



MARKET ECONOMICS

# **Eurozone: Financing the fiscal response to Covid-19**

### **KEY MESSAGES**

We believe the Covid-19 crisis needs a 'whatever it takes' fiscal response in the Eurozone, with a potentially significant impact on debt-to-GDP ratios.

We expect this week's Eurogroup meeting to take a much-needed step forward from the national-focused fiscal approach seen to date.

Mutualisation of debt through joint bond issuance is politically controversial and operationally challenging but the French proposal for a 'recovery fund' could be a viable compromise.

### CONTENTS

Mutualisation of borrowing costs vs of debt	2
Status quo: ECB backstop via sovereign bond purchases	4
ESM under current framework	5
Scaled-up ESM as eurozone debt management office	6
SURE and French 'EU coronavirus rescue fund'	7
EIB guarantee and Dutch healthcare fund	8
Hamilton hand (Euroband or Caronahand)	a

The eurozone needs a bold fiscal response to Covid-19: The cost of the fiscal measures needed to effectively counteract the immediate impact of the Covid-19 shock and to kick-start the economy will likely be significant.

A coordinated approach is needed for the fiscal response to be effective: We expect this week's Eurogroup meeting to move in this direction, with a number of initiatives including ESM loans with little if any conditionality, EIB guarantees, and an EU-based employment reinsurance scheme.

If approved, as we expect them to be, these measures would be a desirable and needed step forward. However, most of them would ultimately still leave the incurred debt on the balance sheets of individual member states.

ECB bond buying offers an immediate and effective shield in the short term but it is not sustainable, we would argue. Increasing debt-to-GDP ratios are likely to become a considerable challenge, especially for those eurozone countries which entered the crisis with weak balance sheets.

Mutualisation of debt is more effective than mutualisation of funding costs: While operationally difficult, joint bond issuance through a 'eurobond', or similar alternatives such as an EU recovery fund would be the most effective long-term options, in our view.

Opposition from a number of countries concerned that a eurobond could pave the way to more general debt mutualisation makes such an option unlikely at this stage. The French proposal for a joint fund could represent a viable compromise, however, and we would expect it to remain on the table with a view to being debated by EU leaders at their next meeting.



### Mutualisation of borrowing costs vs of debt

Central banks' responses to the Covid-19 outbreak have been swift and innovative: Across the world, central banks have reacted quickly to limit market disruptions and support the economy. The ECB has signalled it will do 'whatever it takes' with its commitment to do more if needed, reinforced by its decision to remove the issue/issuer limit for purchases under its Pandemic Emergency Purchase Programme (PEPP), and the introduction of a waiver for Greek bonds. Drawing on their experience of the 2008 Global Financial Crisis, central banks have sought to increase liquidity and preserve the transmission of monetary policy easing to the real economy.

However, this is not 2008 – the Covid-19 shock is 'real' rather than 'financial'. The ECB's substantial measures will help prevent possible market disruptions from exacerbating the impact of the Covid-19 crisis, but monetary policy alone will not be sufficient to counteract the economic impact of the shock.

A bold fiscal response is also needed: In addition to the need to counteract the immediate impact of Covid-19 on the economy, there will be a need to kick-start the economy once the shock fades; we see a real risk that the economic recovery is not as steep and robust as many assumed initially. It may take a long time for both investment and consumption to recover to pre-crisis levels, not to mention the possibility of permanent damage to the economy's supply.

Fiscal bill could reach 15-20% of GDP: As we argued in *Europe: Fiscal fight against Covid-19*, published 3 April, the significant and timely fiscal measures announced to date will probably have to be scaled up and become open ended (where they are not already), effectively replicating in the fiscal space central banks' 'whatever it takes' stance. The fiscal cost could reach levels in the region of 15-20% of GDP, with a corresponding increase in public debt.

Financing the fiscal stimulus: One possible option is 'monetary financing' by the central bank, which would operate as an implicit backstop. While not costless in the long term (it could result in inflation or financial instability) it would raise fiscal efforts' credibility, a key factor for its success in the current circumstances, in our view.

However, in the eurozone, monetary financing is

prevented by the Treaty and there is no eurozone-wide safe asset for the ECB to buy currently. Against this backdrop, the debate regarding some sharing of the fiscal cost of the response to Covid-19 is heating up. As we argued in *Eurozone and Covid-19: Don't Throw Away Your Shot*, published 31 March, mutualisation via joint bond issuance would be the most convincing and effective response.

Mutualisation of debt more effective than mutualisation of funding costs: Fiscal burden sharing can be achieved in two different forms. Below we examine the eurozone's various options and conclude that mutualisation of debt, although politically difficult to agree, would be more effective than the mutualisation of funding costs.

