A deep dive into Austria’s government bond market

by Francesco Maria Di Bella, FI Strategist (UniCredit Bank, Milan) & Walter Pudschedl, Economist (Bank Austria)

- A balanced budget is on the agenda of Austria’s new government led by the Conservatives (ÖVP) and the Greens. With Austria’s GDP growth set to exceed the eurozone average, Austrian macroeconomic fundamentals remain among the most solid in the euro area.

- About two thirds of Austrian bond market is held by foreign investors, and in particular by non-banks. 20% is held by domestic investors (half of which is held by domestic bank while investment managers and insurance companies account for an only modest share). The most price-sensitive investors (such as foreign asset managers) have reduced holdings of Austrian government debt following the beginning of QE, a factor that should provide stability.

- With investors extending maturities, we expect the Austrian curve to moderately flatten from current levels, especially in the 10/30Y segment.

- RAGBs are now trading at the same level as OATs. From a risk/reward perspective, we prefer RAGBs to OATs given their lower volatility and their higher correlation with Bunds.

1. New government combines economic and ecologic expertise

Austria has had a new government since 7 January 2020. Sebastian Kurz, the leader of the ÖVP, leads a coalition government of the ÖVP and the Greens as chancellor. Cooperation between these two parties has already proven to be functional at the provincial level (e.g. currently in Salzburg, Tyrol and Vorarlberg and, until 2015, in Upper Austria), although formally there are major differences in terms of the content of the parties’ programs. In our opinion, a new government model could emerge for Austria, one that addresses the challenges of climate change more proactively while keeping the economic impact contained. While under this government, economic policy decisions will require stronger coordination between the parties than under the coalition of ÖVP and Freedom Party of Austria (FPÖ) (December 2017 to May 2019), we do not see this as posing any risks to the Austrian economy. Furthermore, there is an opportunity for more-progressive education and migration policy to be introduced, and Austria’s European policy could once again assume greater weight.

According to the election results from autumn of last year, the ÖVP occupies the majority of ministerial posts (10 out of 13), and the coalition agreement bears predominantly signature aspects of ÖVP policy, especially with regard to economic and financial policy. The goal of achieving a balanced budget, depending on economic developments, remains in the foreground.

For the first time since 1974, Austria was able to achieve a general government budget surplus of 0.2% of GDP in 2018. We even expect Austria’s fiscal surplus to have increased to 0.5% of GDP in 2019 thanks to a disciplined expenditure policy and the cyclically favorable development of revenues, as well as the benefits of low interest rates.

For 2020, we again expect Austria to achieve a slight budget surplus, but at 0.2% of GDP or about EUR 0.8 billion, this should be slightly lower than it was in the previous year. This is partly due to weaker economic growth and partly due to some expenditure-increasing measures adopted by parliament in the run-up to snap elections, such as a noticeable pension increase. These include, above all, a social-security bonus for low earners, which will lead to a loss in revenue of up to EUR 900 million (approximately 0.2% of GDP in 2020). This should be offset by only minor additional revenue from a digital tax on online advertising revenue, an increase in tobacco tax and the abolition of the import-sales-tax exemption limit.

Further tax reform is planned to be implemented from 2021 onwards, with the coalition agreement only becoming concrete with regard to income tax reform and reduction of the corporation tax rate. The planned reduction of the entry tax rate as applied to Austrian income tax (from 25% to 20%) and subsequent tax levels (from 35% to 30% and from 42% to 40% respectively) will lead to a total loss of revenue of almost EUR 4bn (0.9% of GDP) per year. Reduction of the corporate tax rate from its current 25% to 21% could result in a budget shortfall of around EUR 1.5bn, or 0.4% of GDP. In addition, the government has announced an increase in the family bonus from EUR 1,500 to EUR 1,750 per child per year. All in all, this will result in a loss of revenue of about EUR 6bn, which will be further increased by planned investments of about EUR 2bn in the expansion of public transport.

