

ECB Succession Watch

Trump: Handcuffing the future ECB president

Chief Investment Office GWM | 03 June 2019 3:25 pm BST

Ricardo Garcia, CIO Chief Economist Eurozone; Thomas Wacker, CFA, Analyst; Jens Anderson, CFA, FRM, Analyst; Bert Jansen, Strategist; Fabio Trussardi, Analyst; Thomas Flury, Strategist; Louis Pfau

- Outlook: Given the unexpected escalation in trade tensions, we think the ECB will now raise interest rates in September 2020 rather than March 2020. With the ECB presidential nominations due on June 20, a bumpy outlook for trade negotiations in 2H 2019 would limit the room for Draghi's successor to hike rates swiftly.
- Markets: Despite the negative impact of trade tensions on the economy, we expect the euro to appreciate slowly versus the US dollar. The incoming ECB president will find it increasingly difficult to ease amid limited policy space and a more hawkish executive board, while the likelihood of Fed cuts is rising. Meanwhile, with a more hawkish ECB executive board, peripheral bond and equity markets may show greater sensitivity to adverse macro news than in the past.
- What we are watching: Eurogroup on 13 June, Finnish government formation, SPD leadership appointment, European Council meeting 20–21 June, Brexit, European Parliament coalition building and first sitting on 2 July.

Our view

The renewed escalation in trade tensions between the US and China (and now Mexico) suggests it is less likely that the economic rebound, forecast for the second half of this year, will materialize. According to CIO's recent Risk Radar, a trade deal should only be expected following bumpy negotiations toward year end. With the Eurozone economy unlikely to accelerate in 2H 2019, we think that a rate hike in September 2020 is now more probable than one in March 2020. Elsewhere, Thursday's ECB press conference may shed more light on the details of TLTRO-III, while deposit tiering is not our base case.

The escalating trade dispute and macroeconomic outlook should limit the ECB's ability to swiftly exit its loose monetary policy. But first it needs to appoint a new ECB president – to this effect, the heads of state of the EU member states aim to nominate the next ECB president on June 20, although it may take longer; on the 28 May the European Council stated that no names had been excluded. Nonetheless, we believe that the Spitzenkandidat-system will prevail and Manfred Weber will become European Commission president. This would move France's Villeroy (dove) and the Finnish compromise candidates (balanced policy stance) in pole position (ahead of hawk Jens Weidmann) to succeed Mario Draghi on 1 November.



Source: iStock

Table of contents

Page 2: Q&A ECB

Page 8: Q&A European elections

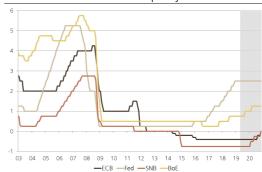
Related Research

- European election review, 27 May 2019
- The European elections, Brexit and Draghi's successor: Update 3, ECB Succession Watch, 20 May 2019
- The future of Europe, the Eurozone and the next recession, 9 April 2019

Source: UBS

Fig. 1: Central bank policy rates (%)

Federal Reserve far ahead in policy normalization



Note: ECB policy rate represented by deposit rate. Source: Haver Analytics, UBS, as of 3 June 2019.

Questions and answers: ECB

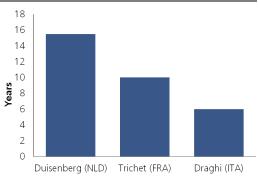
Who are the frontrunners for the ECB succession?

Eurozone member states are each able to put forward one candidate (through the respective head of state), though none has done it so far (and likely only a few will). The key contenders currently include:

