COVID-19 debt relief

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Abstract

The COVID-19 pandemic has been a global shock with dramatic consequences on debts of governments called to alleviate the economic and social impact of the crisis on firms and households. We explore conditions for the feasibility of (COVID-19 generated) government debt relief, justified in principle by the exogenous characteristics of the shock. We outline several technically and economically feasible ways (involving debt "freezing", debt rescheduling or outright debt cancellation) for achieving this goal and discuss their consequences on moral hazard and the Central Bank balance sheets, as well as their potential impact on CB's independence, reputation and, ultimately, on inflation and exchange rates. We also discuss the distributive concerns which arise when a CB (as in the Eurozone) operates in a Union with several sovereign member states.

Keywords: debt relief, COVID-19, European Central Bank.

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1. Introduction

The COVID-19 pandemic is an ongoing global shock that caused (as of 9 December 2020) 67,53 million cases and more than 1,55 million deaths worldwide. The slowdown of economic activities induced by the restrictions aimed to reduce the contagion spread had dramatic effects on employment, economic growth, and global financial conditions. In order to alleviate its consequences on households and on the productive sector, Central Banks (CBs) and governments implemented a wide range of measures. The effects of these on deficits and on the stocks of debt have been huge. According to preliminary estimates, the pandemic has caused an increase of around 15 percentage points of the debt/GDP ratio at EU level (Micossi, 2020). The Institute of International Finance estimates that the aggregate public and private debt has grown during the pandemic from 320% to 365% of global GDP in the first nine months of 2020, around 63% of this new debt having been purchased on the market by CBs.

The extraordinary events we are experiencing and the exogenous nature of the shock affecting government debt justify on ethical grounds that this debt (and specifically that in the hands of CBs) should be frozen, rescheduled or even cancelled. In this paper we examine whether COVID-19 debt relief is technically and economically feasible and/or politically viable.

The debt relief literature shows that episodes of debt restructuring eventually leading to debt cancellation are not so infrequent. Reinhardt and Trebesch (2016) analyse 48 episodes which occurred over two different periods in the 20th century and which involved two separate groups of countries: i) high income countries during the interwar period, and ii) developing countries in the post-Second World War period. By using difference-in-differences approaches and controlling for endogeneity, Reinhard and Trebesch show that debt relief generated positive effects on economic activity, debt service, and even the financial ratings of the countries involved, the effects being stronger and more significant in cases of debt cancellation *vis à vis* softer forms of debt relief. In a similar work Forni *et al.* (2016) show that debt restructurings with external private creditors during the period 1970-2010 have been associated with enhanced growth.

From a theoretical point of view, some of the effects of forgiving sovereign debt have been widely discussed in the literature. Krugman (1988) argued that debt forgiveness can be preferable to debt financing because a large public debt distorts economic incentives in the debtor country, whilst the benefits from a positive economic performance are mostly appropriated by the creditors. Krugman argues that debt cancellation should be made

contingent on states of nature that the country cannot affect: the current pandemic squarely falls into this category. Hatchondo *et al.* (2014) further demonstrate that, under some conditions, debt reduction could improve country risk rating and could be *ex post* Pareto efficient.

Empirically, Broner *et al.* (2014) find that the increases in public debt in the aftermath of the 2007 financial crisis led to a reallocation of credit away from the private sector and towards the public sector, with consequent reduction in private investment and negative effects on growth. Lo and Rogoff (2015) confirm that public and external debt overhang was an important reason for the sluggish economic growth experienced after the financial crisis.

The above mentioned theoretical and empirical studies show that debt overhang has been a common characteristic of many periods of economic history for several countries. The present experience is however different. In all of the debt relief episodes of the last century analysed by Reinhardt and Trebesch (2016) and the rest of the literature, the creditor was a sovereign country; by contrast, in our case the government debt whose relief we are dealing with is held by Central banks.

Proposals of central bank intervention in sovereign debt restructuring have been put forward in the recent past. Pâris and Wyplosz (2014) set out the PADRE (Politically Acceptable Debt Restructuring in the Eurozone) plan, where government debt of EU members in excess of the 60% debt/GDP threshold is purchased and converted into non-redeemable zero-interest perpetual debt. The authors are aware that the operation would create a negative net asset position in the ECB balance sheet, but argue that this position would be progressively covered by seignorage revenues accruing to each member country. In order to make the proposal "politically acceptable", each country would pay its excess debt converted into ECB irredeemable perpetual bonds with its seignorage revenues, thereby avoiding redistributive effects across EU members.

In this paper we argue that there are at least seven ways in which relief of the government debt created by EU member states and held by the ECB during the COVID-19 pandemic is economically feasible.

