Changes in banks' rating assignments in response to the COVID-19 pandemic

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In this study, we investigate how banks in Austria have reacted to the COVID-19 pandemic in their assignment of ratings to nonfinancial corporations. Relying on public information on beneficiaries of COVID-19 support measures, we focus in particular on changes in ratings of debtors that received state aid, e.g. in the form of public guarantees and direct grants. In the first waves of the pandemic, the overall rating structure of nonfinancial corporate exposures deteriorated, but since the second half of 2021, the rating structure has improved. We see that already before the pandemic, debtors that later received COVID-19 support were of lower creditworthiness than the nonfinancial sector average. Also, these debtors were affected to a greater extent by increases in the probability of default (PD) and rating downgrades.

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Keywords: financial stability, credit risk management, internal credit ratings, COVID-19 pandemic

An adequate and robust credit risk monitoring framework that enables banks to manage their credit risk exposure lies at the heart of banks' risk management processes. This includes a regular credit review that banks perform to identify any changes in debtors' risk profiles and creditworthiness; such reviews potentially necessitate updates of internal credit ratings.[2]

During the COVID-19 pandemic, it was challenging for banks to adequately assess their debtors' creditworthiness given the uncertainties surrounding the future course of the pandemic and resulting potential economic hardships. Thus, in this study, we investigate how banks in Austria have reacted to the COVID-19 pandemic in their assignment of internal ratings to nonfinancial corporate debtors. Relying on a publicly available database on the beneficiaries of COVID-19 support, we focus in particular on changes in the ratings of debtors that have received state aid, such as public guarantees and direct grants.

This study is structured as follows: Section 1 describes the methodology and the data we use in the analysis. In section 2, we describe corporate debtors' reliance on COVID-19 support measures, and in section 3 we discuss the changes we observed in debtors' creditworthiness. Section 4 concludes.

1 Data and methodology

We use descriptive statistical methods based on data from a combination of sources to analyze the changes in the ratings assigned by Austrian banks[3]. For credit exposures, we rely on granular credit and credit risk data reported by credit and financial institutions to the OeNB under Article 75 Austrian Banking Act. For

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[2] *For more details, see European Banking Authority (2020).*

[3] *The subsequent analysis covers all banks in Austria. For a breakdown by significant and less significant institutions see the annex.*

debtors that are not natural persons, exposures from EUR 25,000 must be reported. To allow for a comparison between pre-pandemic ratings and the rating assignments during the crisis, we use quarterly credit data starting from March 2019. For the analysis of rating changes, the probability of default (PD) is the key variable of interest in credit register data. The PD is mapped into an eight-bucket rating scale from 1 (lowest PD) to 8 (default). In order to assess changes in banks' rating assignments, the level of the analysis is the bank-debtor relationship. This means that different PDs can be reported for a single debtor in case a company has debt with multiple banks and these banks assign different internal PDs.

We combine credit register data with data from the European Commission on individual state aid as published in the State Aid Transparency Public Search on December 31, 2021.[4] These data include counterparty-level information on state aid awarded by the Austrian granting authorities in reaction to the COVID-19 pandemic. However, the following limitations regarding the scope of data need to be considered: First, based on the State Aid Temporary Framework adopted by the European Commission (see European Commission, 2020, and amendments), only individual aid measures above EUR 100,000 granted under the temporary framework need to be reported to the European Commission.[5] Second, state aid in the form of wage subsidies for employees, deferrals of tax and/or social security contributions as well as recapitalization measures do not have to be reported and are thus excluded from the scope of the State Aid Transparency Public Search. This is particularly important to consider as a significant share of support measures in Austria were granted by means of wage subsidy schemes (Rechnungshof Österreich, 2021). Third, member states must report state aid cases to the European Commission within 12 months. Thus, state aid granted in 2021 that is in the reporting scope might not be included in the data. Taking these limitations into account, this study includes only parts of the total aid granted by the Austrian authorities.[6]

Furthermore, with respect to the level of the analysis, it needs to be noted that we look at the nonfinancial corporate credit market, i.e. we consider the support measures from the credit perspective. To this end, we use the outstanding amount of debt[7] owed by nonfinancial corporations to banks in Austria. Debtors who have received COVID-19 support are flagged accordingly. However, the size of support (e.g. guarantee volumes) received is not taken into account.