- Jens Weidmann (Germany): The former Angela Merkel advisor and Germany's frontrunner would probably start the rate hike process earlier than the others to create monetary policy space for a future recession. He may also seek a small balance sheet in normal times, and is critical of sovereign asset purchases. His candidacy lost momentum last year when Merkel started to focus on the European Commission presidency. French President Emmanuel Macron is said to consider Michel Barnier for European Commission president. In this case, the ECB presidency would be Germany's main target, unless Merkel grabs the European Council presidency for herself. Germany has never held the top ECB job, while France already has in Jean-Claude Trichet.
- François Villeroy de Galhau (France): The Banque de France governor is France's frontrunner and also enjoys some support in Germany given his German roots and language skills. Villeroy de Galhau held various posts in the French administration, including at the treasury and finance ministry. He has a dovish and pragmatic tilt and has stuck close to Draghi's line of stimulus, even if he pushes back against debt monetization ideas. However, his past position at a French bank could make the ECB more sensitive to the banking sector and move rates back to zero more swiftly, if he became president. In addition, he has argued for a large balance sheet even in normal times.
- **Benoît Coeuré** (France): Although he is very highly regarded, Coeuré's nonrenewable term as ECB executive board member runs until the end of 2019. We are skeptical that the legal hurdles to appointing him can be overcome. Although he was one of the architects of the QE program, having started his term along with Draghi in 2011, he is generally not an advocate of pre-commitments and forward guidance.
- Erkki Liikanen (Finland): The former Governing Council member is a seasoned veteran and was an independent thought leader within the ECB. He is a good networker with statesman qualities and his monetary approach is balanced. Some observers believe that France could also support a Finnish ECB president. Liikanen's party (Social Democrats) won the most seats in the recent elections (nine more than compatriot Olli Rehn's Center Party). This could play to his advantage against Rehn, if the Social Democrats grab the prime minister position, which is likely.
- Olli Rehn (Finland): The Governing Council member joined the ECB only in mid-2018. He was in charge of the euro as EU commissioner during the debt crisis, being a strong advocate of fiscal discipline. Just like Liikanen, his political past has helped him develop statesman qualities. His fiscal stance could make a difference for Germany, if France and Germany were to compromise on a non-French and non-German candidate. In addition, he is spearheading the first rethink since 2003 of the ECB's monetary strategy (subject to the Federal Reserve's own rethink in 1H20) and has argued for inflation-targeting. He is one of the few active Twitter users in the Governing Council.

Given the European elections and Brexit, uncertainty is high at this point and the frontrunners could change at a short notice. Other contenders include Klaas Knot (Netherlands), Pablo Hernandez de Cos (Spain), Klaus Regling (Germany), Ardo Hansson (Estonia), and Christine Lagarde (France).

Fig. 2: First three ECB presidentsYears of experience as national central bank chief



Source: UBS.

What is our baseline view on the ECB succession?

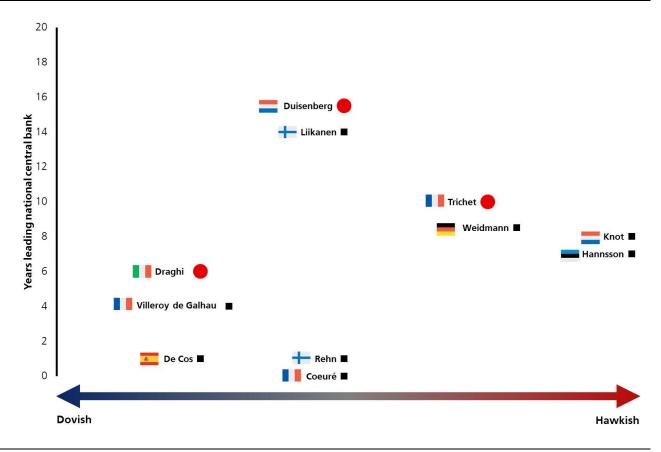
We think that politically, determining the new European Commission president will take precedence over the ECB presidency this time, especially with the ascent of protectionism (the European Commission takes the lead in trade negotiations). Accordingly, the ECB succession will depend on the appointment of the European Commission president. In addition, we believe France and Germany will each aim to place a candidate of their choice (not necessarily of French or German nationality) either at the ECB or the EU Commission, with Germany in particular prioritizing the commission presidency. In such an event, the Finnish compromise candidates Liikanen and Rehn and in particular France's Villeroy de Galhau would be best positioned to be ECB president, although it is still very early days and names can change at a short notice. Conversely, if Germany does not get the European Commission presidency, Weidmann may be best positioned for the role of ECB chief (unless Merkel goes herself for the European Council presidency). This is because he is the only German frontrunner, as well as the only key candidate of a country run by a head of state from the European center-right (European People's Party). Given the European election results, Manfred Weber is currently the favorite to become European Commission president. Accordingly, we think that the Finnish compromise candidates Erkki Liikanen and Ollie Rehn and in particular France's Villeroy de Galhau are currently in the pole position for the ECB.

