

Higher equity ratios in eurozone to reassure against insolvency “wave”

by Dr. Andreas Rees (UniCredit Bank, Frankfurt) and Dr. Thomas Strobel (UniCredit Bank, Munich)

- A marked rise in the number of corporate insolvencies is likely in the eurozone. Economic pressure, especially in the services sector, and the (foreseeable) ending of moratoriums for filing bankruptcy are major drivers.
- However, our analysis of equity ratios for Germany, France and Italy shows that a huge “wave” of insolvencies is improbable. Companies have become more resilient by substantially raising their capital buffers before the outbreak of the pandemic.
- In 2019 (latest available data), French non-financial corporates had an equity ratio of more than 40% compared to about 37% for Germany and 27% for Italy.
- Among smaller companies, French entities recorded the highest equity ratio before the crisis with 43%. Larger Italian companies (32½%) had lower capital buffers than their German peers (35%) but were somewhat higher than in France (31½%).
- More timely available debt data for 2020 confirm that the leverage of companies has barely changed on a net basis since the outbreak of the pandemic. The reason is that firms have boosted their borrowing mainly to increase their liquidity buffers for precautionary motives.

The calm before the storm?

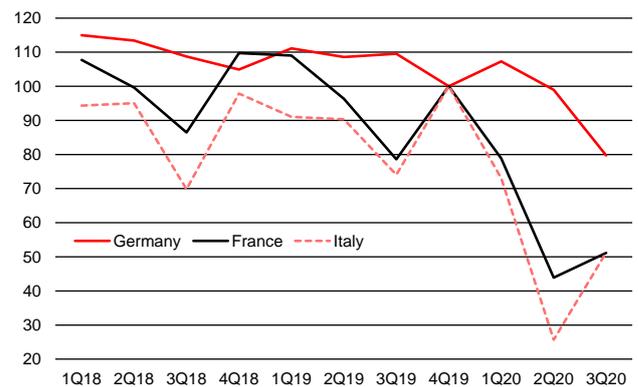
Since the outbreak of the coronavirus crisis about one year ago, fears have been lingering about a massive and unprecedented rise in corporate insolvencies. This in turn could weigh heavily on the eurozone economy. Investment activity would be depressed with the number of jobs being drastically cut. Furthermore, the balance sheets of banks could take a hit.

So far available cross-country data for 3Q20 from Eurostat, the EU’s statistical agency, show that corporate insolvencies in the eurozone remained artificially low (see chart 1). In France and Italy, they were about 50% below their pre-crisis level (4Q19).¹ In Germany, the decline was roughly 20%. Besides government support for companies, the major reason for this pattern was a temporary moratorium which has allowed firms to delay filing for bankruptcy.² However, more timely available German data provided by the Federal Statistical Office show that insolvencies passed their trough

in autumn 2020 and has been trending higher since then.³ The million-euro question is how strong the rises will be in the next one or two years, in Germany and abroad.

CHART1: BUSINESS FAILURES STILL ARTIFICIALLY LOW

Index for declarations of bankruptcies of businesses (4Q19=100)



Source: Eurostat, UniCredit Research

Our analysis is not a classic forecasting exercise based on an econometric model. Instead, we pursue an “indirect” approach by analysing the financial soundness of companies in the three major eurozone countries: Germany, France and Italy. The more robust balance sheets are, the lower is the likelihood of becoming insolvent (*ceteris paribus*, of course). In general, there is a multitude of financial indicators available to derive such conclusions. In the following, we focus on the equity ratio as a share of total assets.

Box 1: Equity ratio

The equity ratio in % of total assets shows how strongly companies are leveraged. For instance, a low equity ratio indicates greater risks of not meeting debt servicing obligations and declaring bankruptcy. Besides paid-up capital, reserves, net income from previous periods, etc., the equity ratio measure also contains a revaluation surplus for tangible and intangible assets. Furthermore, adjustments on financial assets (equity) held by companies are incorporated.

Source: ECB (2015)⁴, UniCredit Research

¹ Eurostat still classifies the data as experimental. The 4Q20 figures will be released in April 2021. For more details, see [link](#).

