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RESEARCH PAPER

The Spectre of Financial Dominance in the Eurozone

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Abstract
Differently from previous crises, the European institutions responded promptly to the Covid-19 pandemic by implementing an appropriate policy mix. However, this policy mix has proven to be insufficient for reducing the risks of financial instability in the European Union due to the temporary horizon of the centralised fiscal policy and the persistence of adverse shocks. In fact, the impact of the pandemic was exacerbated by the dramatic consequences of the war in Ukraine. The possible inefficiencies in implementing the Next Generation-EU (NG-EU) and an inadequate response to the Ukraine crisis could trigger, at best, the revival of financial and fiscal dominance in the euro-area economies. However, by using a simple model referred to the post-pandemic and war period, we show that the overburdening of the European Central Bank's role would come with high costs. Hence, we argue that it is necessary to pursue sustainable development based on the successful implementation of the NG-EU and the related transformation of the one-shot centralised fiscal policy into a recurrent policy tool.

Keywords Fiscal dominance · Financial dominance · ECB · Monetary policy

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1 Introduction

Brunnermeier (2016) maintains that financial dominance refers to a deliberate ex-ante undercapitalisation or a hesitant behaviour of the financial sector to avoid the uptake of potential losses; the author adds that this behaviour can lead to increased volatility and may necessitate the absorption of losses by fiscal or monetary authorities. In this paper, we provide a broader definition of financial dominance which is not limited to the intermediary sector. However, the reference to Brunnermeier (2016) is useful for showing that a proper definition of financial dominance requires starting from an abstract approach.

In this respect, let us note that financial markets involve three groups of agents: financial wealth owners, fund seekers, and financial intermediaries. Debt contracts and other debt instruments are based on borrowers' promises to repay fixed or variable amounts of liquidity at given or recurrent future dates; equities involve fund seekers' substantial commitments to distributing a portion of their returns above a given threshold. These different promises of payment are usually contingent on the occurrence of future events, and specifically on the consequent ability of each fund seeker to generate a stream of uncertain revenues.[1] Unfavourable future states may imply that revenues are insufficient for repaying lenders and bondholders or for transferring the expected dividends to shareholders; hence, one of the intermediaries and wealth owners would suffer losses or a lack of gains and, generally speaking, the set of financial wealth owners would be penalised.[2] The negative consequences of contractual insolvencies or low returns also severely affect the current and future revenues of financial intermediaries and the fund seekers' income streams. The obvious implication is that the variance in the amount and allocation of actual net revenues is an intrinsic feature of financial markets due to their inherent uncertainty.

Financial dominance is the condition under which one or more of the three groups of the above-mentioned agents can influence or exploit policy interventions and financial regulation to improve their balance sheets by reducing market losses or increasing market gains. Financial dominance introduces a distortion in the functioning of financial markets. The expectation of favourable policy interventions or changes in financial regulation incentivises agents exercising significant market power to build up larger and riskier positions that lead to instability and make the policy intervention or re-regulation in financial markets unavoidable.

Let us now turn to the definition of fiscal dominance. As is well known, central banks usually have price stability as a primary (or one of the principal) objective(s). This objective should be achieved through actions that are independent of the fiscal policies implemented in the same area (the so-called monetary dominance).[3] Fiscal

[1] Uncertainty arises from several factors, e.g. the specific riskiness of financed projects, the expected macroeconomic and social scenario, the policymakers' reactions to external or endogenous shocks, and so on.

[2] Losses (or missed gains) are not necessarily experienced by the original lenders or investors because the financial assets can usually be transferred to other wealth owners or intermediaries acting as buyers in capital markets.

