

Euro Area Viewpoint

France: the very slightly brighter spot

Time for a quick tour of the French outlook

We stick to our view that the French economy is likely to outperform the Euro area average going forward. We forecast 0.9% growth in 2023, 0.8% in 2024 and 1.3% in 2025 vs a Euro area aggregate of 0.5% in each of 2023/24 and 1.2% in 2025. France is one of the few Euro area members where our forecasts are not below consensus. That doesn't mean we expect French inflation to resist an undershoot in 2025. Due to late electricity price hikes, we expect headline at 1.9% in 2025, 40bp above the Euro area average, but core at 1.7%, 10bp below.

Prominent downside (growth), limited upside (inflation)

We discuss three risks in particular. Downward revisions to 3Q GDP growth with data signalling at best unchanged momentum in 4Q already suggest short-term downside. Fiscal policy was a crucial driver of France's recovery from COVID and the relatively smooth trajectory during the energy crisis. Very cautious and slow budget adjustments are the base case, but European fiscal rules are a prominent risk. We worry less about inflation upside though. Recent data flow bolsters that view. But more fundamentally, the rise in French participation rates means labour supply grew at least as much as demand. And there is still a lot of room for more of the same, keeping wage pressures at bay.

Stubbornly constructive French debt

High nominal growth (in relative terms), good positioning with respect to global risk factors, and cheap OAT valuations (dragged this way from SSAs (sovereigns, supranationals & agencies)) make us bullish French debt fundamentally. Political/policy risks, high/increasing elsewhere, are a non-story here (next elections in May-27). Issuance is high in absolute terms but this is no big news. We call 10y OAT-Bund at 35-40bp range as fair (2019 levels).

French credit ratings are going to AA-, but when looking at past credit rating impacts it is difficult to spot consistent market reactions (one-day moves are usually in the order of basis point decimals and often even spread tightening).

01 December 2023

Macro
EuropeGlobal Economics Rates & FX
BofAS

Evelyn Herrmann
Europe Economist
BofASE (France)
+33 1 8770 0292
evelyn.herrmann@bofa.com

Erjon Satko
Rates Strategist
BofASE (France)
+33 1 8770 0304
erjon.satko@bofa.com

Ruben Segura-Cayuela
Europe Economist
BofA Europe (Madrid)
+34 91 514 3053
ruben.segura-cayuela@bofa.com

[See Team Page for List of Analysts](#)

See Exhibit 17 for definitions of abbreviations and terminology used in the report.

Trading ideas and investment strategies discussed herein may give rise to significant risk and are not suitable for all investors. Investors should have experience in relevant markets and the financial resources to absorb any losses arising from applying these ideas or strategies.

BofA Securities does and seeks to do business with issuers covered in its research reports. As a result, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision.

Refer to important disclosures on page 10 to 12.

12633023

Timestamp: 01 December 2023 01:30AM EST

France: the very slightly brighter spot

Time for a quick tour of the French outlook

We stick to our view that the French economy is likely to outperform the Euro area average going forward. We forecast 0.9% growth in 2023, 0.8% in 2024 and 1.3% in 2025 vs a Euro area aggregate of 0.5% in each of 2023/24 and 1.2% in 2025. France is one of the few Euro area members where our forecasts are not below consensus. That doesn't mean we expect French inflation to resist an undershoot in 2025. Due to late electricity price hikes, we expect headline at 1.9% in 2025, 40bp above the Euro area average, but core at 1.7%, 10bp below.

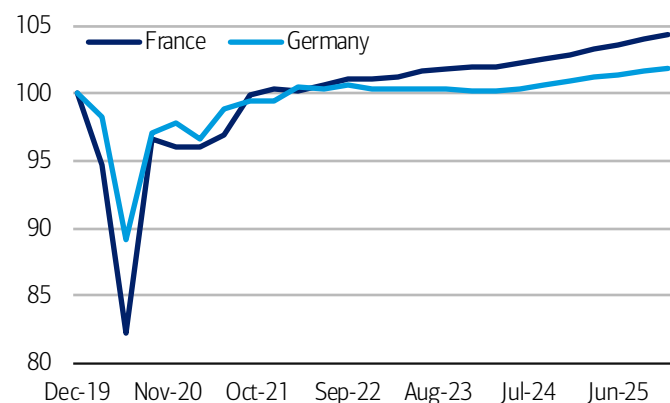
We focus on three particular aspects of our forecasts today. When we initially started working on this piece, we meant to concentrate on fiscal policy and inflation risks. That changed with this week's data flow. Downside to growth forecasts is becoming more acute given the 3Q GDP revisions and latest consumer spending data. Mechanically, 10bp of both 2023 and 2024 forecasts are now at risk from weaker carryovers from the 3Q growth revision from +0.1% to -0.1% qoq. But with recent data flow suggesting at best unchanged growth in 4Q, our 0.1% qoq forecast starts to look optimistic and adds further acute downside to the outlook.

Beyond short-term data, French fiscal policy, like elsewhere in the Euro area, is at risk of having to deliver more tightening than currently planned. The European Commission seems to have taken issue with the plans. We doubt current budget plans are revisited meaningfully, but we are nervous about the prospect of more severe austerity if new or old fiscal rules require faster adjustment.

Third, our base case has inflation undershoot the target. Yet, we are often confronted with the view that the French labour market is tight, like elsewhere in the Euro area, and wage pressures are perhaps even more likely given the more favourable real economic recovery so far. While we would share the view that more persistent wage growth could be more likely in France than elsewhere, it is still a tail risk and with a reducing likelihood given the weakening growth outlook. Recent surveys suggest price expectations are back to pre-COVID norms, and wage growth is past the peak. What's more, headline unemployment and employment levels mask a substantial rise in labour supply recently, an increase in the overall labour productivity of the country's working-age population, with still room for much more of the same.

Exhibit 1: Real GDP levels (4Q19=100)

France's recovery has progressed more smoothly and will continue to do so compared with Germany, in particular

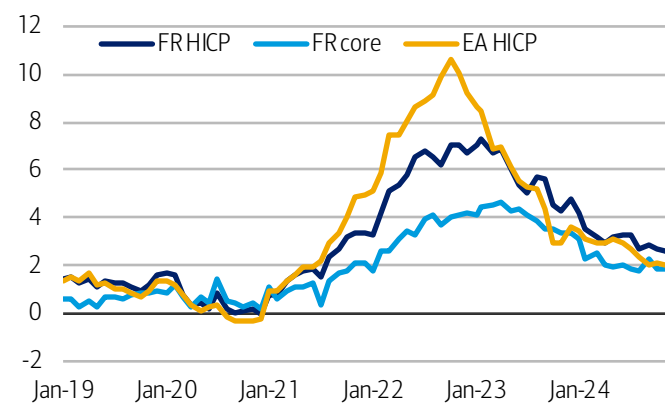


Source: INSEE, Destatis, BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 2: French and Euro area inflation forecasts