(1) The first strategy consists of transforming from voluntary and reversible to irreversible the present choice by the ECB of rolling over a target share of EU government bonds plus returning interest payments to issuing countries. In this way, the commitment to roll over and the reversal of interest payments would correspond to a debt cancellation

and the portion of debt involved in the operation could be cancelled from the debt/GDP ratios.

(2) The second is conversion of the bonds held by the ECB into irredeemable zero-interest bonds. According to this second strategy, ECB current government bond holdings can be considered as the first step of the PADRE plan, and what needs to be done to complete the operation is the second step of transforming them into irredeemable bonds at zero interest rates. The only difference would be the amount of debt transformed (which would be lower than under the more ambitious PADRE plan, which involved all debt in excess of the 60% debt/GDP ratio).

(3) The third hypothesis is an outright write-off of a given portion of public bonds held by the ECB, a decision that would have the consequence of creating a net negative asset position in the ECB balance sheet.

(4) A fourth hypothesis is the issue of perpetual bonds from member countries by the amount corresponding to the debt created during the pandemic, coupled with a commitment by the ECB to buy them on the secondary market and hold them to maturity. In this way the newly issued perpetual bonds would become part of the ECB quantitative easing program and COVID-19 debt relief would be perfectly compatible with EU treaties.

(5) A fifth hypothesis is the combination of outright cancellation of part of the debt with the ECB commitment to a progressive replacement of the stock of government bonds over time in its balance sheet. In this sense the ECB decision would produce a double positive effect on EU member states government debt service, by reducing twice the share of debt to GDP held by non-ECB investors. The double move would eventually shift the problem from the asset/liability side to the profit/loss dimension.

(6) A sixth hypothesis is a commitment progressively to increase the stock of member states government bonds, though sticking to a voluntary and revocable policy of rolling over the debt and returning interest payments to bond issuers.

(7) A seventh hypothesis set forth by Micossi (2020) prescribes that the government debt held by the ECB be purchased by the European Stability Mechanism (ESM) using its own capital as collateral and financing the operation with ESM bond issues.

In our paper we analyse the potential effects of each one of these different debt relief choices on moral hazard, ECB balance sheet, Central Bank independence and reputation, and

its implications for inflation and the exchange rate. We as well conclude that, given the commonalities among the main CBs, debt relief could also be the outcome of a coordinated choice among them which would reduce the potential negative side effects of the decision of a single CB move on its reputation and the exchange rate.

2. Effects of the six measures on the ECB balance sheet and their legal consequences

EU GDP amounted to 18.8 trillion in 2019; the EU debt generated by the COVID-19 pandemic can be conventionally fixed at 10%. The ECB balance sheet has on the asset side 2.87 trillion of EU member long term bonds and 0.6 trillion for REPO and short term monetary policy. The 2.87 trillion stock of EU member government bonds was progressively created in the last years through the quantitative easing. It was almost zero before the year 2000. On the liability side the two main items are 1.2 banknotes and 1.8 bank reserves. ECB profits in 2019 rose from to 2.36 from 1.57 billion euros due to an increase in net interest income and profits from financial operations.

The first scenario (freezing of the current situation with transformation from voluntary to perpetual irrevocable commitment to roll over and return the interest payments) would freeze the current profits and losses position of the ECB. The same would occur under the second hypothesis (conversion of long-term bonds into irredeemable bonds yielding zero interest rates), because the ECB does not earn from interest rates on its long-term bond assets. Under these first two hypotheses the concerns about ECB balance sheet effects and reputation would be minimized.

The third hypothetical scenario (debt write-off) would create a loss on ECB assets compensated by the present value of current and future expected seignorage revenues (as in the Pâris and Wyplosz 2014 PADRE proposal). The effects of such a loss on the euro exchange rates and on ECB reputation need to be taken into account. The ECB can accompany this measure by a change in its seignorage policy by reducing the share of seignorage paid to sovereign countries. Sovereign countries would thus partially participate to the cost of the intervention and their benefits will be reduced. Alternatively, the ECB could maintain its actual seignorage policy thereby not reducing the time needed to cover the loss on its balance sheet. It can be argued that this third approach to debt relief could weaken the ECB ability to implement anti-inflationary policies. However (as we discuss in detail in sections 4 and 6 below) given the amount of government bonds on the ECB asset side, and given the wide range

of instruments at its disposal to conduct monetary policies, the ECB will maintain intact its capacity of counter inflationary pressures.