Mutualisation of funding costs: The first, softer form of fiscal burden sharing is a mutualisation of funding costs, which reduces the cost of funding for most, although not necessarily all, countries but leaves the debt increase associated with the fight against Covid-19 on the balance sheets of the individual member states. Any proposal that involves the European Stability Mechanism in its current setup belongs to this group – the ESM provides governments with loans which means that the individual government still incurs debt. The European Commission's proposal to provide loans for countries to finance short-term work schemes also belongs to this category.

**Mutualisation of the debt:** A second, stronger form of mutualisation is mutualisation of the debt itself, whereby the cost of the additional spending falls on the 'federal' balance sheet – it is jointly backed by all eurozone countries. 'Coronabonds' or Eurobonds belong to this category.

We call them 'Hamilton bonds', using the historical analogy of the decision of the first US Secretary of the Treasury, Alexander Hamilton, that the US federal government take on states' debts incurred fighting the US War of Independence, a common cause.

At the time of writing, the French proposal for a timelimited recovery fund appears to fall into this debtmutualisation category. As the Dutch proposal for a healthcare fund is about grants to recipient countries, rather than loans, we also include it in this category. In the pages below, we examine in more detail some of the options advanced to share the burden of Covid-19related fiscal spending within the EU (see Figure 1). We focus on each option's pros and cons using in particular the following key criteria:

- Scale the amount of fiscal resources being made available; and
- The degree of mutualisation or burden sharing ultimately, who pays for it. While this is a matter of degree, the key distinction is whether the fiscal cost lies on the individual sovereign's or the 'federal' balance sheet.

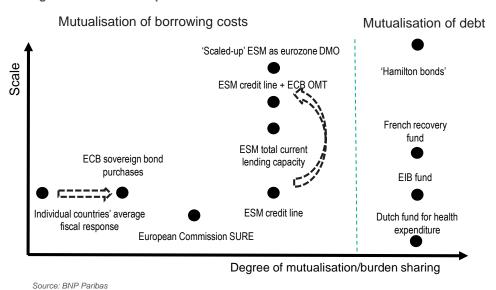
Figure 1 categorises each option according to these two criteria in a schematic fashion. As we see both criteria as key, our preferred option is 'Hamilton bonds'.

EIB, European Commission funds a step in the right direction: We conclude that ECB buying through the

PEPP offers an immediate shield but is not a sustainable solution. Other forms of burden sharing through special funds, guarantees and use of supranational institutions such as the EIB or the European Commission would be welcome and a step forward from the current situation but each have shortcomings including (in most cases) their limited scale and/or the fact that the debt stays on the individual sovereign's balance sheet.

'Hamilton bonds' politically controversial: Finally, while operationally difficult and politically controversial, joint issuance through a 'Hamilton bond' (Eurobond or Coronabond) that would fully mutualise the debt, even if only a one-off move with a limited and specific scope, would be the most effective long-term option, in our view. However, opposition from a number of countries out of concern it could pave the way to more general debt mutualisation means this option is not necessarily the most likely one to be adopted.

Fig. 1: Mutualisation options



<u>Luigi Speranza,</u> Chief Global Economist | BNP Paribas London Branch | <u>Spyros Andreopoulos,</u> Senior European Economist | BNP Paribas SA Zweigniederlassung Frankfurt

# Status quo: ECB backstop via sovereign bond purchases

One possibility is simply to maintain the status quo: national governments take the entire burden of the fiscal cost of the crisis onto their balance sheets, counting on ECB purchases to limit the rise in bond yields as public debt soars.

**ECB commitment vital...** In presenting its new purchase programme, the PEPP, the ECB committed to keeping government financing costs in check and preventing the Covid-19 shock from impairing the transmission mechanism of monetary policy via a widening of bond spreads. This commitment was strengthened by the ECB's decision to remove the issue/issuer limit for PEPP purchases while introducing a waiver for Greek bonds, which are sub-investment grade, thus giving investors grounds to assume that potential rating downgrades of other countries to sub-investment grade would not result in a discontinuation of ECB purchases under the PEPP. By removing two of the self-imposed limits of the Asset Purchase Programme, the ECB in effect adopted a 'whatever it takes' approach which can be read as a commitment to buy in a potentially unlimited fashion, if needed.

But is this really the case?

... but with question marks attached longer term: We would argue that there are some lingering questions about the ECB's commitment, as the ECB specified it will continue to operate "within its mandate". This has a number of subtle but important implications:

- The ECB cannot provide debt monetisation.
- By mandate the ECB can respond to common, not idiosyncratic, shocks. Once the shock fades, it will eventually have to halt purchases. Inflation might also come back – a plausible scenario in the medium term in our view (see <u>Covid-19</u>: <u>Deflationary or Inflationary?</u>, published 3 April), strengthening the case for a change in the ECB's policy stance in order to safeguard its credibility.