2 Debtors that received COVID-19 support

In this section, we take a closer look at corporate debtors of Austrian banks that have received COVID-19-related government support. As shown in chart 1, in the early stage of the pandemic, starting from April 2020, COVID-19 support measures mainly took the form of public guarantees. Subsequently, direct grants such as fixed cost subsidies and compensation for lost turnover were also disbursed

[4] *The public database can be accessed at State Aid Transparency Public Search (europa.eu).*

[5] *For counterparties from the primary agriculture and in the fisheries sectors, a threshold of EUR 10,000 applies for reporting to the European Commission.*

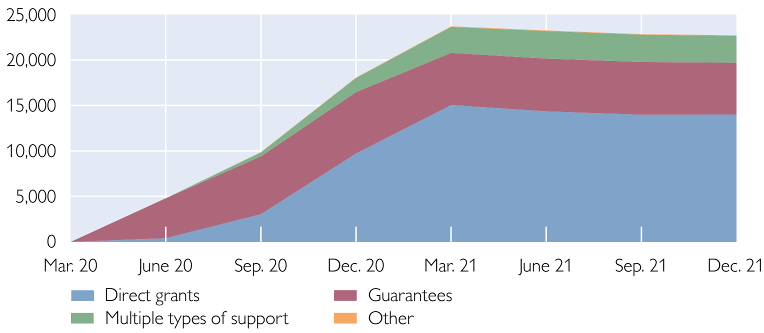
[6] *The list of COVID-19-related state aid cases under which aids were reported to the European Commission are listed in table 1 in the annex.*

[7] *The outstanding amount of debt refers to the amount that would have to be repaid by the debtor as at the reporting date, including any accrued interest, minus any amount transferred to another creditor, if applicable.*

to debtors of Austrian banks, with a sizable share of nonfinancial corporations receiving multiple types of COVID-19 support, e.g. direct grants and public guarantees. Since March 2021, the outstanding amount of debt owed by nonfinancial corporations that received COVID-19 support has stabilized and even decreased slightly. This has been driven by a reduction in newly reported aids in the Aid Transparency Public Search as well as debt repayments by nonfinancial corporations.

Chart 1

Outstanding debt of COVID-19 support beneficiaries



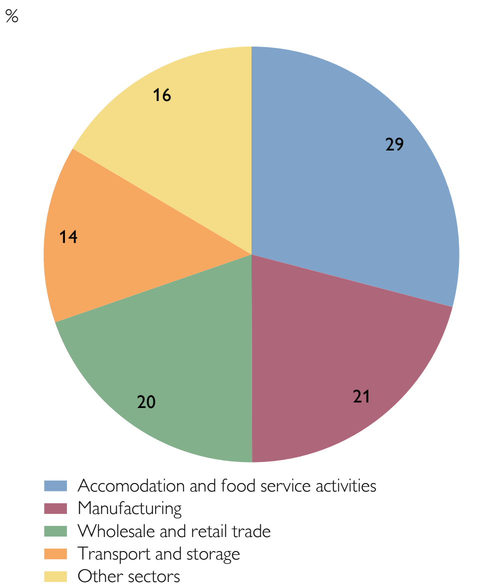
Source: OeNB, European Commission.

As of December 31, 2021, nonfinancial corporations with total outstanding debt in the amount of EUR 22,717 million had received COVID-19 support amounting to 10.2% of the total amount of outstanding debt owed by nonfinancial corporations in Austria. Nonfinancial corporations that received only direct grants had outstanding debt totaling EUR 14,012 million (62% of total outstanding debt of COVID-19 support beneficiaries), while those that received only public guarantees had outstanding debt of EUR 5,687 million, and those that received multiple types of aid had outstanding debt of EUR 2,949 million. Debtors that benefited from other COVID-19 support measures such as subordinated debt are only of minor relevance. The bulk of aid was granted by COFAG (COVID-19 Finanzierungsagentur des Bundes GmbH, the Austrian COVID-19 funding agency), followed by AWS (Austria Wirtschaftsservice GmbH); these two accounted for 58% and 20% of all outstanding debt of COVID-19 support beneficiaries. Direct grants were mainly disbursed by COFAG and by local authorities, whereas AWS and OeHT (Österreichische Hotel- und Tourismusbank) were the main granting authorities for public guarantees.

