Executive summary

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- Central banks have taken drastic steps to keep their economies a oat during the COVID-19 lockdowns. In the euro-area, the European Central Bank (ECB) has eased signi cantly the conditions of its re nancing operations and has announced a new asset purchase programme. is response has triggered fears of a signi cant increase in in ation, and concerns about whether the ECB measures are compatible with its price-stability mandate and with the limits set by the EU Treaties.
- Accelerating in ation is not an immediate threat, as the euro area will experience in 2020 its deepest recession ever recorded. Initially, the pandemic took the form of a supply shock, but second-round e ects have now generated a massive aggregate demand shock. e overall impact on prices will depend on which of these two shocks dominates, but at this stage, it seems that de ationary forces are likely to dominate and bring headline will evolve, but from an economic perspective, if the ECB were to abide by the more stringent rules dictated by the GCC, it would make it harder for the ECB to ful l its primary mandate and secondary objectives.
- e ECB's current actions and the increase in the size of its balance sheet, even if it were to prove permanent, should not restrict signi cantly its ability to increase rates to ful l its price-stability mandate. e ECB would have enough tools at its disposal to counter a surge in in ation if it were to happen.
- While the ordering is clear between the ECB's primary price-stability mandate and its secondary objectives, the secondary goals are not ranked by priority, possibly creating di cult trade-o s. d

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1 Introduction

Central banks and governments have taken a number of drastic steps to keep the economy a oat during the COVID-19 lockdowns, and to try to avoid a depression. is massive response from public authorities has triggered fears of a signi cant increase in in ation (see

2 The COVID-19 crisis and the ECB's mandate

What has the ECB announced since the beginning of the COVID-19 crisis?

e ECB has been very active since the beginning of the COVID-19 crisis and has announced a large number of measures, including some announcements outside of its regular governing council meetings:

- On 12 March: as lockdown measures began to be implemented in various euro-area countries, the ECB announced a package of measures: liquidity provision through eased conditions on its targeted longer-term re nancing operations (TLTROs) (with a rate cut by 25 basis points (bps) below the deposit rate for banks ful lling their benchmarks on lending to the real economy) and additional LTROs, and an increase in the envelope

As a result, the balance sheet of the ECB increased by almost €700 billion in only two months (from €4,702 billion on 6 March to €5,395 billion on 1 May, see Figure 1). Given the volume of asset purchases and the potential take-up of the ECB's re nancing operations, the size of the ECB's balance sheet could reach around €7 trillion (the equivalent of around 60 percent of euro-area GDP) by the end of 2020 (Ducrozet and Gharbi, 2020).

Figure 1: Eurosystem's consolidated balance sheet, assets (in € billions)

S : B ECB. N : T E ' 1999, 2020; MRO: M R fi O , LTRO: L T R fi O (LTRO , VLTRO TLTRO), SMP: S M P , ABSPP: A B S P P , CBPP: C B P P , PSPP: P S P P , CSPP: C S P P , PEPP: P E P P .

What is the outlook for in ation?

In the short to medium-term (ie in the ECB's policy horizon), taking into account the rst estimates available for the rst quarter of 2020, it is now very likely that the euro area will experience its deepest recession ever recorded[4]. As for what will happen after that, although it is di cult to make precise forecasts because of the high uncertainty and the exceptional nature of the current shock, some elements suggest that, after the initial free fall of the economy, there are elevated risks that the euro area will experience a slow recovery. e ECB's early forecasts (Battistini and Stoevsky, 2020) predict that, even in their more optimistic scenario, output is not going to reach its pre-crisis trend before the end of 2022. In their mild and severe scenarios, output will not even return to its pre-crisis level by then.