² For an overview on EU countries, see DLA Piper (2020), *An international guide to changes in insolvency law in response to COVID-19*, December

³ Rees, A. and T. Strobel (2021), *German corporate insolvencies still low but passed their trough*, UniCredit Research, *Economics Flash*, 11 February

⁴ ECB (2015), *The Bank for the Accounts of Companies Harmonized (BACH) database*, Statistics Paper Series, No 11, September

Our analysis is a cross-country and cross-sector peer review. By using the BACH database (see box 2), we are able to compare equity ratios by country, sector and company size. For instance, it is possible to look at the equity ratios of smaller or larger companies in Germany, France and Italy over time. Furthermore, the equity ratios in severely pandemic-stricken sectors such as retailing can be analysed and compared.

Unfortunately, the latest data, which were released recently, are only available for 2019. Hence, conclusions about how equity ratios have developed after the start of the pandemic are not possible. However, we think that the BACH dataset still allows valuable insights into how high (or low) capital buffers had been shortly before the coronavirus crisis. As a reference point in time, equity ratios in 2019 can be compared to the ones in 2007 before the global financial crisis. While both shocks are different animals for obvious reasons, our exercise illustrates whether and to which extent companies were better “prepared” in 2019 to withstand the economic downturn than in 2007.

Box 2: Where the data come from

We used equity ratio figures from the BACH database (Bank for the Accounts of Companies Harmonized). The BACH database provides comparable information on the financial statements of non-financial corporate companies by country, sector and size on an annual basis. Twelve European countries are currently included. To give an example for the coverage, 75% of German manufacturing companies are covered in terms of sales. In Italy, the comparable figure is even 100% (for France 85% in terms of employees).⁵ There are four different company sizes available depending on the annual turnover in million euros (<10mn; 10-50mn; <50mn; >50mn). Most of the time series start in 2000. The figures are available with a time lag of about 12-15 months. Hence, most of the 2020 data will be available by the end of 2021, at least in the form of a provisional reading. The BACH database is managed by the European Committee of Central Balance-Sheet Data Offices (ECCBSO) and hosted by the Banque de France. The ECCBSO is an informal body of experts from national central banks and statistical institutes in Europe. The database can be used freely under www.bach.banque-france.fr.

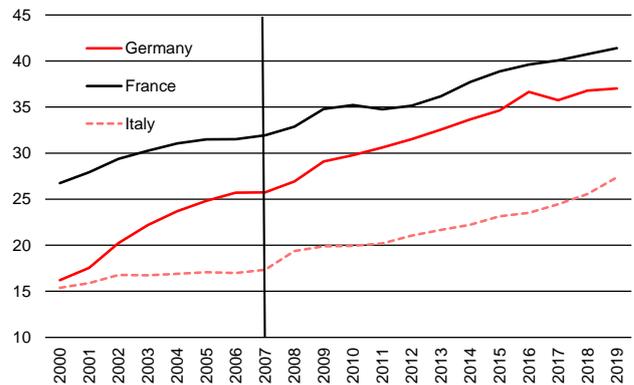
Source: ECCBSO, UniCredit Research

1. Steadily rising equity ratios across countries

In all three major eurozone countries, a structural shift from financing with borrowed capital to equity financing has taken place. As can be seen in chart 2, equity ratios rose markedly in the last 20 years. In Germany and Italy, they increased from roughly 15% to about 37% and 27½%, respectively. French non-financial corporates even increased their capital buffers to about 41% (2000: 27%). Interestingly, such structural trends are at odds with classic corporate financing theories. The so-called pecking order theory projects a rather minor role of equity, while the trade-off approach forecasts cyclical swings in capital buffers (see box 3).

CHART 2: STEADILY RISING EQUITY RATIOS

Equity ratio of non-financial corporates, in % of total assets (median)



Source: BACH database, UniCredit Research

Comparing the two pre-crisis years 2007 and 2019 shows that there is a substantial increase of about 10pp each in equity ratios. However, in the case of Italy, the most important trigger was obviously not the global financial crisis but the eurozone sovereign debt crisis at the start of the 2010s. Only then, the equity ratio of non-financial corporates started to increase significantly. The major reason might have been the sharply rising financing costs of banks and corresponding supply constraints in bank lending.⁶

Note that, in general, rising share prices could also have contributed to increasing equity ratios. However, such changes are likely to have only played a minor role. The large majority of non-financial corporates are not publicly listed entities.⁷

⁶ Deutsche Bundesbank (2018), *Developments in corporate financing in the euro area since the financial and economic crisis*, Monthly Report, January

⁷ In the case of Italy, the Deutsche Bundesbank explicitly notes that the take-up of capital took place in the form of unlisted shares, business shares and participating interests; see Deutsche Bundesbank (2018), p.60.

