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Executive summary

The objective

This report monitors the evolution of asset encumbrance \(^1\) and contributes to the ongoing assessment of the composition of funding sources across EU banks. It can be read in conjunction with the EBA’s forward-looking analysis of banks’ funding plans.\(^2\)

Asset encumbrance ratio is stable ...

The 2018 data show a stable level of asset encumbrance across the EU compared with 2017. The ratio of encumbered assets and collateral received\(^3\) to total assets and collateral received was 27.9% in December 2018, as in 2017. The ratio is higher, however, than in 2016 (26.6%) or 2015 (25.6%). While the modest increases in recent years have not been a major source of concern, the stability of the ratio in 2018 provides some comfort. It is the result of an almost equivalent increase in the numerator and the denominator of the ratio (+1.8% and +1.7%, respectively).

... but it is higher in countries where covered bonds are widespread or reliance on central bank funding remains material

In terms of banks’ business models, the highest levels of encumbrance are again reported by specialised mortgage institutions. As in previous years, a high level of encumbrance is reported in countries where there are large and established covered bond markets (e.g. the Nordic countries), where there is a high share of central bank funding (e.g. countries that were affected by the sovereign debt crisis, such as Greece and Italy) and where repurchase agreements have traditionally played a significant role in the financial markets (e.g. the UK and France).

Countries affected by the sovereign debt crisis are improving rapidly

Countries that have been affected by sovereign debt tensions still show elevated asset encumbrance ratios, in line with the findings of previous reports. Whereas during previous years the levels of central bank funding increased, in 2018 the asset encumbrance ratios of these countries largely improved and their reliance on central bank funding fell significantly. More specifically, the ratios were 23.9% for Greek banks (31.6% in 2017), 16.5% for Irish banks (19.1%) and 17.6% for Portuguese banks (19.1%). The share of central bank funding in

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\(^1\) Following the publication of the relevant implementing technical standards in October 2013, since 2015 the EBA has been receiving quarterly data on asset encumbrance.

\(^2\) EBA report on funding plans, July 2019.

\(^3\) Details on the calculation of the asset encumbrance ratio, together with the definition of encumbered assets and collateral and a description of the sample, are provided in Annexes I and II.
total sources of encumbrance in these countries has decreased further, with the most considerable decrease recorded by Greek banks, down from 61.2% in 2017 to 26.6% in 2018. However, as observed in the previous report, due to the relatively low volume of assets in countries reporting this development, their encumbrance levels make only a marginal contribution to the EU aggregate encumbrance ratio.

Most important sources of asset encumbrance

Repurchase agreement (repo) financing is still the most important source of asset encumbrance in the EU. In fact, repos as a percentage of encumbered assets have increased from 27% in 2017 to 30% in 2018. They continue to form a significant share of encumbrance in the UK and France, where they account for 44% and 34%, respectively, of encumbered assets. The second most important source of encumbrance was ‘other sources’ at 25%, down from 26% in 2017. The shares of covered bonds (17%) and central bank funding (10%) in total asset encumbrance slightly decreased compared with the previous year.

Encumbrance of central bank-eligible assets

Assets’ eligibility for central bank funding allows a comparison of the level of encumbrance with the amount of assets that could be easily encumbered. This shows that the encumbrance of central bank-eligible assets in the EU also remained roughly stable, at 47% in December 2018, compared with 2017, although this represented a slight increase from 44% in 2016. Central bank eligibility can be regarded as a proxy for the overall marketability of assets. As in previous years, wide dispersion can be observed in the level of encumbrance of central bank-eligible assets among countries and banks.

Monitor the dispersion across countries and the increased reliance on repos

The stability of asset encumbrance ratios is a positive sign for the funding structure of the European banking sector. Nevertheless, there are still significant differences across countries, both in the levels of encumbrance and in the distribution of sources of encumbrance. These need to be closely monitored, as does the increased reliance on repurchase agreements.
Analysis of the asset encumbrance of European banks

Sample and scope of the report

This report is based on December 2018 data. The sample covers 181 banks for which the EBA receives data based on the Implementing technical standards (ITS) on supervisory reporting. Further details on the definition of the sample can be found in Annex II. These banks accounted for EUR 32.3 trillion in total assets and EUR 6.2 trillion in collateral received.