It is also possible to postpone or cancel measures in the event of a deterioration in economic development. Therefore, we do not expect a financing gap to arise that would prevent the government’s goal of achieving a balanced budget over the economic cycle. In addition, despite that it is expected to cool off in the coming years, Austria’s economy is expected to remain strong, and this should ensure positive development of tax revenues and charges – among other things, also due to an increase in income-tax revenue in Austria over and above the economic component through the effect of cold progression.
In a statement from November 2019, the European Commission pointed out that Austria will also fulfill EU fiscal rules in 2020. As Austria’s debt ratio remains above the Maastricht limit of 60% of GDP, EU fiscal rules provide for sufficiently rapid debt reduction, which in our opinion, will even be surpassed, as Austria’s debt is expected to decline from just over 70% of GDP to 68.3% in 2020.

2. As the economy loses momentum, growth is set to remain above the euro area average

After three years of growth of above 2%, the increase in Austria’s GDP steadily slowed in 2019. As a result of the impact of weak global trade, Austrian foreign trade lost momentum, and Austria’s strong export industry even slid into recession in mid-2019. However, strong domestic demand was able to maintain economic growth at an estimated 1.5% for 2019 as a whole. However, the slowdown in the pace of growth had an unfavorable effect on Austria’s labor market. With employment growth slowing, the decline in the unemployment rate came to a halt in the course of the year. However, Austria’s average annual unemployment rate of 4.6% was three-tenths lower than it was in 2018. Support came from continued-strong private consumption, which benefited from rising real wages and fiscal stimulus, such as the introduction of Family Bonus Plus. Although investment activity slowed amid lower foreign demand and a general deterioration in economic sentiment, gross fixed capital formation rose by more than 3% year-on-year. The flip side of Austria’s strong domestic economy is that prices have increased at a comparatively higher rate in Austria than in the eurozone. Despite declining from 2.0% in 2018 to an annual average of 1.5% in 2019, Austrian inflation remains above that of the eurozone.

The latest economic data indicate that the Austrian economy has started the year 2020 in a weaker condition than in 2019. Moreover, there are signs that Austria’s economy could cool further. Weakness in global trade will continue to negatively affect the export industry. Due to a lack of foreign demand, we expect investment activity to be more restrained in 2020. Consumption is likely to therefore be the mainstay of growth. However, additional fiscal stimulus, including a reduction in health insurance premiums for low earners, is unlikely to be able to prevent a slight slowdown in consumption. In view of the expected slowdown in growth to 1%, the situation in the Austrian labor market is unlikely to improve further. For the first time since 2015, an increase in the unemployment rate in Austria is expected, although it should be only slight, by 0.1 percentage points (to 4.7%) in 2020. Due to the weaker growth, inflation should also remain manageable, at an average of 1.5%, in 2020, especially since an expected decline in oil prices should ease inflation in Austria.

The Austrian economy should continue to show favorable key economic data in 2020 despite that it is expected to grow more moderately than it did in 2019. In addition, the new government has announced its intention to continue along the solid budget course of recent years despite reforms, particularly in the area of income tax, and a planned greening of the economy. In view of these factors, we do not expect there to be any changes in the ratings of the Republic of Austria in 2020.

**TABLE 1: ECONOMIC OVERVIEW**

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2018</th>
<th>2019E</th>
<th>2020F</th>
<th>2021F</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP (real, yoy, %)</td>
<td>2.5</td>
<td>2.4</td>
<td>1.5</td>
<td>1.0</td>
<td>1.3</td>
</tr>
<tr>
<td>Inflation (yearly average, %)</td>
<td>2.1</td>
<td>2.0</td>
<td>1.5</td>
<td>1.5</td>
<td>1.8</td>
</tr>
<tr>
<td>Unemployment rate (%)</td>
<td>5.5</td>
<td>4.9</td>
<td>4.6</td>
<td>4.7</td>
<td>4.7</td>
</tr>
<tr>
<td>Budget balance (% of GDP)</td>
<td>-0.7</td>
<td>0.2</td>
<td>0.5</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>Public debt (% of GDP)</td>
<td>78.3</td>
<td>74.0</td>
<td>70.4</td>
<td>68.3</td>
<td>66.0</td>
</tr>
<tr>
<td>Current account balance (% of GDP)</td>
<td>1.6</td>
<td>2.3</td>
<td>1.9</td>
<td>1.8</td>
<td>1.9</td>
</tr>
</tbody>
</table>