A breakdown by NACE sectors shows that the debtors that received COVID-19-related support were mainly concentrated in accommodation and food service activities as well as manufacturing, representing 50% of the total credit market of nonfinancial corporations that received COVID-19 support (chart 2). Given that accommodation and food service activities and manufacturing account for only 18% of

Chart 2

Breakdown of outstanding debt of COVID-19 support beneficiaries by economic sector



Source: OeNB, European Commission.

Note: Data as of December 31, 2021.

the overall outstanding amount of debt, this testifies to a particularly high concentration of state aid in these sectors. Wholesale and retail trade as well as transport and storage also accounted for a sizable share of loans to COVID-19 support beneficiaries.

3 Changes in creditworthiness

In this section, we analyze the changes in corporate debtors' creditworthiness, comparing nonfinancial corporations that received COVID-19 support[8] with the aggregate of all corporate debtors. In doing so, we focus on the analysis of rating distributions, rating migrations and changes in the underlying PD.

First, we look at how the distributions of internal ratings have changed with regard to total outstanding debt on the following reference dates: December 31, 2019, December 31, 2020, and December 31, 2021. In chart 3, which shows the rating distributions for all nonfinancial corporations, we see that most of the credit volume (78% on all reference dates) was assigned to rating classes 3, 4 and 5; only a very small portion of the loan volume was assigned to the best rating class. The share of the loan volume in rating class 2 decreased continuously over the years 2020 and 2021. In rating class 3, we see a slight decrease in the loan volume share in 2020 and a rise above the pre-COVID-19 level in 2021. In the last three years, the loan volume share in rating class 4 increased, while rating class 5 saw a decline. Only slight changes in the shares of loan volumes can be observed in rating classes 6 and 7. The share of defaulted loans (rating class 8) increased in 2020 but fell below the pre-COVID-19 level at the end of 2021. A comparison of the rating

Chart 3

Rating distributions of nonfinancial corporations based on outstanding amounts of debt

Source: OeNB.

[8] *For the analyses of changes in creditworthiness, debtors who received COVID-19 support until December 31, 2021, are flagged accordingly for all reporting periods. For example, a debtor that received a public guarantee in November 2020 is flagged for all reporting periods between March 2019 and December 2021. This enables a comparison in the creditworthiness before and during the COVID-19 pandemic of the same clients.*

distribution in chart 3 with the distribution of borrowers who received COVID-19 support (chart 4) shows that the creditworthiness of debtors who received COVID-19 aid was already worse than that of all corporate debtors before the pandemic. The largest part of the loan volume (more than 80% on each observed reporting date) owed by borrowers who received COVID-19 support is in rating classes 4, 5 and 6. The loan volume share of COVID-19 support beneficiaries in rating classes 1, 2 and 3 was 4% at the end of 2020. This represented a decrease by more than 50% compared to the end of 2019. A slight increase in rating class 3 can be noted at the end of 2021. In rating class 4, we saw an increase in the credit volume at the end of 2020 and a decrease at the end of 2021, to the level observed before the outbreak of the pandemic. The credit volume in rating class 5 was also lower at the end of 2020 and continued to fall slightly in 2021. The credit volume shares in rating classes 6 and 7 increased from 22% to 26% over the entire observation period. Similarly, the share of defaulted loans (rating class 8) rose from 3% to 5%, which corresponds to an increase of 72%.

We also analyze semi-annual rating migrations since the second quarter of 2019 to (1) identify the timing of rating changes and (2) to understand the flows between rating classes. For this purpose, the Sankey diagrams in figures 1 and 2 show the rating migrations for all nonfinancial corporations and for nonfinancial corporations that have received COVID-19 support.[9] The nodes represent the absolute value of the outstanding debt assigned to a rating class, thereby illustrating the rating distribution at the given reporting date. The connecting flows between the reporting dates are shown as such that the width of the streams illustrate the volume of the outstanding debt that migrates between the rating classes.

Chart 4

Rating distributions of COVID-19 support beneficiaries based on outstanding amounts of debt

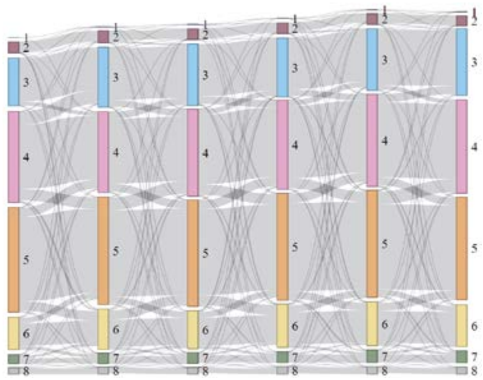
Source: OeNB, European Commission.