- OMT, even if activated, cannot be indefinite, either.
- While the issue/issuer limit was suspended for PEPP purchases, the decision could still be challenged on legal grounds ahead, as it might be seen as akin to monetary financing and therefore contrary to the Treaty.
- Finally, while the ECB introduced short-term flexibility in its adoption of the PEPP, the capital key principle still applies in the longer run and will prevent the ECB from buying too much paper from one or more member countries indefinitely.

In other words, while the ECB has plenty of ammunition in the short term, its ability to continue to finance debt issuance may not be unlimited. We fear that the markets might eventually test the central bank's determination to keep buying in an unlimited fashion, revealing the potential ambiguity of its commitment.



 Immediately available option and politically less controversial, at least in the short term.



- It could prove unsustainable in the medium term.
- By depressing government bond spreads in the short term, it might lead to complacency, making other, more-sustainable and effective solutions such as a 'Hamilton bond' less likely.

### **ESM** under current framework

**ESM under current framework:** The European Stability Mechanism (ESM) was set up after the eurozone debt crisis to mobilise funding and provide support to countries in difficulty. The ESM can raise funds on the markets, purchase bonds in both the primary and the secondary market and/or provide loans through two facilities: the Precautionary Conditioned Credit Line (PCCL) and Enhanced Conditions Credit Line (ECCL, see Figure 2).

The ESM entails a mutualisation of funding costs; if combined with Outright Monetary Transactions (OMT), it can also provide more scale for an individual country, which moves it up in the 'scale' dimension of Figure 1.



- The facility is already in place and could raise and disburse funds in a very short time.
- Countries applying for ESM loans and subject to its conditionality can access the ECB's OMT.



- The ESM is fundamentally a backstop aimed at coping with severe and acute financing problems in order to safeguard the financial stability of the eurozone and its member states. As such, the credit provided through its lines still counts as debt for the borrowing countries, even though it comes at more favourable conditions than offered in the markets. This makes it a less-than-ideal candidate to support a potentially open-ended fiscal stimulus, the success of which is heavily dependent on its credibility.
- The credit comes with conditionality attached that potentially creates a stigma and a negative signalling effect for the markets. The conditionality makes it politically controversial in many countries, as it revives memories of the fiscal austerity that followed the

- eurozone debt crisis. The markets might interpret its use as a sign that the country in question is concerned about its ability to issue at reasonable conditions in the near term. Both Italian and Spanish officials have made it clear they are unwilling to apply for ESM loans at this stage.
- While 'light' conditionality seems to be winning the day, if the Eurogroup of 24 March is anything to go by, recipients of an ESM credit line would have to "return to stability" after the crisis which we interpret as suggesting fiscal consolidation and press reports suggest a requirement to sign up to a Memorandum of Understanding to respect the fiscal rules after the crisis. While this may seem innocuous, taken literally a country would still have to pursue its medium-term fiscal objective, which according to the rules means to reduce its debt-to-GDP ratio by one twentieth of its distance from 60% every year. With this distance increasing substantially due to Covid-19, it could translate into a requirement for quite substantial fiscal consolidation.
- Its current size is limited. The ESM's maximum lending capacity is EUR500bn. However, EUR89.9bn has already been disbursed to Greece, Cyprus and Spain leaving EUR410bn available. Last week's Eurogroup mentioned 2% of a recipient's country GDP as a benchmark. This is a result of the fact that the institution was designed to deal with liquidity problems for individual sovereigns, that is, asymmetric shocks. The current situation arguably poses challenges to the solvency of several sovereigns due to a symmetric shock.
- Decisions on joint assistance generally require unanimity. Under an emergency voting procedure in the event that failure to urgently adopt a decision threatens the economic and financial sustainability of the euro area, a qualified majority of 85% of the votes cast is required. This gives Germany (with 27% of votes), France (20%) and Italy (18%) a de facto veto power.

Sources: ECB, BNP Paribas

### Scaled-up ESM as eurozone debt management office

Fig. 2: ESM facilities

Precautionary Conditioned Credit Line (PCCL)

- · Countries which are financially sound can draw on this
- Financial soundness is determined by a number of criteria including satisfying the SGP requirements, sustainable general government debt, sustainable external position, no bank solvency issues
- While conditionality is attached, the country only faces enhanced surveillance if it actually draws on the credit line

Enhanced Conditions Credit Line (ECCL)

- Countries which are still *financially sound* but do not match the criteria for the PCCL can access the ECCL
- Accessing the ECCL entails both conditionality and enhanced surveillance immediately

Sources: ECB, BNP Paribas

### Scaled-up ESM as eurozone debt management office:

One possibility to increase the size of the eurozone's crisis response would be to 'scale up' the ESM to increase its (gross) lending capacity from the current EUR500bn. If there is no conditionality and all countries enter, the ESM would essentially become a debt management office for the eurozone as a whole, issuing bonds with joint and several liability. Countries would pool much of their debt issuance in this way.