⁵ BACH Brochure, January 2021

Box 3: Theories of corporate financing

There are two important strands in theory why companies use equity as a financing tool. According to the **pecking order theory**, there is a hierarchy in corporate financing caused by financing costs and informational asymmetries. First, companies make use of internal funds before issuing debt or using bank loans. Equity is only regarded as a last resort by business managers. One reason is that shareholders demand a higher risk premium, since issuing equity may signal an overvalued stock and the attempt of diluting shares in the company. According to the **trade-off theory**, the pros and cons of using equity financing have to be weighed against each other. On the one hand, debt could be preferred over equity, as interest costs are tax-deductible. On the other hand, business managers may build up a capital buffer for precautionary reasons in order to avoid an insolvency. The macro environment may play an important role here and lead to a time-varying equity ratio. In the case of an anticipated rise in insolvency risks, business managers are likely to increase the capital buffer.

2. Marked differences by company size in France and Italy

The trend of rising equity ratios can also be observed when differentiating by company size. However, there are marked differences both in dynamics and levels across countries.

One interesting finding is that larger companies in Germany and France did not have higher capital buffers than smaller ones. The equity ratio of French entities with a turnover of below EUR 10mn was even 43% in 2019, the highest reading in our eurozone triad (see table 1). In Germany, smaller and medium-sized companies are also better capitalized than larger ones. However, the differences in equity ratios by company size are not that pronounced. Obviously, the German corporate landscape is more homogenous in terms of corporate financing than in France. Our finding argues against clustering effects in Germany and France which could lead to a disproportionately high number of insolvencies among SMEs.

In Italy, the situation before the coronavirus crisis was different. Medium-sized and larger corporates exceptionally raised their capital buffers since 2007. Shortly before the coronavirus crisis, larger Italian companies even surpassed their peers in France (see chart 3). In 2019, the equity ratio of Italian companies with a turnover of more than EUR 50mn was 32½% compared to about 31½% in France (Germany: 35%; see table 1). In 2007, it was just the other way around.

The equity ratio of larger French and German corporates was about 28% and only 20% for their Italian competitors.

To be sure, these higher capital buffers of larger companies had only a moderately positive impact for the Italian corporate landscape as a whole. In 2019, the aggregated equity ratio was still 27½% compared to about 27% for entities with a turnover below EUR 10mn. The reason for this negligible difference is that smaller companies in Italy dominates.

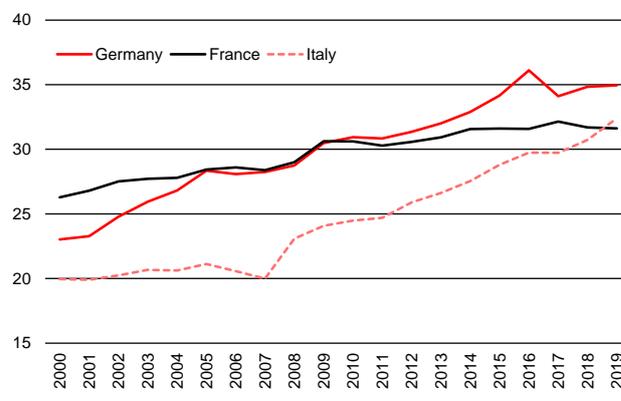
TABLE 1: EQUITY RATIOS BY COMPANY SIZE (ANNUAL TURNOVER, IN EUR), IN % (MEDIAN)

	2000	2007	2019	Δ 2019-2007 (in pp)
Germany				
<10mn	14.5	24.6	37.5	+12.9
10-50mn	17.9	26.7	37.3	+10.6
>50mn	23.0	28.2	34.9	+6.7
Total	16.2	25.7	37.0	+11.3
France				
<10mn	27.0	32.5	42.8	+10.3
10-50mn	25.2	28.7	33.9	+5.2
>50mn	26.3	28.4	31.6	+3.2
Total	26.7	31.9	41.4	+9.5
Italy				
<10mn	15.2	17.2	27.1	+9.9
10-50mn	17.2	17.7	30.6	+12.9
>50mn	20.0	20.0	32.4	+12.4
Total	15.4	17.3	27.4	+10.1

Source: BACH database, UniCredit Research

CHART 3: LARGER ITALIAN COMPANIES OVERTAKING THEIR FRENCH PEERS

Equity capital ratio of non-financial corporates with turnover of more than EUR 50mn, in % of total assets (median)



Source: BACH database, UniCredit Research

3. Lower equity ratios in Italian pandemic-stricken sectors

Three sectors were chosen which have been in particular negatively affected by the coronavirus crisis and the corresponding lockdowns: retailing; accommodation and food services; arts, entertainment and recreation.⁸ Ideally, these sectors would have built up higher capital buffers than any other industries and services to weather potential losses. As a benchmark for comparison, the manufacturing industry is used which was not shut down during the second lockdown. Furthermore, it performed comparatively well in the last few months thanks to robust global demand.