Source: Statistik Austria, OeNB, UniCredit Research

3. Details of 2020 funding plan and the contribution from QE

Based on our estimates, Austrian funding needs this year will amount to EUR 19.8bn, given EUR 14.8bn of domestic bond redemptions, EUR 4.6bn of international bond redemptions and a EUR 0.5bn cash deficit. Most of these needs (we expect EUR 18.3bn) will be covered by the issuance of RAGBs. This amount is between the targets announced by the Austrian treasury (EUR 18-21bn) at the end of last year. Notably, the range is the same as it was in 2019, when Austria sold EUR 20.1bn of RAGBs. In addition, we expect Austria to sell around EUR 1.5bn of international bonds.
In light of our expectations, RAGB net supply is likely to be around EUR 3.5bn. QE purchases will play a very important role in supporting the market. Based on our estimates, if the ECB keeps conducting APP net purchases at its current pace (EUR 20bn per month), during 2020, it should purchase EUR 3.5bn of Austrian bonds, hence covering the entire net supply. Furthermore, we estimate that redemptions of RAGBs in the PSPP portfolio will amount to EUR 5.5bn. Hence, gross QE purchases should amount to around EUR 9bn. Therefore, about 50% of Austria’s gross funding is likely to be absorbed by the ECB.

In the past, Austria has been particularly active in issuing extra-long government bonds. For reference, in 2019, the average maturity of new debt issued was more than 13 years, higher than the eurozone average of around 10 years. As demand for long European paper is likely to remain in the coming months, we expect that, in 2020, more than 30% of the RAGBs Austria issues will be at maturities of longer than ten years. In line with previous years, we expect the bulk of issuance to occur at the 10Y duration (EUR 10bn, 50% of overall gross supply). Chart 2 shows a comparison of the distribution of issuance in the past years, along with our expectations for 2020.

In terms of new benchmarks, Austria will probably issue a new 10Y RAGB between the end of January and the beginning of February to replace RAGB 0.5% Feb29. Interpolating RAGB Feb29 and RAGB May34, a new 10Y benchmark maturing in February 2030 would be trading roughly 15bp richer than the swap curve. In addition, we expect Austria to issue a new 30Y benchmark, which would replace RAGB 1.50% Feb47. Furthermore, Austria is likely to reopen RAGB Jul24 as well as other extra-long RAGBs.

### TABLE 2: AUSTRIAN FUNDING OUTLOOK

<table>
<thead>
<tr>
<th>Funding needs (EUR bn)</th>
<th>Funding sources (EUR bn)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic bond redemptions</td>
<td>14.8</td>
</tr>
<tr>
<td>International bond redemptions</td>
<td>4.6</td>
</tr>
<tr>
<td>Cash deficit</td>
<td>0.5</td>
</tr>
<tr>
<td>Total</td>
<td>19.8</td>
</tr>
</tbody>
</table>

Source: Austrian Treasury, Bloomberg, UniCredit Research

4. **Who owns Austrian debt?**

At the end of 3Q19, Austrian government debt amounted to EUR 313bn. Foreign investors held 63% of Austrian debt, domestic investors around 19% and the ECB 18%.

A look at domestic investors in more detail reveals that, at the end of 3Q19, banks held around 8% of Austrian government debt, while asset managers, insurance companies and pension funds accounted for a tiny 3%. Other domestic investors (non-financial corporates and the government sector) held roughly 8% of Austrian public debt. Therefore, the most price-sensitive domestic investors, namely investment managers and insurance companies, held only a small portion of Austrian government debt.

As shown in Chart 3, the share of Austrian debt held by domestic banks started to decline with the beginning of QE and now amounts to about 8%. Since early 2008 (at the beginning of the financial crisis), investment managers have progressively reduced their holdings (from 4% to 2%), while other domestic investors have more or less maintained their initial holdings of Austrian debt. The chart shows the important role played by the ECB. At the end of 3Q19, purchases under the PSPP accounted for 18% of the overall Austrian government debt. Most Austrian government bonds purchased by the ECB were sold by foreign investors: since the beginning of the QE, their holdings have decreased from 75% to 64%, while that of domestic investors has declined from 25% to 19%.