In Figure 1, this 'larger' ESM moves up the 'scale' dimension.



• In principle, this would not raise too many difficult issues for member states to agree and thus could be done relatively quickly – in contrast to the creation of 'Hamilton bonds' (see below), which would take more time due to a need to set up more structure and agree on issues such as the sharing of proceeds.

- It would lower funding costs for most countries.
- It would give the ECB a mutualised asset to buy, preventing controversy about mutualisation occurring on the central bank's balance sheet. Indeed, the ECB could buy substantial amounts even under its 'regular' APP, given the 50% issue/issuer limit for supranational institutions.



- The amounts distributed to countries would still be loans and thus represent a liability for individual sovereigns.
- Since the ESM under such an option would probably distribute the proceeds mechanically according to the capital key, there is no burden sharing beyond the fact that the countries with the strongest balance sheets could face somewhat higher borrowing costs than if they issued on their own account.

### SURE and French 'EU recovery fund'

European Commission unemployment reinsurance scheme (SURE): The proposal for an unemployment reinsurance scheme is not new in principle. Under the scheme, national unemployment schemes would take the 'first loss' with additional funds added at an EU-wide level. In the case of the SURE (Support to mitigate Unemployment Risks in an Emergency), the idea is to avoid unemployment in the first place by providing support to labour retention schemes. The proposal is for the EU to provide loans to governments of up to EUR100bn in total, if their expenditure increased "suddenly and severely" as of 1 February 2020 as a result of the adoption of short-time working schemes, such as those modelled on Germany's Kurzarbeit programme.

The EU would borrow up to EUR100bn in the market, backed by guarantees provided by unallocated funds in the EU budget and also by guarantees totalling at least EUR25bn from the national governments. There would be a cap in place, with the share of loans granted to the three countries representing the largest share of loans not exceeding EUR60bn.

For an individual country, the size of this support is likely to be smaller than the individual fiscal effort. However, this scheme entails more mutualisation, albeit we have assumed in Figure 1 that the SURE will provide less effective mutualisation of funding costs than the ESM – an institution set up for that purpose.



- Would cushion some of the labour market fallout in countries that would not otherwise have the means to provide short-term work allowance.
- Would be a tangible sign of European 'solidarity' for citizens.



- As these are loans to governments, the individual sovereigns would still incur debt.
- While relatively sizeable, it will probably be insufficient given the likely severe labour market consequences of the shock (see our note <u>Europe: Fiscal fight against</u> <u>Covid-19</u>), especially given the cap.
- It may take time for countries which don't already have short-term work systems in place to adopt them.

French time-limited 'EU recovery fund': The key feature of the fund seems to be that it should allow timelimited (five to ten years) 'common debt', backed by member states' guarantees, to provide loans to countries. It would be run by the European Commission. Few details are currently available. One possible interpretation is that a fund would be set up which would issue on behalf of all EU or eurozone member states under joint and several liability, and that member states would then repay the fund over time until it is fully amortised. With details scant, we see the main questions with regards to its effectiveness as lying with its size; whether the funds ultimately represent liabilities for individual sovereigns; and the manner in which proceeds are distributed across countries (eg, by needed health expenditure or something more mechanical, such as the ECB capital key) and hence implicitly the degree of burden sharing.

In Figure 1 we have assumed the same degree of mutualisation as for the Hamilton bond, but a smaller size.



- Mutualisation would be both ring-fenced and timelimited, which could allay fears of establishing a precedent for permanent mutualisation of funding costs.
- If the debt is taken on the 'federal' balance sheet, the fund would closely resemble a Hamilton bond, of which more on page 9.
- The distribution of proceeds could be made dependent on the needs of the country asking and unrelated to its contribution into the fund (which could be based on capital keys for example), providing further burden sharing.



- In an alternative form, the fund would be granting loans, in which case the liability would remain on the individual sovereign's balance sheet, reducing its effectiveness somewhat.
- We see time-limited 'amortisation' of five to ten years as a rather short time period, especially if the fund is to be of meaningful size.

## **EIB** guarantee and Dutch healthcare fund

**European Investment Bank guarantee fund for loans to companies:** This is intended to provide up to EUR200bn in liquidity guarantees and capital injections to EU-domiciled companies. It would be backed by guarantees from EU member states and capitalised with EUR25bn and remain time-limited to the Covid-19 induced crisis.

In Figure 1, we have assumed broadly the same degree of mutualisation as for Hamilton bonds but a much smaller scale.



 On the 'federal' balance sheet, since they are not loans to individual countries and the guarantees are backed by funds and guarantees of all EU member states.



Relatively limited size compared to total fiscal needs.

**Dutch healthcare fund:** The Netherlands has proposed an EU fund of EUR20bn for emergency aid targeted at the pandemic, financed by contributions on the basis of countries' national incomes, with outgoings treated as grants rather than loans.