[3] These considerations specifically apply to the European Central Bank. The European Treaties aim to prevent monetary policy from losing its independence and becoming subservient to the national fiscal

dominance is the condition under which a central bank cannot focus on its statutory mandate due to the constraints generated by fiscal policies. In the "unpleasant monetarist arithmetic" of Sargent and Wallace (1981, p. 2), the typical example of fiscal dominance is: "if the fiscal authority runs deficits, the monetary authority is unable to control […] the growth rate of the monetary base." The European Central Bank (ECB) experienced an opposite form of fiscal dominance from December 2011 to the summer of 2012 and from the end of 2014 to the end of 2018. Due to the restrictive and largely pro-cyclical stance of the fiscal policy in the euro area and the related high risk of unsustainable government deficit and debt positions, the ECB's monetary policy was overburdened by the responsibility of stabilising the economy through an expansionary stance centred on zero-level or negative policy interest rates, generous refinancing programmes, and the purchase of a large amount of government bonds on the secondary markets. These policies represent a second example of fiscal dominance, independently of their positive impact on the effective functioning of monetary transmission mechanisms.

It should be emphasised that the central bank has a high risk of losing its independence from fiscal policy in both these opposite examples of fiscal dominance. Given our previous definition, the same applies to financial dominance. Moreover, a monetary policy and a regulation can be subject to constraints that are not generated by national fiscal authorities but by private agents in financial markets. It follows that fiscal dominance is a sufficient condition for determining financial dominance, but the presence of financial dominance does not necessarily cause fiscal dominance. The more general concept of financial dominance encompasses fiscal dominance as a particular case.

The evolution of financial markets in the most developed economic areas during the last forty years has increased the risks of financial dominance. Since the 1980s, there have been dramatic increases in purely financial transactions, the number and sophistication of instruments traded, the variety of agents involved, and the dominant market positions covered by a small number of financial intermediaries. The oligopolistic structure of the most developed financial markets and the exclusive circulation in these markets of a growing portion of wealth have incentivised speculative behaviour and generated inefficiencies, leading to greater financial instability. In addition, the financial crises have strengthened their potential contagion on the real economy. Hence, policymakers and regulators have become increasingly concerned about macro-stability and have increased their propensity to intervene in financial markets. However, the same expectations of ex-post monetary or fiscal adjustments or regulatory interventions have created more short-term speculative opportunities, which is why overly accommodative policies or new rules have contributed to more significant financial imbalances.

The increasing importance of financial markets and the potential vicious circle between financial instability and policy (or regulation) interventions are crucial but insufficient factors for determining financial dominance. The latter has progressively taken centre stage when the behaviour of one or more groups acting in financial markets has obliged policymakers or regulators to intervene with initiatives to avoid

Footnote 3 continued
authorities' needs by prohibiting the ECB's purchases of public bonds on the primary markets (Drudi et al. 2012).

disruptive instability in the functioning of these markets. However, by pursuing market stabilisation, these initiatives produce, as a side effect, *ex-post* benefits either for fund seekers or for wealth owners and financial intermediaries. Hence, they also introduce distortions in the financial markets, which incentivise agents to behave *ex-ante* in a non-appropriate way.

The reference to some features of the 2007–2009 crisis exemplifies the economic consequences of financial dominance.[4] Unregulated and oligopolistic financial markets constrained the actions of policymakers and regulators and jeopardised the achievement of their objectives. Monetary policy approached or hit the zero lower bound of the interest rate; bailouts of national banking sectors and the strengthening of automatic stabilisers caused a general increase in government deficits, thus reducing the fiscal capacity, at least in the euro area. Moreover, even if financial regulators and supervisors progressively introduced liquidity buffers and more stringent capital requirements, regulation was unable to fully comply with market evolution, which, in the case of the euro area, doubled the incidence of non-bank loans and corporate bonds on total financing but remained too dependent on banking activity (Schnabel 2020).