[9] *For illustrative reasons, the Sankey diagrams do not show the inflows from new clients and the outflows due to terminated credit relations.*

Figure 1

Migration of ratings of nonfinancial corporations

Rating class

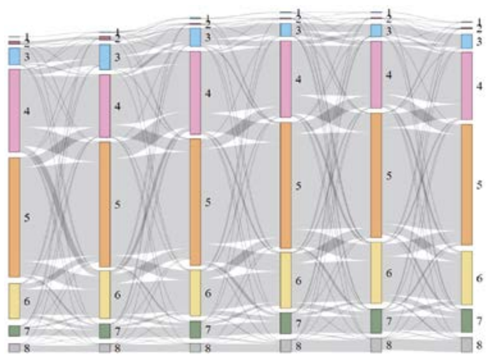


Source: OeNB.

Figure 2

Migration of ratings of COVID-19 support beneficiaries

Rating class



Source: OeNB, European Commission.

Figure 1 illustrates the migration of nonfinancial corporations' ratings. We see that there were fewer upgrades from rating class 4 to rating class 3 from Q2 20 to Q4 20 compared to the pre-pandemic period Q2 19 to Q4 19. At the same time, there were more rating downgrades from rating class 3 to rating class 4, which led to a shift in the rating distribution toward rating class 4 (27% in Q4 20 vs. 25% in Q4 19). Furthermore, a reduction in the improvements from rating class 6 to rating class 5 in the period Q4 20 to Q2 21 compared to Q4 19 to Q2 20 resulted in an increase in the exposure in rating class 6 in the second year of the pandemic (13.4% in Q2 21 vs. 11.7% in Q2 20). The observed overall deterioration in the rating structure since the start of the pandemic was partly offset by rating improvements in the second half of 2021. Particularly noteworthy are significant transfers from rating class 4 to rating class 3 and from rating class 5 to rating class 4.

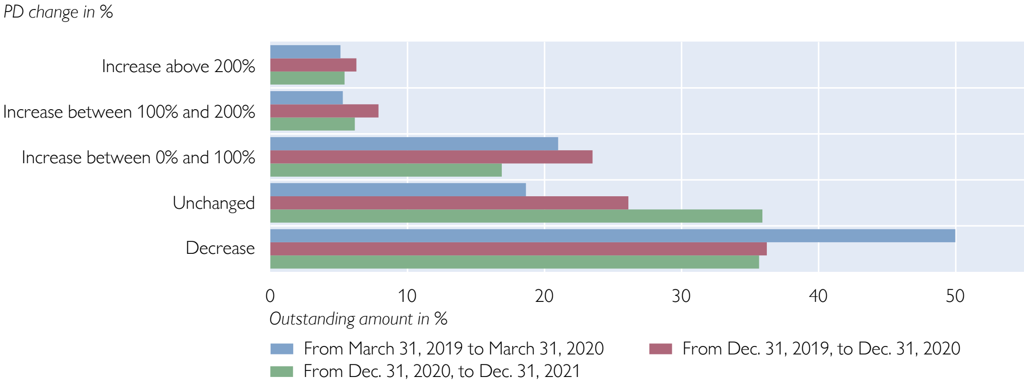
A similar, but more pronounced shift in ratings can be observed for nonfinancial corporations with COVID-19 support as shown in figure 2. We see sizable transfers from rating classes 2 and 3 to the next worse rating classes at the beginning of the pandemic. Starting with the second half of 2020, there was an increase in rating downgrades from rating classes 4 and 5 to rating classes 5 and 6. During the same period, a higher volume was transferred from better rating classes to the worst rating classes 7 and 8. In line with the overall picture, the rating structure of nonfinancial corporations that received COVID-19 support improved from Q2 2021. However, this improvement did not outweigh the continuous deterioration in the rating structure since the beginning of the pandemic.

Lastly, we compare the change in the estimated PD within three different observation periods. When selecting the time periods for this purpose, we took care to maximize the scope of the available data on the one hand and to be able to observe changes in the estimated PD before and during the pandemic on the other.