### CHART 2: HEAVY SUPPLY AT THE LONG END

Source: Austrian Treasury, Bloomberg, UniCredit Research

### CHART 3: FOREIGN INVESTORS HOLD MORE THAN 60% OF AUSTRIAN DEBT

Source: OeNB, Bloomberg, UniCredit Research
Data from the IMF\(^1\) (available from 1Q04 to 2Q19, see Chart 4) show that real-money investors (asset managers, insurers and pension funds) account for around 50% of such holdings by foreign investors. Since the start of QE, their share has decreased by almost EUR 40bn, while that attributed to foreign banks has remained almost unchanged. Foreign officials have also increased their presence in the RAGB market. Hence, in the last few years, the presence of investors with relatively low price sensitivity has increased, a factor that should provide stability.

**CHART 4: FOREIGN INVESTORS OTHER THAN BANKS HAVE REDUCED HOLDINGS OF AUSTRIAN GOVERNMENT DEBT**

As shown in Table 3, the distribution of Austrian government debt among foreign investors is quite similar to foreign holdings of the French debt. Conversely, foreign officials other than ECB, held a much more significant holding of German debt at the end of 2Q19.

**TABLE 3: FOREIGN INVESTORS IN AUSTRIA, GERMANY AND FRANCE**

<table>
<thead>
<tr>
<th></th>
<th>AT 2/10Y</th>
<th>GE 10/30Y</th>
<th>FR 10/30Y</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foreign officials (ex ECB)</td>
<td>29%</td>
<td>79%</td>
<td>34%</td>
</tr>
<tr>
<td>Foreign banks</td>
<td>19%</td>
<td>16%</td>
<td>16%</td>
</tr>
<tr>
<td>Foreign non-banks</td>
<td>52%</td>
<td>5%</td>
<td>49%</td>
</tr>
</tbody>
</table>

**5. AT curve at a glance**

Mimicking other EGB curves, the RAGB curve is flatter than it has been in the past due to dovish monetary policies and decreasing inflation and interest rate risk. As shown in Chart 5, although the curve has recently bear steepened, the 2/10Y spread, currently trading slightly below 60bp, is still not trading far from its lowest level since 2013. On the other hand, the 10/30Y spread, despite the flattening observed in 2H19, is still steeper than the historical low (40bp) it reached at the beginning of the first round of QE. In light of both the uncertain economic outlook in the eurozone and ECB purchases of government bonds, we expect EGB curves to flatten in the coming months, with both the 2/10Y and the 10/30Y spreads close to historical lows.

**CHART 5: THE RAGB CURVE REMAINS FLAT DESPITE RECENT STEEPENING**

Compared to the German curve, the Austrian one is steeper, especially in the 2/10Y section, with the box spread currently trading around 20bp, roughly 5bp higher than its four-year average.

Excluding the first half of 2017, when political pressure in France led to a steepening of the 2/10Y section of the OAT curve, the Austrian curve is as steep as the French one. Indeed, the box spread is trading close to 0bp. From a historical perspective, therefore, we prefer a 2/10Y maturity extension on the RAGB curve rather than on the Bund curve.

---

\(^1\) Data are based on the database compiled by Serkan Arslanalp and Takahiro Tsuda of the IMF. [Tracking Global Demand for Advanced Economy Sovereign Debt](https://www.imf.org/en/Publications/WP/Issues/2016/12/31/Tracking-Global-Demand-for-Advanced-Economy-Sovereign-Debt-40135)
Finally, the RAGB curve is rather smooth, reflecting the relatively low number of these bonds as well as the low number of bonds with the same residual maturity but different issue dates. Existing bonds are also fairly well-spaced in terms of maturity. Because of its smooth shape, the RAGB curve only seldom presents relative value opportunities.

