,490	24,785
13	Revaluation accounts		161,757	144,220
14	Capital and reserves			
	14.1 Capital	2,500		(2,500)
	14.2 Reserves	3,220		(3,220)
			5,720	5,720
15	Distributable profit		–	5,851
			2,526,558	1,779,846

Profit and loss account of the Deutsche Bundesbank for the year 2020

			2019
		€ million	€ million
1.1 Interest income	5,473		(5,936)
1.2 Interest expense	– 2,603		(– 1,293)
1 Net interest income		2,870	4,643
2.1 Realised gains/losses arising from financial operations	1,097		(816)
2.2 Write-downs on financial assets and positions	– 230		(– 35)
2.3 Transfer to/from provisions for general risks, foreign exchange risks and price risks	– 2,424		(1,500)
2 Net result of financial operations, write-downs and risk provisions		– 1,557	2,281
3.1 Fees and commissions income	104		(100)
3.2 Fees and commissions expense	– 49		(– 45)
3 Net income from fees and commissions		55	56
4 Income from participating interests		579	491
5 Net result of pooling of monetary income		– 756	– 119
6 Other income		158	155
Total net income		1,350	7,505
7 Staff costs		601	933
8 Administrative expenses		510	485
9 Depreciation of tangible and intangible fixed assets		124	107
10 Banknote production services		78	122
11 Other expenses		36	32
Profit for the year		–	5,825
12 Allocation to/withdrawal from reserves owing to the restriction on distribution pursuant to Section 253(6) of the German Commercial Code (*Handelsgesetzbuch*)		–	26
Distributable profit		–	5,851

Frankfurt am Main, 16 February 2021

DEUTSCHE BUNDESBANK
Executive Board

Dr Jens Weidmann Professor Claudia Buch

Burkhard Balz Professor Johannes Beermann Dr Sabine Mauderer Professor Joachim Wuermeling

Unqualified independent auditor's report for statutory audits of annual financial statements

To the Deutsche Bundesbank, Frankfurt am Main

Auditor's opinion on the annual financial statements

We have audited the annual financial statements of the Deutsche Bundesbank, Frankfurt am Main, consisting of the balance sheet as at 31 December 2020 and the profit and loss account for the business year from 1 January 2020 to 31 December 2020.

In our opinion, based on the findings of our audit, the said annual financial statements comply, in all material respects, with the legal requirements and the principles for the accounting of the Deutsche Bundesbank approved by the Executive Board pursuant to Section 26(2) of the Bundesbank Act and give a true and fair view of the net assets and financial position of the Deutsche Bundesbank as at 31 December 2020 and the results of operations for the business year from 1 January 2020 to 31 December 2020 in accordance with German principles of proper accounting.

Pursuant to Section 322(3) sentence 1 of the German Commercial Code (*Handelsgesetzbuch* – HGB), we declare that our audit has not led to any reservations with regard to the regularity of the annual financial statements.

Basis for the auditor's opinion on the annual financial statements

We conducted our audit of the annual financial statements in accordance with Section 317 HGB and German generally accepted standards for the audit of financial statements promulgated by the *Institut der Wirtschaftsprüfer* [Institute of Public Auditors in Germany] (IDW) as well as, on a supplementary basis, the International Standards on Auditing (ISAs). Our responsibilities pursuant to these provisions, principles and standards are further described in the "Auditor's responsibilities for the audit of the annual financial statements" section of our report. We are independent of the Deutsche Bundesbank in accordance with German commercial and professional laws and regulations, and we have fulfilled our other German ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Other information

The Executive Board is responsible for other information. Other information comprises any and all information in the Annual Report with the exception of the audited annual financial statements and the respective auditor's report.

Our opinion on the annual financial statements does not cover this other information, and we therefore do not express an auditor's opinion or draw any other form of audit conclusion regarding this other information.

In connection with our audit, we have the responsibility to read the other information and to evaluate whether

- there are material inconsistencies between the other information and the annual financial statements or the findings of our audit, or

- the other information otherwise appears to contain a material misstatement.

If we conclude, on the basis of our audit, that the other information contains a material misstatement, we are obliged to draw attention to this matter. We have nothing to report in this regard.

Responsibilities of the Executive Board for the annual financial statements

The Executive Board is responsible for the preparation of the annual financial statements in accordance with the legal requirements and the principles for the accounting of the Deutsche Bundesbank approved by the Executive Board pursuant to Section 26(2) of the Bundesbank Act and for ensuring that the annual financial statements give a true and fair view of the net assets, financial position and results of operations of the Deutsche Bundesbank in accordance with German principles of proper accounting. Moreover, the Executive Board is responsible for such internal control as it determines necessary in accordance with German principles of proper accounting to enable the preparation of annual financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the annual financial statements, the Executive Board is responsible for assessing the Deutsche Bundesbank's ability to continue as a going concern. It is also responsible for disclosing, as applicable, matters related to going concern and using the going-concern basis of accounting, provided there are no factual or legal impediments thereto.

The Executive Board is responsible for overseeing the Deutsche Bundesbank's financial reporting process for the preparation of the annual financial statements.

Auditor's responsibilities for the audit of the annual financial statements

Our objectives are to obtain reasonable assurance about whether the annual financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion on the annual financial statements.

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Section 317 HGB and German generally accepted standards for the audit of financial statements promulgated by the *Institut der Wirtschaftsprüfer* as well as, on a supplementary basis, the ISAs will always detect a material misstatement. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these annual financial statements.

We exercise professional judgement and maintain professional scepticism throughout the audit. We also

– identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations or the overriding of internal control.

– obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Deutsche Bundesbank's internal control.

– evaluate the appropriateness of the accounting policies used by the Executive Board as well as the reasonableness of accounting estimates and related disclosures made by the Executive Board.

– conclude on the appropriateness of the Executive Board's use of the going-concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the

Deutsche Bundesbank's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Deutsche Bundesbank to cease to continue as a going concern.

– evaluate the overall presentation, structure and content of the annual financial statements and whether the annual financial statements represent the underlying transactions and events in a manner that gives a true and fair view of the net assets, financial position and results of operations of the Deutsche Bundesbank in accordance with German principles of proper accounting.

We communicate with the Executive Board regarding, amongst other matters, the planned scope and timing of the audit and significant audit findings, including any deficiencies in internal control that we identify during our audit.

Frankfurt am Main, 23 February 2021

KPMG AG
Wirtschaftsprüfungsgesellschaft

Dielehner	Müller
Wirtschaftsprüfer	Wirtschaftsprüfer

Overview of the Deutsche Bundesbank's accounting policies

General accounting principles
Reflection of economic reality, thus giving a true and fair view of the Bundesbank's net assets, financial position and results of operations; prudence; recognition of post-balance-sheet events; materiality; going-concern basis; accruals principle; consistency and comparability.

Recognition of spot transactions
Spot transactions denominated in gold and foreign currency shall be accounted for from the trade date to determine the average cost and the realised gains and realised losses. Recognition of these spot transactions and of spot transactions in securities shall be based on the cash/settlement approach.

Valuation rules
Gold, foreign currency instruments, securities and financial instruments shall be valued at mid-market rates and prices as at the balance sheet date. Securities held to maturity shall be valued at amortised cost; write-downs are charged if impairment is expected to be permanent. The same applies to non-marketable securities and securities held for monetary policy purposes by virtue of a decision adopted by the Governing Council of the ECB.

No distinction shall be made between price and currency revaluation differences for gold, but a single gold revaluation difference shall be accounted for, based on the euro price per defined unit of weight of gold derived from the euro/US dollar exchange rate as at the balance sheet date.

Revaluation shall take place on a currency-by-currency basis for foreign currency instruments (including off-balance-sheet transactions).

In the case of securities, each revaluation shall take place on a code-by-code basis (same ISIN number/type).

Repurchase agreements
A repurchase agreement (repo) shall be recorded as a collateralised inward deposit on the liabilities side of the balance sheet, while the assets serving as collateral remain on the assets side of the balance sheet. A reverse repurchase agreement (reverse repo) shall be recorded as a collateralised outward loan on the assets side of the balance sheet for the amount of the loan.

In the case of lending transactions, the assets shall remain on the transferor's balance sheet. Lending transactions where collateral is provided in the form of cash shall be accounted for in the same manner as that prescribed for repurchase operations.

Income recognition
Realised gains and realised losses can arise only in the case of transactions which reduce a securities or foreign currency position. They shall be derived from a comparison of the transaction value with the acquisition value as calculated using the average cost method; they shall be taken to the profit and loss account.

Revaluation gains and losses shall accrue from the revaluation of assets at market values compared to their acquisition value as calculated using the average cost method. Unrealised gains shall not be recognised as income but recorded in a revaluation account.

Unrealised losses shall be taken to the profit and loss account if they exceed previous revaluation gains registered in the revaluation account. Unrealised losses taken to the profit and loss account in prior periods shall not be reversed in subsequent years against new unrealised gains. Unrealised losses in any one security, in any currency or in gold holdings shall not be netted against unrealised gains in other securities, currency or gold.

The average cost method shall be used on a daily basis to compute the acquisition cost of assets subject to exchange rate and/or price movements. The average acquisition cost of the assets shall be reduced by unrealised losses taken to the profit and loss account at year-end.

In the case of securities, the difference between the acquisition and redemption value (premium or discount) shall be amortised over the remaining contractual life of the securities in accordance with the internal rate of return method, presented as part of interest income (amortisation) and included in the acquisition value (amortised cost).

Accruals denominated in foreign currency shall be translated at the mid-market rate on each business day and change the respective foreign currency position.

Accounting rules for off-balance-sheet instruments

Foreign exchange forward transactions, forward legs of foreign exchange swaps and other currency instruments involving an exchange of one currency for another at a future date shall be included in the net foreign currency position as from the trade date.

Interest rate swaps, futures, forward rate agreements and other interest rate instruments shall be accounted for and valued on an item-by-item basis.

Profits and losses arising from off-balance-sheet instruments shall be recognised and treated in a similar manner to those from on-balance-sheet instruments.

Tangible and intangible fixed assets

Tangible and intangible fixed assets shall be valued at cost less depreciation and amortisation. Depreciation and amortisation shall be calculated on a straight-line basis and applied over the expected economic life of the asset. A distinction shall be made as follows:

– computers, related hardware and software, and motor vehicles: 4 years;
– equipment, furniture and plant in building: 10 years;
– building and refurbishment expenditure: 25 years;
– depreciation shall not apply to land.

Tangible and intangible fixed assets costing less than €10,000 after deduction of value added tax shall be written off in full in the year of acquisition.

Provisions

With the exception of the provisions for Eurosystem monetary policy operations, provisions shall be accounted for in accordance with the regulations set forth in the Commercial Code (*Handelsgesetzbuch*). Pursuant to Section 26(2) of the Bundesbank Act (*Bundesbankgesetz*), it shall be possible to create provisions for general risks associated with domestic and foreign business.

Transitional arrangements

The assets and liabilities shown on the closing Deutsche Mark balance sheet as at 31 December 1998 shall be revalued as at 1 January 1999. Unrealised gains arising on or before 1 January 1999 shall be recorded separately from the unrealised gains which arise after 1 January 1999. The market rates/prices applied by the Bundesbank on the euro-denominated opening balance sheet as at 1 January 1999 shall be deemed to be the average acquisition rates/prices as at 1 January 1999. The revaluation accounts for unrealised gains accruing on or before 1 January 1999 shall be released only in connection with revaluation losses and in the event of disposals after 1 January 1999.