In the observation period before the outbreak of the pandemic (blue), the PD fell for 50% of the credit volume. After the outbreak of the pandemic (red and

Chart 5

Relative changes in probability of default of nonfinancial corporations



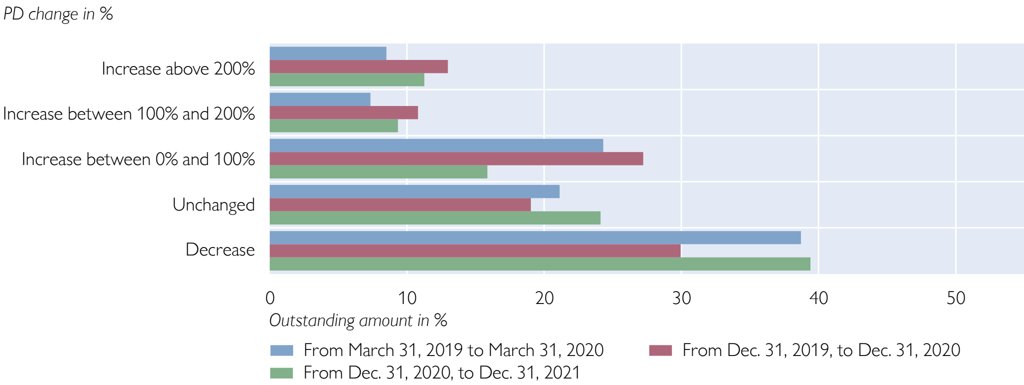
Source: OeNB.

green), the proportion of the credit volume for which the PD decreased fell to around 36%. The share of the loan volume with unchanged PD increased from 19% (before the pandemic) to 36% (second year of the pandemic). In the observation period immediately following the outbreak of the pandemic, the PD increased for 38% of the loan volume. By comparison, before the pandemic, the PD increased for only 31% of the loan volume. In the second year of the pandemic, the PD increased for only 28% of the loan volume.

Prior to the pandemic, 39% of the loan volume decreased and 40% of the loan volume increased in the estimated PD for borrowers who later received COVID-19 support. Immediately following the outbreak of the pandemic, the estimated PD worsened for 51% of the loan volume of these borrowers, and there was an improvement in the estimated PD for only 30% of the loan volume of these borrowers. In the second year of the pandemic, this negative trend reversed. For 39% of the loan volume, the PD decreased, and there was only an increase in the PD for 36% of the loan volume of borrowers who were also beneficiaries of COVID-19 support. Finally, it should also be noted that regardless of the observation period

Chart 6

Relative changes in probability of default of debtors who received COVID-19 support



Source: OeNB, European Commission.

considered, the PD weighted by loan volume increased significantly more for borrowers who had received COVID-19 support than on average for all borrowers combined.

4 Conclusion

Banks in Austria have reacted to the COVID-19 pandemic with rating downgrades, which led to an overall deterioration in the rating structure of nonfinancial corporate exposures within the first waves of the pandemic. Since the second half of 2021, we have seen more frequent rating improvements. In addition, debtors who later received COVID-19 support were less creditworthy than nonfinancial corporate debtors on average already before the pandemic. Moreover, since the start of the pandemic, the credit volumes of borrowers who received COVID-19 support have been affected to a greater extent by increases in the PD and corresponding rating downgrades than nonfinancial corporate debtors in the aggregate.

This study only covers the short- to medium-term perspective of changes in borrowers' creditworthiness during the pandemic. Further analyses of the potential effects resulting from the overall discontinuation of COVID-19 support measures might be of interest. In addition, the impact of the changing macroeconomic environment (e.g. supply-side shocks driven by the war in Ukraine, periods of higher inflation) on borrowers' creditworthiness might be of interest for future research.

References

European Banking Authority. 2020. Guidelines on loan origination and monitoring.

European Commission. 2020. Temporary Framework for State aid measures to support the Economy in the current COVID-19 outbreak.

Rechnungshof Österreich. 2021. Bericht des Rechnungshofes: COVID–19 – Struktur und Umfang der finanziellen Hilfsmaßnahmen – Datenaktualisierung 2021.