The fourth hypothesis is fully compatible with current Treaties. EU member states would issue perpetual bonds up to the amount corresponding to the defined target COVID-19 debt/GDP ratio, and the ECB would voluntarily choose to include them into its Pandemic Emergency Purchase Programme (PEPP) strategy. This hypothesis, differently from the previous ones, implies a further monetary expansion and therefore its use should be assessed with caution.

The fifth hypothesis combines debt relief with monetary expansion through the additional purchase of government bonds. Over time the overall effect on the asset/liability side would be nil since the write-off would be progressively offset by the purchase of the new bonds.

The sixth hypothesis is just an incremental variation of the current voluntary and revocable policy that would correspond to a monetary expansion but nonetheless would correspond to an increase in the ECB commitment to cope with the problem of COVID-19 government debt.

The seventh hypothesis consists of transferring sovereign bonds purchased by the ECB to the European Stability Mechanism (ESM), which could roll over these securities thereby making them equivalent to irredeemable bonds (Micossi, 2020). The purchase of bonds would be funded by securities issued by the ESM. These securities would be guaranteed by the ESM's own capital and by the existing member states.

The feasibility of the seven proposals should also be evaluated in legal terms. All the seven proposals discussed above do not violate art. 123[1] in the sense that they do not propose the purchase of EU member government bonds on the primary market (even though some doubts could be raised for the fourth hypothesis). A related legal issue is whether the proposals

[1] Article 123 (ex Article 101 TEC):
"1. Overdraft facilities or any other type of credit facility with the European Central Bank or with the central banks of the Member States (hereinafter referred to as "national central banks") in favour of Union institutions, bodies, offices or agencies, central governments, regional, local or other public authorities, other bodies governed by public law, or public undertakings of Member States shall be prohibited, as shall the purchase directly from them by the European Central Bank or national central banks of debt instruments.
2. Paragraph 1 shall not apply to publicly owned credit institutions which, in the context of the supply of reserves by central banks, shall be given the same treatment by national central banks and the European Central Bank as private credit institutions."

could breach the principle of separation between monetary and fiscal policy, and whether such a breach would represent by itself a violation of EU treaties. What we observe is that the PEPP is intended to counter the risk of monetary transmission mechanism but is *de facto* helping governments to maintain low interest rates on government bonds. As such, it is thus an explicit help to their fiscal policies. It is however a temporary program, while our proposals are meant to have permanent effects on the portion of debt held by the ECB.[2]

3. The moral hazard problem

One of the main critiques to a debt relief proposal is that it may foster moral hazard. A lack of fiscal discipline could offset the effects of debt cancellation. Two forms of moral hazard are possible: *interim* and *ex post*. In the interim, the discussion of the possibility of debt relief before the end of the pandemic could lead EU member countries to increase their deficits, in the expectation that the additional debt would be cancelled. *Ex post*, a successful episode of debt relief could create expectations of possible debt cancellations in the future, thereby undermining the *ex ante* incentive to maintain fiscal discipline.

Easterly (2002) forcefully pointed out the risk that debt relief could be used to fund unproductive activities or even patronage. Under some circumstances, there could even be an incentive for lenders to keep lending to indebted countries, thus creating the conditions for further high indebtedness. Benjamin and Wright (2008) and Pitchford and Wright (2012) demonstrate that the inability of sovereign borrowers and lenders to commit could lead to protracted debt renegotiations and losses to both parties.

Moral hazard problems, and the potential build-up of further debt, can be solved by imposing enforceable and credible conditionality rules. The Next Generation EU is itself an example where an increase in EU resources for public investment is accompanied by rules that block the supply of subsequent tranches if the intermediate project goals are not achieved. Protracted renegotiations can be avoided by timely and unilateral actions by the ECB and by

[2] According to ECB, "The Governing Council will terminate net asset purchases under the PEPP once it judges that the COVID-19 crisis phase is over, but in any case not before the end of June 2021. The maturing principal payments from securities purchased under the PEPP will be reinvested until at least the end of 2022. In any case, the future roll-off of the PEPP portfolio will be managed to avoid interference with the appropriate monetary stance".
(https://www.ecb.europa.eu/mopo/implement/pepp/html/index.en.html).

EU institutions which would not require lengthy deliberations, and which could be promptly communicated and implemented.

Interim moral hazard can be avoided by careful monitoring of the public finances of the member states during the crisis. *Ex post* moral hazard problems can be ruled out by credibility of ECB stance and by the very extraordinary nature of the current pandemic. If COVID-19 debt cancellation/relief is declared and accepted as being a unique decision linked to a unique event, the expectations of future debt cancellation should be under control.