One major finding for the pandemic-stricken sectors is that the risk of insolvencies seems to be lower for German and French companies than for Italian entities. This might especially be true for retailing and accommodation and food services. With about 22%, the Italian equity ratios were only about half the French ones in 2019 (see table 2). Again, the lower capital buffers came largely from the predominant smaller companies.

TABLE 2: EQUITY RATIO BY COUNTRY, SECTOR AND COMPANY SIZE (2019), IN % (MEDIAN)

Retail ex cars	GVA share*	Total	<10mn	10-50mn	>50mn
Germany	3.9	31.9	35.8	19.7	34.9
France	3.9	42.6	43.8	34.1	36.0
Italy	3.5	21.7	21.6	23.7	29.3
Accommodation & food services					
Germany	1.7	35.5	38.6	25.9	16.9
France	2.1	40.5	40.8	35.7	27.8
Italy	2.0	21.6	21.4	34.2	34.0
Arts, entertainment & recreation					
Germany**	1.4	40.4	41.2	36.7	42.9
France	2.9	35.3	35.7	29.9	28.4
Italy	4.2	29.4	29.4	34.0	23.1
Manufacturing					
Germany	21.6	40.4	40.1	41.8	39.4
France	11.0	47.0	48.0	43.9	43.0
Italy	16.6	29.4	28.0	37.6	40.5

*Gross value added share (latest available data, i.e. 2018 or 2019), in %;
 **2018 data; source: BACH, Eurostat, FERl, UniCredit Research

⁸ The BACH data for retailing includes the whole sector ex cars, i.e. they contain food stores which were kept open. More granular figures are not available.

While French companies are better capitalized than their German and Italian peers, France still seems to be vulnerable from a macro viewpoint.⁹ The three pandemic-stricken sectors account for 9% of total French gross value added, while only 11% comes from the robust manufacturing industry. In Italy, the relation is more favorable with a share of 10% (retail, accommodation, arts, etc.) compared to more than 16% for manufacturing. In Germany, it is even 7% versus nearly 22%.

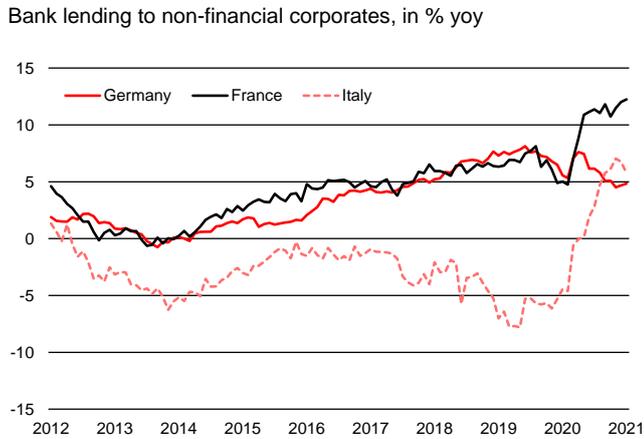
Bottom line: Higher pre-crisis equity ratios ...

The number of insolvencies has still remained artificially low in the eurozone. Besides government support for companies, the temporary moratorium in filing for bankruptcy played a major role. At the same time, the second lockdown has largely continued so far and increased the economic pressure, especially in the services sector. This combination makes marked rises in the number of insolvencies in the next one or two years likely. However, the often heard fear of an insolvency “wave”, which will virtually choke off major eurozone economies, neglects the fact of substantially higher capital buffers which were built up before the crisis.

Our analysis shows that non-financial corporates in Germany, France and Italy significantly raised their equity ratios in the last one or two decades. This is also true for SMEs and companies in sectors which are especially exposed to the negative effects of the coronavirus crisis.

The higher equity ratios have been paying off in the last twelve months. In combination with publicly guaranteed loans, companies have been able to tap bank lending and debt capital markets to bridge liquidity bottlenecks. Especially in France and Italy, bank lending has been rising strongly (see chart 4). Given the higher capital buffers at the beginning of the crisis, the risk that rising borrowing have been pushing corporates into excessive debt remains manageable.