General information on the annual accounts

Legal basis

Sections 26 and 27 of the Bundesbank Act (*Gesetz über die Deutsche Bundesbank*) form the legal basis for the annual accounts and distribution of profit. The provisions on accounting laid down in Section 26(2) sentence 2 of the Bundesbank Act allow the Bundesbank to apply the ECB's accounting policies.

Accounting policies of the Deutsche Bundesbank

The Governing Council of the ECB adopted policies for the ECB's annual accounts in accordance with Article 26.2 of the Statute of the ESCB. The Bundesbank decided to adopt these policies as its own accounting policies.[1] An overview of the Deutsche Bundesbank's accounting policies can be found on the preceding pages. The annual accounts of the Bundesbank thus follow the harmonised accounting and financial reporting rules of Eurosystem operations, both in terms of the structure of the balance sheet and the profit and loss account, and with regard to the valuation and accounting policies applied.

Digression: cost accounting at the Bundesbank

The Bundesbank is furthermore required, pursuant to Section 26(4) sentence 1 of the Bundesbank Act, to prepare a cost account to assist it in its management and administrative tasks. In compliance with this legislation, the Bank draws up a standard cost account and an investment plan before the start of each financial year. The harmonised Eurosystem accounting policies for internal accounting adopted by the Governing Council of the ECB and compiled in the Committee on Controlling (COMCO) manual, are also taken into account in this regard. At the end of the financial year, the Bank makes a comparative analysis of the budgeted figures and the actual costs and investment. This analysis is reviewed separately by the external auditors.

Creation of reserves owing to the restriction on distribution pursuant to Section 253(6) of the Commercial Code

Pursuant to Section 253 of the German Commercial Code (*Handelsgesetzbuch*), provisions for post-employment benefit obligations must be discounted at the average market rate corresponding to their residual maturity calculated over the past ten financial years. The relief resulting from application of the ten-year rather than the seven-year observation period must be calculated annually and may not be distributed. In accordance with Section 253(6) sentence 2 of the Commercial Code, the distribution of profits shall be restricted to the part that exceeds the amount for which distribution is restricted less any disposable reserves. However, the Bundesbank does not have any such reserves. The amount for which distribution is restricted itself has to be treated as reserves, and transfers to them are taken to profit and loss once the profit for the year has been determined as part of the appropriation of profit. The resulting amount is reported as distributable profit (net profit). In financial years with no distributable profit, the difference is disclosed in the Notes only.

Recognition of euro banknotes and …

The ECB and the national central banks of the euro area countries, which together comprise the Eurosystem, issue banknotes denominated in euro. The following allocation procedure was approved for recognition of the euro banknotes in circulation in the financial statements of the individual central banks of the Eurosystem.[2] The respective share of the total value of euro banknotes in circulation due to each central bank in the Eurosystem is calculated on the last business day of each month in accordance with the key for allocating euro banknotes. The ECB is allocated an 8% share of the total value of the euro banknotes in circulation, whereas the remaining 92% is allocated to the national central banks in proportion to their respective paid-up shares in the capital of the ECB. As at 31 December 2020, the Bundesbank had a 26.4% share in the fully paid-up capital of the ECB and, therefore, a 24.3% share of the euro banknotes in circulation in accordance with the banknote

1 As last published in Deutsche Bundesbank Notice No 10001/2020.
2 Decision of the European Central Bank of 13 December 2010 on the issue of euro banknotes (ECB/2010/29), as last amended by the Decision of the European Central Bank of 22 January 2020 (ECB/2020/7).

allocation key. The value of the Bundesbank's share in the total amount of euro banknotes issued by the Eurosystem is shown in item 1 "Banknotes in circulation" on the liabilities side of the balance sheet.

… of intra-Eurosystem balances arising from the allocation of euro banknotes

The difference between the value of the euro banknotes allocated to each central bank of the Eurosystem in accordance with the banknote allocation key and the value of the euro banknotes that the central bank actually puts into circulation gives rise to remunerated intra-Eurosystem balances.[3] If the value of the euro banknotes actually issued is greater than the value according to the banknote allocation key, the difference is recorded on the balance sheet as an intra-Eurosystem liability in liability sub-item 9.2 "Net liabilities related to the allocation of euro banknotes within the Eurosystem". If the value of the euro banknotes actually issued is less than the value according to the banknote allocation key, the difference is recorded in asset sub-item 9.3 "Net claims related to the allocation of euro banknotes within the Eurosystem". These balances are remunerated at the respective rate on the main refinancing operations.

In the year of the cash changeover and in the following five years, the intra-Eurosystem balances arising from the allocation of euro banknotes within the Eurosystem are adjusted in order to avoid significant changes in national central banks' relative income positions as compared to previous years. The adjustments are based on the difference between the average value of the banknotes that each national central bank had in circulation in the reference period and the average value of the banknotes that would have been allocated to each of them during that period in accordance with the ECB's capital key. The adjustments are reduced in annual increments until the first day of the sixth year after the cash changeover year. Thereafter, income from euro banknotes in circulation is allocated fully in proportion to the national central banks' paid-up shares in the ECB's capital. In the year under review, the adjustment resulted from the accession of the Lithuanian central bank in 2015; this adjustment ceased on 31 December 2020. The interest income and expense arising from the remuneration of the intra-Eurosystem balances is cleared through the accounts of the ECB and disclosed under item 1 "Net interest income" of the Bundesbank's profit and loss account.

ECB's interim profit distribution

The ECB's income from the 8% share of the euro banknotes in circulation as well as from securities purchased by the ECB as part of the securities markets programme (SMP), the third covered bond purchase programme (CBPP3), the asset-backed securities purchase programme (ABSPP) and the public sector purchase programme (PSPP) as well as the pandemic emergency purchase programme (PEPP) is distributed to the national central banks of the Eurosystem as interim profit in the same financial year in which the income arises, unless the ECB's net profit is less than this income or the Governing Council of the ECB decides to retain the amount for allocation to the ECB risk provision.[4] For financial year 2020, €1,260 million of the aforementioned ECB income (2019: €1,431 million) was distributed among the national central banks as interim profit. The Bundesbank's share of €332 million (2019: €378 million) is included in item 4 "Income from participating interests" of its profit and loss account.

Change to the ECB's capital key with effect from 1 February 2020

In anticipation of the withdrawal of the United Kingdom from the European Union, the ECB's capital key was adjusted with effect from 1 February 2020. This adjustment increased the Bundesbank's share in the ECB's subscribed capital from 18.4% to 21.4% and raised its participating interest in the ECB from a nominal €1,988 million to €2,321 million. The contribution of capital associated with this ad-

3 Decision of the European Central Bank of 3 November 2016 on the allocation of monetary income of the national central banks of Member States whose currency is the euro (ECB/2016/36), as last amended by the Decision of the European Central Bank of 12 November 2020 (ECB/2020/55).
4 Decision of the European Central Bank of 15 December 2014 on the interim distribution of the income of the European Central Bank (recast) (ECB/2014/57), as last amended by the Decision of the European Central Bank of 12 November 2020 (ECB/2020/56).

justment will take place in three stages. With effect from 1 February 2020, the €58 million in paid-up capital repaid to the Bank of England was redistributed, with a share of €11 million being allocated to the Bundesbank. This increased the participating interest in the ECB (asset sub-item 9.1) to a nominal €1,999 million and, including the Bundesbank's share of the ECB's net equity as at 1 February 2020 (in particular, the ECB's revaluation reserve and the ECB risk provision), to €2,256 million. Two further transfer payments, each in the amount of €161 million, shall be effected at the end of 2021 and at the end of 2022. While the Bundesbank's share in the fully paid-up capital of the ECB remains unchanged, in rounded terms, at 26.4%, the actual share has decreased slightly, from 26.3827% to 26.3615%, on account of a revision of statistical data since the last capital key recalculation on 1 January 2019. The Bundesbank's claim arising from the transfer of foreign reserves to the ECB (asset sub-item 9.2 "Claims equivalent to the transfer of foreign reserves to the ECB") therefore declined slightly, from €10,644 million to €10,635 million.

Preparation and auditing of financial statements

The Executive Board prepared the Deutsche Bundesbank's financial statements for financial year 2020 on 16 February 2021. The financial statements were audited by KPMG AG Wirtschaftsprüfungsgesellschaft, Frankfurt am Main, whom the Executive Board had engaged as external auditors on 27 January 2015 in accordance with Section 26(3) of the Bundesbank Act. The auditors issued an unqualified audit opinion on 23 February 2021 confirming that the Bundesbank's financial statements for 2020 – consisting of the balance sheet and the profit and loss account – comply, in all material respects, with the legal requirements and the accounting policies of the Deutsche Bundesbank approved by the Executive Board and give a true and fair view of the net assets, financial position and results of operations of the Deutsche Bundesbank. After studying the external auditors' unqualified audit opinion, the Executive Board decided that publication of the financial statements would take place on 3 March 2021.

Notes on the individual balance sheet items

Assets

1 Gold and gold receivables

As at 31 December 2020, the Bundesbank's physical holdings (bars) of fine gold amounted to 3,362,487 kg, or 108 million fine ounces (ozf). These are supplemented by an additional 12 kg of gold receivables that were generated by the settlement of margins in the context of gold transactions. The gold was valued at market prices at the end of the year (1 kg = €49,637.02, or 1 ozf = €1,543.884). Compared with the previous year's price (1 kg = €43,535.45, or 1 ozf = €1,354.104), this represents an increase of 14.0%. The gold holdings declined by just 0.1% (4,010 kg, or 0.1 million ozf) in the year under review. This was due to the sale of gold to the Federal Government at market prices for the purpose of minting gold coins. The resulting income in the amount of €184 million is shown in sub-item 2.1 "Realised gains/losses arising from financial operations" in the profit and loss account.

2 Claims on non-euro area residents denominated in foreign currency

This item comprises the receivables from the International Monetary Fund (IMF) as well as balances with banks and security investments, loans and other foreign currency claims on non-euro area residents.

2.1 Receivables from the IMF

Sub-item 2.1 contains the receivables from the IMF which are financed and held by the Bundesbank and which arise from the Federal Republic of Germany's membership of the IMF. The receivables, which total 18,799 million

Gold reserves by storage location

Storage location	31.12.2020		31.12.2019		Year-on-year change			
	Tonnes	€ million	Tonnes	€ million	Tonnes	%	€ million	%
Deutsche Bundesbank, Frankfurt	1,710	84,882	1,710	74,448	0	0.0	10,434	14.0
Federal Reserve Bank, New York	1,236	61,363	1,236	53,820	–	–	7,543	14.0
Bank of England, London	416	20,659	420	18,294	– 4	– 1.0	2,365	12.9
Total	3,362	166,904	3,367	146,562	– 4	– 0.1	20,342	13.9

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special drawing rights (SDRs) (€22,156 million), are made up of the drawing rights within the reserve tranche, the allocated special drawing rights and loans under the New Arrangements to Borrow (NAB).