French policy choices have attempted to smooth the energy price shock over a longer period of time



Source: Eurostat, INSEE, BofA Global Research

BofA GLOBAL RESEARCH

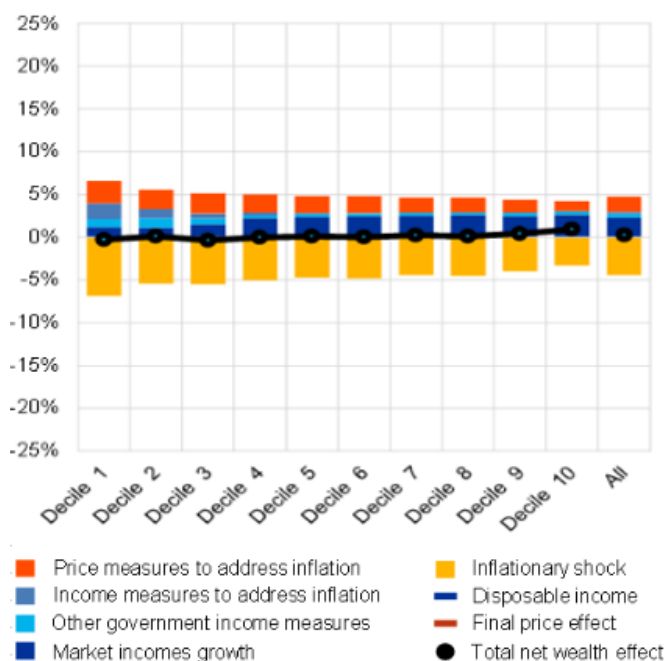
Fiscal policy helped the recovery substantially

Our relatively optimistic French outlook compared with the Euro area is largely a function of the starting point into the severe monetary policy tightening shock. That doesn't make it a particularly comfortable or robust outlook per se, just a better one than elsewhere. What drove the better starting point? The strong post-COVID recovery and relatively smoother trajectory through the energy crisis were partially due to structural features (a generally more domestic demand-driven economy, less gas dependence, and less export exposure to autos and/or China). But to a large extent, the recovery has also been the result of timely, fairly generous and arguably well-designed fiscal policy support.

To illustrate that, we refer to a recent ECB blog post: the authors show that in the Euro area as a whole, the energy shock has hit lower-income households harder than higher-income groups, even after fiscal policy came to the (partial) rescue. This is not so in France, where the mix of very early gas and electricity price caps (introduced in autumn 2021 and phased out only this year) and select one-off payments has helped to almost entirely offset the energy price shock across all income groups (Exhibit 3).

Exhibit 3: % change in equivalized disposable income 2021 across income deciles

France's policy mix has helped to neutralise the energy shock for all income groups, while elsewhere, lower-income groups were still squeezed



Source: ECB Blog "Fiscal policy to the rescue: How governments shielded households from inflation", 23 Nov 2022

BofA GLOBAL RESEARCH

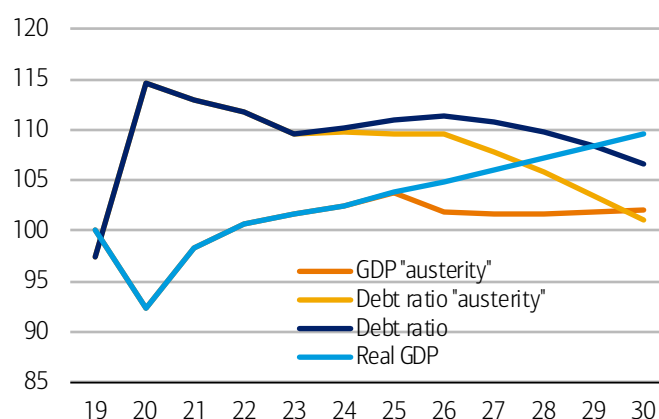
But fiscal rules create risks looking ahead

Perversely, it is fiscal policy that features prominently in downside risks to the outlook (although the risks in France are considerably less acute than in Germany, see [Euro Area Watch: German budget: it's getting special, 24 November 2023](#)).

The 2024 French budget plan foresees a deficit of 4.4% of GDP, a 0.5ppt improvement vs 2023, mainly by fading most of the energy crisis support measures. That is still a large deficit, but would deliver the 40-50bp p.a. correction needed to return gradually to the 3% threshold in EU rules by 2027. Debt ratios, as a consequence, would also only start to properly inflect then.

Exhibit 4: Debt (% of GDP) and GDP (2019=100) trajectories in the base case and under the assumption of imminent debt ratio stabilisation

Moderate deficit adjustments by c 50bps planned would lead to a downward trend in debt ratios starting 2026. The GDP cost of an imminent stabilisation of debt ratios would be sizeable



Source: BofA Global Research Note: we assume standard fiscal multipliers of 0.6, i.e., each 1ppt tightening in policy vs the base case reduces growth by 0.6ppt. Severe inflation trajectories could actually further complicate the ambition to stabilize debt quickly

BofA GLOBAL RESEARCH

To us, the “weakness” of the budget plan is the growth assumption. The government expects 1.3% growth next year, 50bp above our forecast. Cyclical factors could hence raise the deficit by 20-30bp, but that would arguably not be a game changer.

A priori, the budget (like that of other countries, i.e., see [Euro Area Watch: Italy: unstable equilibrium, 19 October 2023](#)) looked to be designed not to provoke Brussels. Yet, the European Commission seems to take a different view, flagging the possibility of France being put under an Excessive Deficit Procedure again in the spring.

One of the Commission’s two main criticisms is that France is to maintain energy price measures worth c 0.3% of GDP in 2024. That mainly reflects France’s decision to keep regulated electricity prices below what market prices of the past two years (which usually determine prices) would imply. But in terms of budget implications, this decision is a wash: higher electricity prices would mean higher EDF profits looped back to the consumer via slower hikes in consumer prices than standard formulas would suggest with zero budget impact and a positive growth outcome, arguably. We are surprised that the Commission has criticised this budget-neutral redistribution policy and would assume no proper action on that measure as a consequence.

The other European Commission criticism relates to the pace of expenditure growth, largely a function of underlying technical assumptions. Again, we assume that action on the back of that remains limited.

What the European Commission communication shows, however, is that the return of old fiscal rules, or a potential reform thereof, can easily result in tighter fiscal policy than we currently assume – in France and the Euro area more broadly. And that potentially represents sizeable downside risks to our forecasts of 2024/25, or even the trajectory beyond.

To explain the trade-off, we illustrate a (mechanical) extreme scenario of debt ratio stabilisation as early as next year. That would require an additional primary deficit correction of 0.7%ppt or so, reducing growth by half. By 2026, the overall budget balance would need to reach zero to keep debt ratios broadly unchanged, but that would come at the cost of a recession that year. The debt ratio would then start to fall very quickly, but the socio-economic cost of such a scenario, showing in a significantly severed GDP trajectory, would be more than sub-optimal, making such a scenario (hopefully) unlikely in reality (Exhibit 4).