This paper mainly focuses on the policy and regulatory interventions in the European Union's (EU's) financial markets. As is well known, during the international financial crisis, several EU countries dramatically increased their government deficits to bail out their national banking sectors and other non-bank financial intermediaries on the brink of systemic bankruptcy. The most fragile of the countries in the euro area (Greece, Ireland, and Portugal) could not overcome the consequent debt imbalances in their national balance sheets. Hence, in the following years, these countries were obliged to seek recourse to a European aid programme and to severely adjust their fiscal policy, thus triggering a new prolonged economic recession. The result was a dramatic increase in financial instability that negatively affected economic activity. During the second half of 2011, financial dominance strengthened the "doom loop" between the sovereign debt and the financial crises in the euro area.

Furthermore, we argue that even though the new policy mix has offset the recent pandemic shock through an expansionary monetary and fiscal policy, there are risks that this could transform into another episode of financial and fiscal dominance triggered by the economic consequences of the Russian invasion of Ukraine and the stagflation scenario.

Our paper is organised as follows. Section 2 outlines the critical role played by financial dominance with specific reference to its interaction with policies during the euro area's 2010–2013 crisis and the subsequent pre-pandemic period (2014–2019). Section 3 shows how the pandemic shock has redefined the European policy mix and regulation. It also explains how these changes deeply affected and will affect the role of financial dominance. Section 4 offers a stylised model to illustrate our arguments analytically. Finally, Sect. 5 concludes the paper by arguing that financial stability and sustainable development in the new setting determined by the dramatic Russian invasion of Ukraine and the persistence of Covid-19 can be achieved by satisfying at

[4] It should be noted that there were substantial episodes of financial dominance before the policy reactions to the 2007–2009 crisis. Here, it suffices to mention the monetary policy stance the President of the Federal Reserve, Alan Greenspan, followed after the Twin Towers attack (2001–2005).

least two conditions: i) a new definition of fiscal rules, and ii) a different organisation of European financial markets. Both conditions matter to financial dominance.

2 Pre-Pandemic Financial and Fiscal Dominance

The 2011–2012 vicious interaction between the euro-area sovereign debt crisis and the liquidity or insolvency crisis in a large part of the European banking sector ("doom loop") brought the monetary union to the brink of a breakdown. The initiatives taken by the ECB temporarily overcame the doom loop. At the beginning of December 2011 and the end of February 2012, the ECB implemented two innovative rounds of open-market operations: the so-called Longer-Term Refinancing Operations (LTRO). These operations were characterised by the ECB's supply function that had infinite elasticity at a low and fixed policy interest rate; moreover, the ECB's supply was associated with weak collateral requirements. The European banking sector exploited the opportunity by demanding more than €1,000 billion of liquidity from the ECB. However, this vast amount of additional liquidity was largely hoarded in the banks' balance sheets without significantly improving their lending activities (Belke 2012).

Between the end of 2011 and March 2012, European fiscal rules became more severe due to the implementation of the *Six Packs* and the so-called *Fiscal Compact*. Consequently, there was a revival of the doom loop during the summer of 2012. As a result, the survival of the euro area was at risk once again. However, even in this case, the ECB provided a temporary solution. At the end of July 2012, Mario Draghi made his "whatever it takes" statement the basis for the approval of the Outright Monetary Transactions (OMT).[5] The mere announcement of the OMT was sufficient for lowering yields on distressed sovereign bonds without any actual change in the monetary policy stance (Buiter and Rahbari 2012; De Grauwe and Ji 2013; Messori 2021: 1–25).

The LTRO and OMT initiatives, coupled with new restrictive fiscal rules, opened a phase of proactive intervention by monetary policy that led to the peculiar form of fiscal dominance already illustrated: the ECB became the "only player in town" to offset the recessionary effects of the crisis, which had been exacerbated by the national fiscal policies. The latter's stance was, in fact, pro-cyclical until the utilisation of the flexibility introduced by the European Commission's (EC's) Communication mid-January 2015. From the beginning of 2016 to March 2020, the fiscal policy became neutral, in the aggregate, due to the distortionary combination of expansionary policies in the EU member states with high public debt and recessionary policies in the 'core' member states. Hence, the debt positions of countries with loose fiscal policies would have been unsustainable and on the brink of default, putting at risk the survival of the euro area without a short-term expansionary monetary policy.