The drawing rights within the reserve tranche correspond to the amounts actually paid to the IMF in gold, special drawing rights, foreign currency and national currency under the German quota. The drawing rights held in the reserve tranche represent the difference between the German quota of SDR 26,634 million (€31,391 million) and the euro balances amounting to €23,969 million (SDR 20,337 million) at the IMF's disposal at the end of the year. In 2020, these rose on balance by SDR 2,057 million to SDR 6,297 million (€7,422 million).

Special drawing rights – by means of which freely usable currencies as per the IMF definition can be obtained at any time – in the amount of SDR 12,059 million were allocated free of charge. A corresponding counterpart is shown as liability item 8 "Counterpart of special drawing rights allocated by the IMF". In 2020, the holdings of special drawing rights went

Receivables from the IMF

Item	31.12.2020		31.12.2019		Year-on-year change			
	SDR million	€ million	SDR million	€ million	SDR million	%	€ million	%
German quota	26,634	31,391	26,634	32,865	–	–	– 1,473	– 4.5
less Euro balances	20,337	23,969	22,394	27,633	– 2,057	– 9.2	– 3,663	– 13.3
Drawing rights within the reserve tranche	6,297	7,422	4,240	5,232	2,057	48.5	2,190	41.9
Special drawing rights	11,890	14,014	11,867	14,642	23	0.2	– 629	– 4.3
New Arrangements to Borrow	612	721	664	819	– 52	– 7.9	– 99	– 12.0
Total	18,799	22,156	16,771	20,693	2,028	12.1	1,463	7.1

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up by SDR 23 million to SDR 11,890 million (€14,014 million).

The NAB are multilateral credit lines with the IMF, which serve as a backstop for use in the event of a systemic crisis. They were not activated by the IMF in 2020, which means that the Bundesbank was not drawn upon. The Bundesbank's NAB credit arrangement amounted to SDR 12.9 billion in 2020. At the end of the reporting year, this resulted in receivables from the IMF of SDR 612 million (€721 million) from earlier drawdowns. The bilateral credit line of €41.5 billion additionally pledged by the Bundesbank to the IMF as a further backstop until the end of 2020 was not drawn down, as adequate IMF liquidity was available. There were, therefore, no receivables arising from bilateral loans at the end of the year.

The beginning of 2021 saw the extension of the term and doubling of the size of the multilateral NAB come into effect, to which the Bundesbank has contributed a credit line of SDR 25.8 billion. In addition, new temporary bilateral borrowing arrangements (BBA) have been concluded with the IMF to follow on from the credit lines that expired at the end of 2020, with the Bundesbank contributing a new credit line of €17.9 billion.

If all items on the assets side and the liabilities side of the balance sheet are taken into account, the net holdings of special drawing rights amounted to SDR 6,741 million, compared with SDR 4,717 million in the previous year. Valuation is based on the reference rate of SDR 1 = €1.1786 (2019: SDR 1 = €1.2339) calculated by the ECB at the end of the year for all central banks participating in the Eurosystem.

2.2 Balances with banks and security investments, external loans and other external assets

Balances with banks and security investments, loans and other foreign currency claims reported under sub-item 2.2 amounted to €30,066 million at the end of 2020, compared with €32,039 million in the previous year. These include, in particular, US dollar holdings in the amount of US$31,343 million (€25,542 million), representing a decline of US$1,523 million on the year. The sub-item also contains holdings in yen (¥203,139 million, equivalent to €1,606 million), Australian dollar (A$1,824 million, equivalent to €1,148 million), Canadian dollar (C$2,382 million, equivalent to €1,524 million) and Chinese yuan (renminbi) (1,967 million yuan, equivalent to €245 million), and a small amount of other currencies. The holdings are interest-bearing. The foreign currency holdings were valued at the respective end-of-year market rate.

Balances with banks and security investments, external loans and other external assets

	31.12.2020	31.12.2019	Year-on-year change	
Item	€ million	€ million	€ million	%
Current account balances and overnight deposits	1,884	1,845	38	2.1
Claims arising from reverse repurchase agreements	–	134	– 134	– 100.0
Fixed-term deposits and deposits redeemable at notice	1,182	1,691	– 510	– 30.1
Marketable securities				
Government bonds				
US dollar	17,980	21,766	– 3,786	– 17.4
Yen	339	372	– 32	– 8.7
Australian dollar	931	853	79	9.2
Canadian dollar	1,522	–	1,522	.
Chinese yuan (renminbi)	221	–	221	.
Supranational, sovereign and agency (SSA) bonds	5,852	5,210	642	12.3
Other	155	169	– 14	– 8.1
Total	30,066	32,039	– 1,973	– 6.2

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Net foreign exchange positions in selected currencies

Balance of all reported asset and liability items in foreign currency at market rates (net foreign exchange position) in	31.12.2020		31.12.2019		Year-on-year change
	Million (currency)	Market rate per euro	Million (currency)	Market rate per euro	Million (currency)
US dollar	31,426	1.2271	32,990	1.1234	– 1,564
Yen	203,243	126.49	203,320	121.94	– 77
Australian dollar	1,834	1.5896	1,793	1.5995	42
Canadian dollar	2,386	1.5633	1	1.4598	2,386
Chinese yuan (renminbi)	1,988	8.0225	0	7.8205	1,988

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3 Claims on euro area residents denominated in foreign currency

This item contains US$560 million (€456 million) of US dollar claims on credit institutions resulting from refinancing operations in the context of the standing swap agreement with the Federal Reserve Bank, or Fed (2019: €1,362 million). In order to carry out these operations, based on the swap agreement, the ECB receives US dollars from the Fed in return for euro; the ECB then allocates these to the national central banks, which pass them on to euro area credit institutions. The TARGET2 liabilities resulting from the swap transactions between the ECB and the Bundesbank lower the TARGET2 settlement balance shown in asset sub-item 9.4 “Other claims within the Eurosystem (net)”.

4 Claims on non-euro area residents denominated in euro

Claims on non-euro area counterparties arising from bilateral repo transactions amounting to €1,455 million (2019: €1,065 million) are shown in this item. These claims resulted from the reverse repos transacted simultaneously with the repos, in which securities in the PSPP portfolio as well as PEPP public sector holdings were lent against Federal securities on a cash-neutral basis; the transactions had a maximum term of seven days. The corresponding liabilities from the repos are shown under liability item 5 “Liabilities to non-euro area residents denominated in euro”.

5 Lending to euro area credit institutions related to monetary policy operations denominated in euro

The volume and structure of liquidity-providing monetary policy operations carried out by the Bundesbank as part of the Eurosystem are shown in this item (main and longer-term refinancing operations and the marginal lending facility). As at the end of the reporting year, the outstanding volume of the Eurosystem’s monetary policy operations amounted to €1,793,194 million (2019: €624,232 million), of which the Bundesbank accounted for €341,434 million (2019: €75,861 million). Pursuant to Article 32.4 of the Statute of the ESCB, risks from these operations, provided they materialise, are shared among the Eurosystem national central banks in proportion to the prevailing shares in the capital of the ECB. Losses arise only if the counterparty to a monetary policy operation defaults and the collateral it has provided proves insufficient upon realisation. The national central banks may accept certain types of collateral excluded from risk sharing on their own responsibility.

Main refinancing operations are regular weekly transactions with a standard one-week maturity, the purpose of which is to provide liquidity. In the reporting year, main refinancing operations continued to be conducted as fixed rate tenders with full allotment. At the end of the year, the main refinancing operations amounted to €193 million, which was €1,718 million

Lending to euro area credit institutions related to monetary policy operations denominated in euro

Item	31.12.2020 € million	31.12.2019 € million	Year-on-year change € million	Year-on-year change %
Main refinancing operations	193	1,911	– 1,718	– 89.9
Longer-term refinancing operations				
Regular operations (3 months)	485	119	366	307.6
Targeted operations – second series (TLTRO-II)	6,682	69,467	– 62,785	– 90.4
Targeted operations – third series (TLTRO-III)	331,423	4,364	327,059	.
Pandemic emergency operations (PELTROs)	2,499	–	2,499	.
Subtotal	341,089	73,950	267,139	361.2
Marginal lending facility	152	0	152	.
Total	341,434	75,861	265,573	350.1

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less than at the end of the previous year. On a daily average, the outstanding volume of main refinancing operations came to €469 million (2019: €671 million).

In the year under review, the regular longer-term refinancing operations with maturities of three months were carried out as fixed rate tenders with full allotment at the average main refinancing rate. As at 31 December 2020, take-up of these totalled €485 million (2019: €119 million). Maturities and early repayments reduced the targeted longer-term refinancing operations completed in 2016 and 2017 as part of the second series of operations (TLTRO-II) from €69,467 million in the previous year to €6,682 million. The interest on these operations, which have a maturity of four years, is charged at an individual rate geared to the respective counterparty's eligible net lending. This rate lies between the main refinancing rate and the deposit facility rate prevailing at the time of allotment. In addition, TLTROs from the third series (TLTRO-III), which each have a term of three years, have been carried out since September 2019. The interest on these operations, which total €331,423 million (2019: €4,364 million), is charged at an individual rate geared to the respective counterparty's eligible net lending. This rate lies between the average main refinancing rate and deposit facility rate prevailing over the life of the respective operation. In response to the coronavirus crisis, the Governing Council of the ECB decided to lower the minimum interest rate over the period from 24 June 2020 to 23 June 2022 to 50 basis points below the deposit facility rate, but in any case to at least -1%. Since the actual rates applied to these operations are only determined when the operation in question matures, the interest accrued in the 2020 annual accounts has been calculated, for reasons of prudence, at the deposit facility rate and, as from 24 June 2020, at 50 basis points below the deposit facility rate. The reporting year also saw seven additional pandemic emergency longer-term refinancing operations (PELTROs) being conducted as fixed rate tenders with full allotment at an interest rate that is 25 basis points below the average rate applied in main refinancing operations over the life of the respective PELTRO. As at 31 December 2020, take-up amounted to €2,499 million. Moreover, in the period between March and June 2020, 13 additional longer-term refinancing operations were allotted on a weekly basis as fixed rate tenders with full allotment at an interest rate equal to the average of the deposit facility rate over the life of the respective operation, all of which matured on the allotment date of the fourth TLTRO-III operation (24 June 2020). The total volume of longer-term refinancing operations outstanding at year-end 2020 came to €341,089 million, which was €267,139 million up on the figure at the end of 2019; on a daily average, the volume amounted to €208,042 million (2019: €84,836 million).

The marginal lending facility is a standing facility which counterparties may use to obtain overnight liquidity at a pre-specified interest rate. Recourse to this facility amounted to €152 million at year-end 2020. Average daily use came to €10 million (2019: €25 million).

6 Other claims on euro area credit institutions denominated in euro

This item, amounting to €2,360 million (2019: €2,248 million), consists, in particular, of claims on euro area counterparties arising from bilateral repo transactions in the amount of €2,359 million (2019: €623 million). These claims resulted from the reverse repos transacted simultaneously with the repos, in which securities in the PSPP portfolio as well as PEPP public sector holdings were lent against Federal securities on a cash-neutral basis; the transactions had a maximum term of seven days. The corresponding liabilities from the repos are shown under liability item 3 “Other liabilities to euro area credit institutions denominated in euro”.