Homemade inflation: hope springs eternal

Back to something more cheerful (perhaps): given the relatively more robust economic recovery than the Euro area average, it is tempting to argue that France is perhaps the country best positioned in the region to deliver higher wage growth and hence inflation at or above 2% more durably. That is not our base case – we expect headline inflation at 1.9% in 2025, above the Euro area forecast of 1.4% courtesy of France’s delayed electricity price passthrough, and core at 1.7%, 10bp below the Euro area average.

Survey data actually conveys a fairly convincing disinflationary picture. Z-scores of INSEE’s price expectations survey shows even short-term inflation expectations back at or below average 2003-19 levels for consumers (not shown) and the industry sector (Exhibit 5). The service sector currently still stands out somewhat (Exhibit 6), although at the current juncture, that looks more like a delay than a shift in underlying sector trends.

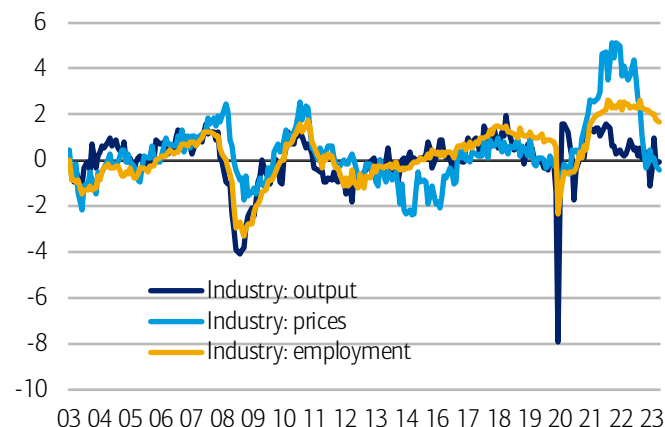
Inflation optimists would likely point to exactly that services sector survey or the absolute tightness of the labour market to argue more inflation for longer is coming. But we remain sceptical.

Survey data is far from conclusive. In the industry sector, price and output expectations are back to or even below normal, but hiring intentions are robust (Exhibit 5). In the

services sector, outlook and hiring intentions have deteriorated simultaneously, but price expectations seem to be sticky (Exhibit 6). To spin this into an inflationary story, we would need to argue that services-specific inflation expectations have persistently moved higher, while industry-specific labour market tightness would trigger inflation. That would be twisting data signals too much, we would argue.

Exhibit 5: Industry sentiment components (z-scores)

Activity and price expectations back to normal, hiring intentions elevated

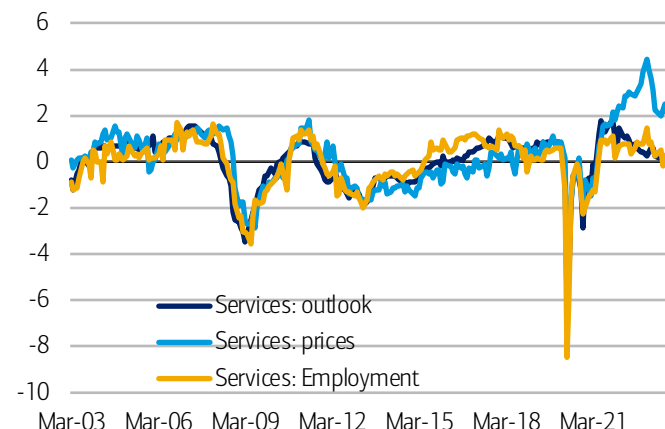


Source: INSEE, BofA Global Research, normalized to 2003-19

BofA GLOBAL RESEARCH

Exhibit 6: Industry sentiment components (z-scores)

Activity and hiring expectations back to normal, prices a bit lagged

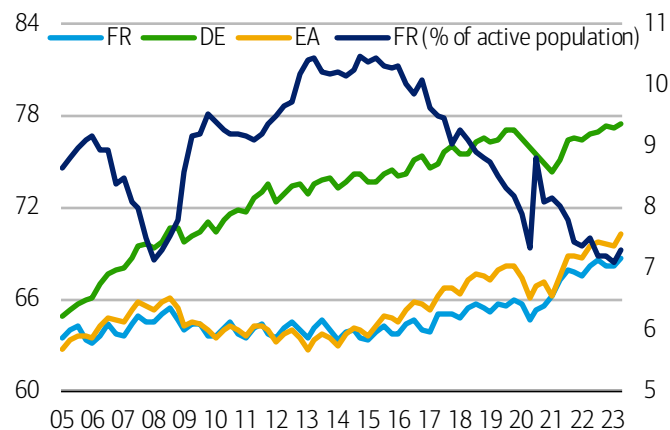


Source: INSEE, BofA Global Research, normalized to 2003-19

BofA GLOBAL RESEARCH

Exhibit 7: Employment in % of working age population

France's labour supply has grown a lot with still plenty of potential

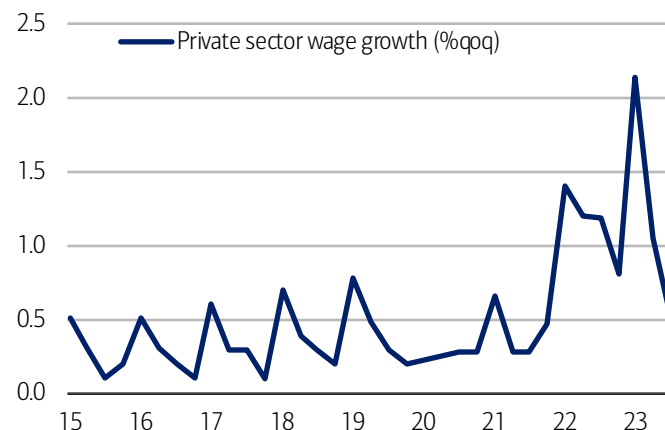


Source: Eurostat, BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 8: Private sector wage growth (%qoq)

GDP, employment and arguably wage growth past peak already



Source: Dares, BofA Global Research

BofA GLOBAL RESEARCH

Labour market supply has grown fast

France is likely to be yet another country where the labour market looks tighter than it is. Unlike at the Euro area aggregate level, hours worked per employee are fairly close to pre-crisis trend. But participation rates in France have risen more than elsewhere. We actually took inspiration from a recent Banque de France blog post¹, flagging that the French drop in labour productivity per hour may be a very partial analysis of the labour

¹ O. Garnier and T. Zuber, "A measure of efficiency in the use of labour resources: beyond productivity", Banque de France Eco Notepad 15 November 2023

market. Employment ratios as a % of the working-age population (rather than of the “active” population) have picked up meaningfully. Productivity of the population, rather than a very select sub-sample, has improved.