This situation explains the ECB's decision to strengthen the unconventional monetary policy introduced in response to the deflation risk in the second half of 2014 through the first Targeted Longer-Term Refinancing Operations (T-LTRO) and a form

[5] Since the beginning of September 2012 OMT has allowed the ECB to purchase an unlimited amount of short- and medium-term government bonds issued by the euro-area countries that were on the brink of debt unsustainability but were not bankrupt, being already enrolled in a European aid programme.

of quantitative easing. To (implicitly) support the sustainability of government debts, the ECB thus launched the Asset Purchase Programme (APP: March 2015) and combined an improved APP with a more effective form of T-LTRO (April 2016). Finally, it made the unexpected decision of re-opening a monthly APP in November 2019 to respond to the risk of a new stagnation (Benigno et al. 2022b).

This long phase of monetary expansion dramatically increased the amount of liquidity pumped into the euro area's economies in the 2011–2012 and 2015–2018 periods, and—in turn—the augmented liquidity in circulation had a substantial impact on European financial dominance.

It would be too naïve to look for regular correlations between the dynamics of liquidity and the trends in the various segments of the euro area's financial market. The trends in equity prices and the shapes of the curves representing the term structure of interest rates are affected by the current and expected macroeconomic cyclical phases and by many idiosyncratic financial factors. In this respect, it should be recalled that the banking regulation of the euro area experienced dramatic changes between 2012 and 2014. The main change was due to the implementation of the Banking Union, which is based on centralised supervision[6] and a partially centralised resolution mechanism incorporating a bail-in process (Enria et al. 2016; Micossi 2017)[7]; another critical change was the approval of Basel III's new capital requirements and second pillar rules (Stellinga 2021). Moreover, in the following years, European financial markets were characterised by the growing importance of non-banking credit suppliers and corporate bonds.

Despite this caveat, Fig. 1 shows that the LTRO, the OMT, the announcement of the ECB's unconventional monetary policies, and the strengthening of these policies by mid-2016 positively affected equity prices in the stock markets of the euro area. Furthermore, Fig. 2 shows the changes in the term structure of interest rates in the euro area at different points of time (i.e. between July and October 2012; between April and December 2014; and in May 2016.) It stresses the impact of the approval of the OMT (September 2012), the first substantial announcement of "quantitative easing" (Fall 2014), and the implementation of the various forms of APP (mid-2016). All these measures determined a downward shift and a reduced slope of the curve representing the term structure of interest rates in the euro area.

The trends described affected the balance sheets of the different groups of agents involved in financial markets. Fund seekers, shareholders, and the part of bondholders trading for capital gains benefitted from the expansionary monetary policy, which implied recurrent decreases in interest rates and inflated asset prices. Specifically, from August 2012 to the end of 2019, the most fragile countries of the euro area not involved in a European aid programme could issue government bonds at much lower interest rates than those paid in the June–November 2011 period and in July 2012. Moreover, between 2015 and 2019, euro-area core countries experienced decreasing interest rates on their government bonds that reached a negative Effective Lower Bound

[6] That is, the attribution of the single supervisory mechanism to the ECB.

[7] It is worth remembering that the banking union project did not just emerge out of the policy agenda of recent years. On the contrary, although different from the current developments, an EC initiative appeared in the 1960s and early 1970s but needed to be addressed (for details, see Mourlon-Druol 2016).