6. A deeper look at the credit spread between RAGBs and OATs

At the time of writing, the 10Y RAGB-OAT spread is trading almost flat, as is the 2Y spread. Although the main economic fundamentals are stronger for Austria than for France (lower deficit, lower debt-to-GDP ratio, higher expected GDP growth), the better liquidity of OATs has provided support to the market, keeping the yield spread of OATs vs. RAGBs tight.

It is interesting to analyze the historical behavior of the RAGB-OAT spread. The chart below shows the historical distribution of the 10Y RAGB-Bund spread and the 10Y OAT-Bund yield differential from January 2013 to date. We chose to look at their spread against German Bunds both because this is a widespread market practice and because it helps to highlight country-specific events.

The interesting point highlighted in Chart 9 is that the AT-GE spread has been less volatile and less skewed towards high values than the FR-GE spread.
In this respect, buying OATs at their current spreads to Bunds does not offer a sufficient reward for the risks. Thus, RAGBs are attractive compared to their French peers.

The six-month rolling daily correlations of 10Y yields (Chart 10) confirm our findings. Even if one excludes the significant decline in correlation between OATs and Bunds occurred in the first half of 2017, which was caused by an increase in French political risk, the correlation between Austrian and German government bonds has been greater and more stable.

**CHART 10: AT-GE CORRELATION HAS BEEN MORE STABLE AND HIGHER**

![Chart 10: AT-GE Correlation Has Been More Stable and Higher](source: Bloomberg, UniCredit Research)

During the analyzed period, the Austrian index achieved the second highest performance with the lowest volatility. As we have already shown, Austrian government bonds are more correlated with Bunds than OATs but less correlated than DSLs. Given their high correlation with Bunds and their lower volatility, Austrian government bonds have a beta lower than one, making them a more defensive instrument than Bunds. This means that they tend to underperform Bunds when core yields decline and tend to outperform Bunds when core yields rise. These findings are also confirmed by the statistics found at the bottom of Table 4. Compared to DSLs despite their lower standard deviation, RAGBs have tended to offer more attractive yields.

**Authors**
Francesco Maria Di Bella  
FI Strategist  
(UniCredit Bank, Milan)  
+39 02 8862-0850  
francescomaria.dibella@unicredit.eu

Walter Pudschedl  
Economist  
(Bank Austria)  
+43 505 05 41957  
walter.pudschedl@unicreditgroup.at

**Editor**  
Dr. Luca Cazzulani  
Co-Head of Strategy Research, FI Strategist  
(UniCredit Bank, Milan)  
+39 02 8862-0640  
luca.cazzulani@unicredit.eu

---

**TABLE 4: EGB PERFORMANCE IN THE LAST SEVEN YEARS**

<table>
<thead>
<tr>
<th></th>
<th>GE</th>
<th>AT</th>
<th>NL</th>
<th>FR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market value (EUR bn)</td>
<td>200</td>
<td>45</td>
<td>62</td>
<td>265</td>
</tr>
<tr>
<td>Modified duration</td>
<td>7.8</td>
<td>7.5</td>
<td>7.8</td>
<td>8.0</td>
</tr>
<tr>
<td>Average annualized return</td>
<td>3.34%</td>
<td>3.60%</td>
<td>3.57%</td>
<td>4.05%</td>
</tr>
<tr>
<td>Annualized volatility</td>
<td>4.05%</td>
<td>3.89%</td>
<td>3.93%</td>
<td>4.10%</td>
</tr>
<tr>
<td>Correlation with GE</td>
<td>94%</td>
<td>97%</td>
<td>89%</td>
<td></td>
</tr>
<tr>
<td>Beta with GE</td>
<td>0.90</td>
<td>0.94</td>
<td>0.90</td>
<td></td>
</tr>
<tr>
<td>Average YTM</td>
<td>0.38%</td>
<td>0.62%</td>
<td>0.57%</td>
<td>0.71%</td>
</tr>
<tr>
<td>Average spread to Bund (bp)</td>
<td>23</td>
<td>19</td>
<td>33</td>
<td></td>
</tr>
<tr>
<td>Min spread (bp)</td>
<td>5</td>
<td>4</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Max spread (bp)</td>
<td>48</td>
<td>53</td>
<td>77</td>
<td></td>
</tr>
<tr>
<td>Spread volatility (bp)</td>
<td>61</td>
<td>69</td>
<td>97</td>
<td></td>
</tr>
</tbody>
</table>