It is also important that the measures that are implemented are perceived as decisive, in order to rule out the possibility that further future debt relief may become necessary in the future. The restructuring or cancellation of debt should therefore be of an order of magnitude sufficient to exclude additional interventions.

Moral hazard issues could be further reduced by a coordinated action by the main central banks, including not just the ECB but also possibly the Federal Reserve and the Bank of Japan. This would lend credibility to the debt relief operation, make it more extraordinary thereby reducing the expectation that such an intervention could be repeated in the future.

The moral hazard is a serious problem, but it can be tackled by proper credible announcement and action on conditionality rules.

4. Inflation and inflation forecasts: the "porcupine curse"

The main Central Bank default risk depends on finding itself unable to tackle a sudden inflationary pressure. From the opposite perspective the power of CBs grows when inflation risk gets lower. We argue in this section that structural factors create a deflationary scenario which can be exploited by the ECB. In the old pre-globalisation system and before the internet era, the pace of innovation was lower and labour unions had strong bargaining power over wages since corporations had no outside option of delocalisation. Hence higher money supply easily translated into higher prices in non-competitive markets where price setters could increase their profits by rising prices and unions had higher probability of success in their wage claims. In the current global competition system and after the web revolution the circulation of knowledge has incredibly accelerated, and companies can more easily choose the production location that minimises their labour, environmental and tax costs in order to maximise their profits.

The production cost race-to-the-bottom dominates this era, forcing national and regional institutions to a Bertrand competition which could eventually lead to an equilibrium of “nations without wealth and wealth without nations”. Competition on quality and non-delocalizable competitive factors can obviously counteract this pressure which however remains strong. As a consequence, we now have two relevant factors of deflationary pressure: technological innovation which reduces production costs, and the erosion of the bargaining power of workers under the delocalisation threat and the pressure of competitors producing in other areas of the world were wages are lower.

The stylised facts of this new era are consequently a stronger pace of innovation, increasing skill wage differentials (Dögüs, 2019) and within country inequalities (workers bargaining power depend on their skills and not on trade unions and those who are at the bottom of the talent ladder suffer more in this competitive race), a declining labour share (Karabarbounis and Neiman, 2014), and deflationary pressures that lead to repeated upward biased inflation forecasts (the well-known porcupine effect) if forecasters continue to model expectations under the old pre globalisation approach. Ciccarelli and Osbat (2017) show that inflation has indeed been systematically below forecasts in the last years, with the bias falling when the time distance with inflation release date got closer.

A further deflationary structural factor contributing to deflationary pressures is demographics. Ciccarelli and Osbat (2017) find a positive and significant relationship between inflation and the growth of working age population, thereby showing that ageing in EU countries can be a key explanatory factor for deflation.

The pace of technological innovation is even producing more deflationary pressure than what we see in official data since, as is well known, inflation indexes do not fully adjust for product quality (Nordhaus, 1998). Imagine for a moment an inflation index created on a bundle composed of food, services, technology and a significant share of goods that decades ago we had to buy (travel agency services, tutorials, photos, cd records, information) and today are mostly free on the web. If we compare the level of this aggregated price index at distance we realize that inflation has been much lower than what recorded in official statistics due to a survivorship bias effect, since the latter do not incorporate -100% inflation rates of goods and services which are now been offered for free. In addition to it, programmes installed on our cellphones are automatically updated and improved in quality after our purchase. Hence the price per quality of the product continues to fall after our purchase.

In addition to it the recent logistic revolution operated by global players like Amazon can procure whatever raw or intermediate product from the other side of the world, thereby

reducing production costs. If the first phase of the internet era accelerated the circulation of knowledge and weightless data, the application of this revolution to logistics is also accelerating the circulation of material goods thereby creating a further factor of deflationary pressure through a fall in production costs. The combination of these factors not only makes realized official inflation always inferior to what had been forecast but, as well, quite higher than the effective rate of inflation.

Based on this evidence our final claim is that the new globalisation scenario has a cost in terms of low wage and dignity of labour for the low skilled, but also – quite apart from the acceleration of the flow of knowledge and technological innovation – a benefit in the form of the opportunity of more audacious monetary policies given the lower inflation risk, which ought to be exploited to offset that cost.

Of course the additional money created by expansionary monetary policies has to find an allocation if it does not inflate prices of real goods and services. The liquidity earned by banks selling bonds to the ECB can be left under the form of reserves in the same ECB, it can be lent to firms or households or invested in financial assets. Financial asset inflation (together with an increase in money balances and bank reserves) is the most likely outcome whose effects need to be taken into account in presence of expansionary monetary policies, especially in times, as ours, where regulatory requirements are made more stringent to avoid bank crises. We however have two remarks on this point. First, many of our debt relief proposals (if we exclude (4)-(6)) are not inflationary. Second, the 2008 global financial crisis proved that the ECB is fully equipped to address financial crises that would destroy monetary base and increases liquidity risk, since the main solution of these crises consists in the same CB activity of money creation coupled with provision of liquidity services.