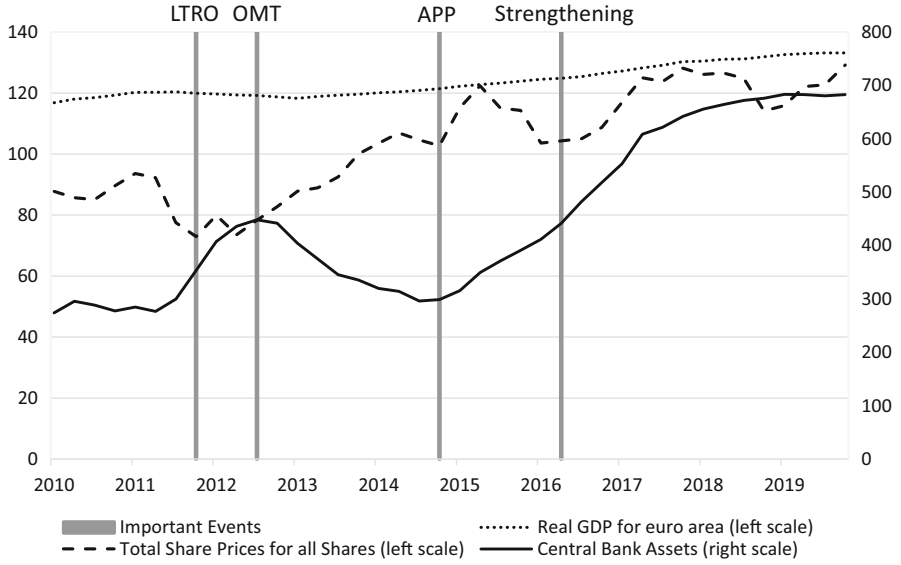

Fig. 1 Monetary policy and stock markets in the euro area

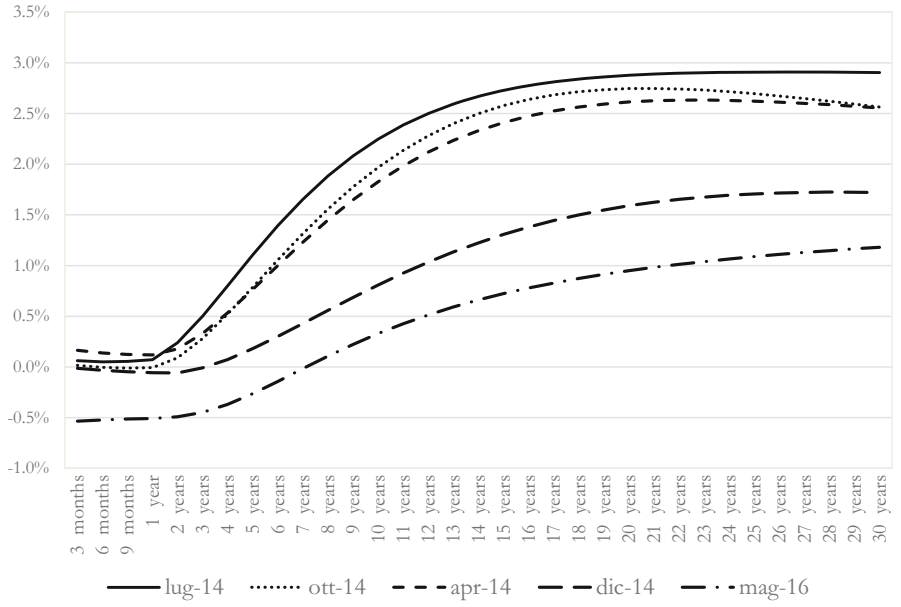

Fig. 2 Monetary policy and changes in the euro area term structure of interest rates Source: ECB. Notes: In the yield curves, only AAA-rated bonds are considered

(ELB), first for the shortest maturity and then for a growing portion of the medium-long term expiry dates. At the same time, if we do not consider asymmetric shocks (such as Italy's political uncertainty in 2018), the government bonds of the most fragile countries of the euro area enjoyed a reduction in their spreads towards those of the core countries along the curve of the interest rate term structure.