Until the end of 2017, total volumes of encumbered and unencumbered assets followed a decreasing trend, which reversed slightly during the course of 2018 (Figure 1). In 2018, total assets increased by 0.6% (EUR 32.1 trillion in December 2017) and collateral received increased by 8% (EUR 5.8 trillion in December 2017).

Figure 1: Total assets (encumbered and unencumbered) and year on year (YoY) growth

Figure 2 shows the distribution of total assets by asset type, which has remained broadly unchanged compared with the previous year. In 2018, loans and advances other than loans on demand comprised the largest share of total assets, at 60.4% (58.4% in 2017). ‘Other assets’ slightly decreased to 16.5% (17.7% in 2017) and debt securities increased by 10 basis points to 12.5%.

Figure 2: Distribution of total assets by asset type

4 Historical data were used for this report as available at the cut-off date of 22 May 2019. As a result of resubmitted data from banks, historical values may differ from those in previous reports.
As in previous years, debt securities formed the largest proportion of total collateral received (Figure 3). Specifically, 80.9% of the collateral received was debt securities (78.2% in 2017), followed by equity instruments at 16.4% (18.9% in 2017).

Figure 2: Distribution of total assets (encumbered and unencumbered) by asset type, December 2018

Figure 3: Distribution of total collateral received available for encumbrance (encumbered and unencumbered) by collateral type, December 2018

**Total encumbrance**

The weighted average\(^5\) ratio of encumbered assets and collateral received relative to the total assets and total collateral received available for encumbrance remained unchanged from the previous year at 27.9%. This represents a halt in the upwards trend observed between 2014 and 2017, when the asset encumbrance ratio rose from 25.4% to 27.9% (see Figure 4).

This is the result of an increase in both the numerator (a 1.8% increase in encumbered assets and encumbered collateral) and the denominator (an increase of 1.7% in total assets and collateral received). Specifically, the total volume of encumbered assets and collateral increased in 2018 to EUR 10.7 trillion from EUR 10.6 trillion in 2017. The increase in the volume of total encumbered assets and collateral can be attributed mainly to the considerable increase in the volume of encumbered collateral (a 9% increase year on year), whereas the volume of encumbered assets slightly decreased since 2017 (~3% year on year). More specifically, the increase in encumbered collateral was driven by a 13% rise in encumbered debt securities received as collateral.

Figure 4 shows the wide dispersion of the asset encumbrance ratio across banks. However, dispersion across banks decreased between 2017 and 2018, with a decline in the encumbrance ratio of the 95th percentile from 63% in Q4 2017 to 52% in Q4 2018, whereas the ratio of the 5th percentile remained stable at around 1.5% during the same period.

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\(^5\)All weighted averages are computed as the ratio of the sum of the numerator across the sample to the sum of the denominator.
As in previous reports, the highest values, i.e. those above 80%, are mostly reported by specialised mortgage institutions, and encumbrance ratios for collateral received are significantly higher than encumbrance ratios for assets only.

Figure 4: Distribution of the asset encumbrance ratios of the banks in the EU (weighted average, median, interquartile range and the 5th and 95th percentiles)

Encumbrance by country

Figure 5 shows the distribution of total encumbered assets and collateral by country in December 2018. In general terms, the countries with the largest banking sectors usually show the highest absolute levels of encumbered assets and collateral. Thus, the UK (EUR 4 095 billion) and France (EUR 2 104 billion) showed the highest volumes, followed by Germany (EUR 1 377 billion).  

Figure 5: Distribution of asset and collateral encumbrance by country (billion EUR)

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6 It should be noted that these totals include subsidiaries; therefore, the total volume differs from the total encumbrance at consolidated level.
Figure 6 and Figure 7 present the distribution of the asset encumbrance ratio across countries and the change since December 2017. As in previous years, asset encumbrance ratios are relatively high in certain countries, such as the Nordic countries and Germany, in which there are large and established covered bond markets. The ratio is also high where there has been more use of central bank funding following sovereign debt challenges (e.g. in Greece and Italy), and in countries with a high share of repurchase agreement (repo) financing and collateral requirements for over-the-counter (OTC) derivatives (e.g. the UK and France).