From an inflation perspective, the rise in labour market participation is crucial. Yes, the economic recovery was strong, and yes, employment has grown a lot. But in fact, labour market supply is currently growing at least as fast as labour demand (the recent increase in unemployment rates would suggest even faster than demand). Compared with peers (Germany in particular), France still has considerable unused capacity in its working-age population. That should help to contain wage pressures, which have arguably eased already substantially in the second half of this year (Exhibit 8).

Stubbornly constructive French debt

High nominal growth (in relative terms), good positioning with respect to global risk factors, and cheap OAT valuations (dragged this way from SSAs) make us bullish French debt fundamentally. Political/policy risks, high/increasing elsewhere, are a non-story here (next elections on May-27). Issuance is high in absolute terms but this is no big news.

We call 10y OAT-Bund at 35-40bp range as fair (2019 levels).

Exhibit 9: Projected supply net of coupons, redemptions, buybacks, QE

Monthly supply through 2024, with 2023 totals comparison

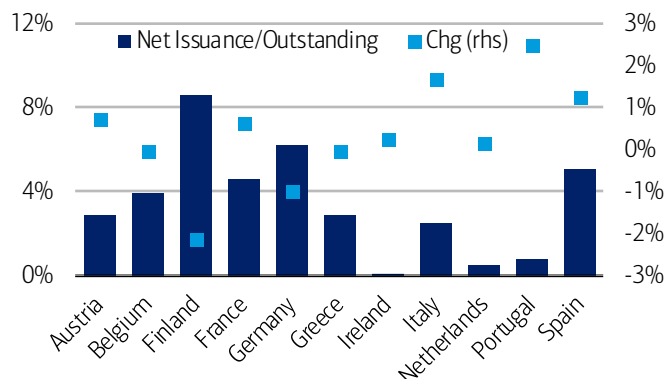
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	Chg.
Austria	7	0	5	1	5	2	-7	1	4	-7	1	1	12	2
Belgium	5	5	1	5	5	-7	4	3	5	-6	0	0	22	0
Finland	4	0	1	-3	4	1	0	3	-1	1	2	0	10	-3
France	32	1	-4	17	-6	29	16	14	32	20	-12	3	140	17
Germany	12	4	9	3	9	12	22	9	7	12	27	-5	120	-23
Greece	2	0	0	-1	1	0	1	0	0	1	0	0	3	0
Ireland	4	0	-6	0	1	0	0	0	1	0	0	0	0	0
Italy	14	21	3	8	-1	31	9	0	0	13	17	-14	101	41
Holland	-4	7	6	3	5	6	-9	0	6	3	3	0	26	6
Portugal	3	-4	1	2	1	1	0	0	1	1	1	0	6	4
Spain	11	23	16	-4	-1	23	-3	7	19	-5	-2	5	89	18
Total	89	57	31	31	22	95	32	37	75	32	38	-10	530	65

Source: BofA Global Research. Note: Numbers are expressed in EUR bn. We assume PEPP reinvestments happening at 50% of the total from H2 onwards

BofA GLOBAL RESEARCH

Exhibit 10: Net-net issuance in 2024, level and change, vs outstanding

French issuance does not particularly stand out on this metric



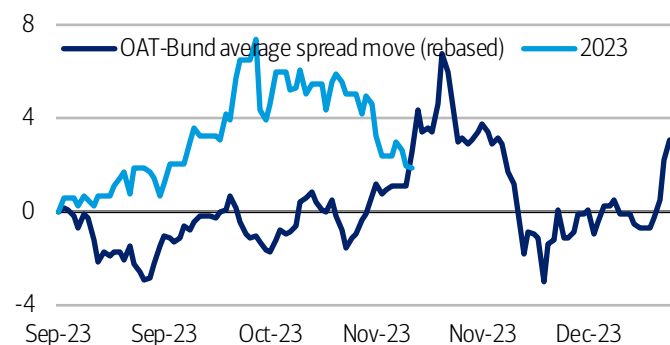
Source: own calcs, ECB, National treasuries

BofA GLOBAL RESEARCH

End of year usually brings OAT underperformance on year-ahead supply risks pricing (Exhibit 11). We cannot rule out that happening again. But we have possibly already passed that phase with the early autumn global bond sell-off. Supply risks pricing has abated significantly since then, according to our surveys (see [FX and Rates Sentiment Survey](#)).

Exhibit 11: OAT-Bund spread px action year-end (bp, rebased)

Year-ahead supply pricing tends to attract OAT shorts, historically

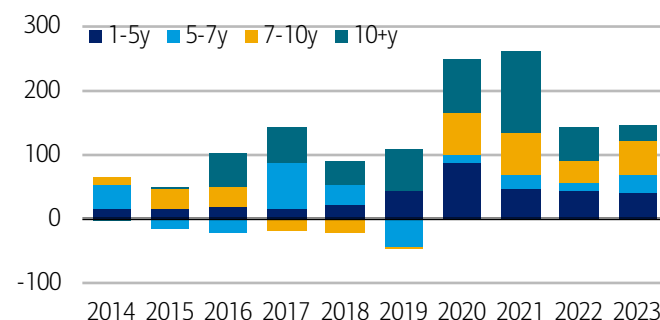


Source: Bloomberg

BofA GLOBAL RESEARCH

Exhibit 12: Yearly EUR SSA supply by maturity bucket

Rates curtailing appetite for SSAs primary market activity, especially long-end. Tougher NGEU milestones may add downside risks past 2024



Source: ICE Data Indices, LLC. Numbers in EUR billions

BofA GLOBAL RESEARCH

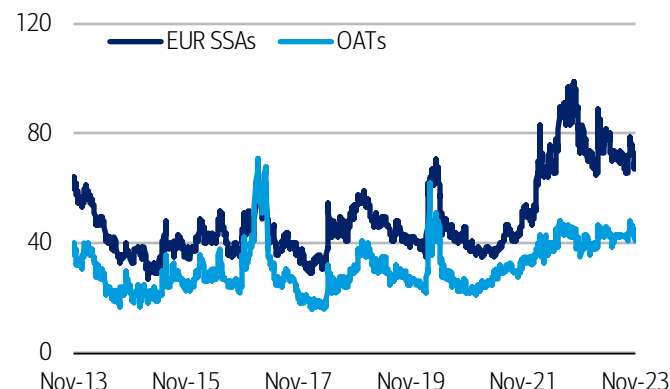
5y point still relatively cheap, may get help from banks/foreign investors

OAT valuations look historically stretched, mainly because of the spillovers from the SSAs issuance shock in 2020-21. The outlook for the latter is relatively benign. EU issuance may accelerate, but for the block as a whole policy tightening is keeping primary market activity off the recent highs.