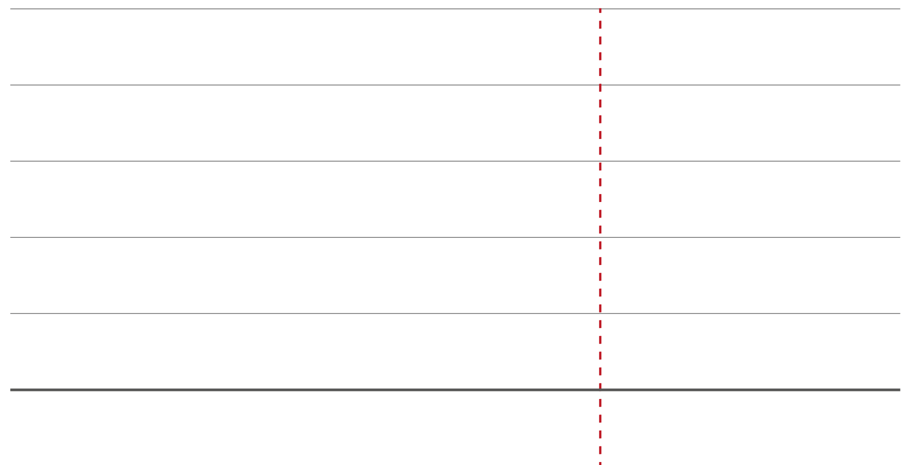
ere are good reasons to forecast such a dire outcome. In particular, a protracted demand

possible). Combined with the direct effect of the substantial fall in the prices of oil and non-food commodities, this means that deflationary forces are likely to dominate and bring headline Harmonised Index of Consumer Prices (HICP) inflation into negative territory in the near future.

There might be some significant relative price changes with increases in the prices of some indispensable goods, including food and medical equipment, and some increases in some other prices arising from pent-up demand when lockdowns are eased. However, prices of services and other goods could decline because of the fall in aggregate demand and more structural behavioural changes resulting from the pandemic (eg in entertainment services, tourism, mobility, etc). In fact, HICP estimates for March and April 2020 (even if these must be taken with a pinch of salt given the difficulty of collecting prices during the lockdowns and the changes in consumption patterns) already point towards a decrease in overall inflation in the euro area[5].

Moreover, this downward pressure on consumer prices has resulted in falling inflation expectations since the beginning of the crisis. Markets have heavily revised downwards their expectations. They now expect headline inflation to fall into negative territory over the next 12 months, and, more worryingly, to stay below 1 percent – ie well below the ECB's definition of price stability – for the next decade (Figure 2).

Figure 2: Euro-area inflation, core, headline and market expectations (y-o-y, %)



Are the recent ECB decisions guided by its price-stability mandate?

Given the short-term outlook for inflation, and with deflation risks mounting in the ECB policy horizon, potentially leading inflation expectations further downwards, we think that an expansionary monetary policy is clearly warranted today for the ECB to fulfil its price-stability mandate, as defined by an inflation rate "*below, but close to, two percent in the medium term*", and by the ECB's "*commitment to symmetry*".

To ease its monetary policy, the ECB is following two main paths: easing financial

5 Headline HICP inflation in the euro area in April fell to 0.4 percent year-on-year while core inflation fell to 0.9 percent y-o-y. See https://ec.europa.eu/eurostat/documents/2995521/10294696/2-30042020-AP-EN.pdf/695df4c4-1a67-bf92-3a0f-69534046cbfe.

conditions to support the real economy, and ensuring that there is no liquidity crisis either in the private or in the public sector. Are these the appropriate tools to fulfil its mandate?

First, the ECB decided to provide accommodative financing conditions and encourage credit provision to companies to limit the destruction of productive capacity during the lockdowns. Cutting the TLTRO lending rate below the deposit facility rate (as the ECB did on 12 March and again on 30 April), conditional on banks reaching a benchmark volume for loans, provides a new way for the ECB to cut its rates to ease financial conditions. This allows the ECB to take a more expansionary stance without lowering its deposit rate further, thus avoiding the negative impact on banks' profits and therefore, possibly, on bank lending. It indeed gives banks a strong incentive to take out long-term loans from the ECB, given that the rate is lower than what they will pay to deposit excess liquidity there. This allows them to make more loans, which in turn will mechanically increase their reserve requirements,