5. Further reflections on ECB accounts

As discussed in section 2, one of the most hotly debated issues when discussing the possibility of debt relief from a Central Bank creditor concerns its effects on the CB balance sheet. As is well known, the ECB balance sheet has changed dramatically during the last decade due to the adoption of conventional monetary policies and notably the quantitative easing launched to tackle the Euro government spread crisis.

A relevant objection to debt relief by the ECB it that it could make ECB net assets negative thereby undermining its activity. The issue whether a CB can operate or not with

negative net assets has been discussed among others by Pâris and Wyplosz (2014), De Grauwe and even dealt with by the ECB itself with a discussion paper (Bunea *et al.*, 2016). In the latter it is argued that a central bank cannot default since "*central banks are protected from insolvency due to their ability to create money and can therefore operate with negative equity*" (p. 14). According to Pâris and Wyplosz (2014), the negative equity position – a consequence of the application of the PADRE plan – is just a problem of accounting conventions and reputation, since the present value of seignorage revenues should compensate such loss. Cecchetti and Schoenholtz (1985) calculate for the US the net present value of seignorage revenues equal to 30% of GDP.

The inherited accounting standard of CBs are that circulating currency is registered on the liability side. This choice made perfect sense at the time of the gold standard when liquidity holdings corresponded to claims toward the CB, while it makes less sense today. A liability is such when it implies a costly obligation on behalf of the debtor (restitution of the principal and/or interest payments). In our case, however, the holder of currency issued by the ECB is not entitled of any claim toward it. A hint that this accounting convention is an inheritance of the past is that foreign dollar holdings are still considered a liability on the FED balance sheet. This was obviously the case until De Gaulle kept asking for gold in exchange for his dollar holdings and forced Richard Nixon and the Fed in 1971 to close the dollar-gold convertibility era. Since then, dollars held by foreigners are *de facto* no more a liability for the FED.

To sum up, currency is today an irredeemable zero-interest liability and therefore is not an effective liability. The only possible way to argue for it would be to assume that there exists a one-to-one correspondence between Euro currency holdings in the economy and the amount of money that the ECB needs to withdraw when facing inflationary pressures with open market operations. In this case a proper stock of bonds to be sold for the occasion should be in ECB balance sheet. Hence the amount of currency holdings in the economy should find a correspondence in a proportional amount of ECB bonds on the asset side.

To tackle this point we must consider the evolution of the ECB balance sheet. Before 2000 there were no long-term EU member government bond holdings on the asset side, while today their stock in the ECB balance sheet amounts to almost 3 trillion euros. Before the year 2000, the ECB used for its open market operations its buffer of short-term stocks which is today larger than before 2000. If it is undisputable that the currency circulating in the economy is much more than 20 years ago, but it is also true that in presence of global competition it has gone to inflate financial asset prices with minimal effects on inflation so that CB's inflationary expectations have been systematically upward biased in the last years. It is therefore reasonable

to conclude that, even in presence of a decision of freezing or outright write-off of the portion of government debts created during the pandemic, the ECB will still have sufficient ammunition to face the challenge of future inflationary pressures.

The points discussed in this section however matter in case of a strong shock on the ECB balance sheet comparable to that of the original PADRE plan. In our seven proposals the impact is much more modest and, in some cases, negligible, with the exception of the third (debt write-off) hypothesis.

6. Effects on ECB independence and "whatever it takes" options

Another important issue is whether COVID-19 debt relief could represent a threat to ECB independence. The importance of independence of central banks is now widely accepted as being crucial to avoid the time inconsistency issues in the conduct of monetary policy. In his seminal contribution, Walsh (1985) discussed the design of incentives which would commit central bankers to a rigorous pursuit of policies to control inflation. Central bank independence has indeed been shown to be associated with lower inflation in developed countries (Cukierman, 1992).

Debelle and Fischer (1994) introduced an important distinction between "goal independence" and "instrument independence" of the central bank. Whilst the former refers to the central bank's ability to set the goals of policy without direct influence of the fiscal authority, the latter pertains to its capability to adapt its policy tools to the pursuit of its goals, depending on the specific circumstances that it faces (see also Walsh, 2008). The ECB has arguably given proof of instrument independence in its response to the financial crisis (Draghi, 2018). Indeed, it could be maintained that it was its very ability to adopt the most appropriate instruments in response to the changed financial and macroeconomic circumstances which made it possible for the ECB to fulfil the mandate prescribed by its charter.