Weekly data from 4 January 2013 to 17 January 2020  
Source: Bloomberg, UniCredit Research

---

**7. A lesson of history from Austrian government bonds**

The table below compares the performance of Austrian bonds with a number of European peers. The statistics are based on weekly data from 7-10Y Bloomberg and Barclays government bond indices during the period between January 2013 and January 2020.
Previous editions of Rates Perspectives

- Italy’s 2020 funding outlook and how to trade it - 9 January 2020
- Supply Outlook 2020: Still heavy activity at extra-long maturities - 10 December 2019
- Estimating and discussing the term premium on German bonds - 4 November 2019
- BTPs caught between macro fundamentals and appetite for carry trades - 2 October 2019
- ILBs pay higher Z-spreads than nominal bonds: We discuss the main drivers - 11 September 2019
- ECB’s QE 2: Number crunching and trade ideas - 24 July 2019
- BTPi breakeven curve: Too flat and too low - 10 July 2019
- Spain: Still a periphery country, judging from its foreign investors’ base - 17 June 2019
- SOFR and SONIA derivative markets: Small in size but growing - 24 May 2019
- Flows of eurozone investors into USTs: another factor keeping UST real yields low - 8 May 2019
- ECB tiering and money market rates: The devil is in the details - 16 April 2019
- Who are the foreign investors in Italian government debt? A breakdown by geography and institution - 3 April 2019
- Bund-swap has lagged Schatz in cheapening: why we expect a correction - 18 March 2019
- Keeping in place the Fed’s current monetary policy framework will likely benefit USTs - 4 March 2019
- Euribor and ESTER: Where we stand, where we’re going - 15 February 2019
- Our scorecard for EMU countries: A useful tool for detecting misalignments in EGBs valuations - 30 January 2019
- Six years after the introduction of CACs in the eurozone: Analyzing the effect on pricing - 10 January 2019
- Supply Outlook 2019: primary market activity to gradually shift to shorter maturities - 6 December 2018
- Scarcity of Bunds to keep real yields low - 29 October 2018
- Measuring rating expectations for BTPs - 4 October 2018
- Scarcity of Bunds (and safe eurozone paper) will remain an issue in 2019 - 17 September 2018
- CCTs: a good buying opportunity on a medium-term horizon - 30 July 2018
- ECB QE reinvestments: maturity matters - 18 July 2018
- ECB forward guidance: we like 5/30Y flatteners and sovereign credit-risk exposure - 2 July 2018
- Investing in USTs: to hedge or not to hedge? - 18 June 2018
- Who holds the BTPs? Dissecting Italian public debt investor base - 5 June 2018
- Italy funding, progress, cost and outlook: as good as it gets - 17 May 2018
- A model for POLGB yields - 3 May 2018
- 10Y BTP-SPGB spread: wide compared to fundamentals but convergence to fair value is tricky - 19 April 2018
- T-LTRO II early repayments: why we are not concerned - 5 April 2018
- US 10Y fair value model part II: breakeven inflation - 22 March 2018
- Upside risks to the US term premium - 8 March 2018
- US real yields are in line with our fair-value model - 26 February 2018
Legal Notices

Glossary

A comprehensive glossary for many of the terms used in the report are 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 as an inducement to enter into, any contract or commitment whatsoever. Investors are urged to contact their bank or another professional advisor for individual evaluation and advice.

Neither UniCredit Bank AG, UniCredit Bank AG London Branch, UniCredit Bank AG Milan Branch, UniCredit Bank Austria AG, UniCredit Bulbank, Zagrebacka 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 23 January 2020 at 12:47.

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 §34b 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 Austria 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 (UniCredit Bank, Austria), Rothschildplatz 1, 1020 Vienna, Austria. Regulatory authority: Finanzmarktaufsichtsbehörde (FMA), Otto-Wagner-Platz 5, 1090 Vienna, Austria


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

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

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


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 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.