Looking at positioning, we note domestic banking, pension/insurance as particularly underweight. The same applies to non-residents. Demand from banks should continue (there's room for another €250-600bn despite headwinds from shrinking central banks). Demand from pension/insurance should remain positive, albeit volumes suffer from savers rebalancing from these schemes to bonds. Demand from non-residents has also resurfaced bidding €250bn so far this year (all types of bonds), but there's over €600bn to go until neutral balancing. The supply/demand picture should help contain the cheapening in the 5y in spread terms (Exhibit 14).

Exhibit 13: Average spreads of OAT and EUR SSA bond indices

OATs struggle cheapening beyond 50bp, barring idiosyncratic risks

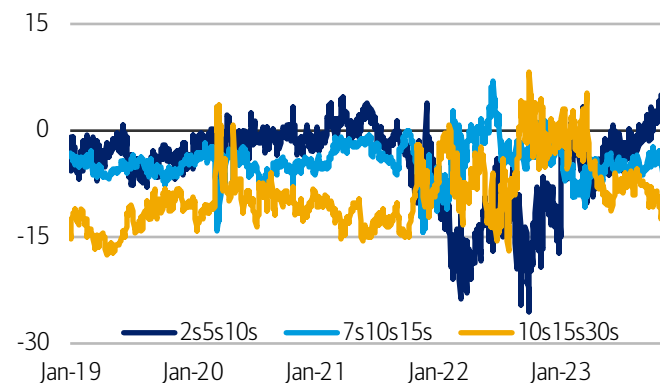


Source: ICE Data Indices, LLC. Values in basis points

BofA GLOBAL RESEARCH

Exhibit 14: France-Germany OAT curve flies (bp, constant maturity)

5y is relatively cheap on the OAT-Bund spread curve



Source: Bloomberg

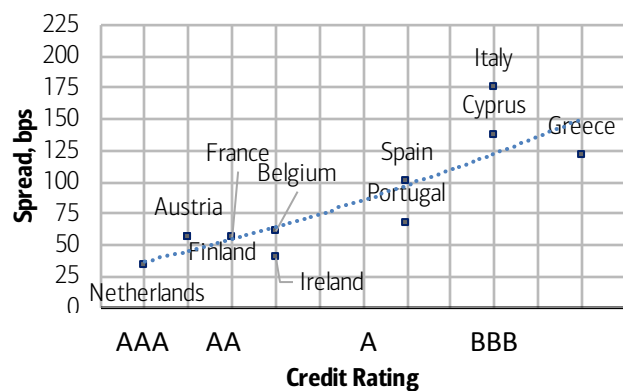
BofA GLOBAL RESEARCH

Rating going to AA-, but market impact is usually muted

The rating outlook for France is not encouraging. The market prices French debt in line with an AA rating (in line with the current composite), but the current public finance trend has a downgrade to AA- baked in, in our view (starting from S&P this Friday). That said, when looking at the market impact of downgrades since 2008, we note that at the time of these ratings, market reactions remain very muted (OATs often even rally on the day).

Exhibit 15: EGB 10y spreads (benchmarks) vs average credit rating

OATs trade broadly in line with current ratings

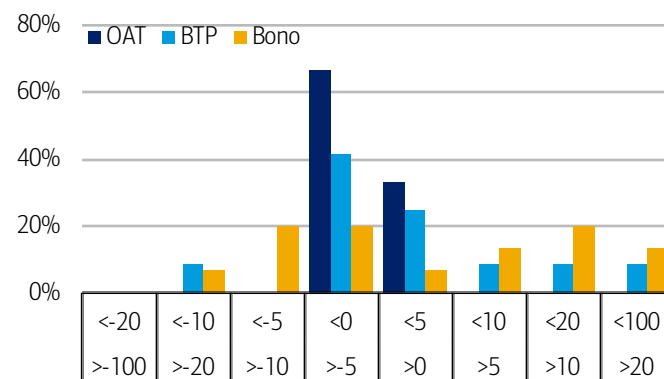


Source: Bloomberg, BofA Global Research calcs.

BofA GLOBAL RESEARCH

Exhibit 16: Frequency histogram of 1-day moves around rating events

French downgrades often bring small OAT selloffs, if not outright rallies



Source: Bloomberg, BofA Global Research calcs.

BofA GLOBAL RESEARCH

Exhibit 17: Common acronyms/abbreviations used in our reports

This list is subject to change

Acronym/Abbreviation	Definition	Acronym/Abbreviation	Definition
1H	First Half	IT	Italy
2H	Second Half	Jan	January
1Q	First Quarter	Jul	July
2Q	Second Quarter	Jun	June
3Q	Third Quarter	lhs	left-hand side
4Q	Fourth Quarter	m	month
ann	annualized	MA	Moving Average
APP	Asset Purchase Programme	Mar	March
Apr	April	MBM	Meeting-by-meeting
AS	Austria	mom	month-on-month
Aug	August	Mon	Monday
BdF	Banque de France (Bank of France)	MPC	Monetary Policy Committee
BE	Belgium	MWh	Megawatt-hour
BEA	Bureau of Economic Analysis	NGEU	NextGenerationEU
BLS	Bank Lending Survey	NE	Netherlands
BoE	Bank of England	Nov	November
BofA	Bank of America	NRRP	National Recovery and Resilience Plan
BoI	Banca d'Italia (Bank of Italy)	NSA	Non-seasonally Adjusted
BoJ	Bank of Japan	OAT	Obligations assimilables du Trésor
BoS	Banco de España (Bank of Spain)	OBR	Office for Budget Responsibility
bp	basis point	Oct	October
BTP	Buoni Poliennali del Tesoro	OECD	Organisation for Economic Co-operation and Development
Buba	Bundesbank	ONS	Office for National Statistics
c	circa	p	preliminary/flash print
CA	Current Account	PBoC	People's Bank of China
CPI	Consumer Price Index	PEPP	Pandemic Emergency Purchase Programme
CSPP	Corporate Sector Purchase Programme	PMI	Purchasing Managers' Index
d	day	PSPP	Public Sector Purchase Programme
GE	Germany	PT	Portugal
Dec	December	QE	Quantitative Easing
DS	Debt sustainability	qoq	quarter-on-quarter
EA	Euro area	QT	Quantitative Tightening
EC	European Commission	RBA	Reserve Bank of Australia
ECB	European Central Bank	RBNZ	Reserve Bank of New Zealand
ECJ	European Court of Justice	rhs	right-hand side
EFSF	European Financial Stability Facility	RPI	Retail Price Index
EGB	European Government Bond	RRF	Recovery and Resilience Facility
EIB	European Investment Bank	SA	Seasonally Adjusted
EMOT	Economic Mood Tracker	SAFE	Survey on the access to finance of enterprises
EP	European Parliament	Sat	Saturday
SP	Spain	Sep	September
ESI	Economic Sentiment Indicator	SMA	Survey of Monetary Analysts
ESM	European Stability Mechanism	SNB	Swiss National Bank
EU	European Union	SPF	Survey of Professional Forecasters
f	final print	Sun	Sunday
Feb	February	SURE	Support to mitigate Unemployment Risks in an Emergency
Fed	Federal Reserve	S&P	Standard & Poor's
FR	France	Thu	Thursday
Fri	Friday	TLTRO	Targeted Longer-term Refinancing Operations
GC	Governing Council	TPI	Transmission Protection Instrument
GDP	Gross Domestic Product	TTF	Title Transfer Facility
GNI	Gross National Income	Tue	Tuesday
GR	Greece	UK	United Kingdom
HICP	Harmonised Index of Consumer Prices	US	United States
HMT	His Majesty's Treasury	WDA	Work-day Adjusted
IMF	International Monetary Fund	Wed	Wednesday
INSEE	National Institute of Statistics and Economic Studies	y	year
IP	Industrial Production	yoy	year-on-year
IR	Ireland	ytd	year-to-date
PCA	Principal Component Analysis	EGB	Eurozone Government Bond
ORI	Optional Reverse Inquiry	C&R	Coupons and redemptions
DV01	Dollar Value of one basis points change		