The EU weighted average asset encumbrance ratio remained unchanged between 2017 and 2018, not least due to the stability in the ratios of countries with high volumes of encumbered assets and collateral and large banking sectors, such as the UK, France, Germany, Italy and Denmark. In contrast, some countries with smaller banking sectors registered significant variations (Figure 6).

The highest increases in the asset encumbrance ratio (in percentage points (p.p.)) between December 2017 and December 2018 were recorded in Iceland, Czechia and Norway. The asset encumbrance ratio of Greece decreased the most compared with other countries, followed by Latvia, Belgium and Romania. Greece’s decreasing asset encumbrance ratio is consistent with the trend in previous years, as Greek banks continue to reduce their reliance on central bank funding. Banks in other countries hit by the sovereign debt crisis, such as Ireland and Portugal, have also continued to reduce — in line with the trend in previous years — their reliance on central bank funding and hence their asset encumbrance ratios. Latvia’s asset encumbrance ratio decreased by 6.7 p.p. between December 2017 and December 2018, and it had the second lowest ratio (0.2%) among the European Economic Area (EEA) countries after Estonia (0% in 2018).

In addition, with the exception of Cyprus and Latvia (due to a change in the sample within the year) and Greece (which registered a significant decrease), all the countries showed stable trends throughout the last five quarters, with little volatility in their asset encumbrance ratios (Figure 7).
Figure 7: Weighted average asset encumbrance by country (December 2017-December 2018)
Encumbrance by asset class

Debt securities continue to account for the largest proportion of encumbered assets and collateral, with a share of 47.3% in 2018 (see Figure 8), an increase of 2.8 p.p. on the previous year. On the other hand, the share of loans and advances followed a decreasing trend and in 2018 these represented 37.6% of encumbered assets and collateral (38.8% in 2017 and 42% in 2016). As in previous years, the distribution of encumbered assets and collateral is marked by the high proportion of debt securities in encumbered collateral (more than 80%) and of loans and advances in encumbered assets (65.5%).

The distribution of unencumbered assets and collateral remained similar in 2018 to in 2017. In particular, loans and advances other than loans on demand slightly increased as a proportion of the total, from 54% to 56%, at the expense of equity instruments and other assets (see Figure 9). The distribution of unencumbered assets and collateral is more widely spread among asset classes than that of encumbered assets and collateral. In particular, ‘other assets’ account for a higher share of unencumbered assets, although the percentage has decreased slightly, from 20% in December 2017 to 18.2% in December 2018 (see Figure 9). Debt securities account for only 14.4% of the total unencumbered assets and collateral.

In terms of volumes, debt securities in encumbered assets and collateral increased by EUR 388 million (+8%), whereas equity instruments decreased in total by EUR 140 million (−11%). In terms of unencumbered assets and collateral, the largest increase was observed in loans and advances other than loans on demand, by EUR 842 million (+6%), and the largest decrease in volume in ‘other assets’ (EUR 422 million, −8%) (Figure 8 and Figure 9).

Figure 8: Volumes of encumbered assets and collateral by type (billion EUR)
Figure 9: Volumes of unencumbered assets and collateral by type (billion EUR)

Assets’ eligibility for central bank funding is a suitable proxy for the marketability of unencumbered assets. It allows a comparison of the level of encumbrance with the amount of assets that can effectively be encumbered, as not all unencumbered assets can be used to generate funding. For instance, only 6% of ‘other assets’ were encumbered in December 2018, but 53% of central bank-eligible ‘other assets’ were encumbered at the same point in time (see Figure 10 and Figure 11). Consistently with the previous year’s trend, the shares of both encumbered debt securities and encumbered equity instruments increased in 2018 (Figure 10).

Figure 10: Percentage of encumbrance of total assets and collateral and by type

The encumbrance of central bank-eligible assets remained roughly unchanged over the year at 47% (Figure 11). The largest increase was in the share of encumbered equity instruments (52%, up from 22% in 2017). Similarly, the dispersion of total central bank-eligible assets and collateral across countries remained wide, at between 0% and 66%, as also observed in the previous report.
Figure 11: Percentage of encumbrance of total central bank-eligible assets and collateral and by type