⁹ One note of caution is appropriate when interpreting the equity results for Germany. The sample in the BACH database is comparatively small, especially for accommodation and food services and arts, entertainment and recreation. Hence, the question remains open how representative the results are.

CHART 4: BANK LENDING TO FRENCH AND ITALIAN COMPANIES RISING STRONGLY


Source: ECB, UniCredit Research

... and barely changed net debt in 2020 to reassure against insolvency “wave”

Timely available debt data for 2020 confirm this finding. As a matter of fact, the net debt level of the non-financial corporate sector in the eurozone has hardly changed recently. This is shown in one of our latest Chart of the Week where a comparison of the latest available data for 3Q20 to the pre-crisis figures in 4Q19 was done.¹⁰ Net debt equals gross debt including loans and debt securities minus liquid assets held by companies, namely currency and deposits. By absolute numbers, the net debt level even declined somewhat in Germany and Italy, while it rose marginally in France. The reason is that firms have boosted their borrowing during the pandemic mainly to increase their liquidity buffers for precautionary motives. Hence, looking at gross debt, either in terms of gross value added or absolute terms, sends a misleading message these days. Eurozone companies are not excessively leveraged but better equipped to weather the storm than they were nearly 15 years ago.

¹⁰ Valli, M. (2021), Spike in indebtedness overstates the vulnerability of eurozone firms, UniCredit Research, [Chart of the Week](#), 15 January

References

- BACH Brochure, January 2021
- Deutsche Bundesbank (2018), *Developments in corporate financing in the euro area since the financial and economic crisis*, Monthly Report, January
- DLA Piper (2020), *An international guide to changes in insolvency law in response to COVID-19*, December
- ECB (2015), *The Bank for the Accounts of Companies Harmonized (BACH) database*, Statistics Paper Series, No 11, September
- Eurostat (2021), *Quarterly registrations of new businesses and declarations of bankruptcies – statistics*, 29 January
- Rees, A. and T. Strobel (2021), *German corporate insolvencies still low but passed their trough*, UniCredit Research, [Economics Flash](#), 11 February
- Valli, M. (2021), Spike in indebtedness overstates the vulnerability of eurozone firms, UniCredit Research, [Chart of the Week](#), 15 January

Author

Dr. Andreas Rees, Chief German Economist (UniCredit Bank, Frankfurt)
 +49 69 2717-2074
andreas.rees@unicredit.de

Dr. Thomas Strobel, Economist (UniCredit Bank, Munich)
 +49 89 378-13013
thomas.strobel@unicredit.de

Editor

Daniel Vernazza, PhD, Chief International Economist (UniCredit Bank, London)
 +44 207 826-7805
daniel.vernazza@unicredit.eu

Previous editions of Economics Thinking

- » Rating reactions to the pandemic in Europe - 4 March 2021
- » Mass vaccination in 2021: What could possibly go wrong? - 19 January 2021
- » Unemployment: How bad is it really, and how bad could it get? - 3 September 2020
- » Italy's public debt: New challenges brought on by the COVID-19 crisis - 17 July 2020
- » Spain vs. Italy: Dissecting the "structural" growth outperformance - 8 January 2020
- » French pension reform: Greater fairness would boost financial sustainability - 24 July 2019
- » Assessing global and regional imbalances - 28 June 2019
- » Financial cycles in the eurozone: no signs of immediate risk - 5 June 2019
- » 'Winners' and 'losers' in the eurozone's low interest rate environment - 14 May 2019
- » Trump's auto-tariffs threat: trade linkages and market implications - 8 May 2019
- » Assessing the impact of Italy's sovereign stress on the real economy - 22 March 2019
- » Global outlook weighs on eurozone car sector - 15 February 2019
- » China's infrastructure plan likely to raise government's contingent liabilities - 6 February 2019
- » Dissecting the slowdown in eurozone exports - 17 January 2019
- » Italy: Budget should have done more to address weak capital accumulation and sluggish ... - 14 December 2018
- » Sweden: High household indebtedness complicates the Riksbank's interest rate normalization - 23 October 2018
- » The drivers of EM capital flows - 28 September 2018
- » European venture capital: unleashing potential - 11 September 2018
- » What if? Trade wars and global supply chains - 7 September 2018
- » US: Is the wealth effect dead? - 30 August 2018
- » CNY-denominated commodities won't fly without CNY convertibility - 27 July 2018
- » Eurozone firms are more resilient to a tightening of financial conditions - 19 July 2018
- » Progress in integrating refugees on German labor market - 9 July 2018
- » French corporate debt: taking advantage of cheap financing - 15 June 2018
- » A turning point in the global economy? - 8 June 2018
- » The problems with the Swiss Sovereign Money Initiative - 5 June 2018
- » The productivity puzzle: the Digital Revolution has yet to come - 11 May 2018
- » How the US-Eurozone growth differential gets revised away - 27 April 2018
- » US tariffs: estimating the cost to European industry - 26 April 2018
- » Italy: potential growth on the rise, but could be boosted further - 6 April 2018