How do the candidates compare to prior ECB presidents?

One thing all ECB presidents so far have in common is that they led their national central banks (for 10 years on average, see Fig. 2). In our view, the technical and management experience gained from such a position is more important than ever, because the ECB's staff, influence, and responsibilities have increased substantially since 1999. Accordingly, we think that candidates who have run a national central bank have an edge in the process. Certainly, years of experience running a central bank are a mere proxy for the skill set required of a candidate for ECB president, but they are in any case part of the debate. In Fig. 3 we go one step further and combine this proxy with our own assessment of how dovish or hawkish the candidates with central bank leadership experience are compared to the first three ECB presidents. Surprisingly, the top three candidates in most surveys (Weidmann, Villeroy, Liikanen) are fairly close in policy leanings to the prior presidents. Villeroy has similarities with Draghi, Liikanen with Duisenberg, and Weidmann with the hawkish Trichet. These profiles are far apart from each other. Draghi, for example, has not raised interest rates in his eight years as president, and even added multiple accommodative tools such as quantitative easing. Trichet raised interest rates in 2005 against the wishes of almost all member states, in 2008 during the global financial crisis, and again in 2011 just before the Eurozone entered recession. Duisenberg in turn was rather inconspicuous compared to the other two presidents. Investors are therefore well advised to closely follow the appointment process in June.

Fig. 3: CIO ECB succession radar

The top three candidates (Weidmann, Villeroy, Liikanen) have similarities with prior ECB presidents



Sources: UBS, Bloomberg. Note: Names can change at short notice and exclude non-central bankers such as Christine Lagarde or Klaus Regling. Note: Dovish/Hawkish assessment based on quotes from central bankers, interviews and Bloomberg ECB spectrometer.

Eurozone bonds: Implications from ECB presidency and European elections?

German Bund yields have fallen further and reached all-time lows. Sovereign bond risk premiums were unmoved by the European Parliament election outcome in most Eurozone countries . The exceptions were those of Italy and Greece, which moved in opposite directions. Greek bonds gained after Prime Minister Alexis Tsipras announced he would call snap elections as soon as possible following his party's defeat in the EU poll. We caution, however, that a new government led by the New Democracy party would not necessarily result in better fiscal performance.

Italian bonds suffered as the right-wing Lega party gained most votes. Although no new elections have been announced in the country as a result, Lega is the government's junior but managing coalition partner with M5S. We expect the process of drafting a 2020 budget plan in autumn to be difficult. Lega officials are set to challenge EU budget rules, but will come up against new EU Commission members likely keen on demonstrating their ability to enforce the fiscal stability mandate. The resulting public stand-off may lead to higher and more volatile risk premiums for Italian bonds along with the possibility of escalating conflict, as was the case last year.

The choice of president for the European Central Bank (ECB) could also heighten bond markets' sensitivity to political news. If Jens Weidmann is chosen, yields and spreads would most likely shift higher at first. Lower-rated countries, which have benefited greatly from ECB bond buying, could experience rising bond yields, as Weidmann has often criticized this policy measure. Italian bonds, in particular, look most vulnerable to adverse political news if the established "Draghi backstop" is questioned. A mere continuation of current policies, as might be expected if France's François Villeroy becomes ECB president, should not shift most Eurozone government bond yields much, as valuations already reflect a very dovish monetary policy stance, in our view. But investors would likely assume that even the most dovish candidate may not support Italian banks and government bonds as effectively as Draghi has done, resulting in greater sensitivity to adverse economic or political news.

ECB presidency: What are the implications for Eurozone equities?

There are many moving parts driving Eurozone equity markets, not least of all geopolitical uncertainty, especially US-China trade tensions and, to a lesser extent, Brexit. This adds to the conventional drivers, such as earnings momentum, valuations and central bank policies, including the Fed's. The ECB's exceedingly loose monetary policy might be called into question if Jens Weidman were to be chosen as the new ECB president. If his appointment leads to higher Eurozone rates and greater risk premia for lower-rated countries, this could have an adverse effect on EMU equities; Eurozone banks would benefit, however. But even more dovish candidates may exhibit a more conservative stance to the periphery, which would hamper their equity markets. Moreover, a rising euro would have an adverse impact on MSCI EMU's EPS growth because non-euro revenues would be worth less when translated into euros; around 50% of Eurozone companies' revenues are generated outside the euro area. A lasting 5% rise in the trade-weighted euro would reduce EPS, on average, by 2-3%. Countries with above-average forex exposure, such as Germany and the Benelux, would be most affected.