Annex

Table A1

List of Austrian COVID-19 related state aid measures

State aid case number	State aid case title
SA.56840	COVID-19 - Austrian liquidity assistance scheme
SA.56981	COVID-19: Austrian scheme for guarantees on bridge loans
SA.57148	COVID-19: Support Measures by Carinthia, Styria, Tyrol, Upper Austria and Vienna
SA.57291	COVID-19; Compensation Scheme: Directive for fixed cost subsidies
SA.57312	COVID-19 Startup Hilfsfonds
SA.57928	AT- COVID-19; Compensation scheme: Directive for fixed cost subsidies for economic activities of Non-Profit-Organizations
SA.58385	COVID-19; Support Measures by Carinthia, Upper Austria, Styria, Tyrol and Vienna
SA.58661	COVID-19: Fixed Cost Compensation according to 3.12 Temporary Framework
SA.59710	COVID-19 – Prolongation of SA.58360
SA.60290	COVID-19: Modification of SA.57148 (2020/N): Support Measures by the States (Länder) of Carinthia, Upper Austria, Styria, Tyrol and Vienna under the Temporary Framework for State aid measures to support the economy in the current COVID-19 outbreak
SA.60321	COVID-19: Prolongation of SA.57928(2020/N): Compensation scheme: Directive for fixed cost subsidies for economic activities of Non-Profit-Organizations
SA.60599	COVID-19: Third amendment of SA.56981 (2020/N): Austrian guarantee scheme on bridge loans under the Temporary Framework for State aid measures to support the economy in the current COVID-19 outbreak
SA.61210	COVID-19: Fourth amendment to the existing aid scheme SA.56981 under the Temporary Framework
SA.63291	Guidelines of the Lower Austrian Economic and Tourism Fund - Funding program COVID-19
SA.63708	COVID-19: Fifth Amendment of the exiting aid scheme SA.56981

Source: European Commission State Aid Transparency Public Search.

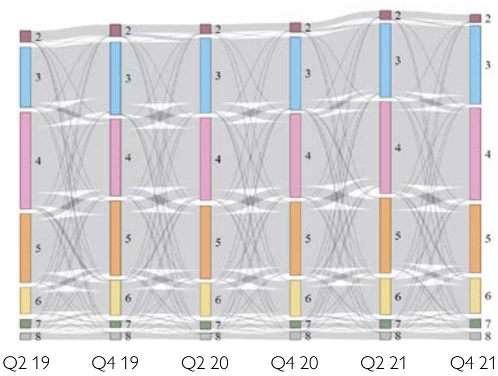
Note: List of COVID-19-related state aid cases under which individual award data are published in the State Aid Transparency Public Search as on December 31, 2021.

Figure A1

Rating migrations with breakdowns by significant and less significant institutions

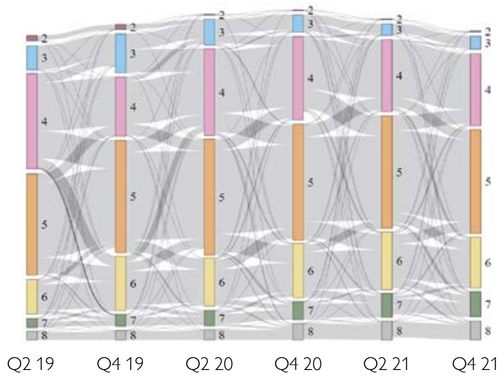
Migration of ratings of nonfinancial corporations – significant institutions

Rating class



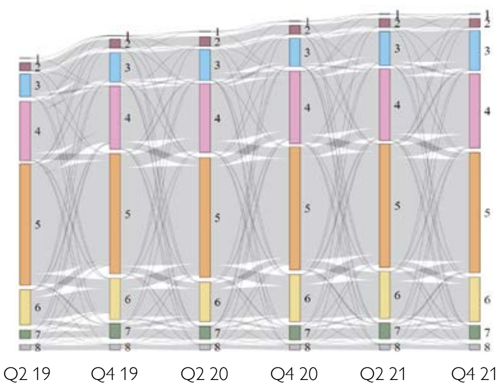
Migration of ratings of COVID-19 support beneficiaries – significant institutions

Rating class



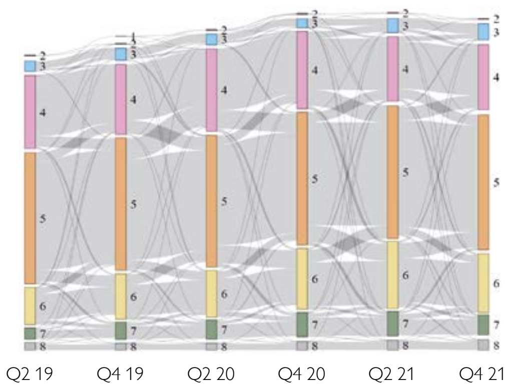
Migration of ratings of nonfinancial corporations – less significant institutions