7 Securities of euro area residents denominated in euro

This item contains the holdings of securities denominated in euro resulting from purchases made within the framework of the Eurosystem purchase programmes announced by the ECB Governing Council, which are shown under sub-item 7.1 “Securities held for monetary policy purposes”. These holdings are carried at amortised cost, irrespective of whether the securities are held to maturity. Net asset purchases under the asset purchase programme (APP: CBPP3, PSPP, CSPP and ABSPP), as adopted by the ECB Governing Council on 4 September 2014, 22 January 2015 and 10 March 2016, which restarted at a monthly pace of €20 billion in November 2019, continued in the reporting year and were expanded in March 2020 in response to the coronavirus pandemic to include an additional envelope of €120 billion until the end of 2020. Furthermore, the ECB Governing Council decided on 18 March 2020 to launch a new temporary €750 billion pandemic emergency purchase programme (PEPP) until the end of 2020, covering all the assets eligible under the existing purchase programmes. The Governing Council’s decisions of 4 June 2020 and 10 December 2020 increased the overall envelope for the PEPP to a total of up to €1,850 billion and extended the horizon for net purchases at least until the end of March 2022. Maturing assets changed the composition of the terminated SMP, CBPP and CBPP2 programmes.

Securities held for monetary policy purposes

Portfolio	31.12.2020		31.12.2019		Year-on-year change			
	Balance sheet value € million	Market value € million	Balance sheet value € million	Market value € million	Balance sheet value € million	Balance sheet value %	Market value € million	Market value %
SMP								
Greece	–	–	254	263	– 254	– 100.0	– 263	– 100.0
Ireland	–	–	354	367	– 354	– 100.0	– 367	– 100.0
Portugal	49	53	342	357	– 293	– 85.6	– 304	– 85.2
Italy	4,271	4,394	6,067	6,432	– 1,796	– 29.6	– 2,037	– 31.7
Spain	1,251	1,278	1,853	1,951	– 602	– 32.5	– 673	– 34.5
Subtotal	5,571	5,725	8,869	9,370	– 3,298	– 37.2	– 3,645	– 38.9
CBPP	150	158	627	645	– 477	– 76.1	– 488	– 75.6
CBPP2	871	904	935	995	– 64	– 6.9	– 91	– 9.1
CBPP3	68,839	70,659	61,818	62,997	7,021	11.4	7,663	12.2
PSPP	490,815	518,106	451,279	468,012	39,536	8.8	50,094	10.7
CSPP	60,576	62,762	44,726	45,786	15,850	35.4	16,976	37.1
PEPP covered bonds	741	752	–	–	741	.	752	.
PEPP public sector securities	154,710	155,325	–	–	154,710	.	155,325	.
PEPP corporate sector securities	6,957	7,173	–	–	6,957	.	7,173	.
Total	789,230	821,565	568,254	587,806	220,975	38.9	233,760	39.8

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At year-end, the Eurosystem national central banks' SMP holdings amounted to €26,335 million (2019: €44,216 million), their CBPP3 holdings to €263,536 million (2019: €241,934 million), their CSPP holdings to €250,403 million (2019: €184,505 million) and their PSPP holdings of securities issued by supranational institutions (of which the Bundesbank itself did not acquire any holdings) to €249,317 million (2019: €225,169 million). As at 31 December 2020, the Eurosystem national central banks' PEPP holdings amounted to €2,815 million in the covered bonds portfolio, to €43,154 million in the corporate sector portfolio and to €47,796 million in the portfolio of securities issued by supranational institutions (of which the Bundesbank itself did not acquire any holdings). Consistent with Article 32.4 of the Statute of the ESCB, all risks from the SMP, CBPP3, CSPP and the above-mentioned PSPP and PEPP holdings, provided they materialise, are shared among the Eurosystem national central banks in proportion to the prevailing shares in the capital of the ECB, as is the case with the income received. Risks and income resulting from the covered bonds purchased under the CBPP and CBPP2 as well as from the government bonds purchased under the PSPP and PEPP (including regional government bonds and bonds issued by eligible agencies located in the euro area), on the other hand, are borne or are collected, respectively, by the individual national central banks holding these bonds. For its PSPP and PEPP public sector portfolio, the Bundesbank purchases only bonds issued by German issuers.

The Governing Council of the ECB decided that there was no need to recognise any impairment losses on securities contained in the SMP, CSPP and PSPP holdings and in the three CBPP portfolios and the PEPP portfolios as at 31 December 2020, as it is expected that all payment obligations relating to the bonds and debt securities contained in Eurosystem central banks' holdings will continue to be met as agreed.

8 Claims on the Federal Government

This item shows the equalisation claims on the Federal Government and the non-interest-bearing debt register claim in respect of Berlin; both date back to the currency reform of 1948. They form the balance sheet counterpart of the amounts paid out at that time in cash per capita and per enterprise and of the initial provision of credit institutions and public corporations with central bank money. Equalisation claims yield interest at a rate of 1% per annum. In conjunction with Article 123 of the Treaty on the Functioning of the European Union (the Lisbon Treaty), it has been stipulated that the equalisation claims and the debt register claim are to be redeemed in ten annual instalments, starting in 2024.

9 Intra-Eurosystem claims

The Bundesbank's claims on the ECB and on the national central banks participating in the Eurosystem are consolidated in this item.

Sub-item 9.1 shows the Bundesbank's participating interest in the ECB. Pursuant to Article 28 of the Statute of the ESCB, the ESCB national central banks are the sole subscribers to the capital of the ECB. An adjustment was made to the key for subscription of the ECB's capital with effect from 1 February 2020 in anticipation of the United Kingdom's withdrawal from the European Union and the Bank of England's related withdrawal from the ESCB (see "General information on the annual accounts"). The Bundesbank's participating interest in the ECB amounted to a nominal €1,999 million as at 31 December 2020; including the Bundesbank's share of the ECB's net equity, effective from 1 February 2020, it came to €2,256 million.

Sub-item 9.2 contains the Bundesbank's euro-denominated claims equivalent to the transfer of foreign reserves to the ECB. At the beginning of 1999, the central banks participating in the Eurosystem transferred foreign reserve assets (15% in gold and 85% in foreign currency) to the ECB in accordance with Article 30 of the Statute of the ESCB. Adjustments to the key for subscription of the ECB's capital also resulted in adjustments to the Bundesbank's claims equivalent to the transfer of foreign reserves to the

ECB. These claims amounted to €10,635 million as at 31 December 2020 (2019: €10,644 million). As the transferred gold does not earn any interest, the claims are remunerated at 85% of the prevailing main refinancing rate.

Sub-item 9.3 "Net claims related to the allocation of euro banknotes within the Eurosystem" shows the claims which arise from applying the euro banknote allocation key. As in 2019, the Bundesbank did not have a claim at the end of 2020 but a liability, which is shown in liability sub-item 9.2 "Net liabilities related to the allocation of euro banknotes within the Eurosystem".

A daily net balance vis-à-vis the ECB is derived from settlement balances between the central banks of the ESCB which result from cross-border payments as recorded in the Eurosystem's TARGET2 high-value payment system. As at the end of the year, the Bundesbank's net claim on the ECB was €240,783 million higher at €1,136,002 million, which is contained in sub-item 9.4 "Other claims within the Eurosystem (net)". The net balance (with the exception of unremunerated intra-Eurosystem balances resulting from the swap transactions between the ECB and the Bundesbank – see asset item 3 "Claims on euro area residents denominated in foreign currency") is remunerated at the respective main refinancing rate. On a daily average, the remunerated net claim amounted to €973,446 million (2019: €881,424 million). This item also contains liabilities of €779 million arising from the allocation of monetary income to the national central banks (see profit and loss item 5 "Net result of pooling of monetary income") and the €332 million claim on the ECB arising from the interim distribution of profit (see "General information on the annual accounts").

10 Items in course of settlement

This item contains the asset items arising from payments still being processed within the Bundesbank.

11 Other assets

The Bundesbank's holdings of euro coins are shown in sub-item 11.1 "Coins". New coins are received from the Federal mints at their nominal value for the account of the Federal Government, which holds the coin prerogative.

Sub-item 11.2 "Tangible and intangible fixed assets" amounted to €931 million, compared with €918 million in the previous year. It comprises land and buildings, furniture and equipment including computer equipment, and software.

Sub-item 11.3 "Other financial assets" amounted to €12,086 million, compared with €11,852 million in the previous year. It con-

Tangible and intangible fixed assets

€ million

Item	Acquisition and production costs 31.12.2019	Additions	Disposals	Accumulated depreciation	Book value 31.12.2020	Book value 31.12.2019	Depreciation in 2020
Land and buildings	2,189	17	– 2	– 1,606	598	620	– 38
Furniture and equipment including computer equipment	976	114	– 27	– 738	326	292	– 79
Software	153	6	– 0	– 153	6	6	– 6
Total	3,318	138	– 29	– 2,496	931	918	– 124

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tains the Bundesbank's own funds portfolio as a counterpart to its capital, statutory reserves, provisions for general risks and long-term provisions for civil servant pensions and healthcare assistance. The own funds portfolio is invested not in government securities but exclusively in fixed rate covered bonds denominated in euro, which are generally held to maturity and are, therefore, valued at amortised cost. The duration is based on commonly used indices. As at 31 December 2020, the value of the own funds portfolio measured at amortised cost amounted to €11,097 million, of which German Pfandbriefe accounted for €6,683 million, French covered bonds for €2,454 million, Finnish covered bonds for €902 million, Dutch covered bonds for €734 million and Belgian covered bonds for €323 million. The total market value of the own funds portfolio stood at €11,559 million.

This item also includes €51 million in participating interests held by the Bundesbank. The Bundesbank's participating interest in the Bank for International Settlements, Basel, was unchanged at €50 million as at the end of the year; it holds 50,100 shares, with 25% of their par value being paid-in capital. As in the previous year, the participating interest in the cooperative society S.W.I.F.T., La Hulpe (Belgium), amounted to €1 million.

Claims on euro area counterparties other than credit institutions arising from bilateral repo transactions amounting to €939 million (2019: nil) are also shown in this item. These claims resulted from the reverse repos transacted simultaneously with the repos, in which securities in the PSPP portfolio as well as PEPP public sector holdings were lent against Federal securities on a cash-neutral basis; the transactions had a maximum term of seven days. The corresponding liabilities from the repos are shown under liability sub-item 4.2 "Other liabilities".

Sub-item 11.4 "Off-balance-sheet instruments revaluation differences" essentially comprises the net result from the valuation of the US dollar forward liabilities to the ECB arising from the euro/US dollar swap agreement with the ECB in the amount of €5 million (2019: €13 million) (see asset item 3 "Claims on euro area residents denominated in foreign currency").

Sub-item 11.5 "Accruals and prepaid expenditure" contains accruals and prepaid expenditure as at 31 December 2020. This chiefly consists of (accrued) coupon interest due in the new financial year from securities which were acquired or transacted in the financial year just ended.