Refinancing operations, as an ECB tool, have never been challenged in courts and thus pose no problem at this stage, but two ECB asset purchase programmes – Outright Monetary Transactions (OMT) announced in 2012, but never implemented, and the Public Sector Purchase Programme (PSPP) launched in 2015 – have been legally challenged in Germany. The Court of Justice of the EU (CJEU), which was consulted in both cases, considered that asset purchases are a legitimate tool of the ECB as long as there are "*sufficient safeguards*". The CJEU considered that the safeguards present in OMT and in PSPP ensured that the Treaties were respected. The safeguards were: no certainty about ECB buying and holdings, no disincentive for sound fiscal policy, no selective purchases, stringent eligibility criteria for the selection of assets, temporary and limited nature of the programme, and purchase limits (CJEU, 2015 and 2018).

What does that mean for the PEPP? Does the new programme include sufficient safeguards? The technical details of the PEPP are actually quite similar to the PSPP and it thus fulfils mechanically most of the criteria listed above [8]. However, the one notable difference is that, to be credible in the current dire situation and to have enough flexibility and possibly increase significantly the volume of asset purchases in the next months, the ECB announced in the PEPP legal act that the programme would not be subject to its self-imposed 33 percent issuer limit[9].

Could that make the PEPP illegal in the eyes of the EU Court? In our view, relaxing the 33 percent limit should be considered legal by the CJEU. As noted by Grund (2020), in its judgement on the PSPP (CJEU, 2018) the EU Court did not prescribe a specific share for the purchase limits[10]. In fact, it seemed to consider that, in theory, the relevant limit of the ECB's public-sector purchase programme compatible with the EU Treaty is not to buy all the bonds issued. The ruling stated that the European System of Central Banks (ESCB) is "*not permitted to buy either all the bonds issued by such an issuer or the entirety of a given issue of those bonds*" and that monetary financing is avoided when "*a private operator necessarily runs the risk of not being able to resell them to the ESCB on the secondary markets, as a purchase of all the bonds issued is in all cases precluded*". The 33 percent issuer limit was thus seen by the CJEU as a sufficient safeguard, but not as a necessary one, and could thus be relaxed

2020) is irrelevant[11]. Such a proportionality appraisal would imply that the ECB would have to constantly balance price stability with other – potentially conflicting and not well-defined – objectives, exactly the kind of political trade-off that the EU Treaties wanted to take out of the hands of independent unelected policymakers. On the other hand, the interpretation of the proportionality principle by the CJEU is quite different, and in our view more consistent with

because this reduces the credibility of its policies (and in the current situation of the PEPP) in the eyes of the markets. This could lead to the re-emergence of bad self-fulfilling equilibria in euro-area sovereign bond markets, similar to what happened during the euro crisis before the ECB's OMT was established.

3 Could current ECB's actions endanger price stability in the future?

The ECB's major increase in the monetary base (similarly to other major central banks around the world) has raised fears about a future acceleration of inflation[15]. As discussed in section 2, this will probably not be the case in the short-term, during which deflationary forces will dominate. However, some fear that it could be a risk in the medium-term as the economy picks up, especially if the ECB decides to keep the assets purchased on its balance-sheet for a long period, to avoid introducing too much volatility into euro-area sovereign debt markets[16]. In fact, the debate on the size of the ECB's balance sheet and the potential risks associated with a large balance sheet when the economy recovers is not new and pre-dates the COVID-19 crisis (Claeys and Demertzis, 2017).

Will a larger central bank balance sheet inevitably result in higher inflation in the long run?

The most intuitive argument brought forward against having a large balance sheet is the classical monetarist argument. A high level of central bank liquidity could result in rapid credit creation by the banking sector and ultimately in an acceleration of inflation above target, which would endanger the price-stability mandate of the ECB.

In theory, according to the money multiplier principle, the relationship between the central bank's monetary base (M0) and the broad monetary aggregate (M3) should be relatively stable, because holding more reserves should enable banks to provide more loans to firms and households, which should in turn boost inflation (according to the quantity theory of money).