It is worth noting that the positive-sum game offered by financial dominance to active financial wealth owners, fund seekers, and financial intermediaries is not Pareto-improving even in the short term. The other part of the financial wealth owners who hold fixed-income assets at maturity and the management of technical reserves by insurance companies are negatively affected by a very low level in the time structure of interest rates; the same applies to traditional banks whose balance sheets are based mainly on interest margins. However, the impact of financial dominance can become indirectly positive for these agents. The low level of the term structure of interest rates in the euro area structurally depends on the positive imbalance between aggregate savings and aggregate investments; hence, an expansionary monetary policy implements this structural trend in the short term to mitigate its recessionary impact. Moreover, this mitigation decreases the risk of the collapse of financial markets and the probability of a credit crunch induced by strong recessions. Hence, financial dominance could indirectly limit the more sizable losses that all three groups operating in financial markets would face if no policy or regulatory interventions were made.

In terms of short-term cost–benefit analysis, we conclude that a sizeable financial multiplier (both for losses and gains) makes the monetary policy and the regulatory adjustments due to financial dominance unavoidable and desirable. However, let us note that this will not contradict our statement on the distortionary impact of financial dominance if we consider the distinctions between short- and long-term or between ex-ante and ex-post.

A short-term positive-sum game can turn into a negative-sum one in the medium-long term. It is sufficient to recall here that policy or regulatory interventions should disincentivise the structural adjustments of this balance in improving the current balance sheet of a given agent or group of agents. The consequent reproduction of the disequilibrium can flow into a medium-long-term condition that is so unstable as to become unmanageable. Hence, whereas financial dominance can play the role of stabiliser in the short term, it risks becoming a source of irreversible instability in the medium-long term. The probability of this outcome will be strengthened if we refer to the ex-ante and ex-post distinction. We have already emphasised that financial dominance could trigger a self-fulfilling prophecy: the expectation that a policy or a regulatory intervention makes it worthwhile for various agents to select riskier behaviour, given that the more significant—even if low-probability—benefits would be privatised. At the same time, the high-probability losses would be totally or partially absorbed by policy or regulatory adjustments. The consequent selection of riskier behaviour increases the medium-long-term trend toward an irreversibly unstable condition.

The above implications of financial dominance highlight that the latter is quite distortionary. Financial dominance can lengthen recessions and weaken subsequent recoveries by creating financial cycles of a wider magnitude than the standard business cycles.

3 Financial and Fiscal Dominance During the Pandemic

The Covid-19 pandemic is a shock of an unprecedented nature with two distinguishing features: it is characterised by an exogenous character and a peculiar form of asymmetry. With Covid-19 being an infectious disease, the shock is entirely exogenous, although it bears significant economic consequences beyond its dramatic effects on human life. It is, however, different from exogenous standard supply or demand shocks, which usually affect sectors of the economy in a symmetric way (Woodford 2020).

The asymmetry of the pandemic impact can be explained by the fact that some sectors of various economies were directly affected by lockdowns or other forms of restriction, which immediately generated zeroing or missing revenues. These sectors were thus unable to cover their fixed and variable costs and were forced to stop or dramatically reduce their demand for the different inputs of their usual productions. Like a cascade, this first impact resulted in missing revenues for other sectors and decreasing demand for labour units and other goods in the national markets and the international value chains. Moreover, the fall in the purchasing power of the weakest part of the population, the binding constraints in daily life, and the growing uncertainty negatively affected private consumption and investment.

The overall effects in each economic system were highly multiplicative and generated dramatic contractions in aggregate demand, actual employment, and aggregate output. In principle, decreases in demand and supply should have been partially counterbalanced because the pandemic emergency induced a greater public demand for specific medical equipment and a growing need for various forms of health assistance. However, market and institutional bottlenecks prevented international supply components from responding adequately and cooperatively to this growing demand. Furthermore, the magnitude of the net adverse effects in each economic system depended on the productive specialisation and the position of different firms in the international value chains (European Central Bank 2019; OECD 2021; Stiglitz 2020).