Liabilities

1 Banknotes in circulation

The total value of euro banknotes issued by the central banks of the Eurosystem is distributed among these banks on the last business day of each month in accordance with the key for allocating euro banknotes (see "General information on the annual accounts"). According to the banknote allocation key applied as at 31 December 2020, the Bundesbank has a 24.3% share of the value of all the euro banknotes in circulation. During the year under review, the total value of banknotes in circulation within the Eurosystem rose from €1,292.7 billion to €1,434.5 billion, or by 11.0%. Taking into account the allocation key, the Bundesbank had euro banknotes in circulation worth €347,905 million as at the end of the year, compared with €313,774 million a year previously. The value of the euro banknotes actually issued by the Bundesbank increased in 2020 by 9.5% from €749,538 million to €821,003 million. As this was more than the allocated amount, the difference of €473,098 million (2019: €435,764 million) is shown in liability sub-item 9.2 "Net liabilities related to the allocation of euro banknotes within the Eurosystem".

2 Liabilities to euro area credit institutions related to monetary policy operations denominated in euro

Sub-item 2.1 "Current accounts" contains the deposits of credit institutions, amounting to €793,755 million (2019: €480,230 million), which are also used to meet the minimum reserve requirement and to settle payments. The main criterion for including these deposits in this sub-item is that the relevant counterparties appear in the list of institutions which are subject to the Eurosystem's minimum reserve regulations. The balances held to fulfil the minimum reserve requirement amounted to €38,605 million on an annual average. These balances are remunerated at the average main refinancing rate in the respective maintenance period. Since 30 October 2019, a two-tier system for calculating the remuneration of deposits in excess of the minimum reserve requirements has applied. Under this system, balances determined as a multiple (set by the Governing Council of the ECB; in 2020: six) of a credit institution's minimum reserve requirements are exempt from negative remuneration. Negative interest at the rate applicable to the deposit facility is applied only to the non-exempt excess reserve holdings; these holdings amounted to €429,487 million on an annual average. On a daily average, total current account deposits increased from €481,324 million in 2019 to €694,196 million in 2020.

Sub-item 2.2 "Deposit facility", amounting to €225,003 million (2019: €80,001 million), contains overnight deposits remunerated at the deposit facility rate (2020: -0.5%). On a daily average, the deposit facility amounted to €113,302 million, compared with €144,973 million in 2019.

Sub-item 2.5 "Deposits related to margin calls" contains cash collateral deposited by credit institutions in order to increase underlying assets. As in the previous year, this item contained no holdings as at 31 December 2020.

3 Other liabilities to euro area credit institutions denominated in euro

This item contains liabilities to euro area credit institutions arising from bilateral repo transactions. In these repo transactions, securities in the PSPP portfolio as well as PEPP public sector holdings are lent against cash as collateral, or in the case of simultaneous reverse repos, against Federal securities on a cash-neutral basis; the transactions have a maximum term of seven days. As at the end of the year, securities lending against cash as collateral gave rise to liabilities in the amount of €4,722 million (2019: €2,792 million), and securities lending against Federal securities resulted in liabilities of €2,359 million (2019: €623 million); the corresponding claims are reported in asset item 6 "Other claims on euro area credit institutions denominated in euro". In addition, this item contains liabilities in the amount of €391 million (2019: €199 million) arising from account balances pledged for deposit protection pursuant to the Deposit Guarantee Act (*Einlagensicherungsgesetz*) in conjunction with the Regulation on the Financing of the Compensation Scheme (*Entschädigungseinrichtungs-Finanzierungsverordnung*).

4 Liabilities to other euro area residents denominated in euro

Sub-item 4.1 "General government deposits" encompasses the balances of the Federal Government, its special funds, the state governments and other public depositors. The deposits of other public depositors constitute balances held by social security funds and local authorities. Owing to Eurostat statistical requirements, since 2020 this sub-item has also included the deposits of the European Stability Mechanism (ESM) and the European Financial Stability Facility (EFSF), which were reported under sub-item 4.2 "Other liabilities" in 2019. On 31 December 2020, general government deposits amounted to €195,996 million in all (2019: €51,737 million). On a daily average, the volume amounted to €167,365 million (2019: €59,217 million).

Sub-item 4.2 "Other liabilities" amounted to €13,701 million, compared with €36,200 million a year earlier. It mainly comprises deposits of financial intermediaries and individuals. The decrease of €22,498 million in sub-item 4.2 as at the reporting date is primarily due to the reclassification of ESM and EFSF deposits to sub-item 4.1 "General government deposits" in 2020 owing to Eurostat statistical requirements. In addition, liabilities to euro area counterparties other than credit institutions arising from bilateral repo transactions were included in this sub-item as at 31 December 2020. In these repo transactions, securities in the PSPP portfolio as well as PEPP public sector holdings are lent against cash as collateral, or in the case of simultaneous reverse repos, against Federal securities on a cash-neutral basis; the transactions have a maximum term of seven days. As at the end of the year, securities lending against cash as collateral gave rise to liabilities in the amount of €1,894 million (2019: €2,041 million), and securities lending against Federal securities resulted in liabilities of €939 million (2019: nil); the corresponding claims are reported in asset sub-item 11.3 "Other financial assets". On a daily average, the sub-item amounted to €20,127 million (2019: €44,253 million).

5 Liabilities to non-euro area residents denominated in euro

This balance sheet item, amounting to €256,804 million (2019: €179,986 million), contains the balances of non-euro area central banks, monetary authorities, international organisations and commercial banks held, inter alia, to settle payments. As at 31 December 2020, deposits of €243,214 million were attributable to non-euro area central banks and monetary authorities, of which €71,458 million was attributable to central banks within the European Union. On a daily average, the volume amounted to €74,947 million (2019: €102,180 million). Liabilities to non-euro area counterparties arising from bilateral repo transactions are also recorded in this item. In these repo transactions, securities in the PSPP portfolio as well as PEPP public sector holdings are lent against cash as collateral, or in the case of simultaneous reverse repos, against Federal securities on a cash-neutral basis; the transactions have a maximum term of seven days. As at the end of the year, securities lending against cash as collateral gave rise to liabilities in the amount of €3,686 million (2019: €623 million), and securities lending against Federal securities resulted in liabilities of €1,455 million (2019: €1,065 million); the corresponding claims are reported in asset item 4 "Claims on non-euro area residents denominated in euro".

6 Liabilities to euro area residents denominated in foreign currency

This item contains US dollar deposits of banks resident in the euro area and of the Federal Government.

7 Liabilities to non-euro area residents denominated in foreign currency

Foreign currency-denominated liabilities to banks outside the euro area are recorded in this item. These are liabilities in US dollars which have arisen from repos. As in the previous year, this item contained no holdings as at 31 December 2020.

8 Counterpart of special drawing rights allocated by the IMF

The counterpart of the special drawing rights (SDRs) allocated by the IMF free of charge corresponds to the allocations of SDRs to the Federal Republic of Germany from 1970 to 1972, from 1979 to 1981 and in 2009, which together totalled SDR 12,059 million (see asset sub-item 2.1 "Receivables from the IMF").

9 Intra-Eurosystem liabilities

The Bundesbank's liabilities to the ECB and to the other central banks participating in the Eurosystem are consolidated in this item.

Sub-item 9.1 contains "Liabilities related to the issuance of ECB debt certificates". The ECB issued no debt certificates in 2020.

Sub-item 9.2 "Net liabilities related to the allocation of euro banknotes within the Eurosystem" contains the liabilities arising from the application of the euro banknote allocation key (see liability item 1 "Banknotes in circulation"). As at the end of the year, these liabilities amounted to €473,098 million in total (2019: €435,764 million). The 8% share of the total value of euro banknotes in circulation attributable to the ECB (€1,434.5 billion) resulted in a liability of €30,253 million for the Bundesbank (according to its capital share of 26.4%). In addition, the difference between the Bundesbank's actual banknote issuance of €821,003 million and its notional share (again according to the capital share) in the allocation of the remaining 92% of euro banknotes in circulation to the balance sheets of the national central banks resulted in a liability of €442,845 million. The reason for the size of this liability was the Bundesbank's still disproportionately high share of banknote issuance (57.2%), which is largely due to net outflows of banknotes to other countries.

The net liabilities arising from other assets and liabilities within the Eurosystem would be shown in sub-item 9.3 "Other liabilities within the Eurosystem (net)". As at the end of 2020, the Bundesbank had a net claim, which is shown on the assets side under sub-item 9.4 "Other claims within the Eurosystem (net)" and outlined there.

10 Items in course of settlement

This item contains the liability items arising from payments still being processed within the Bundesbank.

11 Other liabilities

As at the end of 2020, as in the previous year, no holdings were reported under sub-item 11.1 "Off-balance-sheet instruments revaluation differences". These holdings are shown in asset sub-item 11.4.

Sub-item 11.2 "Accruals and income collected in advance" contains the accrued and collected income calculated as at 31 December 2020. This consists mainly of (accrued) interest expenses which are due in future financial years but were incurred in 2020 in connection with the negative remuneration of credit institutions' refinancing (particularly TLTRO-III).

Sub-item 11.3 "Sundry" mainly comprises the liabilities arising from Deutsche Mark banknotes still in circulation. Deutsche Mark banknotes are no longer legal tender. However, the Bundesbank has publicly undertaken to redeem Deutsche Mark banknotes that are still in circulation for an indefinite period. The Deutsche Mark banknotes still in circulation belong to the series BBk I/Ia and BBk III/IIIa. In accordance with the accounting policies, the liabilities arising from Deutsche Mark banknotes still in circulation will continue to be reported until it is virtually certain that claims are no longer to be expected. In keeping with this, the reported liabilities arising from Deutsche Mark banknotes in circulation now comprise only notes of the BBk III/IIIa series in the amount of €1,771 million (2019: €1,786 million). In addition, there are still banknotes in circulation belonging to the BBk I/Ia series, which has already been derecognised, amounting to €1,188 million. Deposits of Deutsche Mark banknotes in 2020 totalled €20 million, of which €16 million consisted of the BBk III/IIIa series banknotes and €4 million of the BBk I/Ia series banknotes (see profit and loss item 11 "Other expenses").

12 Provisions

The provisions for general risks are created pursuant to the regulations governing the Bundesbank's annual accounts laid down in Section 26(2) of the Bundesbank Act. They are established to hedge against general risks associated with domestic and foreign business. The level of funds to be allocated to the provisions for gen-

Provisions

Provisions for	31.12.2020 € million	31.12.2019 € million	Year-on-year change € million	 %
General risks	18,824	16,400	2,424	14.8
Monetary policy operations	–	23	– 23	– 100.0
Direct pension commitments	6,212	6,033	179	3.0
Indirect pension commitments (supplementary pension funds for public sector employees)	638	594	45	7.5
Healthcare subsidy commitments to civil servants	1,674	1,601	73	4.6
Partial retirement scheme	15	10	5	51.2
Staff restructuring schemes	27	40	– 12	– 31.3
Other	99	85	14	16.0
Total	27,490	24,785	2,704	10.9

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eral risks is reviewed annually using value-at-risk and expected shortfall calculations, amongst others. These calculations consider the holdings of risk-bearing assets, their risk content, foreseeable changes to the risk situation, expected financial conditions in the coming year, and the statutory reserves (€2.5 billion). The Bundesbank's risks, which are determined using a model-based approach, relate, in particular, to exchange rate risk, default risk from the asset purchase programmes and credit risk arising from refinancing loans as well as interest rate risk. Compared with the previous year, the risk level is significantly higher overall. The main reason for the increase was higher interest rate risk and credit risk stemming from the APP and from the PEPP, which was launched in March 2020. Taking into account all of the aforementioned factors, the existing risk provisions were topped up by €2,424 million owing to the current risk assessment. The provisions for general risks thus amounted to €18,824 million as at 31 December 2020. A further increase in the risk provisions is expected to be reported in the annual accounts for 2021 as the higher risks in 2020 could only be partially covered. The risk assessment does not take account of the risks arising from the Bundesbank's TARGET2 claim on the ECB and from the issuance of euro banknotes. The Bundesbank could hypothetically be affected (in the case of the TARGET2 claim, only indirectly as an ECB shareholder) by the risk to which the Eurosystem would be exposed if a euro area country were to leave the single currency area and its central bank failed to settle its TARGET2 liability to the ECB or its banknote liabilities to the ECB (8% share) and the national central banks. It considers this scenario to be unlikely to materialise, however, which means that credit risk arising from Eurosystem liquidity-providing operations is ultimately the main risk factor.