However, empirically, the money multiplier is not a mechanical relationship and has not been stable over time. In particular, since 2007 and the significant injections of liquidity into the system by the ECB, first through its refinancing operations and later through its asset purchases, the multiplier has fallen considerably, with the two variables clearly decoupling. The increase in M0 during the crisis has not led to a proportional increase in M3, nor has the ECB's 2012 decision to divide by two the reserve requirements led to a doubling of broad money through a quick expansion of credit in the euro area.

The causal relationship between the monetary base and broad monetary aggregates is often misunderstood. As explained by the ECB (2017), the increased provision of central bank reserves before 2007 was in fact demand-driven and mirrored the increase in broad money because of the rise in the supply of credit to the non-financial sector that was taking place at the time. The increase in M0 after 2007 was of a different nature. From 2007 to 2012 it was related to an increase in banks' demands for reserves in refinancing operations, not because they were increasing credit (quite the opposite), but because they were seeking to insure themselves against liquidity shortfalls when short-term money markets were dysfunctional.

15 See for instance: https://www.wsj.com/articles/get-ready-for-the-return-of-inflation-11587659836.

16 The creation of an [illegible] programme – the PEPP – to purchase assets during the pandemic instead of using an existing instrument such as the PSPP, opens up the possibility of distinguishing them clearly from the assets previously purchased and rolling it over indefinitely if necessary.

After asset purchases began and expanded greatly in 2015, with the inclusion of sovereign assets, the increase in base money was entirely supply-driven and induced mechanically by the creation of reserves by the ECB to pay for its asset purchases. In such a scenario, minimum requirements are not binding and increasing the reserves does not steer credit automatically. In the end, trying to increase credit by increasing M0 could be seen as 'pushing on a string' because the money multiplier is a mathematical inequality – ie a limit on money creation – not an equality.

In fact, QE does not work through the money multiplier channel but through other indirect channels (such as portfolio rebalancing, wealth effects, signalling effects or the easing of financing conditions through a flattening of the yield curve). This explains to a great extent the smaller effect on inflation than some predicted when such programmes were first launched a decade ago[17]. In any case, if really needed, in a strong upturn, the ECB could reduce the size of its balance sheet by reducing the volume of refinancing operations, which still represent a major share of its assets (Figure 1)[18]. In addition, even though they have not been deployed to this end in recent decades[19], reserve requirements could also be used to avoid a quick expansion of credit if they become binding (rationing reserves could be seen as 'pulling on a string'). The ECB could thus increase minimum reserve requirements to drain excess reserves and provide a disincentive to deter money creation by banks[20].

However, in practice, in modern economies credit creation by banks is mainly determined by the level of interest rates and the corresponding demand for loans from firms and households, the credit risk assessment of banks, their financial health and the prudential regulation affecting them. Overall, reserves play a marginal, if any, role. Therefore, a high level of liquidity should not prevent the ECB from influencing credit creation or from tightening its policy if required by the inflation outlook, as long as the ECB retains control over short-term interest rates and is able to influence the benchmark risk-free yield curve.

Will the ECB's current actions prevent it from raising rates in the future if needed?

The most relevant question is thus whether the ECB can control short-term market rates with a large balance sheet. In particular, the question is whether today's ECB decisions could constrain its ability to raise rates if inflation surges in the future. This could happen not necessarily because of the increase in the monetary base during the crisis itself, but for other reasons, including possible structural changes induced by the pandemic, such

MROs on the EONIA rate. For banks to bid for a rate near the MRO rate, it is necessary for the banking system to have a liquidity deficit relative to the central bank. Otherwise banks can just use their own reserves to fulfil their reserve requirements and the interbank market rate will clear at a level close to the deposit facility rate.

If excess liquidity becomes a permanent feature of the system, the ECB would need to continue using the deposit rate (ie the rate paid on excess reserves) as its main tool to ensure that the monetary policy stance is correctly transmitted to the economy through short-term interest rates. But what really matters is that the ECB controls the benchmark short-term market rate (in particular the €STR, which has recently replaced the EONIA as the short-term interest rate benchmark), not the way it does it.