In Figure 1, we have assumed broadly the same degree of mutualisation as for Hamilton bonds (as these are grants, not loans), but the scale to be the smallest of all.



- Grants mean countries don't incur debt.
- Burden sharing occurs if a country's share of proceeds exceeds its share of contributions.



Very limited scale.

# 'Hamilton bond' (Eurobond or Coronabond)

'Hamilton bond' (Eurobond or Coronabond): This is, in our view, probably the cleanest option – a "federal" bond jointly backed by eurozone countries. The reference in the name is to Alexander Hamilton, the first US Secretary of the Treasury known for his plan to federalise the debts incurred by US states during the US War of Independence. Such a bond could be issued by a newlycreated fiscal agency or, more likely and easier operationally, by the ESM or the European Commission. Its proceeds could be redistributed according to predefined criteria. It could be limited in its scope and one-off in its nature, or alternatively provide the template for a more enduring arrangement with a view to moving towards a fiscal union.

On balance, if one takes the view that, in the long term, greater fiscal integration within a common framework that prevents moral hazard is a desirable option, it can be argued that the pros of this option outweigh its costs, making a common bond the most effective instrument to respond to the ongoing crisis. However, this option remains politically controversial and operationally difficult to implement and therefore not necessarily the most likely one.

In Figure 1, Hamilton bonds are, by construction, both large in scale and provide maximum amount of debt mutualisation.



- By construction, the bonds would not fall on the individual sovereign's but on the 'federal' balance sheet.
- In this way it could also help preserve the essence of the existing fiscal framework: member states could still be required to pursue the fiscal policies appropriate to their debt levels prior to the health crisis, albeit with less ambitious objectives.
- Its size could be flexible and therefore dependent on the still-uncertain extent of the shock.
- The distribution of proceeds could be asymmetric, giving more severely affected countries more than a mechanical distribution via capital key (as in the case of ESM issuance), thereby increasing burden sharing.

- Joint issuance would reduce its cost it would be a relatively cheap form of financing for most, if not all, countries.
- It could be limited in its scope (health spending and or reconstruction) – albeit at the expense of scale – and time, so as to represent a one-off response to the crisis rather than a permanent new feature. This would reduce concern regarding permanent debt mutualisation and moral hazard, of which more below.
- It would create a eurozone safe asset on a large enough scale, deepening the eurozone capital markets and boosting the euro's status as a reserve currency – thereby also conferring geopolitical benefits.
- The ECB could buy it and might be more comfortable in keeping it on its balance sheet for a long period, if not indefinitely, in what would be a softer and more politically acceptable form of monetary financing.



- It is politically controversial, as it is seen by traditionally more fiscally prudent countries as opening the gate to the sharing of legacy debt. A common argument against this option is that, by sharing the risk, it would reduce the incentive of individual actors to reduce risk in the future ('moral hazard'). However, it could be argued that this occasion is different, as the socialisation of the losses can be justified on the grounds that the shock was unforeseeable and its impact difficult to prevent, provided of course that burden sharing does not extend to legacy debt.
- It is operationally challenging to set up. A key reason is that a common bond requires some common guarantee in the form of assets and/or tax revenues. It also requires a centralised decision-making process to make spending allocation transparent and accountable. Such a setup takes time while the current circumstances require a very quick response.

MARKETS 360

This document has been written by our Strategist and Economist teams within the BNP Paribas group of companies (collectively "BNPP"); it does not purport to be an exhaustive analysis, and may be subject to conflicts of interest resulting from their interaction with sales and trading which could affect the objectivity of this report. This document is non-independent research for the purpose of the UK Financial Conduct Authority rules. For the purposes of the recast Markets in Financial Instruments Directive (2014/65/EU) (MiFID II), non-independent research constitutes a marketing communication. This document is not investment research for the purposes of MiFID II. It has not been prepared in accordance with legal requirements designed to provide the independence of investment research, and is not subject to any prohibition on dealing ahead of the dissemination of investment research.

The content in this document/communication may also contain "Research" as defined under the MiFID II unbundling rules. If the document/communication contains Research, it is intended for those firms who are either in scope of the MiFID II unbundling rules and have signed up to one of the BNPP Global Markets Research packages, or firms that are out of scope of the MiFID II unbundling rules and therefore not required to pay for Research under MiFID II. Please note that it is your firm's responsibility to ensure that you do not view or use the Research content in this document if your firm has not signed up to one of the BNPP Global Markets Research packages, except where your firm is out of scope of the MiFID II unbundling rules.

STEER™ is a trade mark of BNPP.