In accordance with the Eurosystem's accounting policies, the ECB Governing Council decided in 2018 to establish a provision for the required impairment of one issuer's CSPP securities. Consistent with Article 32.4 of the Statute of the ESCB, the provision for monetary policy operations is set aside by each of the national central banks of the Eurosystem in proportion to their subscribed capital share. This provision (Bundesbank share as at 31 December 2019: €23 million) was reversed owing to the sale of the CSPP securities in question in 2020, which increased profit and loss item 5 "Net result of pooling of monetary income".

Provisions for post-employment benefit obligations (direct pension commitments and indirect pension commitments as a result of the Bundesbank's obligation to act as guarantor for

Discount rates and trends

Parameter	31.12.2020 %	31.12.2019 %
Discount rate for post-employment benefit obligations	2.38	2.75
Discount rate for comparable long-term staff obligations (healthcare subsidy commitments to civil servants)	1.73	2.11
Discount rate for short-term staff obligations (partial retirement scheme and staff restructuring schemes)	0.44	0.57
Wage trend	2.25	2.50
Career trend	0.50	0.50
Cost trend for healthcare subsidy commitments to civil servants	3.00	3.25
Pension trend for direct pension commitments	2.25	2.50
Pension trend for supplementary pension funds for public sector employees	1.00	1.00

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pension payments out of the supplementary pension funds for public sector employees) as well as for healthcare subsidy commitments to civil servants are valued on the basis of actuarial expert opinions prepared using current mortality tables (Heubeck 2018 G mortality tables) according to the entry age normal method (*Teilwertverfahren*) (for current staff) and the present value method (*Barwertverfahren*) (for pensioners and ex-civil servants with portable pension entitlements), taking into account discount rates and trends.

The discount rate used for post-employment benefit obligations is, in each case, a matched-maturity average market interest rate for the past ten years or, for healthcare subsidy commitments to civil servants, for the past seven years pursuant to the Regulation on the Discounting of Provisions (*Rückstellungsabzinsungsverordnung*). Pursuant to Section 253(6) of the Commercial Code, the amount saved by applying the ten-year rather than the seven-year period for calculating the average market interest rate for post-employment benefit obligations is subject to a restriction on distribution. In 2019, the ten-year rate (2.75%) and the seven-year rate (2.11%) resulted in an interest margin of 64 basis points, representing a difference of €720 million. In 2020, the interest margin came to 65 basis points (2.38% versus 1.73%), which, taking stock effects into account, resulted in a larger difference of €768 million.

Provisions for the partial retirement scheme and for payment commitments arising from staff restructuring schemes that had already been carried out as at the reporting date are valued based on actuarial expert opinions prepared using current mortality tables according to the present value method, or according to the entry age normal method in the case of the outstanding settlement amount for the partial retirement scheme, taking into account discount rates and trends. The discount rate is based on a matched-maturity average market interest rate for the past seven years pursuant to the Regulation on the Discounting of Provisions.

The other provisions are created for remaining holiday entitlement, overtime worked and positive balances of flexible working hours and long-term working hours accounts as well as for other uncertain liabilities.

Expenses in the amount of €710 million from marking up the provisions (including the effects of the change in the discount rates) are contained in profit and loss sub-item 1.2 "Interest expense". Profit and loss item 7 "Staff costs" shows a net amount saved of €362 million, with a total allocated amount of €334 million standing against a total utilisation (including effects of trend changes) of €696 million. Other changes in provisioning gave rise, on balance, to utilisation-related relief of €8 million in profit and loss item 11 "Other expenses" and of €7 million in profit and loss item 8 "Administrative expenses". The reversal of provisions resulted in income of €30 million in profit and loss item 6 "Other income".

13 Revaluation accounts

This item contains the disclosed hidden reserves from the initial valuation at the time of the changeover to market valuation as at 1 January 1999 (revaluation items "old") and the unrealised gains arising from market valuation as at 31 December 2020 (revaluation items "new").

Revaluation items "old"

A revaluation item "old" now remains only for gold. This item represents the difference between the market value of gold as at 1 January 1999 and the lower book value of gold prior to that date. On the balance sheet as at 31 December 1998, the book value for gold was 1 ozf = DEM 143.8065 (€73.5271), while the market value as at 1 January 1999 was 1 ozf = €246.368. Although the valuation gains arising from the initial valuation of the gold holdings are not eligible for distribution, they will be released under certain circumstances. Besides being released in the case of valuation losses on the gold position, a proportionate release will also take place in the event of net reductions if the end-of-year gold holdings are below their lowest end-of-year level since 1999.

Revaluation accounts

Item	Revaluation items "old"	Revaluation items "new"	Total as at 31.12.2020	Total as at 31.12.2019	Year-on-year change	
	€ million	€ million	€ million	€ million	€ million	%
Gold	18,685	140,270	158,956	138,604	20,351	14.7
US dollar	–	1,958	1,958	4,827	−2,869	– 59.4
SDR	–	–	–	144	– 144	– 100.0
Yen	–	198	198	260	– 62	– 23.7
Australian dollar	–	23	23	15	8	56.0
Canadian dollar	–	–	–	0	– 0	– 100.0
Chinese yuan (renminbi)	–	–	–	–	–	–
Securities in foreign currency	–	622	622	369	253	68.4
Total	18,685	143,072	161,757	144,220	17,537	12.2

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The reduction of 4,010 kg, or 0.1 million ozf, in the gold holdings resulted in the release of €22 million in the year under review, which was taken to profit and loss sub-item 2.1 "Realised gains/losses arising from financial operations".

Revaluation items "new"

The revaluation items "new" show, for the gold holdings, the net positions in each foreign currency and the securities portfolios in each category of security (securities identification number), the positive difference in each case between the market value on 31 December 2020 and their value at average amortised cost since 1 January 1999.

As regards gold, this acquisition cost is 1 ozf = €246.369. As at the end of 2020, the market value of the gold position exceeded its acquisition value, leading to a revaluation item of €140,270 million (2019: €119,897 million). In the case of the net foreign exchange positions in US dollars, Japanese yen and Australian dollars, the market values at year-end were also above their acquisition values (€1 = US$1.3313, €1 = ¥144.29 and €1 = A$1.6228, respectively), resulting in revaluation items. The market values of the net foreign exchange positions in SDRs, Canadian dollars and Chinese yuan (renminbi) were below their acquisition values as at the end of the year (€1 = SDR 0.8278, €1 = C$1.5483 and €1 = 7.9079 yuan, respectively), resulting in valuation losses (see profit and loss sub-item 2.2 "Write-downs on financial assets and positions").

The valuation gains on foreign currency-denominated securities shown on the balance sheet result predominantly from US Treasury notes (€563 million). However, for a small portion of the foreign currency-denominated securities, the relevant acquisition values were higher than their corresponding market values on the reporting date, resulting in valuation losses (see profit and loss sub-item 2.2 "Write-downs on financial assets and positions"). In principle, securities denominated in euro are carried at amortised cost.

14 Capital and reserves

In accordance with Section 2 of the Bundesbank Act, the Bank's capital, amounting to €2.5 billion, is owned by the Federal Republic of Germany. As in the previous year, the statutory reserves pursuant to the Bundesbank Act are at the fixed upper limit of €2.5 billion laid down in Section 27 No 1 of the Bundesbank Act. (Other) reserves, which contain the difference arising from the discounting of post-employment benefit obligations, which is subject to a restriction on distribution pursuant to Section 253(6) of the Commercial Code (see "General information on the annual accounts", liability item 12 "Provisions" and profit and loss item 12 "Allocation to/withdrawal from reserves owing to the restriction on distribution pursuant to Section 253(6) of the German Commercial Code (*Handelsgesetzbuch*)"), remained unchanged on the previous year, at €720 million.

15 Distributable profit

The profit and loss account for 2020 closed with a balanced annual result (2019: profit for the year of €5,825 million); as a result, there was no transfer to (other) reserves on account of the restriction on distribution pursuant to Section 253(6) of the Commercial Code (2019: withdrawal of €26 million; see "General information on the annual accounts", liability item 12 "Provisions" and profit and loss item 12 "Allocation to/withdrawal from reserves owing to the restriction on distribution pursuant to Section 253(6) of the German Commercial Code (*Handelsgesetzbuch*)").

Notes on the profit and loss account

1 Net interest income

This item shows interest income, net of interest expense. Net interest income was lower than in the previous year, dropping by €1,773 million to €2,870 million. Net interest income in foreign currency was down by €318 million owing to lower yields, while net interest income in euro declined by €1,455 million on account of higher negative interest on targeted longer-term refinancing operations (TLTRO-III).

1.1 Interest income

Interest income in foreign currency fell from €943 million in 2019 to €546 million in 2020 owing to lower yields. Interest income in euro decreased by €66 million year on year to €4,927 million. Interest income from the negative remuneration of credit institutions' deposits rose by €360 million to €2,726 million owing to the year-on-year increase in holdings and the lowering of the deposit facility rate from -0.4% to -0.5% in September 2019; this was despite the two-tier remuneration system introduced in October 2019 (see liability sub-item 2.1 "Current accounts"). During the reporting year, as in the previous year, no income arose from the TARGET2 claim on the ECB as a consequence of the lowering of the main refinancing rate to 0% as from March 2016. Income from securities held for monetary policy purposes relating to the terminated purchase programmes (SMP and CBPP/CBPP2) declined by €296 million to a total of €386 million on account of the annual average decrease in holdings of €5.5 billion as securities reached maturity. Equally, in the case of the current programmes (CBPP3, PSPP and CSPP as well as PEPP), even though holdings increased, lower yields caused interest income to decrease on balance, falling by €527 million to a total of €58 million. For example, interest income in the CBPP3 portfolio declined from €211 million in 2019 to €194 million owing to lower remuneration, despite an annual average increase in holdings of €3.8 billion. For the PSPP portfolio, a likewise slightly lower average rate of interest in the reporting year gave rise to a net result of -€150 million; of this, €142 million was attributable to fixed income securities (2019: €128 million) and -€292 million to inflation-linked bonds (2019: -€14 million). In the CSPP portfolio, owing to the annual average increase in holdings of €10.4 billion and a rise in the average rate of interest to 0.68% (2019: 0.60%), interest income climbed by €103 million. Interest income in the PEPP corporate sector portfolio came to €37 million, whereas the PEPP public sector portfolio and PEPP covered bonds portfolio gave rise to negative interest income of -€386 million and -€1 million, respectively. Given virtually unchanged holdings and an average interest rate of 0.83% (2019: 0.95%), the Bundesbank's own funds portfolio saw its interest income contract by €16 million. Interest income arising from the negative remuneration of euro balances held by domestic and foreign depositors rose by €421 million because