Banking sector: What are the implications of TLTROs?

We expect the ECB to announce the remaining details on its planned TLTRO-III program on 6 June. We expect the conditions of the new TLTRO to be less convenient than the previous ones as the duration will be shorter at two years instead of four. Meanwhile, the funding rate will be the main refinancing rate (currently 0.0%) "over the life of each operation". This contrasts with the TLTRO-II, where the funding rate was the main refinancing rate at the date of allotment. In addition, like the outstanding TLTRO-II program, the TLTRO-III will feature "built-in incentives for credit conditions to remain favorable". An extension of the cheap funding facility is necessary to support lending to the economy by creating incentives for banks to keep lending conditions loose, in our view.

The launch of the TLTRO-III instrument in September this year does not mean a threat to banks' liquidity coverage ratios (LCRs) and would be manageable in our view. In 4Q18, European banks had an average LCR of 145% based on SSM data. However, there is insufficient disclosure on net stable funding ratios (NSFRs). Banks will have to repay EUR 720bn worth of old-TLTRO funds by 2020–2021, of which some EUR 400bn are due in 2020 (first repayment June 2020). Most TLTRO funds have been taken up by the weaker banks, many of which are located in the so-called

peripheral countries. Italian and Spanish banks took up about 55% of the old-TLTRO funding, while a few major banks in core Eurozone countries have also taken up larger amounts of TLTRO II.

Deposit-tiering: What are the implications for bank earnings?

We do not expect the ECB to announce a tiered-system for bank deposits on 6 June. Under a deposit-tiering system, banks' excess reserves would not be charged up to a certain amount. The ECB's view is that the benefits of negative rates outweigh the disadvantages, most notably the pressure negative rates exert on profitability. This said, the information the ECB gave on 10 April with regard to "possible side effects" of negative rates are essentially unchanged vis-a-vis Mario Draghi's comments in his speech on 27 March: "We will continue monitoring how banks can maintain healthy earnings while net interest margins are compressed. And, if necessary, we need to reflect on possible measures that can preserve the favorable implications of negative rates for the economy, while mitigating the side effects, if any". We take this to mean that the ECB is discussing at least the introduction of a deposit-tiering system following the example of the Bank of Japan and the Swiss National Bank.

Despite a theoretical positive bank earnings boost by up to high-single-digit percentage points, in practice we would not expect a full exemption of the -0.4% rates applied to the banks excess reserves at the ECB. Therefore we would expect deposit-tiering, if implemented, to bring only minor relief to bank profitability pressures. Nevertheless, the signal sent to bank shareholders and creditors and the potential shift in sentiment towards the sector from an ECB becoming more supportive to banks should also not be underestimated, in our view.

How should the currency react to a new ECB president?

The president is the primus inter pares when voting on big decisions and usually leads the consensus on controversial issues. From that perspective, the majority matters more than the head. Still, the personality and the character of the president make a difference, and we should not underestimate the impact Draghi had on the euro during his term. His name will always be closely connected to the weakness of the euro triggered by quantitative easing, and the idea that the ECB will do "whatever it takes" to safeguard the Eurozone. At first, the change from Draghi to a new leader is likely to strengthen the currency almost by definition. Anyone stepping into his big shoes will find it difficult at first to convince markets that he is as strong and committed as his predecessor. We suspect that markets, when in doubt, would rather buy than sell the euro. Now, it is more difficult for the ECB to find new means to expand monetary policy than it is to tighten. Market perception of risks could therefore turn hawkish, especially as the next generation of the Executive Board will likely be more hawkish. With the new president getting settled, it seems clear that Weidmann, being more conservative, will promote policies that strengthen the euro more than it would under the other two leading candidates (i.e. Villeroy or Liikanen). For this reason, we could also see a tendency that the euro reacts positively to those two candidates, at least in an initial phase.

What is the link between politics and the ECB presidency?