Legal Notices

Glossary

A comprehensive glossary for many of the terms used in the report is available on our website: <https://www.unicreditresearch.eu/index.php?id=glossary>

Disclaimer

Our recommendations are based on information obtained from or are based upon public information sources that we consider to be reliable, but for the completeness and accuracy of which we assume no liability. All information, estimates, opinions, projections and forecasts included in this report represent the independent judgment of the analysts as of the date of the issue unless stated otherwise. We reserve the right to modify the views expressed herein at any time without notice. Moreover, we reserve the right not to update this information or to discontinue it altogether without notice. This report may contain links to websites of third parties, the content of which is not controlled by UniCredit Bank. No liability is assumed for the content of these third-party websites.

This report is for information purposes only and (i) does not constitute or form part of any offer for sale or subscription of or solicitation of any offer to buy or subscribe for any financial, money market or investment instrument or any security, (ii) is neither intended as such an offer for sale or subscription of or solicitation of an offer to buy or subscribe for any financial, money market or investment instrument or any security nor (iii) as marketing material within the meaning of applicable prospectus law. The investment possibilities discussed in this report may not be suitable for certain investors depending on their specific investment objectives and time horizon or in the context of their overall financial situation. The investments discussed may fluctuate in price or value. Investors may get back less than they invested. Fluctuations in exchange rates may have an adverse effect on the value of investments. Furthermore, past performance is not necessarily indicative of future results. In particular, the risks associated with an investment in the financial, money market or investment instrument or security under discussion are not explained in their entirety.

This information is given without any warranty on an "as is" basis and should not be regarded as a substitute for obtaining individual advice. Investors must make their own determination of the appropriateness of an investment in any instruments referred to herein based on the merits and risks involved, their own investment strategy and their legal, fiscal and financial position. As this document does not qualify as an investment recommendation or as a direct investment recommendation, neither this document nor any part of it shall form the basis of, or be relied on in connection with or act as an inducement to enter into, any contract or commitment whatsoever. Investors are urged to contact their bank's investment advisor for individual explanations and advice.

Neither UniCredit Bank AG, UniCredit Bank AG London Branch, UniCredit Bank AG Milan Branch, UniCredit Bank AG Vienna Branch, UniCredit Bank Austria AG, UniCredit Bulbank, Zagrebačka banka d.d., UniCredit Bank Czech Republic and Slovakia, ZAO UniCredit Bank Russia, UniCredit Bank Czech Republic and Slovakia Slovakia Branch, UniCredit Bank Romania, UniCredit Bank AG New York Branch nor any of their respective directors, officers or employees nor any other person accepts any liability whatsoever (in negligence or otherwise) for any loss howsoever arising from any use of this document or its contents or otherwise arising in connection therewith.

This report is being distributed by electronic and ordinary mail to professional investors, who are expected to make their own investment decisions without undue reliance on this publication, and may not be redistributed, reproduced or published in whole or in part for any purpose.

This report was completed and first published on 18 March 2021 at 11:51.

Responsibility for the content of this publication lies with:

UniCredit Group and its subsidiaries are subject to regulation by the European Central Bank

a) UniCredit Bank AG (UniCredit Bank, Munich or Frankfurt), Arabellastraße 12, 81925 Munich, Germany, (also responsible for the distribution pursuant to §85 WpHG). Regulatory authority: "BaFin" – Bundesanstalt für Finanzdienstleistungsaufsicht, Marie-Curie-Str. 24-28, 60439 Frankfurt, Germany.

b) UniCredit Bank AG London Branch (UniCredit Bank, London), Moor House, 120 London Wall, London EC2Y 5ET, United Kingdom. Regulatory authority: "BaFin" – Bundesanstalt für Finanzdienstleistungsaufsicht, Marie-Curie-Str. 24-28, 60439 Frankfurt, Germany and subject to limited regulation by the Financial Conduct Authority, 12 Endeavour Square, London E20 1JN, United Kingdom and Prudential Regulation Authority 20 Moorgate, London, EC2R 6DA, United Kingdom. Further details regarding our regulatory status are available on request.

c) UniCredit Bank AG Milan Branch (UniCredit Bank, Milan), Piazza Gae Aulenti, 4 - Torre C, 20154 Milan, Italy, duly authorized by the Bank of Italy to provide investment services.