Source: BofA Global Research

BofA GLOBAL RESEARCH



Disclosures

Important Disclosures

Due to the nature of strategic analysis, the issuers or securities recommended or discussed in this report are not continuously followed. Accordingly, investors must regard this report as providing stand-alone analysis and should not expect continuing analysis or additional reports relating to such issuers and/or securities.

BofA Global Research personnel (including the analyst(s) responsible for this report) receive compensation based upon, among other factors, the overall profitability of Bank of America Corporation, including profits derived from investment banking. The analyst(s) responsible for this report may also receive compensation based upon, among other factors, the overall profitability of the Bank's sales and trading businesses relating to the class of securities or financial instruments for which such analyst is responsible.

BofA Securities fixed income analysts regularly interact with sales and trading desk personnel in connection with their research, including to ascertain pricing and liquidity in the fixed income markets.

Other Important Disclosures

Prices are indicative and for information purposes only. Except as otherwise stated in the report, for any recommendation in relation to an equity security, the price referenced is the publicly traded price of the security as of close of business on the day prior to the date of the report or, if the report is published during intraday trading, the price referenced is indicative of the traded price as of the date and time of the report and in relation to a debt security (including equity preferred and CDS), prices are indicative as of the date and time of the report and are from various sources including BofA Securities trading desks.

The date and time of completion of the production of any recommendation in this report shall be the date and time of dissemination of this report as recorded in the report timestamp.

This report may refer to fixed income securities or other financial instruments that may not be offered or sold in one or more states or jurisdictions, or to certain categories of investors, including retail investors. Readers of this report are advised that any discussion, recommendation or other mention of such instruments is not a solicitation or offer to transact in such instruments. Investors should contact their BofA Securities representative or Merrill Global Wealth Management financial advisor for information relating to such instruments.

Rule 144A securities may be offered or sold only to persons in the U.S. who are Qualified Institutional Buyers within the meaning of Rule 144A under the Securities Act of 1933, as amended. SECURITIES OR OTHER FINANCIAL INSTRUMENTS DISCUSSED HEREIN MAY BE RATED BELOW INVESTMENT GRADE AND SHOULD THEREFORE ONLY BE CONSIDERED FOR INCLUSION IN ACCOUNTS QUALIFIED FOR SPECULATIVE INVESTMENT.

Recipients who are not institutional investors or market professionals should seek the advice of their independent financial advisor before considering information in this report in connection with any investment decision, or for a necessary explanation of its contents.

The securities or other financial instruments discussed in this report may be traded over-the-counter. Retail sales and/or distribution of this report may be made only in states where these instruments are exempt from registration or have been qualified for sale.

Officers of BofA or one or more of its affiliates (other than research analysts) may have a financial interest in securities of the issuer(s) or in related investments.

This report, and the securities or other financial instruments discussed herein, may not be eligible for distribution or sale in all countries or to certain categories of investors, including retail investors.

Individuals identified as economists do not function as research analysts under U.S. law and reports prepared by them are not research reports under applicable U.S. rules and regulations.

Macroeconomic analysis is considered investment research for purposes of distribution in the U.K. under the rules of the Financial Conduct Authority.

Refer to [BofA Global Research policies relating to conflicts of interest](#).

"BofA Securities" includes BofA Securities, Inc. ("BofAS") and its affiliates. Investors should contact their BofA Securities representative or Merrill Global Wealth Management financial advisor if they have questions concerning this report or concerning the appropriateness of any investment idea described herein for such investor. "BofA Securities" is a global brand for BofA Global Research.

Information relating to Non-US affiliates of BofA Securities and Distribution of Affiliate Research Reports:

BofAS and/or Merrill Lynch, Pierce, Fenner & Smith Incorporated ("MLPF&S") may in the future distribute, information of the following non-US affiliates in the US (short name: legal name, regulator): Merrill Lynch (South Africa): Merrill Lynch South Africa (Pty) Ltd., regulated by The Financial Service Board; MLI (UK): Merrill Lynch International, regulated by the Financial Conduct Authority (FCA) and the Prudential Regulation Authority (PRA); BofASE (France): BofA Securities Europe SA is authorized by the Autorité de Contrôle Prudentiel et de Résolution (ACPR) and regulated by the ACPR and the Autorité des Marchés Financiers (AMF). BofA Securities Europe SA ("BofASE") with registered address at 51, rue La Boétie, 75008 Paris is registered under no 842 602 690 RCS Paris. In accordance with the provisions of French Code Monétaire et Financier (Monetary and Financial Code), BofASE is an établissement de crédit et d'investissement (credit and investment institution) that is authorised and supervised by the European Central Bank and the Autorité de Contrôle Prudentiel et de Résolution (ACPR) and regulated by the ACPR and the Autorité des Marchés Financiers. BofASE's share capital can be found at www.bofam.com/BofASEdisclaimer; BofA Europe (Milan): Bank of America Europe Designated Activity Company, Milan Branch, regulated by the Bank of Italy, the European Central Bank (ECB) and the Central Bank of Ireland (CBI); BofA Europe (Frankfurt): Bank of America Europe Designated Activity Company, Frankfurt Branch regulated by BaFin, the ECB and the CBI; BofA Europe (Madrid): Bank of America Europe Designated Activity Company, Sucursal en España, regulated by the Bank of Spain, the ECB and the CBI; Merrill Lynch (Australia): Merrill Lynch Equities (Australia) Limited, regulated by the Australian Securities and Investments Commission; Merrill Lynch (Hong Kong): Merrill Lynch (Asia Pacific) Limited, regulated by the Hong Kong Securities and Futures Commission (HKSF); Merrill Lynch (Singapore): Merrill Lynch (Singapore) Pte Ltd, regulated by the Monetary Authority of Singapore (MAS); Merrill Lynch (Canada): Merrill Lynch Canada Inc, regulated by the Canadian Investment Regulatory Organization; Merrill Lynch (Mexico): Merrill Lynch Mexico, SA de CV, Casa de Bolsa, regulated by the Comisión Nacional Bancaria y de Valores; Merrill Lynch (Argentina): Merrill Lynch Argentina SA, regulated by Comisión Nacional de Valores; BofAS Japan: BofA Securities Japan Co., Ltd., regulated by the Financial Services Agency; Merrill Lynch (Seoul): Merrill Lynch International, LLC Seoul Branch, regulated by the Financial Supervisory Service; Merrill Lynch (Taiwan): Merrill Lynch Securities (Taiwan) Ltd., regulated by the Securities and Futures Bureau; BofAS India: BofA Securities India Limited, regulated by the Securities and Exchange Board of India (SEBI); Merrill Lynch (Israel): Merrill Lynch Israel Limited, regulated by Israel Securities Authority; Merrill Lynch (DIFC): Merrill Lynch International (DIFC Branch), regulated by the Dubai Financial Services Authority (DFS); Merrill Lynch (Brazil): Merrill Lynch S.A. Corretora de Títulos e Valores Mobiliários, regulated by Comissão de Valores Mobiliários; Merrill Lynch KSA Company: Merrill Lynch Kingdom of Saudi Arabia Company, regulated by the Capital Market Authority.