However, a potential side effect of increasing its deposit rate while having a large balance sheet and a lot of excess liquidity, is that the increase could reduce the ECB's profits and increase the risk of financial losses, as highlighted recently by Blanchard and Pisani-Ferry (2020). This will happen if the central bank holds a large portfolio of long-term, low-yielding assets, while its liabilities are short-term and remunerated (which is the case for reserves) and the interest rate paid on these liabilities is increasing[21]. Even though central banks are not profit-maximising institutions, positive profits ensure the financial independence of central banks and facilitate their operational independence (Sims, 2016) from a political perspective[22].

Nevertheless, central-bank losses should only be a transitional problem during the interest rate 'normalisation' because in the long run, if the central bank were to decide to maintain permanently a large balance sheet by reinvesting the principal from maturing assets in new bonds, these assets would benefit from higher yields so there should be a positive spread between medium to long-term bonds on its asset side and the short-term reserves on its liability side. In addition, in the short-run (and actually during the whole period preceding the rate increase, which could last a while), the Eurosystem would also make significant profits as a result of the current purchases as the assets being purchased have higher returns than the deposit rate applied to the reserves created to make the purchases. Given the Eurosystem's usual practice of setting aside significant buffers, and more generally of smoothing its distributable profits over time thanks to its accounting practices to ensure they are always positive and relatively steady (documented by Chiacchio *et al*, 2018, and visible in Figure 3 on the next page), this could allow the ECB to avoid reporting actual financial losses during the transition, which would limit the risks to its independence.

As a last resort, a simple solution to avoid central-bank losses altogether during the transition could be to increase the banks' reserve requirements (to make liquidity scarce again) and to stop remunerating these required reserves. The drawback would be that the opportunity cost for banks could be significant. Ultimately the shortfall for banks resulting from such a measure could be higher than the cost of the negative deposit rate currently, but would have the advantage of being counter-cyclical: when policy rates are high the opportunity cost from holding high, unremunerated required reserves would be high, but when rates fall to 0, the cost would be nil. This would not be unprecedented – the Fed did not remunerate required reserves until October 2008.

21 By contrast, when a central bank has a small balance sheet, the liability side is predominantly composed of non-interest-bearing cash and required reserves (remunerated at the MRO rate), while on the asset side (as Figure 1 shows), as liquidity is scarce, commercial banks need to participate in refinancing operations for which they will pay interest (approximatively the MRO rate). The difference between the two leads to positive seignoriage profits for the central banks.

22 The net profits of central banks are generally transferred to governments (see Chiacchio *et al*, 2018, for the details on how this is done in the euro area). Politicians might not like policies that result in lower or even no transfers from the central bank to the budget for a long period of time (even if these transfers are quite marginal compared to the overall size of budgets), which could potentially endanger central bank independence and/or reduce their ability to use unconventional monetary policies in the future.

Figure 3: Eurosystem profits (in € billions)

S : C et al (2018) ECB , E . N : D fi fi fi . S C et al (2018).

An alternative scenario: the possibility of a low-inflation/low-interest rate environment for a long period

Finally, it is also important to consider another scenario: it is perfectly possible that inflation will remain very low for many years for pre-existing structural reasons, which could even be amplified by the crisis. In that case, the ECB would not face the problems described above as it would have to leave its rates at a low level and keep its balance sheet large for a long time to fulfil its price-stability mandate[23].

Figure 4: Short-term rates (EONIA and €STR) market-based expectations (in %)

S : B B . N : I EONIA STR - (1 2 , 10), EONIA/ STR . E 2021 EONIA/ STR (2020), 1- EONIA (2021 2022), 2-

23 This would nevertheless create other problems for the ECB as this would drastically reduce its room for manoeuvre to use the interest rate as a main instrument in the case of future negative shocks (see details in Claeys , 2019). For governments, on the contrary, this scenario could help with debt sustainability and increase the fiscal space to mitigate the consequences of the pandemic and boost the recovery.