In a scenario of excessively high debt a further extension of the CBs non-conventional polices in the direction of a COVID-19 debt relief, far from being a violation of ECB mandate, could actually be the most appropriate strategy to pursue its statutory goal of ensuring the proper transmission of monetary policy (thereby respecting goal independence) through instrument independence enriched by new options that appear convenient and desirable after the pandemic shock.

Insofar as the choice is an exceptional and voluntary decision by the ECB related to the specificity of the COVID-19 pandemic, the fear that its credibility and independence would be called into question is likely to be exaggerated. The ECB decision in presence of an extraordinary event would not imply that governments can pressurize it to repeat such a decision in ordinary times. If we offer advice to a friend or a relative they may take it or not, but it would be unusual of them to respond that this is an attempt to violate their independence.

ECB independence includes the possibility of using "whatever it takes" options in presence of negative reactions to its COVID-19 debt relief policies. These are not only limited to the creation of money supply (which is always limited by the risk of inflation) but also to the possibility of creating new financial instruments or of changing the monetary rules of the system, in the face of changed circumstances outside its control. Indeed, it is this very flexibility in adapting its instruments to changed conditions which confers credibility to the Central Bank and which validates its reputation.

7. Distributive concerns

Distributive concerns seemed to be an insurmountable barrier to developments of EU fiscal and monetary policy some years ago. The Pâris and Wyplosz's PADRE plan was accurately carved in order to avoid distributional problems across EU member states. The characteristics of the Next Generation EU where the share of contributions are proportional to the COVID-19 impact on the economies of EU member states and not to their ECB's capital shares have shown that this taboo has been overcome.

This does not mean that distributional issues do not require to be dealt with care. A debt relief operation is much easier to manage for central banks of single or federal states than for a central bank running monetary policy for several independent EU member states, each of them having their own fiscal policies with high degree of autonomy.

A related issue is the relationship between Eurozone and non Eurozone EU member states, since the ECB only holds government bonds of the first group. A possible solution here would be the purchase of a proportional amount of government bonds of non-Eurozone EU members and their subsequent freezing, rescheduling or cancellation or, alternatively, the ECB support to similar plans implemented by independent CBs of non-Eurozone EU member states. The latter would however be free to participate or not to the COVID-19 debt relief operation.

8 A stress test of the effect of COVID-19 debt relief on ECB

As is well known Central Banks are powerful but not almighty since they face an exchange rate risk, an interest rate risk, and a "default" risk related to the failure of achieving their goal of preserving the real value of money in presence of hyperinflation.

In this section we examine the potential implications of COVID-19 debt relief in terms of a stress test focusing on its impact on the above three forms of risk.

Most of exchange risk is run by central banks when they try to maintain a fixed exchange rate or a peg. This is not the case of the ECB. The likely impact of COVID-19 debt relief is likely to be negligible (especially if we exclude case three), at most leading to moderate currency depreciation with effects on real economy depending on pass through and Marshall-Lerner conditions.

Interest rate risk is related to both sides of the ECB balance sheet. Changes in profits and losses should at least partially match when interest rates change since interest payments are profits on the bond side and outflows on the liability side where the ECB remunerates bank reserves. As it happens, the extremely expansionary monetary policy in times of the COVID-19 pandemic leads the ECB to gain from both sides of the balance sheet because of a reduction in losses due to the negative interest rates on bank reserves, and an increase in total profits also arising from net interest payments.

The most likely risk that we should therefore consider in our "stress test" is a sudden need to counteract inflationary pressures to avoid "default" risk and hyperinflation. In section 4 we explain why we believe that this risk is not severe. Another argument to consider is that the COVID-19 debt relief reduces from this point of view ammunitions of the ECB in terms of open market operations. The amount of long-term government bonds remaining after COVID-19 debt cancellation would however remain large enough for this policy instrument to be effective. One should also not forget that CBs have plenty of instruments to perform their main goal including changes in policy rates, interest rates on excess reserves, and volume reserve requirements including bank regulatory policies that crucially affect their lending policies and therefore the creation of high powered money. Before the implementation of quantitative easing, anti-inflationary policies were effectively pursued with a much smaller stock of bonds and almost entirely with short-term government bonds (hence without the 2.87 trillion stock of long-term government bonds that will be in part interested by the debt relief proposals). In the extremely unlikely event of a very strong inflationary pressure, the ECB could even decide to

issue their own bonds to reduce market liquidity. If it is true that the amount liquidity circulating is much larger today than in the pre-quantitative easing period, but the existing instruments are more than sufficient to perform anti-inflationary policies.