This information has been approved for publication and is distributed in the United Kingdom (UK) to professional clients and eligible counterparties (as each is defined in the rules of the FCA and the PRA) by MLI (UK), which is authorized by the PRA and regulated by the FCA and the PRA - details about the extent of our regulation by the FCA and PRA are available from us on request; has been approved for publication and is distributed in the European Economic Area (EEA) by BofASE (France), which is authorized by the ACPR and regulated by the ACPR and the AMF; has been considered and distributed in Japan by BofAS Japan, a registered securities dealer under the Financial Instruments and Exchange Act in Japan, or its permitted affiliates; is issued and distributed in Hong Kong by Merrill Lynch (Hong Kong) which is regulated by HKSF; is issued and distributed in Taiwan by Merrill Lynch (Taiwan); is issued and distributed in India by BofAS India; and is issued and distributed in Singapore to institutional investors and/or accredited investors (each as defined under the Financial Advisers Regulations) by Merrill Lynch (Singapore) (Company Registration No 198602883D). Merrill Lynch (Singapore) is regulated by MAS. Merrill Lynch Equities (Australia) Limited (ABN 65 006 276 795), AFS License 235132 (MLEA) distributes

this information in Australia only to 'Wholesale' clients as defined by s.761G of the Corporations Act 2001. With the exception of Bank of America N.A., Australia Branch, neither MLEA nor any of its affiliates involved in preparing this information is an Authorised Deposit-Taking Institution under the Banking Act 1959 nor regulated by the Australian Prudential Regulation Authority. No approval is required for publication or distribution of this information in Brazil and its local distribution is by Merrill Lynch (Brazil) in accordance with applicable regulations. Merrill Lynch (DIFC) is authorized and regulated by the DFSA. Information prepared and issued by Merrill Lynch (DIFC) is done so in accordance with the requirements of the DFSA conduct of business rules. BofA Europe (Frankfurt) distributes this information in Germany and is regulated by BaFin, the ECB and the CBI. BofA Securities entities, including BofA Europe and BofASE (France), may outsource/delegate the marketing and/or provision of certain research services or aspects of research services to other branches or members of the BofA Securities group. You may be contacted by a different BofA Securities entity acting for and on behalf of your service provider where permitted by applicable law. This does not change your service provider. Please refer to the [Electronic Communications Disclaimers](#) for further information.

This information has been prepared and issued by BofAS and/or one or more of its non-US affiliates. The author(s) of this information may not be licensed to carry on regulated activities in your jurisdiction and, if not licensed, do not hold themselves out as being able to do so. BofAS and/or MLPF&S is the distributor of this information in the US and accepts full responsibility for information distributed to BofAS and/or MLPF&S clients in the US by its non-US affiliates. Any US person receiving this information and wishing to effect any transaction in any security discussed herein should do so through BofAS and/or MLPF&S and not such foreign affiliates. Hong Kong recipients of this information should contact Merrill Lynch (Asia Pacific) Limited in respect of any matters relating to dealing in securities or provision of specific advice on securities or any other matters arising from, or in connection with, this information. Singapore recipients of this information should contact Merrill Lynch (Singapore) Pte Ltd in respect of any matters arising from, or in connection with, this information. For clients that are not accredited investors, expert investors or institutional investors Merrill Lynch (Singapore) Pte Ltd accepts full responsibility for the contents of this information distributed to such clients in Singapore.

General Investment Related Disclosures:

Taiwan Readers: Neither the information nor any opinion expressed herein constitutes an offer or a solicitation of an offer to transact in any securities or other financial instrument. No part of this report may be used or reproduced or quoted in any manner whatsoever in Taiwan by the press or any other person without the express written consent of BofA Securities. This document provides general information only, and has been prepared for, and is intended for general distribution to, BofA Securities clients. Neither the information nor any opinion expressed constitutes an offer or an invitation to make an offer, to buy or sell any securities or other financial instrument or any derivative related to such securities or instruments (e.g., options, futures, warrants, and contracts for differences). This document is not intended to provide personal investment advice and it does not take into account the specific investment objectives, financial situation and the particular needs of, and is not directed to, any specific person(s). This document and its content do not constitute, and should not be considered to constitute, investment advice for purposes of ERISA, the US tax code, the Investment Advisers Act or otherwise. Investors should seek financial advice regarding the appropriateness of investing in financial instruments and implementing investment strategies discussed or recommended in this document and should understand that statements regarding future prospects may not be realized. Any decision to purchase or subscribe for securities in any offering must be based solely on existing public information on such security or the information in the prospectus or other offering document issued in connection with such offering, and not on this document.

Securities and other financial instruments referred to herein, or recommended, offered or sold by BofA Securities, are not insured by the Federal Deposit Insurance Corporation and are not deposits or other obligations of any insured depository institution (including, Bank of America, N.A.). Investments in general and, derivatives, in particular, involve numerous risks, including, among others, market risk, counterparty default risk and liquidity risk. No security, financial instrument or derivative is suitable for all investors. Digital assets are extremely speculative, volatile and are largely unregulated. In some cases, securities and other financial instruments may be difficult to value or sell and reliable information about the value or risks related to the security or financial instrument may be difficult to obtain. Investors should note that income from such securities and other financial instruments, if any, may fluctuate and that price or value of such securities and instruments may rise or fall and, in some cases, investors may lose their entire principal investment. Past performance is not necessarily a guide to future performance. Levels and basis for taxation may change.