Sources of encumbrance

As in previous years, the main source of asset encumbrance — i.e. balance sheet liabilities for which collateral was posted by institutions across the sample — were repos. In 2018, the share of repos rose by 2.6 p.p. to 30% (Figure 12), whereas the share of most of the other sources of encumbrance was stable or declined somewhat. The bulk of EU repos are in the balance sheets of UK and French banks, where the shares of this source of encumbrance reach 44% and 34%, respectively. Beyond these countries, the shares of repos are particularly high in Czechia (73%) and Greece (48%). The latter was also the country that registered the largest variation in the share of repos as a source of encumbrance (+25 p.p.). In contrast, the shares of repos as a source of encumbrance decreased significantly in Malta (−14 p.p.) and Luxembourg (−7 p.p.).
The share of central bank funding as a source of encumbrance declined by 0.5 p.p. to 10%. Central bank funding was especially important for Latvian (93%) and Cypriot (83.9%) banks, although in the former the overall asset encumbrance ratio fell significantly. In 2018, those two countries showed the greatest increases in shares of central bank encumbrance (+87 p.p. and +4.7 p.p., respectively), along with Lithuania (+13.7 p.p.). On the contrary, the share of central bank funding declined substantially in Greece (−35 p.p.), as Greek banks have managed to partially replace central bank funding with repo funding. In other countries exhibiting high levels of central bank funding, the developments in this regard were diverse. For example, while the proportion decreased slightly in Italy (−0.8 p.p. to 34.2%), it rose in Portugal (+1.7 p.p. to 44.7%) and Spain (+4.5 p.p. to 30.7%).

As regards OTC derivatives, their share in total sources of encumbrance fell by 0.6 p.p. to 7.6%. Belgium (28.6%) and Finland (15%) are the countries where this source of encumbrance is most significant.

Finally, the share of ‘other sources of encumbrance’ decreased slightly, from 26% to 25%. This source is particularly relevant in countries where the overall asset encumbrance ratio is low, such as Bulgaria, Croatia and Malta, with shares above 60%. In addition, the UK (37.5%) and Germany (29.4%) have high shares of ‘other sources of encumbrance’.

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7 The category ‘Other sources of encumbrance’ comprises the nominal of loan commitments and financial guarantees received, the fair value of securities borrowed with non-cash-collateral and other sources.
The level of overcollateralisation (OC) — i.e. encumbered assets and collateral relative to the matching liabilities that institutions have to give — increased slightly, from 109.1% to 110.5%, during 2018 (Figure 14).

In 2018, central bank funding replaced asset-backed securities (ABS) issued as the type of liability with the highest OC. In fact, whereas central bank funding OC rose 4 p.p. to 128.7%, ABS OC fell 10 p.p. to 126.3%. Central bank OC is remarkably high in Cyprus (358%) and Lithuania (251%). As regards ABS, the OC levels are particularly elevated in the UK (148%), Portugal (136%) and Spain (133%). However, the Iberian countries registered a decrease in their ABS OC levels of more than 30 p.p. in 2018.

Repos were the third most overcollateralised liabilities at a level of 124.1%. Repo OC levels were above 1000% in Bulgaria. They were also high in Iceland (343%) (although repos in this country represent only 0.1% of sources of encumbrance), Lithuania (245%) and Greece (147%). However, whereas the Bulgaria, Iceland and Lithuania registered an increase in repo OC levels in 2018, a fall of 9 p.p. took place in Greece.

Finally, the difference in OC levels between exchange-traded derivatives (122.2%) and OTC derivatives (59.5%) is noteworthy. Moreover, a huge dispersion is observed among countries. In the case of exchange-traded derivatives, OC levels range from 27% in Croatia to more than 2000% in Finland, whereas for OTC derivatives the range goes from as low as 19%, also in Croatia, to as high as 3700% in Malta.
Figure 14: Encumbered assets and collateral relative to matching liabilities by type

BOX: A NEW EUROPEAN COVERED BOND FRAMEWORK

In April 2019, a political agreement was reached on the EU covered bond legislative package, consisting of a directive on the issue of covered bonds and covered bond public supervision and a regulation amending Regulation (EU) No 575/2013 as regards exposures in the form of covered bonds. The legislative package addresses the lack of harmonisation with regard to covered bonds issued across the EU by setting minimum common rules for all Member States. The directive provides a legal definition of the covered bond and harmonises the structural features of this instrument. The amendments to Regulation (EU) No 575/2013 (the CRR) strengthen the conditions that covered bonds need to meet, in addition to those set out in the directive, for credit institutions investing in them to apply the preferential prudential treatment provided for in Article 129 of that regulation.