To sum up, the most serious risk in CB action is inflation. We however explained in the paper that COVID-19 debt relief does not increase this risk for three reasons: i) several of the proposed forms of debt relief discussed in the paper are inflation neutral (see Table 1); ii) inflation has been systematically overestimated by institutional and private forecasts and is overestimated in inflation indexes currently in use (see section 4); iii) the COVID-19 debt relief proposals do not significantly reduce the range of CB's anti-inflationary tools that could be used to counter inflationary pressures.

9. Conclusions

The unexpected world shock of the COVID-19 pandemic has led to a significant growth of debt/GDP ratios in most countries. Such increase in debt is largely due to factors outside of the responsibility of the governments and is justified by the need to alleviate the effects of the pandemic on firms and households. The economic literature shows that episodes of debt relief in the 20th century have not been uncommon, were not limited to developing countries, and proved quite successful in terms of their effects on debtors' post-intervention economic and financial recovery. The debt relief hypotheses discussed in this paper are however different from these historical episodes, since our hypotheses are strictly limited to the debt held by a creditor that is not a sovereign state but a central bank which holds bonds of sovereign states and operates their monetary policy.

We outline seven ways in which softer or stronger ways of COVID-19 debt relief could be implemented and evaluate their effects on ECB balance sheet, reputation and independence, on debtors' moral hazard and on inflation and exchange rate.

Our conclusions are that COVID-19 debt relief measures are technically feasible with limited side effects and without harming the ECB power of adopting anti-inflationary policies. In the recent debate on the fiscal paradigm shift Furman and Summers (2020) argue that what really matters in debt sustainability is not the usual stock/flow debt/GDP ratio but the flow/flow ratio between real interest payment and the GDP. Empirical evidence shows that, in spite of the large growth of the first ratio, the active policies pursued by CBs (quantitative easing plus restitution of interest payments) have dramatically reduced the second ratio. In the case of Italy

the year 2000 saw a 105.1 debt/GDP ratio and 6.3% interest payment/GDP ratio, compared with expected 159% debt/GDP ratio and 3.4 interest payment/GDP ratio in 2020. The conclusion is that the debt problem seems to be much less dramatic if we use a flow/flow instead of a stock/flow approach. This is however in large part due to the discretionary active role of central banks that, on the one side bought around 63% of the new debt created after the pandemic and, on the other side, allows government issuers to cash back interest payment. The much better flow/flow picture however, if not combined with the stock/flow data hides an interest rate upside risk that needs to be managed and would remain high in presence of high debt/GDP ratios and non-irrevocable ECB commitment to the actual policy.

Writing well before the onset of the pandemic, Blanchard and Summers (2017) forcefully argued that a critical lesson from the Great Financial Crisis is the need for more aggressive and ambitious fiscal policies. More recently, Paul Krugman (2020) joined the call for a paradigm shift in fiscal policy. Our analysis on the seven debt relief proposals aims to achieve a permanent and non-temporary improvement of the debt/GDP ratio in order to increase debt sustainability and free resources for investment and economic prosperity. The considerations developed in our position paper on effects on inflation, exchange rate, ECB independence, ECB balance sheet and different sources of ECB risk suggest that there is enough room to do so. More to it, in presence of an increased debt burden on Eurozone members ECB debt relief intervention can even be an optimal strategy increasing its instrument independence to mitigate sovereign debt risk in the euro area, pursue its statutory goal and ensuring correct transmission of monetary policies The room of manoeuvre would even be much larger if we imagine that the main world CBs realise the fiscal paradigm shift and understand that it is convenient to act cooperatively such change and the conditions for a cooperative equilibrium seem to exist if debt relief would produce just small effects on inflation and exchange rates.

References

Benjamin, David, and Mark L. J. Wright (2008), "Recovery Before Redemption? A Theory of Delays in Sovereign Debt Renegotiations", mimeo, University of Southampton and University of California, Los Angeles.

Broner, Fernando, Aitor Erce, Alberto Martin, and Jaume Ventura (2014), "Sovereign Debt Markets in Turbulent Times: Creditor Discrimination and Crowding-out Effects", *Journal of Monetary Economics*, 61, pp. 114–142.

Bunea, Daniela, Polychronis Karakitsos, Niall Merriman and Werner Studener (2016), "Profit distribution and loss coverage rules for central banks", ECB Occasional Paper, No. 169, April.