Typically, decision-making for European appointments revolves around the Franco-German axis as well as the affiliation of the 19 heads of state to the respective European party family. The political heat map (Fig. 5)

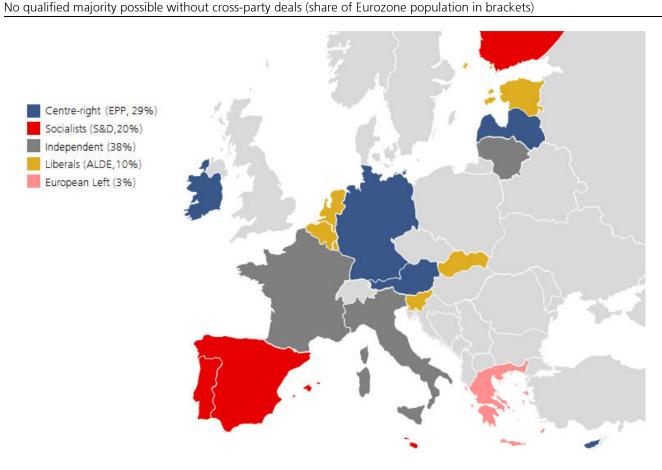
Fig. 4: EURUSD vs. trade-weighted euro Trade-weighted exchange rate consolidating



Note: REER = Real effective exchange rate. Source: Haver Analytics, UBS, as of 29 May 2019.

shows all voting countries and the membership of the respective head of state in the European party families. The center-right (i.e., EPP) will mathematically not be able to push through the ECB presidency on their own. Beyond Spain, Germany will need the support from either France or Italy. France will likely only play ball if they get either the ECB presidency or European Commission presidency. Italy's priority is to be properly represented in European institutions. We believe that taking the European parliament presidency in July could fit that purpose.

Fig. 5: Heads of state behind ECB presidency decision



Source: UBS, as of June 2019

Note: EPP = European People's Party, S&D = The Progressive Alliance of Socialists and Democrats, ALDE = The Alliance of Liberals and Democrats for Europe. Slovakian head of state changes as of 15 June (from S&D to ALDE). Finland is currently in its government formation process and the new socialist prime minister is expected to take office by the European Council of June 20/21. Belgium is about to start its government formation process.

When is the ECB president elected?

We believe the ECB president will be determined after it is clear who will become the European Commission president. Following the European elections, the president of the European Council, Donald Tusk, will consult the European Parliament in June on the European Commission presidency. The European Council will formally decide on its proposal for the Commission presidency on 20–21 June (with first indications at the European June 13), while the European Parliament will elect the European Commission president in early July, most likely on 2 July. However, given the fragmentation in European politics, it could easily take longer.

How is the ECB president elected?

To become ECB president, Article 283 of the Treaty of the European Union applies. Under Article 283, a candidate is appointed by the heads of the member states (for a nonrenewable eight-year term). The heads of state need to consult with the European Parliament and the ECB Governing Council before making an appointment. Nonetheless, the ultimate decision-making power lies with the Eurozone heads of state within the European Council, based on "reinforced qualified majority." This requires that at least 72% of member states (i.e., 14 out of 19 members) and member states representing at least 65% of the population of the Eurozone to approve it (see Fig. 6 for weights). As such, each member state (through its head of state) has the right to put forward one candidate. Normally, very few countries (or sometimes only one) put forward a candidate, because only a few candidates have a realistic chance of winning the race.

Questions and answers: European elections

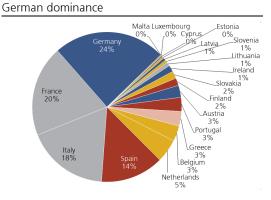
European elections: What is the Spitzenkandidaten-process?

According to the Spitzenkandidaten-process (used for the first time in 2014), the European Parliament has to elect the European Commission president. Usually it is the lead candidate of the winning party family, like Jean-Claude Juncker from the European People's Party in 2014. The Spitzenkandidaten-process is controversial because multiple heads of state see it as their responsibility to come up with the lead candidate (as per Article 17 of Treaty of the European Union). France is against the Spitzenkandidaten-process, Germany and Spain in favor and Italy sees it as one key criterion, but not the only one. In any event, both the European Parliament and the European Council vote on the commission presidency, by a simple majority and a qualified majority (55% of member states, representing at least 65% of the EU population), respectively. Jean-Claude Juncker in turn re-confirmed his conviction at the informal European Council on 9 May, that the Spitzenkandidat winning the European elections will become the new European Commission president. In addition, the socialists and the center right (both supporting the Spitzenkandidaten-process) have a blocking minority in the European Council.