The new directive defines covered bonds as ‘debt obligation[s] issued by a credit institution … secured by cover assets to which covered bond investors have direct recourse as preferred creditors’. Thus, the directive pins down the dual recourse mechanism by which, in case of insolvency or resolution, investors have a priority claim on the cover assets and, if they are insufficient to meet the outstanding obligations, also a claim on the insolvency estate of the issuer.

The directive also requires the segregation of cover assets to ensure that they are not included in the insolvency estate and to protect them from third party claims and lays down rules with respect to eligible cover assets, coverage, liquidity, transparency vis-à-vis investors, conditions for maturity extensions and rules on special public

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8 For derivatives, it should be taken into account that derivatives are reported on a gross basis under International Financial Reporting Standards, while collateral might be netted.
supervision. Furthermore, Member States may require banks to appoint a cover pool monitor to provide additional protection for investors.

With respect to cover assets, covered bonds should be backed by assets mentioned in Article 129 of the CRR (public loans, residential and commercial mortgage loans and ship loans) or by other high-quality cover assets, in particular loans to or guaranteed by public undertakings. In relation to liquidity requirements, the cover pool should include a liquidity buffer to cover the maximum cumulative net liquidity outflow for 180 days.

According to the amended CRR, covered bonds should have an overcollateralisation (OC) level\(^9\) of at least 5%. Member States may decide to reduce this level to 2% if the calculation of the OC is based either on a formal approach that takes into account the underlying risk of the assets or on a formal approach whereby the valuation of the assets is subject to mortgage lending value. Nonetheless, when the underlying assets are loans to or secured by public undertakings, the OC level cannot be lower than 10%. Currently, covered bonds liabilities in the EU are collateralised by assets equivalent to 114% of their value on average and four countries report an average OC level below 5%.

![Figure 15: Encumbered assets relative to matching covered bond liabilities (median, interquartile range and the 5th and 95th percentiles)](image)

Covered bonds fulfilling the requirements in the directive can use the label ‘European Covered Bond’. If they also comply with the requirements laid down in Article 129 of the CRR, they can use the label ‘European Covered Bond (Premium)’.

**Encumbrance by maturity**

In 2018, 58% of encumbered assets and collateral received had an open maturity or a maturity of less than 3 months (Figure 16). This is an increase of 1.3 p.p. on 2017 that could be related to the increase in the share of repos. In contrast, the share of encumbered assets and collateral received with a maturity of more than 2 years fell by 4.4 p.p. to 26.1%. This decline seems consistent with the fall in the share of covered bonds as a source of encumbrance in 2017 (–3 p.p.) and in 2018 (–0.3 p.p.) and with the decrease in the remaining maturity of longer-term central bank funding facilities.

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\(^9\) OC levels in the EU framework are expressed as the percentage that exceeds the value of the covered bonds issued. That means an OC level of 5% corresponds to an OC level of 105% in EBA terminology.
The amounts of short-term encumbered assets and collateral are significant in Luxembourg, the UK and Czechia. In Luxembourg, the main source of encumbrance was collateralised deposits, whereas in the UK and Czechia the encumbrance was mainly due to repos. Since these liabilities usually have an open maturity or short tenors, banks in those countries could be pledging mainly short-term assets.

By contrast, long-term assets and collateral represent a significant proportion of total encumbered assets and collateral in the Nordic countries, where covered bonds play a very important role, and also in countries such as Cyprus and Hungary.

**Figure 16: Distribution of encumbered assets and collateral by maturity**

![Chart showing distribution of encumbered assets and collateral by maturity](image)

**Conclusion**

The EBA monitors asset encumbrance to assess whether changes signal challenges or have broader implications for access to unsecured instruments. This report shows that the level of asset encumbrance has remained stable in 2018 compared with 2017, at 27.9%. The level of encumbered assets and collateral has increased in line with total assets and collateral received.

Despite the stable asset encumbrance on average, there are different trends across countries. Some of the countries with the largest banking sectors have recorded an increase in their banks’ asset encumbrance ratios (e.g. the UK, France and Italy). Nevertheless, these increases were compensated for by a decrease in the ratios of other countries also with large banking sectors (e.g. Germany, Spain, Belgium and Sweden). The largest decrease in the asset encumbrance ratio was in Greece, indicating less dependence on central bank funding on the part of the Greek banks, whereas Iceland registered the greatest increase.