Cecchetti, Stephen G., and Kermit I. Schoenholtz (2015), "Do Central Banks Need Capital?", Money and Banking, commentary.
Do central banks need capital? — Money, Banking and Financial Markets (moneyandbanking.com)

Ciccarelli, Matteo, and Chiara Osbat (eds.) (2017), "Low Inflation in the Euro Area: Causes and Consequences", ECB Occasional Paper No. 181.

Cukierman, A. (1992), *Central Bank Strategy, Credibility, and Independence: Theory and Evidence*, Cambridge, MA: The MIT Press.

Debelle, G. and S. Fischer (1994), "How Independent Should a Central Bank Be?", in J.C. Fuhrer (ed.), *Goals, Guidelines and Constraints Facing Monetary Policymakers*, Federal Reserve Bank of Boston, 195-221.

Dögüs, Ilhan (2019), "Rising wage differential between white-collar and blue-collar workers and market concentration: The case of the USA, 1964-2007." *PSL Quarterly Review*, 72.290. pp. 223-251.

Draghi, Mario (2018), "Central bank independence", Lamfalussy Lecture, Banque Nationale de Belgique, Brussels, October.

Easterly, William (2002), "How Did Heavily Indebted Poor Countries Become Heavily Indebted? Reviewing Two Decades of Debt Relief", *World Development*, Vol. 30, No. 10, pp. 1677–1696.

Forni, Lorenzo, Geremia Palomba, Joana Pereira, and Christine Richmond (2016), "Sovereign Debt Restructuring and Growth", IMF Working Paper.

Furman, Jason, and Lawrence Summers (2020), "A Reconsideration of Fiscal Policy in the Era of Low Interest Rates", Discussion Draft, Harvard University.

Hatchondo, Juan Carlos, Leonardo Martinez, and César Sosa Padilla, (2014), "Voluntary Sovereign Debt Exchanges", *Journal of Monetary Economics* 61, pp. 32–50.

Karabarbounis. Loukas, and Brent Neiman (2014), "The Global Decline of the Labor Share", *Quarterly Journal of Economics*, 129 (1), pp. 61-103.

Krugman, Paul (1988), "Financing *vs.* Forgiving a Debt Overhang", *Journal of Development Economics*, 29, pp. 253-268.

Krugman, Paul (2020), "Learn to Stop Worrying and Love Debt", *The New York Times*, 3 December.

Lo, Stephanie, and Kenneth Rogoff (2015), "Secular Stagnation, Debt Overhang and Other Rationales for Sluggish Growth, Six Years On", BIS Working Papers No 482.

Micossi, Stefano (2020), "Sovereign Debt Management in the Euro Area as a Common Action Problem", CEPS Policy Insight, PI 2020-27.

Nordhaus, W. D. (1998), "Quality changes in price indexes," *Journal of Economic Perspectives*, 12, pp. 59–68.

Pâris, Pierre, and Charles Wyplosz, (2014), "Politically Acceptable Debt Restructuring in the Eurozone", *Geneva Special Report on the World Economy*, 3.

Pitchford, Rohan, and Mark L. J. Wright (2012), "Holdouts in Sovereign Debt Restructuring: A Theory of Negotiation in a Weak Contractual Environment", *The Review of Economic Studies*, April, Vol. 79, No. 2, pp. 812-837.

Reinhart, Carmen M., and Christoph Trebesch (2016), "Sovereign Debt Relief and Its Aftermath", *Journal of the European Economic Association*, 14.1, pp. 215-251.

Walsh, Carl E. (1995), "Optimal Contracts for Central Bankers", *American Economic Review*, Vol. 85, Issue 1, March, pp. 150-167.

Walsh, Carl E. (2008), "Central Bank Independence", in S. N. Durlauf and L. E. Blume (eds), *The New Palgrave Dictionary of Economics*, 2nd ed. Palgrave Macmillan.

Table 1. Effects of the seven forms of COVID-19 debt relief

	ECB asset/liability	ECB profit/losses	Inflation risk	Exchange rate risk	Room for anti-inflationary policies	Art. 123
	Neutral	Neutral	Neutral	Neutral	Slightly reduced	Neutral
	Neutral	Neutral*	Neutral	Neutral	Slightly reduced	Neutral
	Negative net position	Neutral*	Neutral	Positive	Slightly reduced	Neutral
	Positive net position	Negative	Positive	Positive	Increased	Neutral
	Negative in the SR neutral in the LR	Negative	Strongly positive	Positive	Slightly reduced in the SR, Neutral in the LR	Neutral
	Slightly positive	Slightly negative	Slightly positive	Slightly positive	Slightly increased	Neutral
	Compensated by profits	Positive	Negative	Neutral	Slightly reduced	Neutral

- Under the current ECB policy of interest rate reversal