How and when is the European Commission president elected?

European Council President Donald Tusk will consult the European Parliament in June on the candidate for the European Commission presidency, taking into account the European election results. The Spitzenkandidat of the European Parliament will be considered, but the European Council is not bound by it. As laid out earlier, the heads of state may take the distortion of the UK participating in the elections as an excuse to ignore the Spitzenkandidat. Following those consultations in June, Tusk will formally propose a candidate for the commission presidency to the European Council. By 20–21 June, the European Council will formally decide on their candidate of choice based on a qualified majority vote. The qualified majority vote requires 16 of 28 countries (the UK is also allowed to vote) representing at least 65% of the EU population voting in favor of the candidate. This is then followed by the final vote in the European Parliament in July, most likely 2 July. If the European Parliament doesn't confirm the European Council's candidate, the latter has to come up with another candidate within one month's time. We think there is a high probability for a delay due to the increased

Fig. 6: Eurozone population weights



Source: UBS, as of June 2019

Note: blue = EPP, grey = independent, red = S&D, yellow = ALDE, light red = European Left, green = Greens. Slovakian head of state changes as of 15 June (from S&D to ALDE). Finland is currently in its government formation process and the new socialist prime minister is expected to take office by the European Council of June 20/21. Belgium is about to start its government formation process.

Fig. 7: Election of the European Commission A long way ahead

Date	Event	
June	The president of the European Council consults with the EP on the candidate for the presidency of the Commission and proposes a candidate to the European Council The European Council decides on its proposal for a candidate (by qualified majority)	
July	Election of the Commission President by the EP (by majority - at least 353)	
August - September	Member states propose Commissioners- designate Hearings of the Commissioners-designate by the EP committees	
October - November	Vote by the EP on the new Commission (by a majority of the vote cast) Inauguration of the new European Commission	

Sources: European Parliament, UBS, as of June 2019.

political fragmentation in Europe. Furthermore, at the inaugural plenary session of the newly elected Parliament, to be held on 2 July, a new European Parliament president is set to be elected, with the current President, Antonio Tajani (EPP), being up for reelection.

Who are the main Spitzenkandidaten for the EC presidency?

- Manfred Weber (Germany, center-right): The chairman of the EPP is a member of the Bavarian party CSU, the coalition partner of the CDU. Weber's CSU is positioned to the right of the CDU. Angela Merkel has declared her clear support for Manfred Weber at the informal European Council of 9 May. In addition, she stated that all members of the European center-right (European People's Party) are in support of the Spitzenkandidat-process and thus Manfred Weber. Hungary's Orban is a notable exception, as he vowed to vote against Weber due to frictions with him. Weber's political agenda focuses on creating more jobs, increasing border control, fostering innovation, and supporting the European youth.
- Frans Timmermans (Netherlands, socialist): Currently serving as first vice-president of the European Commission, the lead candidate of the socialists (PES) is a former Dutch Minister of Foreign Affairs. He gained firsthand experience next to Jean-Claude Juncker and is fluent in seven languages. Timmermans pledges that he would strengthen trade alliances, support fair taxation, and fight the shortage of affordable housing and unfair wages.

As mentioned earlier, the European Council is not bound by the Spitzenkandidat emerging from the European election and coalition building. The Council just has to take into account the result of the European election. The UK's participation in the European elections could reduce the chances of the European Council voting for the Spitzenkandidat due to the distorted election results. It is said that France's Macron may push for Michel Barnier as European Commission president and Germany for Peter Altmaier, especially if Weber's EPP unexpectedly fails to build a majority in the European Parliament. For what it's worth, the UK will have the right to vote on the European Commission president, as well as those of the European Council and the EU parliament. Barnier ending up as European Commission president would likely move the pole position for the ECB presidency from the Finnish compromise candidates Erkki Liikanen/Ollie Rehn and Villeroy de Galhau to Jens Weidmann, unless Angela Merkel would grab the European Council presidency for herself.

More populists in the European Parliament: Implications?