MARKETS 360 is a trade mark of BNP Paribas

This document constitutes a marketing communication and has been prepared by BNPP for, and is directed at, (a) Professional Clients and Eligible Counterparties as defined by the recast Markets in Financial Instruments Directive (2014/65/EU) (MiFID II), and (b) where relevant, persons who have professional experience in matters relating to investments falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, and at other persons to whom it may lawfully be communicated (together "Relevant Persons") under the regulations of any relevant jurisdiction. Any investment or investment activity to which this document relates is available only to and will be engaged in only with Relevant Persons. Any person who is not a Relevant Person should not act or rely on this document or its content.

Securities described herein may not be eligible for sale in all jurisdictions or to certain categories of investors.

The information and opinions contained in this document have been obtained from, or are based on, public sources believed to be reliable, but there is no guarantee of the accuracy, completeness or fitness for any particular purpose of such information and such information may not have been independently verified by BNPP or by any person. None of BNPP, any of its subsidiary undertakings or affiliates or its members, directors, officers, agents or employees accepts any responsibility or liability whatsoever or makes any representation or warranty, express or implied, as to the accuracy and completeness of the information or any opinions based thereon and contained in this document and it should not be relied upon as such.

This document does not constitute or form any part of any offer to sell or issue and is not a solicitation of any offer to purchase any financial instrument, nor shall it or any part of it nor the fact of its distribution form the basis of, or be relied on, in connection with any contract or investment decision. To the extent that any transaction is subsequently entered into between the recipient and BNPP, such transaction will be entered into upon such terms as may be agreed by the parties in the relevant documentation.

Information and opinions contained in this document are published for the information of recipients, but are not to be relied upon as authoritative or taken in substitution for the exercise of judgment by any recipient, are subject to change without notice and not intended to provide the sole basis of any evaluation of the instruments discussed herein. In providing this document, BNPP does not offer investment, financial, legal, tax or any other type of advice to, nor has any fiduciary duties towards, recipients. Any reference to past performance is not indicative of future performance, which may be better or worse than prior results. Any hypothetical, past performance simulations are the result of estimates made by BNPP, as of a given moment, on the basis of parameters, market conditions, and historical data selected by BNPP, and should not be used as guidance, in any way, of future performance. To the fullest extent permitted by law, no BNPP group company accepts any liability whatsoever (including in negligence) for any direct or consequential loss arising from any use of or reliance on material contained in this document even where advised of the possibility of such losses. All estimates and opinions included in this document are made as of the date of this document. Unless otherwise indicated in this document there is no intention to update this document.

BNPP may make a market in, or may, as principal or agent, buy or sell securities of any issuer or person mentioned in this document or derivatives thereon. Prices, yields and other similar information included in this document are included for information purposes however numerous factors will affect market pricing at any particular time, such information may be subject to rapid change and there is no certainty that transactions could be executed at any specified price.

BNPP may have a financial interest in any issuer or person mentioned in this document, including a long or short position in their securities and/or options, futures or other derivative instruments based thereon, or vice versa. BNPP, including its officers and employees may serve or have served as an officer, director or in an advisory capacity for any person mentioned in this document. BNPP may, from time to time, solicit, perform or have performed investment banking, underwriting or other services (including acting as adviser, manager, underwriter or lender) within the last 12 months for any person referred to in this document. BNPP may be a party to an agreement with any person relating to the production of this document. BNPP may to the extent permitted by law, have acted upon or used the information contained herein, or the analysis on which it was based, before the document was published. BNPP may receive or intend to seek compensation for investment banking services in the next three months from or in relation to any person mentioned in this document. Any person mentioned in this document may have been provided with relevant sections of this document prior to its publication in order to verify its factual accuracy.

This document is for information purposes only and there is no assurance that a transaction(s) will be entered into on such indicative terms. Any indicative price(s) contained herein have been prepared in good faith in accordance with BNPP's own internal models and calculation methods and/or are based on or use available price sources where considered relevant. Indicative price(s) based on different models or assumptions may yield different results. Numerous factors may affect the price(s), which may or may not be taken into account. Therefore, these indicative price(s) may vary significantly from indicative price(s) obtained from other sources or market participants. BNPP expressly disclaims any responsibility for the accuracy or completeness of its own internal models or calculation methods, the accuracy or reliability of any price sources used, any errors or omissions in computing or disseminating these indicative price(s), and for any use you make of the price(s) provided. The indicative price(s) do not represent (i) the actual terms on which any existing transactions could be entered into, (ii) the calculation or estimate of an amount that would be payable following an early termination of the transactions or (iv) the price(s) given to the transactions by BNPP in its own books of account for financial reporting, credit or risk management purposes. As an investment bank with a wide range of activities, BNPP may face conflicts of interest, which are resolved under applicable legal provisions and internal guidelines. You should be aware, however, that BNPP may engage in transactions in a manner inconsistent with the views expressed in this document, either for its own account or for the account of its clients.