Jordà *et al* (2020) found some evidence that pandemics have long-lasting effects. In particular, they show that, following previous pandemics, the natural rate of interest – the interest rate compatible with low and stable inflation and an economy at its potential – tended to decline for decades, reaching its low point about 20 years after the health crisis, with the natural rate around 150 basis points lower than if the pandemic had not taken place. They also show that pandemics have very different macroeconomic effects to wars which tend to increase the natural rate.

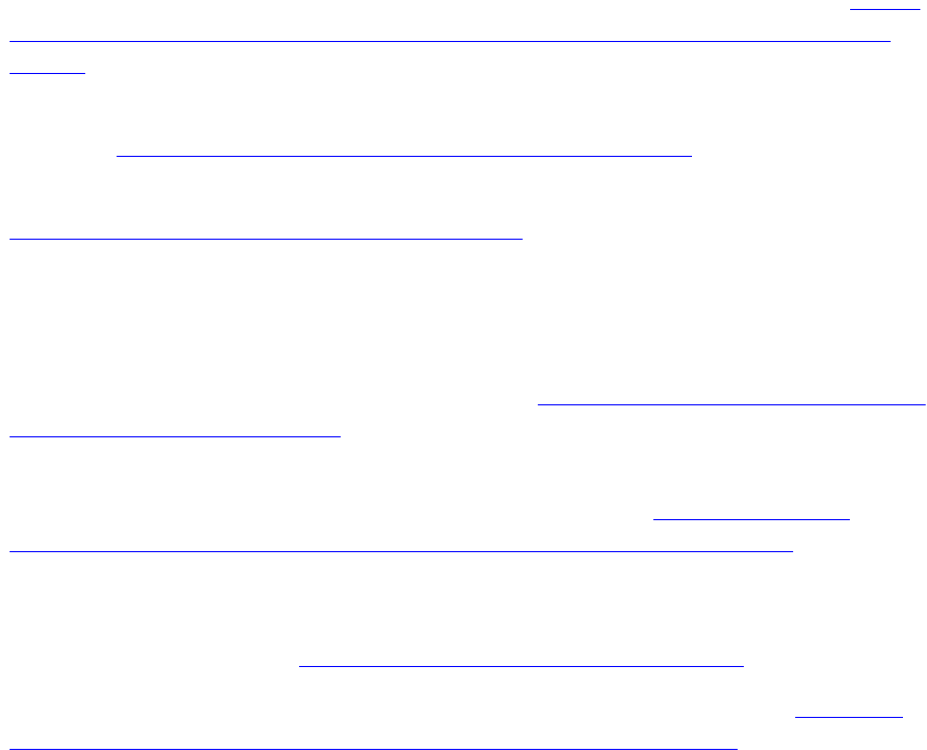
It is of course possible that the COVID-19 pandemic will prove to be radically different to previous pandemics, and that its macroeconomic effects will be different. However, the view that the fall in the neutral interest rate is going to be long-lasting appears to be supported by the fall in expectations for short-term interest rates since the beginning of the crisis. Markets now expect overnight rates to stay negative until 2030 (Figure 4). Combined with the long-run inflation expectations shown in Figure 1, this implies that markets now believe that in the long-run (ie in equilibrium), the real interest rate is negative, as expected inflation is around 1 percent and the expected nominal rate is around 0 percent in 2030.

4 Concluding remarks: how can the ECB deal with trade-offs when they arise?

It appears from our discussion that accelerating inflation is not an immediate threat, and that in any case the ECB would have enough tools at its disposal to counter a surge in inflation if it were to happen. Our discussion suggests that the ECB's current actions and the increase in the size of its balance sheet, even if it proves permanent, do not restrict significantly its

participate in the EU fight against climate change by imposing higher haircuts on brown assets when they are taken as collateral by the ECB in its refinancing operations, and by over-allocating green assets in its corporate bond purchases (when these are needed to fulfil its price-stability mandate) in order to internalise negative externalities from brown investments (which makes sense for a public institution).