We don't think that the populists gains in the European parliament will suffice to dominate the European Parliament. Most votes are taken by simple majority, depending on legislation also based on an absolute majority. In addition, there are no blocking minorities when voting in the European Parliament. Accordingly, we don't think the populists are set to take control of the European Parliament. What's more, it is unlikely that the far right and far left will unite or consistently align behind legislative proposals. Ultimately, we expect a majority coalition between the centerright and socialists to also include the liberals (ALDE) and/or the Greens.

How are seats allocated in the European Parliament?

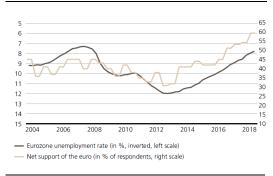
The criteria for the composition of the European Parliament are

Fig. 8: European Parliament seat projection Center-right in the lead



Note: Partially based on provisional results. Sources: European Parliament, UBS CIO WM, as of 28 May 2019

Fig. 9: Euro support vs. unemployment rate Euro support at all-time high



Sources: Eurobarometer, Eurostat, UBS, as of December 2018.

determined in Article 14(2) TEU, stating that at least six seats are allocated by member states. The maximum threshold is 96 and the European Council decided that the thresholds should be fully utilized in order to reflect the respective population sizes as closely as possible, a goal that is met with Germany holding 96 seats. Furthermore, the representation is proportional, meaning that an MEP from a more populous member state should represent more citizens than an MEP from a less populous country. Given that the UK is now expected to participate in the European elections, the number of seats of the European Parliament will remain unchanged at 751.

What are the powers of the European Parliament?

The European Parliament is the only directly elected supranational institution in the world and has legislative, budgetary, and supervisory powers. Legislation voted by the European Parliament is binding on all member states. The parliament co-decides on an annual basis with the European Council on the annual budget of the EU. It also adopts the EU's seven-year budget (Multiannual Financial Framework). The European Parliament exercises democratic oversight over European institutions such as the ECB.

Appendix

Terms and Abbreviations				
Term / Abbreviation	Description / Definition	Term / Abbreviation	Description / Definition	
1H, 2H, etc. or 1H11,	First half, second half, etc. or first half 2011,	Α	actual i.e. 2010A	
2H11, etc.	second half 2011, etc.			
COM	Common shares	Shares o/s	Shares outstanding	
UP	Underperform: The stock is expected to	CIO	UBS WM Chief Investment Office	
	underperform the sector benchmark			

UBS Chief Investment Office's ("CIO") investment views are prepared and published by the Global Wealth Management business of UBS Switzerland AG (regulated by FINMA in Switzerland) or its affiliates ("UBS").

The investment views have been prepared in accordance with legal requirements designed to promote the independence of investment research.

Generic investment research – Risk information:
This publication is for your information only and is not intended as an offer, or a solicitation of an offer, to buy or sell any investment or other specific product. The analysis contained herein does not constitute a personal recommendation or take into account the particular investment objectives, investment strategies, financial situation and needs of any specific recipient. It is based on numerous assumptions. Different assumptions could result in materially different results. Certain services and products are subject to legal restrictions and cannot be offered worldwide on an unrestricted basis and/or may not be eligible for sale to all investors. All information and opinions expressed in this document were obtained from sources believed to be reliable and in good faith, but no representation or warranty, express or implied, is made as to its accuracy or completeness (other than disclosures relating to UBS). All information and opinions as well as any forecasts, estimates and market prices indicated are current as of the date of this report, and are subject to change without notice. Opinions expressed herein may differ or be contrary to those expressed by other business areas or divisions of UBS as a result of using different assumptions and/or criteria.