This document may contain certain performance data based on back-testing, i.e. simulations of performance of a strategy, index or assets as if it had actually existed during a defined period of time. To the extent any such performance data is included, the scenarios, simulations, development expectations and forecasts contained in this document are for illustrative purposes only. All estimates and opinions included in this document constitute the judgment of BNPP and its affiliates as of the date of the document and may be subject to change without notice. This type of information has inherent limitations which recipients must consider carefully. While the information has been prepared in good faith in accordance with BNPP's own internal models and other relevant sources, an analysis based on different models or assumptions may yield different results. Unlike actual performance records, simulated performance returns or scenarios may not necessarily reflect certain market factors such as liquidity constraints, fees and transactions costs. Actual historical or back tested past performance does not constitute an indication of future results or performance.

This document is only intended to generate discussion regarding particular products and investments and is subject to change or may be discontinued. We are willing to discuss it with you on the understanding that you have sufficient knowledge, experience and professional advice to understand and make your own independent evaluation of the merits and risk of the information and any proposed structures. The information contained herein is not and under no circumstances is to be construed as, a prospectus, an advertisement, a public offering, an offer to sell securities described herein, or solicitation of an offer to buy securities described herein, in Canada, the U.S. or any other province or territory nor shall it be deemed to provide investment, tax, accounting or other advice. Transactions involving the product(s) described in this document may involve a high degree of risk and the value of such transactions may be highly volatile. Such risks include, without limitation, risk of adverse or unanticipated market developments, risk of counterparty or issuer default, risk of adverse events involving any underlying reference obligation or entity and risk of illiquidity. In certain transactions, counterparties may lose their entire investment or incur an unlimited loss. The information relating to performance contained in this document is illustrative and no assurance is given that any indicated returns, performance or results will be achieved. Moreover, past performance is not indicative of future results. Information herein is believed reliable but BNPP and its affiliates do not warrant or guarantee its completeness or accuracy. All information, terms and pricing set forth herein reflect our judgment at the date and time hereof and are subject to change without notice. In the event that we were to enter into a transaction with you, we will do so as principal (and not as agent or in any other capacity, including, without limitation, as your fliduciary, advisor or otherwise). Only in the event of a potential transa

Prior to transacting, you should ensure that you fully understand (either on your own or through the use of independent expert advisors) the terms of the transaction and any legal, tax and accounting considerations applicable to them. You should also consult with independent advisors and consultants (including, without limitation, legal counsel) to determine whether entering into any securities transactions contemplated herein would be contrary to local laws. The information contained herein is provided to you on a strictly confidential basis and you agree that it may not be copied, reproduced or otherwise distributed by you, whether in whole or in part (other than to your professional advisers), without our prior written consent. Neither we, nor any of our affiliates, nor any of their respective directors, partners, officers, employees or representatives accepts any liability whatsoever for any direct or underwriter of a public offering or otherwise, in the capacity of principal or agent, deal in, hold or act as market makers or advisors, brokers or commercial and/or investment bankers in relation to the securities or related derivatives that are discussed herein. BNPP and its affiliates may (or may in the future) hold a position or act as a market maker in the financial instruments discussed, or act as an advisor, manager, underwriter or lender to such issuer. In no circumstances shall BNPP or its affiliates be obliged to disclose any information that it has received on a confidential basis or to disclose the existence thereof.

Legal Notice



The information presented herein does not comprise a prospectus of securities for the purposes of EU Directive 2003/71/EC (as amended from time to time).

This document was produced by a BNPP group company. This document is for the use of intended recipients and may not be reproduced (in whole or in part) or delivered or transmitted to any other person without the prior written consent of BNPP. By accepting this document you agree to this.

For country- specific disclaimers (United States, Canada, United Kingdom, France, Germany, Belgium, Ireland, Italy, Netherlands, Portugal, Spain, Switzerland, Brazil, Turkey, Israel, Bahrain, South Africa, Australia, China, Hong Kong, India, Indonesia, Japan, Malaysia, Singapore, South Korea, Taiwan, Thailand, Vietnam) please type the following URL to access our legal notices:

https://globalmarkets.bnpparibas.com/gm/home/20191111 Markets 360 Country Specific Notices.pdf

Some or all of the information contained in this document may already have been published on MARKETS 360TM Portal

#### © BNPP (2020). All rights reserved.

#### IMPORTANT DISCLOSURES by producers and disseminators of investment recommendations for the purposes of the Market Abuse Regulation:

Although the disclosures provided herein have been prepared on the basis of information we believe to be accurate, we do not guarantee the accuracy, completeness or reasonableness of any such disclosures. The disclosures provided herein have been prepared in good faith and are based on internal calculations, which may include, without limitation, rounding and approximations.

BNPP and/or its affiliates may be a market maker or liquidity provider in financial instruments of the issuer mentioned in the recommendation.
BNPP and/or its affiliates may provide such services as described in Sections A and B of Annex I of MiFID II (Directive 2014/65/EU), to the Issuer to which this investment recommendation relates. However, BNPP is unable to disclose specific relationships/agreements due to client confidentiality obligations.