Using multiple tools to achieve multiple objectives can also sometimes be used to achieve primary and secondary objectives at the same time. For instance, if neutral rates have really fallen to low or even negative levels, this will force central banks to keep their rates low for a very long time to fulfil their price-stability mandates. However, this could, in turn, lead to



Court of Justice of the European Union (2018) Case C-493/17, Weiss v. ECB, available at https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:62017CJ0493&from=EN

Court of Justice of the European Union (2020) 'Press release following the judgment of the German Constitutional Court of 5 May 2020', *Press Release* No 58/20, Luxembourg, 8 May, available at https://

Annex

Excerpts from relevant articles of the EU Treaties

- **Article 3 (3) of the TEU:** e Union shall establish an internal market. It shall work for the

- Article 127 (5) of TFEU: The ESCB shall contribute to the smooth conduct of policies pursued by the competent authorities relating to the prudential supervision of credit institutions and the stability of the financial system.
- Article 127 (6) of TFEU: The Council, acting by means of regulations in accordance with a special legislative procedure, may unanimously, and after consulting the European Parliament and the European Central Bank, confer specific tasks upon the European Central Bank concerning policies relating to the prudential supervision of credit institutions and other financial institutions with the exception of insurance undertakings.
- Article 130 of TFEU: When exercising the powers and carrying out the tasks and duties conferred upon them by the Treaties and the Statute of the ESCB and of the ECB, neither the European Central Bank, nor a national central bank, nor any member of their decision-making bodies shall seek or take instructions from Union institutions, bodies, offices or agencies, from any government of a Member State or from any other body. The Union institutions, bodies, offices or agencies and the governments of the Member States undertake to respect this principle and not to seek to influence the members of the decision-making bodies of the European Central Bank or of the national central banks in the performance of their tasks.
- Article 267 of the TFEU: The Court of Justice of the European Union shall have jurisdiction to give preliminary rulings concerning: (a) the interpretation of the Treaties; (b) the validity and interpretation of acts of the institutions, bodies, offices or agencies of the Union; Where such a question is raised before any court or tribunal of a Member State, that court or tribunal may, if it considers that a decision on the question is necessary to enable it to give judgment, request the Court to give a ruling thereon. Where any such question is raised in a case pending before a court or tribunal of a Member State against whose decisions there is no judicial remedy under national law, that court or tribunal shall bring the matter before the Court. If such a question is raised in a case pending before a court or tribunal of a Member State with regard to a person in custody, the Court of Justice of the European Union shall act with the minimum of delay
- Article 284 (3) of TFEU: The European Central Bank shall address an annual report on the activities of the ESCB and on the monetary policy of both the previous and current year to the European Parliament, the Council and the Commission, and also to the European Council. The President of the European Central Bank shall present this report to the Council and to the European Parliament, which may hold a general debate on that basis. The President of the European Central Bank and the other members of the Executive Board may, at the request of the European Parliament or on their own initiative, be heard by the competent committees of the European Parliament.
- Article 14 (3) of the Statute of The European System of Central Banks and of the European Central Bank: The national central banks are an integral part of the ESCB and shall act in accordance with the guidelines and instructions of the ECB. The Governing Council shall take the necessary steps to ensure compliance with the guidelines and instructions of the ECB, and shall require that any necessary information be given to it.
- Article 35 (4) of the Statute of The European System of Central Banks and of the European Central Bank: The Court of Justice of the European Union shall have jurisdiction to give judgment pursuant to any arbitration clause contained in a contract concluded by or on behalf of the ECB, whether that contract be governed by public or private law.
- Article 35 (6) of the Statute of The European System of Central Banks and of the European Central Bank: The Court of Justice of the European Union shall have jurisdiction in disputes concerning the fulfilment by a national central bank of obligations under the Treaties and this Statute. If the ECB considers that a national central bank has failed to fulfil an obligation under the Treaties and this Statute, it shall deliver a reasoned opinion on the matter after giving the national central bank concerned the opportunity to submit its observations. If the national central bank concerned does not comply with the opinion within the period laid down by the ECB, the latter may bring the matter before the Court of Justice of the European Union.