Net interest income

Item	2020 € million	2019 € million	Year-on-year change € million	Year-on-year change %
Interest income in foreign currency				
IMF	42	201	– 159	– 79.2
Reverse repo transactions	14	79	– 65	– 81.9
Securities	437	602	– 164	– 27.3
Other	52	62	– 10	– 15.4
Subtotal	546	943	– 397	– 42.1
Interest income in euro				
Deposits of credit institutions (negative interest)	2,726	2,366	360	15.2
TARGET2 claim on the ECB	–	–	–	–
SMP portfolio	350	614	– 264	– 43.0
CBPP and CBPP2 portfolio	36	67	– 32	– 46.8
CBPP3 portfolio	194	211	– 17	– 8.1
PSPP portfolio	– 150	113	– 263	.
CSPP portfolio	363	260	103	39.5
PEPP covered bonds portfolio	– 1	–	– 1	.
PEPP public sector portfolio	– 386	–	– 386	.
PEPP corporate sector portfolio	37	–	37	.
Claims arising from the transfer of foreign reserves to the ECB	–	–	–	–
Own funds portfolio (financial assets)	94	110	– 16	– 14.2
Euro balances of domestic and foreign depositors (negative interest)	1,587	1,166	421	36.1
Repo transactions (negative interest)	29	38	– 9	– 23.7
Other	47	47	0	0.6
Subtotal	4,927	4,993	– 66	– 1.3
Total interest income	5,473	5,936	– 463	– 7.8
Interest expense in foreign currency				
IMF	30	148	– 118	– 79.6
Repo transactions	1	6	– 5	– 82.9
Other	46	2	44	.
Subtotal	77	157	– 80	– 50.8
Interest expense in euro				
Refinancing operations (negative interest)	1,773	338	1,435	425.1
Liabilities arising from the allocation of euro banknotes	–	–	–	–
Claims arising from central bank services (negative interest)	23	20	4	18.4
Marking up of staff provisions	710	756	– 46	– 6.1
Reverse repo transactions (negative interest)	20	24	– 3	– 14.1
Other	0	0	– 0	– 26.6
Subtotal	2,526	1,137	1,389	122.2
Total interest expense	2,603	1,293	1,310	101.3
Net interest income	2,870	4,643	– 1,773	– 38.2

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Net result of financial operations, write-downs and risk provisions

Item	2020	2019	Year-on-year change	
	€ million	€ million	€ million	%
Realised gains/losses				
Gold	184	113	71	63.0
Foreign currency	484	392	91	23.3
Securities	430	311	119	38.2
Subtotal	1,097	816	281	34.5
Write-downs				
Foreign currency	– 217	– 0	– 217	.
Securities	– 13	– 35	23	63.9
Subtotal	– 230	– 35	– 194	– 548.8
Transfer to/from provisions for general risks, foreign exchange risks and price risks	– 2,424	1,500	– 3,924	.
Total	– 1,557	2,281	– 3,837	.

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of increased average holdings. Bilateral repo transactions (see liability item 3 "Other liabilities to euro area credit institutions denominated in euro", liability sub-item 4.2 "Other liabilities" and liability item 5 "Liabilities to non-euro area residents denominated in euro") resulted in interest income of €29 million (2019: €38 million).

1.2 Interest expense

There was a year-on-year increase of €1,310 million to €2,603 million in interest expense. As regards monetary policy refinancing operations, the higher interest expense of €1,773 million compared with €338 million in 2019 stemmed, in particular, from the lowering of the minimum interest rate for TLTRO-III (initially to the deposit facility rate, then to 50 basis points below the deposit facility rate as from 24 June 2020; see asset item 5 "Lending to euro area credit institutions related to monetary policy operations denominated in euro") and the annual average increase in take-up of €123.0 billion. Owing to the lowering of the main refinancing rate to 0% as from March 2016, there was, as in the previous year, no interest expense for the remuneration of the intra-Eurosystem balances arising from the allocation of euro banknotes (see "General information on the annual accounts"). Expenses arising from the marking up of staff provisions decreased by €46 million (see liability item 12 "Provisions"). Bilateral repo transactions (see asset item 4 "Claims on non-euro area residents denominated in euro", asset item 6 "Other claims on euro area credit institutions denominated in euro" and asset sub-item 11.3 "Other financial assets") resulted in an interest expense of €20 million (2019: €24 million).

2 Net result of financial operations, write-downs and risk provisions

Realised net income from foreign currency transactions reported in sub-item 2.1 mainly concerns transactions involving US dollars (€474 million) and special drawing rights (€8 million). Realised gains on sales of securities primarily relate to US Treasury notes (€388 million; 2019: €246 million).

Write-downs in sub-item 2.2 chiefly result from exchange rate losses on special drawing rights as well as valuation losses on US Treasury notes.

Sub-item 2.3 "Transfer to/from provisions for general risks, foreign exchange risks and price risks" contains the increase of €2,424 million in the provisions for general risks (see liability item 12 "Provisions").

3 Net income from fees and commissions

Net income from fees and commissions came to €55 million, compared with €56 million in the previous year.

4 Income from participating interests

This item contains the Bundesbank's income from its participating interests in the ECB and the BIS. The total income of €579 million (2019:

Net income from fees and commissions

Item	2020	2019	Year-on-year change	
	€ million	€ million	€ million	%
Income				
Cashless payments	26	26	0	0.1
Cash payments	6	7	− 1	− 14.3
Securities business and security deposit business	51	43	8	17.9
Other	22	24	− 2	− 10.0
Subtotal	104	100	4	4.2
Expense				
Securities business and security deposit business	41	36	5	13.0
Other	9	9	0	3.6
Subtotal	49	45	5	11.2
Total	55	56	− 1	− 1.3

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€491 million) is equivalent to the Bundesbank's share of the ECB's profit distributions for financial years 2019 and 2020. The share of the ECB's interim profit distribution for financial year 2020 is €332 million (2019: €378 million for financial year 2019); a further €247 million came from the (remaining) profit distribution for financial year 2019 which took place in February 2020 (2019: €98 million for financial year 2018).

5 Net result of pooling of monetary income

This item comprises expenditure of €756 million overall in 2020. Risk provisioning for Eurosystem monetary policy operations resulted in income of €23 million (2019: €18 million; see liability item 12 "Provisions"). Expenditure from the pooling of monetary income amounted on balance to €779 million (2019: €138 million).

Monetary income of the Eurosystem national central banks is pooled in accordance with a decision taken by the Governing Council of the ECB.[5] Since 2003, the amount of monetary income allocated to each national central bank has been measured on the basis of the actual income that derives from the earmarked assets that each holds as a counterpart to its liability base.

The liability base contains, in particular, the following items: liability item 1 "Banknotes in circulation", liability item 2 "Liabilities to euro area credit institutions related to monetary policy operations denominated in euro", liability sub-item 9.2 "Net liabilities related to the allocation of euro banknotes within the Eurosystem" and the TARGET2 net liability contained in liability sub-item 9.3 "Other liabilities within the Eurosystem (net)". All interest paid on these items or received on them owing to the negative remuneration decreases or increases the amount of monetary income to be transferred by the national central bank concerned.

A national central bank's earmarked assets consist mainly of the following items: asset item 5 "Lending to euro area credit institutions related to monetary policy operations denominated in euro", asset sub-item 7.1 "Securities held for monetary policy purposes", asset sub-item 9.2 "Claims equivalent to the transfer of foreign reserves to the ECB", asset sub-item 9.3 "Net claims related to the allocation of euro banknotes within the Eurosystem", the TARGET2 net claim contained in asset sub-item 9.4 "Other claims within the Eurosystem (net)" and a limited amount of the national central banks' gold

5 Decision of the European Central Bank of 3 November 2016 on the allocation of monetary income of the national central banks of Member States whose currency is the euro (ECB/2016/36), as last amended by the Decision of the European Central Bank of 12 November 2020 (ECB/2020/55).

holdings corresponding to their share in the fully paid-up capital of the ECB. It is assumed that no income is generated from the gold and that the covered bonds purchased under the CBPP and CBPP2 as well as the government bonds (including regional government bonds and bonds issued by eligible agencies located in the euro area) purchased under the PSPP and PEPP generate income commensurate with the applicable main refinancing rate, as the ECB Governing Council has ruled out the possibility of pooling the risk and returns arising from these instruments among the national central banks.

If the value of a national central bank's earmarked assets exceeds or falls short of the value of its liability base, the difference is offset by applying the main refinancing rate to the value of the difference. At the end of each financial year, the total monetary income transferred by all national central banks is allocated to the national central banks in proportion to their respective shares in the fully paid-up capital of the ECB. The transfer and allocation can cause redistribution effects among the national central banks under two conditions in practice. First, earmarked assets or liabilities as part of the liability base must have an interest rate that is different from the main refinancing rate (such as, for instance, the excess reserves remunerated at the deposit facility rate or TLTRO-II and TLTRO-III operations remunerated at individual rates). Second, the pro rata share of these earmarked assets or liabilities on the balance sheet of the respective national central bank must be higher or lower than its share in the ECB's capital. For example, the Bundesbank's average share of the Eurosystem's total TLTRO-III holdings, at around 16.9%, is well below the Bundesbank's capital share of 26.4%; the resultant disproportionately high interest expenses of the other national central banks are balanced out via the common pool of monetary income.

On aggregate, the pooling of monetary income resulted in a net expense of €779 million for the Bundesbank (2019: €138 million). This balance represents the difference between the €1,903 million (2019: €3,115 million) in monetary income paid by the Bundesbank into the common pool and the Bundesbank's claim of €1,124 million (2019: €2,977 million) – corresponding to the Bundesbank's share of the ECB's paid-up capital – on the common pool.

Consistent with Article 32.4 of the Statute of the ESCB, the Governing Council of the ECB had in 2018 identified a need to recognise an impairment on one issuer's CSPP securities. The Bundesbank had set aside a provision commensurate with its capital share at that time of 25.6% (2019: €23 million), which was reversed in 2020 following the sale of the securities (in order to offset pro rata the realised loss pooled by another national central bank; see liability item 12 "Provisions").

6 Other income

Other income amounted to €158 million, compared with €155 million in 2019. Of this, €75 million (2019: €67 million) was attributable to the contributions of the Eurosystem national central banks to the costs of developing and running Eurosystem services, €30 million (2019: €44 million) to the reversal of provisions (see liability item 12 "Provisions"), €19 million to rental income (as in 2019) and €1 million to proceeds from the sale of land and buildings (2019: €2 million).

7 Staff costs

Staff costs fell from €933 million to €601 million year on year. Expenditure on post-employment benefits decreased by €378 million owing to lower trends for staff provisions (see liability item 12 "Provisions"). Excluding transfers to staff provisions, staff costs rose by 3.7%. This was attributable to the general pay rises for salaried staff and civil servants as well as higher staff numbers.