Section A and B services include A. Investment services and activities: (1) Reception and transmission of orders in relation to one or more financial instruments; (2) Execution of orders on behalf of clients; (3) Dealing on own account; (4) Portfolio management; (5) Investment advice; (6) Underwriting of financial instruments and/or placing of financial instruments on a firm commitment basis; (7) Placing of financial instruments without a firm commitment basis; (8) Operation of an MTF; and (9) Operation of an OTF. B. Ancillary services: (1) Safekeeping and administration of financial instruments for the account of clients, including custodianship and related services such as cash/collateral management and excluding maintaining securities accounts at the top tier level; (2) Granting credits or loans to an investor to allow him to carry out a transaction in one or more financial instruments, where the firm granting the credit or loan is involved in the transaction; (3) Advice to undertakings on capital structure, industrial strategy and related matters and advice and services relating to mergers and the purchase of undertakings; (4) Foreign exchange services where these are connected to the provision of investment services related to underwriting; and (7) Investment services and activities as well as ancillary services of the type included under Section A or B of Annex 1 related to the underlying of the derivatives included under points (5), (6), (7) and (10) of Section C (detailing the MiFID II Financial Instruments) where these are connected to the provision of investment or ancillary services.

BNPP and/or its affiliates do not, as a matter of policy, permit pre-arrangements with issuers to produce recommendations. BNPP and/or its affiliates as a matter of policy do not permit issuers to review or see unpublished recommendations. BNPP and/or its affiliates acknowledge the importance of conflicts of interest prevention and have established robust policies and procedures and maintain effective organisational structure to prevent and avoid conflicts of interest that could impair the objectivity of this recommendation including, but not limited to, information barriers, personal account dealing restrictions and management of inside information.

BNPP and/or its affiliates understand the importance of protecting confidential information and maintain a "need to know" approach when dealing with any confidential information. Information barriers are a key arrangement we have in place in this regard. Such arrangements, along with embedded policies and procedures, provide that information held in the course of carrying on one part of its business to be withheld from and not to be used in the course of carrying on another part of its business. It is a way of managing conflicts of interest whereby the business of the bank is separated by physical and non-physical information barriers. The Control Room manages this information flow between different areas of the bank where confidential information including inside information and proprietary information is safeguarded. There is also a conflict clearance process before getting involved in a deal or transaction.

In addition, there is a mitigation measure to manage conflicts of interest for each transaction with controls put in place to restrict the information flow, involvement of personnel and handling of client relations between each transaction in such a way that the different interests are appropriately protected. Gifts and Entertainment policy is to monitor physical gifts, benefits and invitation to events that is in line with the firm policy and Anti-Bribery regulations. BNPP maintains several policies with respect to conflicts of interest including our Personal Account Dealing and Outside Business Interests policies which sit alongside our general Conflicts of Interest Policy, along with several policies that the firm has in place to prevent and avoid conflicts of interest.

The remuneration of the individual producer of the investment recommendation may be linked to trading or any other fees in relation to their global business line received by BNPP and/or affiliates.

#### IMPORTANT DISCLOSURES by disseminators of investment recommendations for the purposes of the Market Abuse Regulation:

The BNPP disseminator of the investment recommendation is identified above including information regarding the relevant competent authorities which regulate the disseminator. The name of the individual producer within BNPP or an affiliate and the legal entity the individual producer is associated with is identified above in this document. The date and time of the first dissemination of this investment recommendation by BNPP or an affiliate is addressed above. Where this investment recommendation is communicated by Bloomberg chat or by email by an individual within BNPP or an affiliate, the date and time of the dissemination by the relevant individual is contained in the communication by that individual disseminator.

The disseminator and producer of the investment recommendations are part of the same group, i.e. the BNPP group. The relevant Market Abuse Regulation disclosures required to be made by producers and disseminators of investment recommendations are provided by the producer for and on behalf of the BNPP Group legal entities disseminating those recommendations and the same disclosures also apply to the disseminator.

If an investment recommendation is disseminated by an individual within BNPP or an affiliate via Bloomberg chat or email, the disseminator's job title is available in their Bloomberg profile or bio. If an investment recommendation is disseminated by an individual within BNPP or an affiliate via email, the individual disseminator's job title is available in their email signature.

For further details on the basis of recommendation specific disclosures available at this link (e.g. valuations or methodologies, and the underlying assumptions, used to evaluate financial instruments or issuers, interests or conflicts that could impair objectivity recommendations or to 12 month history of recommendations history) are available at <a href="https://globalmarkets.bnpparibas.com/gmportal/private/globalTradeIdea">https://globalmarkets.bnpparibas.com/gmportal/private/globalTradeIdea</a>. If you are unable to access the website please contact your BNPP representative for a copy of this document.