Rating class



Migration of ratings of COVID-19 support beneficiaries – less significant institutions

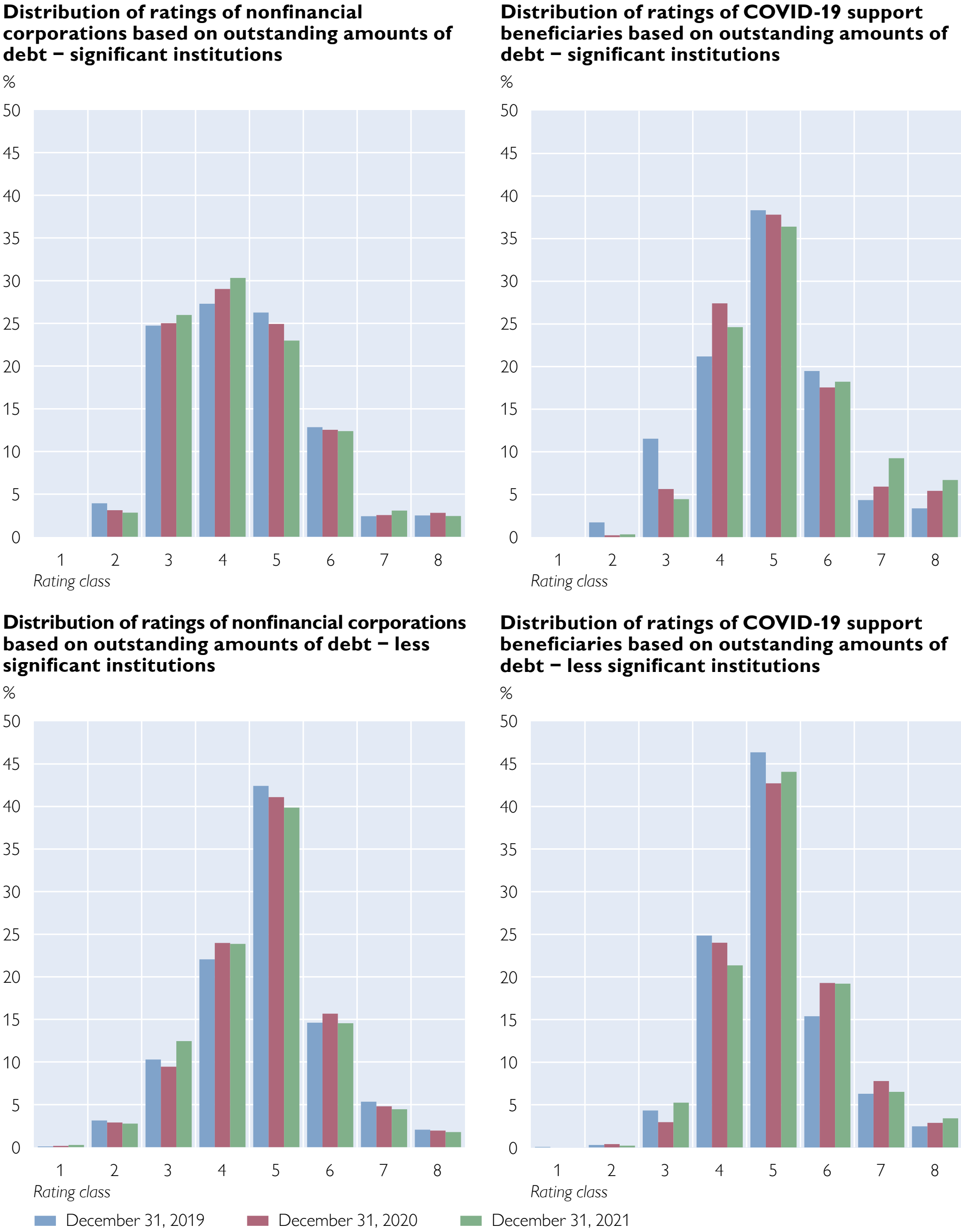
Rating class



Source: OeNB, European Commission.

Chart A1

Change in rating distributions with breakdowns by significant and less significant institutions



Source: OeNB, European Commission.