In no circumstances may this document or any of the information (including any forecast, value, index or other calculated amount ("Values")) be used for any of the following purposes (i) valuation or accounting purposes; (ii) to determine the amounts due or payable, the price or the value of any financial instrument or financial contract; or (iii) to measure the performance of any financial instrument including, without limitation, for the purpose of tracking the return or performance of any Value or of defining the asset allocation of portfolio or of computing performance fees. By receiving this document and the information you will be deemed to represent and warrant to UBS that you will not use this document or otherwise rely on any of the information for any of the above purposes. UBS and any of its directors or employees may be entitled at any time to hold long or short positions in investment instruments referred to herein, carry out transactions involving relevant investment instruments in the capacity of principal or agent, or provide any other services or have officers, who serve as directors, either to/for the issuer, the investment instrument itself or to/for any company commercially or financially affiliated to such issuers. At any time, investment decisions (including whether to buy, sell or hold securities) made by UBS and its employees may differ from or be contrary to the opinions expressed in UBS research publications. Some investments may not be readily realizable since the market in the securities is illiquid and therefore valuing the investment and identifying the risk to which you are exposed may be difficult to quantify. UBS relies on information barriers to control the flow of information contained in one or more areas within UBS, into other areas, units, divisions or affiliates of UBS. Futures and options trading is not suitable for every investor as there is a substantial risk of loss, and losses in excess of an initial investment may occur. Past performance of an investment is no guarantee for its future performance. Additional information will be made available upon request. Some investments may be subject to sudden and large falls in value and on realization you may receive back less than you invested or may be required to pay more. Changes in foreign exchange rates may have an adverse effect on the price, value or income of an investment. The analyst(s) responsible for the preparation of this report may interact with trading desk personnel,

sales personnel and other constituencies for the purpose of gathering, synthesizing and interpreting market information.

Tax treatment depends on the individual circumstances and may be subject to change in the future. UBS does not provide legal or tax advice and makes no representations as to the tax treatment of assets or the investment returns thereon both in general or with reference to specific client's circumstances and needs. We are of necessity unable to take into account the particular investment objectives, financial situation and needs of our individual clients and we would recommend that you take financial

and/or tax advice as to the implications (including tax) of investing in any of the products mentioned herein.

This material may not be reproduced or copies circulated without prior authority of UBS. Unless otherwise agreed in writing UBS expressly prohibits the distribution and transfer of this material to third parties for any reason. UBS accepts no liability whatsoever for any claims or lawsuits from any third parties arising from the use or distribution of this material. This report is for distribution only under such circumstances as may be permitted by applicable law. For information on the ways in which CIO manages conflicts and maintains independence of its investment views and publication offering, and research and rating methodologies, please visit www.ubs.com/research. Additional information on the relevant authors of this publication and other CIO publication(s) referenced in this report; and copies of any past reports on

Important Information about Sustainable Investing Strategies: Incorporating environmental, social and governance (ESG) factors or Sustainable Investing considerations may inhibit the portfolio manager's ability to participate in certain investment opportunities that otherwise would be consistent with its investment objective and other principal investment strategies. The returns on a portfolio consisting primarily of ESG or sustainable investments may be lower than a portfolio where such factors are not considered by the portfolio manager. Because sustainability criteria can exclude some investments, investors may not be able to take advantage of the same opportunities or market trends as investors that do not use such criteria. Companies may not necessarily meet high performance standards on all aspects of ESG or sustainable investing issues; there is also no guarantee that any company will meet expectations in connection with corporate responsibility, sustainability, and/or impact performance.

Distributed to US persons by UBS Financial Services Inc. or UBS Securities LLC, subsidiaries of UBS AG. UBS Switzerland AG, UBS Europe SE, UBS Bank, S.A., UBS Brasil Administradora de Valores Mobiliarios Ltda, UBS Asesores Mexico, S.A. de C.V., UBS Securities Japan Co., Ltd., UBS Wealth Management Israel Ltd and UBS Menkul Degerler AS are affiliates of UBS AG. UBS Financial Services Incorporated of Puerto Rico is a subsidiary of UBS Financial Services Inc. accepts responsibility for the content of a report prepared by a non-US affiliate when it distributes reports to US persons. All transactions by a US person in the securities mentioned in this report should be effected through a US-registered broker dealer affiliated with UBS, and not through a non-US affiliate. The contents of this report have not been and will not be approved by any securities or investment authority in the United States or elsewhere. UBS Financial Services Inc. is not acting as a municipal advisor to any municipal entity or obligated person within the meaning of Section 15B of the Securities Exchange Act (the "Municipal Advisor Rule") and the opinions or views contained herein are not intended to be, and do not constitute, advice within the meaning of the Municipal Advisor Rule.

External Asset Managers / External Financial Consultants: In case this research or publication is provided to an External Asset Manager or an External Financial Consultant, UBS expressly prohibits that it is redistributed by the External Asset Manager or the External Financial Consultant and is made available to their clients and/or third parties. For country disclosures, click here.

Version 04/2019. CIO82652744

© UBS 2019.The key symbol and UBS are among the registered and unregistered trademarks of UBS. All rights reserved.