The remuneration received by each member of the Executive Board is published in the Annual Report in accordance with item 9 of the "Code of Conduct for the members of the Executive Board of the Deutsche Bundesbank". For 2020, the President of the Bundesbank

Staff costs

Item	2020 € million	2019 € million	Year-on-year change € million	Year-on-year change %
Salaries and wages	664	618	46	7.5
Social security contributions	91	92	– 0	– 0.3
Expenditure on post-employment benefits	– 155	223	– 378	– 169.3
Total	601	933	– 332	– 35.6

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received a pensionable salary of €398,663.66, special non-pensionable remuneration of €76,693.78 and a standard expenses allowance of €5,112.96, amounting to a total of €480,470.40. The Vice-President of the Bundesbank received a pensionable salary of €318,930.94, special non-pensionable remuneration of €61,355.03 and a standard expenses allowance of €3,067.80, amounting to a total of €383,353.77 for 2020. The other members of the Executive Board each received a pensionable salary of €239,198.32, special non-pensionable remuneration of €46,016.27 and a standard expenses allowance of €2,556.48, amounting to a total of €287,771.07 each for the year 2020.

Total remuneration payments to serving and former members of the Executive Board, former members of the Bundesbank's Directorate and of the Executive Boards of the Land Central Banks, including their surviving dependants, amounted to €10,858,761.72 in 2020.

8 Administrative expenses

Administrative expenses increased from €485 million in 2019 to €510 million. This item shows not only operating expenditure but also, in particular, expenditure of €198 million on computer hardware and software (2019: €163 million) and of €99 million on office buildings (2019: €97 million) as well as expenditure of €63 million on Eurosystem services (2019: €51 million).

9 Depreciation of tangible and intangible fixed assets

Depreciation of land and buildings, of furniture and equipment including computer equipment and of software amounted to €124 million, compared with €107 million in 2019 (see asset sub-item 11.2 "Tangible and intangible fixed assets").

10 Banknote production services

Expenditure on banknote production services decreased by €44 million year on year to €78 million; in 2019, partial deliveries from print contracts actually attributable to 2018 had increased this expenditure.

11 Other expenses

Other expenses amounted to €36 million (2019: €32 million) and contained, in particular, expenditure on residential buildings amounting to €25 million as well as expenditure on the encashment of the BBk I/Ia series Deutsche Mark banknotes, which are no longer shown on the balance sheet, in the amount of €4 million (see liability sub-item 11.3 "Sundry").

In 2020, the Bundesbank's donations totalled €707,004.82, including €428,359.53 for research projects, €158,945.29 for other specific projects, €82,200.00 for scholarships and prize money, and €37,500.00 for institutional financial assistance.

12 Allocation to/withdrawal from reserves owing to the restriction on distribution pursuant to Section 253(6) of the German Commercial Code (Handelsgesetzbuch)

Pursuant to Section 253(6) of the Commercial Code, the amount saved by applying the ten-year rather than the seven-year period for calculating the average market interest rate at which to discount post-employment benefit obligations is subject to a restriction on distribution. This amount rose by €48 million to €768 million in 2020 (see "General information on the annual accounts", liability item 12 "Provisions" and liability item 14 "Capital and reserves"). As the annual accounts for 2020 do not provide for the distribution of profit, there was no transfer to reserves either (2019: withdrawal of €26 million).

Annex

The Deutsche Bundesbank: key figures

Staff[1]	2019	2020
Core staff (full-time equivalents)	10,193	10,407
– Contraction since 31 December 2001[2]	4,607 (= 31.1%)	4,393 (= 29.7%)

Locations/core staff (full-time equivalents)[1]	2019	2020
Central Office	1 / 5,066	1 / 5,240
Regional Offices	9 / 2,705	9 / 2,726
Branches	35 / 2,422	35 / 2,441

Annual accounts[1]	2019	2020
Distributable profit	€5,851 million	–
Net interest income	€4,643 million	€2,870 million
Total assets	€1,779,846 million	€2,526,558 million
Foreign reserve assets (total)	€199.3 billion	€219.1 billion
– Foreign currency	€32.0 billion	€30.1 billion
– Receivables from the IMF	€20.7 billion	€22.2 billion
– Gold	(3,367 t) €146.6 billion	(3,362 t) €166.9 billion
Allocation across the various storage locations		
Frankfurt	(1,710 t) €74.4 billion	(1,710 t) €84.9 billion
New York	(1,236 t) €53.8 billion	(1,236 t) €61.4 billion
London	(420 t) €18.3 billion	(416 t) €20.7 billion

ECB capital key[1]	2019	2020
Share of subscribed capital	18.3670%	21.4394%
Share of paid-up capital	26.3827%	26.3615%
Amount of the participating interest in the ECB	€1.99 billion	€2.00 billion
Foreign reserve assets transferred to the ECB	€10.64 billion	€10.64 billion

Money market transactions	2019	2020
Open market operations in the euro area[3]		
– Main refinancing operations	€4.38 billion	€0.93 billion
– Longer-term refinancing operations[4]	€696.64 billion	€1,252.55 billion
of which counterparties of the Bundesbank	€84.84 billion	€208.04 billion
– Banks participating in the main refinancing operations (average) / of which via the Bundesbank	30 / 8	16 / 6
Standing facilities[3]		
– Marginal lending facility in the euro area	€0.09 billion	€0.01 billion
– Deposit facility in the euro area	€524.86 billion	€199.31 billion
Asset purchase programmes (Bundesbank's share)[1]		
CBPP3 portfolio	€61.8 billion	€68.8 billion
PSPP portfolio	€451.3 billion	€490.8 billion
CSPP portfolio	€44.7 billion	€60.6 billion
PEPP public sector portfolio	–	€154.7 billion
PEPP corporate sector portfolio	–	€7.0 billion
PEPP covered bonds portfolio	–	€0.7 billion

1 As at 31 December. 2 Core staff (full-time equivalents) as at 31 December 2001 (year before the structural reform began): 14,800. 3 Daily average of the individual amounts outstanding. 4 Including targeted longer-term refinancing operations (TLTROs).

Cash payments	2019	2020
Volume of euro banknotes in circulation (Eurosystem)[1]	€1,292.7 billion	€1,434.5 billion
Volume of coins in circulation (Eurosystem)[1]	€30.0 billion	€30.4 billion
Returned DEM banknotes and coins	DEM 84.5 million	DEM 57.2 million
Unreturned DEM banknotes and coins	DEM 12.45 billion	DEM 12.40 billion

Incidence of counterfeit money in Germany	2019	2020
Euro banknotes (number)	55,200	58,800
Euro coins (number)	42,100	44,800

Cashless payments	2019	2020
Payments via the Bundesbank (number of transactions)	5,397.6 million	6,266.5 million
of which via RPS	5,302.6 million	6,148.8 million
of which via TARGET2-BBk	92.2 million	114.9 million
– payment transactions in T2 and TIPS	47.5 million	48.2 million
– settlement of securities transactions in T2S	44.7 million	66.7 million
Payments via the Bundesbank (value)	€224.7 trillion	€245.5 trillion
of which via RPS	€3.5 trillion	€3.7 trillion
of which via TARGET2-BBk	€219.6 trillion	€240.6 trillion
– payment transactions in T2 and TIPS	€180.1 trillion	€187.2 trillion
– settlement of securities transactions in T2S	€39.5 trillion	€53.4 trillion
Share of TARGET2-BBk transactions in EU-wide TARGET2 system (number of payment transactions)	~ 54%	54.3%

Banking supervision	2019	2020
Number of institutions supervised	3,039	2,983
On-site inspections[5]	203	113

Cooperation with foreign central banks	2019	2020
Training and advisory events[5]	254	239
– Number of participants (total)	4,149	3,713
– Number of participating countries (total)	98	89

Selected economic publications (editions/circulation)	2019	2020
Annual Report	1 / 7,700	1 / 7,400
Financial Stability Review	1 / 7,000	1 / 5,500
Monthly Report	12 / 7,500	12 / 7,450
Statistical Supplements[6]	60 / –	15 / –
Research Centre Discussion Papers	49 / 300	67 / 300
Publications in academic journals	85	75

External communication/public relations	2019	2020
Visitors to the Money Museum[5]	49,376	14,097
Economic education events / number of participants[5]	2,444 / 73,893	1,107 / 30,721
Written answers to queries	11,431	11,543
Press releases	357	443
Training sessions on counterfeit prevention / number of participants[5]	2,300 / 49,000	560 / 12,000

5 Due to the COVID-19 pandemic, in-person events, museum visits and inspection activities only took place to a limited extent in 2020. **6** Only available in electronic form. The Statistical Supplements were published up to and including March 2020.

Branches of the Deutsche Bundesbank on 31 December 2020

Locality number	Bank location	Locality number	Bank location
720	Augsburg	860	Leipzig
		545	Ludwigshafen
100	Berlin		
480	Bielefeld	810	Magdeburg
430	Bochum	550	Mainz
		700	Munich
870	Chemnitz		
370	Cologne		
		150	Neubrandenburg
440	Dortmund	760	Nuremberg
300	Düsseldorf		
		280	Oldenburg
820	Erfurt	265	Osnabrück
360	Essen		
		750	Regensburg
500	Frankfurt/Main	640	Reutlingen
680	Freiburg	130	Rostock
260	Göttingen	590	Saarbrücken
		600	Stuttgart
450	Hagen		
200	Hamburg	630	Ulm
250	Hanover		
		694	Villingen-Schwenningen
660	Karlsruhe		
570	Koblenz	790	Würzburg

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Staff of the Deutsche Bundesbank on 31 December 2020*

Item	Staff numbers[1]				Year-on-year changes			
	Total	Regional offices	Branches	Central Office	Total	Regional offices	Branches	Central Office
Civil servants	6,170	1,604	972	3,594	111	26	-53	138
Salaried staff	5,852	1,483	1,714	2,655	144	-23	76	91
Total	12,022	3,087	2,686	6,249	255	3	23	229
of which: trainees	736	107	27	602	39	-10	1	48
Remainder: core staff	11,286	2,980	2,659	5,647	216	13	22	181
Memo item: core staff pro rata (full-time equivalents)	10,407.3	2,725.5	2,441.4	5,240.4	214.1	20.7	19.0	174.4

		End-2020	End-2019
*	Not included:		
	Members of staff on secondment	85	111
	Members of staff on unpaid leave	243	253
	Members of staff in the second phase of the partial retirement scheme	56	45
1	Of which: part-time employees	3,122	3,067
	Of which: staff with temporary contracts	329	288

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Offices held by members of the Executive Board of the Deutsche Bundesbank

Pursuant to the Code of Conduct for members of the Executive Board of the Deutsche Bundesbank, the Annual Report shall disclose details of offices held by Board members on supervisory boards or similar inspection bodies of business enterprises.[1]

The Board members hold the offices indicated below.

– Dr Jens Weidmann, President:
  Chairman of the Board of Directors, BIS;
  Member of the Financial Stability Board (FSB);[2]
  Vice-President of Deutsches Aktieninstitut[2]

– Professor Claudia Buch, Vice-President:
  Member of the Board of Trustees, Monetary Stability Foundation

– Professor Joachim Wuermeling:
  Alternate, Board of Directors, BIS

1 Membership of other official bodies is not listed.
2 Ex officio.