The main source of asset encumbrance (i.e. balance sheet liabilities for which collateral was posted) continues to be repos. Their share has even increased somewhat this year, in contrast with the
broadly stable evolution of the rest of sources of encumbrance. The share of central bank funding decreased to 10%, partially reversing the 2 p.p. surge registered in 2017.
Annex I: The asset encumbrance ratio

The core metric applied in this report is the asset encumbrance ratio. The metric used as a basis for all analyses (unless stated otherwise) is the asset encumbrance ratio as defined in Commission Implementing Regulation (EU) No 2015/79. The asset encumbrance ratio is defined as equal to the encumbered assets of an institution and the collateral received by the institution and reused. Therefore, the formula is encumbered over total assets and collateral received:

$$AE\% = \frac{Total \text{ encumbered assets} + Total \text{ collateral received and reused}}{Total \text{ assets} + Total \text{ collateral received available for encumbrance}}$$

Collateral received was added to the definition, as it can be assumed that this is usually available to be reused for refinancing transactions. Here, assets are measured at the carrying amount, while collateral is measured at fair value. Additional selected analyses apply the same calculation for assets or collateral only. An asset is treated as encumbered if it has been pledged or if it is subject to any form of arrangement to secure, collateralise or credit enhance any transaction from which it cannot be freely withdrawn. This definition covers but is not limited to:

- secured financing transactions, including repurchase contracts and agreements, securities lending and other forms of secured lending;
- various collateral agreements, for instance collateral placed for the market value of derivative transactions;
- financial guarantees that are collateralised;
- collateral placed at clearing systems, central counterparties (CCPs) and other infrastructure institutions as a condition of access to service;
- central bank facilities;
- underlying assets from securitisation structures, where the financial assets have not been derecognised from the institution’s financial assets;
- assets in cover pools used for covered bond issuance.

Further details on the definitions of various metrics and the data reported can also be found in Annex III to Commission Implementing Regulation (EU) No 2015/79.

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10 Paragraphs 9-11 of Annex III.
Annex II: The sample

This report is based on the full sample of banks for which the EBA receives data on asset encumbrance as part of the EU-wide supervisory reporting data. The harmonised supervisory reporting framework (based on the EBA ITS on supervisory reporting) came into force during 2014.\(^\text{11}\) The EBA started collecting harmonised supervisory data based on the ITS from 195 banks in 29 EEA countries as of March 2015. As of December 2018, the sample in this report comprises 181 banks. The EBA received harmonised supervisory data from Iceland for the first time in March 2018. The sample of banks covers at least three banks from each country and, in addition, all large banks. In particular, the set of banks for which the EBA receives supervisory reporting data includes all institutions that fulfil at least one of the following criteria:

- The institution is one of the three largest institutions in a Member State, including banking groups at the highest level of consolidation and subsidiaries of foreign banking groups, measured by total assets. This criterion selects the top institutions at country level and also allows the analysis of average country-level data in countries in which banks are mostly subsidiaries of foreign institutions.

- The institution’s total assets are in excess of EUR 30 billion, both for institutions that represent the highest consolidation level of any given banking group and for non-EEA banking group subsidiaries. This criterion selects the largest banks at EU level.

- The institution’s 4-year average of total assets is in excess of 20% of the 4-year average of a Member State’s gross domestic product (GDP), both for institutions that represent the highest consolidation level of any given banking group and for non-EEA banking group subsidiaries. This last relative criterion ensures that institutions that are particularly relevant for a country are included in the sample regardless of whether they meet either of the other two criteria.

Other institutions may be added to the reporting sample by the EBA or by competent authorities.

Data for banks is generally included in this report at the highest level of consolidation in the EU. In country analyses, subsidiaries of banks from other Member States of the EU were also included. It should be noted that subsidiaries of EU parent institutions therefore appear for both countries — i.e. the country of the parent and that of the subsidiary — in all country-level analyses in this report but not in EU aggregates.

Banks are included in the data for each period included in this report if they were in the reporting sample for that period. This means that this report is not based on a balanced sample, and the sample may differ slightly over the different periods.