Regulatory authority: "Bank of Italy", Via Nazionale 91, 00184 Roma, Italy and Bundesanstalt für Finanzdienstleistungsaufsicht, Marie-Curie-Str. 24-28, 60439 Frankfurt, Germany.

d) UniCredit Bank AG Vienna Branch (UniCredit Bank, Vienna), Rothschildplatz 1, 1020 Vienna, Austria. Regulatory authority: Finanzmarktaufsichtsbehörde (FMA), Otto-Wagner-Platz 5, 1090 Vienna, Austria and subject to limited regulation by the "BaFin" – Bundesanstalt für Finanzdienstleistungsaufsicht, Marie-Curie-Str. 24-28, 60439 Frankfurt, Germany. Details about the extent of our regulation by the Bundesanstalt für Finanzdienstleistungsaufsicht are available from us on request.

e) UniCredit Bank Austria AG (Bank Austria), Rothschildplatz 1, 1020 Vienna, Austria. Regulatory authority: Finanzmarktaufsichtsbehörde (FMA), Otto-Wagner-Platz 5, 1090 Vienna, Austria

f) UniCredit Bulbank, Sveta Nedelya Sq. 7, BG-1000 Sofia, Bulgaria. Regulatory authority: Financial Supervision Commission (FSC), 16 Budapeshta str., 1000 Sofia, Bulgaria

g) Zagrebačka banka d.d., Trg bana Josipa Jelačića 10, HR-10000 Zagreb, Croatia. Regulatory authority: Croatian Agency for Supervision of Financial Services, Franje Račkoga 6, 10000 Zagreb, Croatia

h) UniCredit Bank Czech Republic and Slovakia, Želetavská 1525/1, 140 92 Praga 4, Czech Republic. Regulatory authority: CNB Czech National Bank, Na Příkopě 28, 115 03 Praga 1, Czech Republic

i) ZAO UniCredit Bank Russia (UniCredit Russia), Prechistsenskaya nab. 9, RF-119034 Moscow, Russia. Regulatory authority: Federal Service on Financial Markets, 9 Leninsky prospekt, Moscow 119991, Russia

j) UniCredit Bank Czech Republic and Slovakia, Slovakia Branch, Šancova 1/A, SK-813 33 Bratislava, Slovakia. Regulatory authority: CNB Czech National Bank, Na Příkopě 28, 115 03 Praha 1, Czech Republic and subject to limited regulation by the National Bank of Slovakia, Imricha Karvaša 1, 813 25 Bratislava, Slovakia. Regulatory authority: National Bank of Slovakia, Imricha Karvaša 1, 813 25 Bratislava, Slovakia

k) UniCredit Bank Romania, Bucharest 1F Expozitiei Boulevard, 012101 Bucharest 1, Romania. Regulatory authority: National Bank of Romania, 25 Lipscani Street, 030031, 3rd District, Bucharest, Romania

l) UniCredit Bank AG New York Branch (UniCredit Bank, New York), 150 East 42nd Street, New York, NY 10017. Regulatory authority: "BaFin" – Bundesanstalt für Finanzdienstleistungsaufsicht, Marie-Curie-Str. 24-28, 60439 Frankfurt, Germany and New York State Department of Financial Services, One State Street, New York, NY 10004-1511

Further details regarding our regulatory status are available on request.

ANALYST DECLARATION

The analyst's remuneration has not been, and will not be, geared to the recommendations or views expressed in this report, neither directly nor indirectly.

All of the views expressed accurately reflect the analyst's views, which have not been influenced by considerations of UniCredit Bank's business or client relationships.

POTENTIAL CONFLICTS OF INTERESTS

You will find a list of keys for company specific regulatory disclosures on our website <https://www.unicreditresearch.eu/index.php?id=disclaimer>.

RECOMMENDATIONS, RATINGS AND EVALUATION METHODOLOGY

You will find the history of rating regarding recommendation changes as well as an overview of the breakdown in absolute and relative terms of our investment ratings, and a note on the evaluation basis for interest-bearing securities on our website <https://www.unicreditresearch.eu/index.php?id=disclaimer> and <https://www.unicreditresearch.eu/index.php?id=legalnotices>.