Futures and options are not appropriate for all investors. Such financial instruments may expire worthless. Before investing in futures or options, clients must receive the appropriate risk disclosure documents. Investment strategies explained in this report may not be appropriate at all times. Costs of such strategies do not include commission or margin expenses.

BofA Securities is aware that the implementation of the ideas expressed in this report may depend upon an investor's ability to "short" securities or other financial instruments and that such action may be limited by regulations prohibiting or restricting "shortselling" in many jurisdictions. Investors are urged to seek advice regarding the applicability of such regulations prior to executing any short idea contained in this report.

This report may contain a trading idea or recommendation which highlights a specific identified near-term catalyst or event impacting a security, issuer, industry sector or the market generally that presents a transaction opportunity, but does not have any impact on the analyst's particular "Overweight" or "Underweight" rating (which is based on a three month trade horizon). Trading ideas and recommendations may differ directionally from the analyst's rating on a security or issuer because they reflect the impact of a near-term catalyst or event.

Foreign currency rates of exchange may adversely affect the value, price or income of any security or financial instrument mentioned in this report. Investors in such securities and instruments effectively assume currency risk.

BofAS or one of its affiliates is a regular issuer of traded financial instruments linked to securities that may have been recommended in this report. BofAS or one of its affiliates may, at any time, hold a trading position (long or short) in the securities and financial instruments discussed in this report.

BofA Securities, through business units other than BofA Global Research, may have issued and may in the future issue trading ideas or recommendations that are inconsistent with, and reach different conclusions from, the information presented herein. Such ideas or recommendations may reflect different time frames, assumptions, views and analytical methods of the persons who prepared them, and BofA Securities is under no obligation to ensure that such other trading ideas or recommendations are brought to the attention of any recipient of this information.

In the event that the recipient received this information pursuant to a contract between the recipient and BofAS for the provision of research services for a separate fee, and in connection therewith BofAS may be deemed to be acting as an investment adviser, such status relates, if at all, solely to the person with whom BofAS has contracted directly and does not extend beyond the delivery of this report (unless otherwise agreed specifically in writing by BofAS). If such recipient uses the services of BofAS in connection with the sale or purchase of a security referred to herein, BofAS may act as principal for its own account or as agent for another person. BofAS is and continues to act solely as a broker-dealer in connection with the execution of any transactions, including transactions in any securities referred to herein.

Copyright and General Information:

Copyright 2023 Bank of America Corporation. All rights reserved. iQDatabase® is a registered service mark of Bank of America Corporation. This information is prepared for the use of BofA Securities clients and may not be redistributed, retransmitted or disclosed, in whole or in part, or in any form or manner, without the express written consent of BofA Securities. BofA Global Research information is distributed simultaneously to internal and client websites and other portals by BofA Securities and is not publicly-available material. Any unauthorized use or disclosure is prohibited. Receipt and review of this information constitutes your agreement not to redistribute, retransmit, or disclose to others the contents, opinions, conclusion, or information contained herein (including any investment recommendations, estimates or price targets) without first obtaining express permission from an authorized officer of BofA Securities.

Materials prepared by BofA Global Research personnel are based on public information. Facts and views presented in this material have not been reviewed by, and may not reflect information known to, professionals in other business areas of BofA Securities, including investment banking personnel. BofA Securities has established information barriers between BofA Global Research and certain business groups. As a result, BofA Securities does not disclose certain client relationships with, or compensation received from, such issuers. To the extent this material discusses any legal proceeding or issues, it has not been prepared as nor is it intended to express any legal conclusion, opinion or advice. Investors should consult their own legal advisers as to issues of law relating to the subject matter of this material. BofA Global Research personnel's knowledge of legal proceedings in which any BofA Securities entity and/or its directors, officers and employees may be plaintiffs, defendants, co-defendants or co-plaintiffs with or involving issuers mentioned in this material is based on public information. Facts and views presented in this material that relate to any such proceedings have not been reviewed by, discussed with, and may not reflect information known to, professionals in other business areas of BofA Securities in connection with the legal proceedings or matters relevant to such proceedings.

This information has been prepared independently of any issuer of securities mentioned herein and not in connection with any proposed offering of securities or as agent of any issuer of any securities. None of BofAS or any of its affiliates or their research analysts has any authority whatsoever to make any representation or warranty on behalf of the issuer(s). BofA Global Research policy prohibits research personnel from disclosing a recommendation, investment rating, or investment thesis for review by an issuer prior to the publication of a research report containing such rating, recommendation or investment thesis.

Any information relating to the tax status of financial instruments discussed herein is not intended to provide tax advice or to be used by anyone to provide tax advice. Investors are urged to seek tax advice based on their particular circumstances from an independent tax professional.

The information herein (other than disclosure information relating to BofA Securities and its affiliates) was obtained from various sources and we do not guarantee its accuracy. This information may contain links to third-party websites. BofA Securities is not responsible for the content of any third-party website or any linked content contained in a third-party website. Content contained on such third-party websites is not part of this information and is not incorporated by reference. The inclusion of a link does not imply any endorsement by or any affiliation with BofA

Securities. Access to any third-party website is at your own risk, and you should always review the terms and privacy policies at third-party websites before submitting any personal information to them. BofA Securities is not responsible for such terms and privacy policies and expressly disclaims any liability for them.

All opinions, projections and estimates constitute the judgment of the author as of the date of publication and are subject to change without notice. Prices also are subject to change without notice. BofA Securities is under no obligation to update this information and BofA Securities ability to publish information on the subject issuer(s) in the future is subject to applicable quiet periods. You should therefore assume that BofA Securities will not update any fact, circumstance or opinion contained herein.

Certain outstanding reports or investment opinions relating to securities, financial instruments and/or issuers may no longer be current. Always refer to the most recent research report relating to an issuer prior to making an investment decision.

In some cases, an issuer may be classified as Restricted or may be Under Review or Extended Review. In each case, investors should consider any investment opinion relating to such issuer (or its security and/or financial instruments) to be suspended or withdrawn and should not rely on the analyses and investment opinion(s) pertaining to such issuer (or its securities and/or financial instruments) nor should the analyses or opinion(s) be considered a solicitation of any kind. Sales persons and financial advisors affiliated with BofAS or any of its affiliates may not solicit purchases of securities or financial instruments that are Restricted or Under Review and may only solicit securities under Extended Review in accordance with firm policies.

Neither BofA Securities nor any officer or employee of BofA Securities accepts any liability whatsoever for any direct, indirect or consequential damages or losses arising from any use of this information.

Research Analysts

BofA Euro Economics

BofA Europe (Madrid)
europaeconomics@bofa.com

European Rates Research

MLI (UK)

Trading ideas and investment strategies discussed herein may give rise to significant risk and are not suitable for all investors. Investors should have experience in relevant markets and the financial resources to absorb any losses arising from applying these ideas or strategies.