ADDITIONAL REQUIRED DISCLOSURES UNDER THE LAWS AND REGULATIONS OF JURISDICTIONS INDICATED

You will find a list of further additional required disclosures under the laws and regulations of the jurisdictions indicated on our website <https://www.unicreditresearch.eu/index.php?id=disclaimer>.

UniCredit Research*

Macro Research



Erik F. Nielsen
 Group Chief Economist
 Global Head of CIB Research
 +44 207 826-1765
 erik.nielsen@unicredit.eu



Dr. Ingo Heimig
 Head of Research Operations
 & Regulatory Controls
 +49 89 378-13952
 ingo.heimig@unicredit.de

Head of Macro Research



Marco Valli
 Head of Macro Research
 Chief European Economist
 +39 02 8862-0537
 marco.valli@unicredit.eu

European Economics Research



Dr. Andreas Rees
 Chief German Economist
 +49 69 2717-2074
 andreas.rees@unicredit.de



Dr. Loredana Federico
 Chief Italian Economist
 +39 02 8862-0534
 loredanamaría.federico@unicredit.eu



Stefan Bruckbauer
 Chief Austrian Economist
 +43 50505-41951
 stefan.bruckbauer@unicreditgroup.at



Tullia Bucco
 Economist
 +39 02 8862-0532
 tullia.bucco@unicredit.eu



Edoardo Campanella
 Economist
 +39 02 8862-0522
 edoardo.campanella@unicredit.eu



Walter Pudschedl
 Economist
 +43 50505-41957
 walter.pudschedl@unicreditgroup.at



Chiara Silvestre
 Economist
 chiara.silvestre@unicredit.eu



Dr. Thomas Strobel
 Economist
 +49 89 378-13013
 thomas.strobel@unicredit.de

International Economics Research



Daniel Vernazza, Ph.D.
 Chief International Economist
 +44 207 826-7805
 daniel.vernazza@unicredit.eu

EEMEA Economics Research



Dan Bucsa
 Chief CEE Economist
 +44 207 826-7954
 dan.bucsa@unicredit.eu



Gökçe Çelik
 Senior CEE Economist
 +44 207 826-6077
 gokce.celik@unicredit.eu



Mauro Giorgio Marrano
 Senior CEE Economist
 +43 50505-82712
 mauro.giorgiomarrano@unicredit.de



Artem Arkhipov
 Head, Macroeconomic Analysis
 and Research, Russia
 +7 495 258-7258
 artem.arkhipov@unicredit.ru



Hrvoje Dolenc
 Chief Economist, Croatia
 +385 1 6006-678
 hrvoje.dolenc@unicreditgroup.zaba.hr



Dr. Ágnes Halász
 Chief Economist, Head, Economics and
 Strategic Analysis, Hungary
 +36 1 301-1907
 agnes.halasz@unicreditgroup.hu



Ľubomír Koršňák
 Chief Economist, Slovakia
 +421 2 4950 2427
 lubomir.korsnak@unicreditgroup.sk



Anca Maria Negrescu
 Senior Economist, Romania
 +40 21 200-1377
 anca.negrescu@unicredit.ro



Kristofor Pavlov
 Chief Economist, Bulgaria
 +359 2 923-2192
 kristofor.pavlov@unicreditgroup.bg



Pavel Sobišek
 Chief Economist, Czech Republic
 +420 955 960-716
 pavel.sobisek@unicreditgroup.cz

UniCredit Research, Corporate & Investment Banking, UniCredit Bank AG, Am Eisbach 4, D-80538 Munich, globalresearch@unicredit.de
 Bloomberg: UCCR, Internet: www.unicreditresearch.eu

MR 20/2

*UniCredit Research is the joint research department of UniCredit Bank AG (UniCredit Bank, Munich or Frankfurt), UniCredit Bank AG London Branch (UniCredit Bank, London), UniCredit Bank AG Milan Branch (UniCredit Bank, Milan), UniCredit Bank AG Vienna Branch (UniCredit Bank, Vienna), UniCredit Bank Austria AG (Bank Austria), UniCredit Bulbank, Zagrebačka banka d.d., UniCredit Bank Czech Republic and Slovakia, ZAO UniCredit Bank Russia (UniCredit Russia), UniCredit Bank Romania.