The exogenous pandemic shock has thus had asymmetric impacts in different countries and within each country. It entailed policy responses that, to meet the challenge, have been quite different from the usual policies implemented to stabilise the economy under more common disturbances. The new policy responses have involved ample financial and liquidity support to cope with three areas[8]:

(i) The productive sectors mainly affected by the shock, to meet their flows of payments and to limit the bankruptcy of potentially efficient firms;
(ii) The various lenders to these sectors, to avoid systemic problems in the banking sector, the collapse of financial markets, and a credit crunch;
(iii) The unemployed workers, to mitigate the negative social consequences of the pandemic.

However, due to the highly multiplicative impact of the economic contraction, transfers and guarantees have been rapidly extended to a large part of the various economic systems. At the same time, substantial government funds have been used

[8] See, among others, Schivardi and Romano (2020), Pfeiffer et al. (2020), Benigno et al. (2022a), Cardani et al. (2022), and Di Bartolomeo et al. (2022).

to improve and rationalise the demand for and the supply of medical assistance and equipment.

In all the above-described cases, government intervention took the form of fiscal transfers, public guarantees, and public purchases. Therefore, fiscal policymakers have significantly increased their national debts. At the same time, central banks have strengthened the already expansionary stance of their monetary policies to provide abundant liquidity to their banking sector and to support the implementation of expansionary national fiscal policies.

In principle, if an economic system were at full productive capacity and available fiscal capacity before a pandemic shock, there would be no need for a specific monetary policy accommodation. A mix of fiscal transfers and government purchases would be sufficient. However, at least in the euro area in 2018–2019, the economies of many member states grew in a subdued way or fell into stagnation; moreover, the pandemic shock was extreme in some of the member states with the worst track record in terms of growth rates and fiscal capacity.[9] Hence, since the beginning of the pandemic a strongly accommodative monetary policy has been fundamental to alleviate the fiscal burden in the weakest countries of the euro area. By keeping nominal interest rates close to zero or even negative, the ECB has lowered the financing cost of the growing government debts; and by purchasing the most significant part of these additional debts in the secondary segments of the financial markets, it has provided an implicit guarantee in terms of market access and lower risk premia even for the weakest countries (Benigno et al. 2022b).

The prompt European policy responses to the pandemic shock have determined an innovative convergence between monetary and fiscal policies.[10] The following points can summarise the evolution of this policy mix.

1. In 2020, between March and June, the ECB: (a) strengthened its APP and started an emergency programme of government-debt purchases labelled the Pandemic Emergency Purchase Programme (PEPP); (b) restarted the LTRO programme and significantly expanded the ongoing T-LTRO III programme to improve the liquidity provision of the euro-area banking sector.
2. At the same time, the EC decided to de facto suspend its fiscal rules, previously set by the 2011–2013 changes in the Stability and Growth Pact, and to approve the first version of the 'Temporary Framework' aimed at weakening the rules on state aid and other European regulations.
3. The EC also launched a centralised European fiscal policy for the emergency. In the spring of 2020, it offered more than €500 billion to protect unemployed workers temporarily, cover healthcare expenditures up to 2% of the national Gross Domestic Product without any conditionality, and guarantee new investment financing.
4. The EC and the European Council reacted extraordinarily to the pandemic by launching the Next Generation-EU (NG-EU), which was approved by the European Parliament in the autumn of 2020 and came into effect in the summer of

[9] The impact of the pandemic shock on a country depends on the temporal sequence of epidemiological events, the reaction capacity of the national health system, and production specialisation. The lack of fiscal capacity is due to the high public debt levels.

[10] This convergence is innovative because it has led to a very different response from that given during the financial crisis and implies a new policy mix (see Benigno et al. 2022a; Buti and Messori 2021).

2021.[11] The NG-EU is financed by the EU's market indebtedness and offers long-term European loans and permanent transfers to member states also in proportion to the national weaknesses that preceded and were caused by Covid-19. Although it has been designed as a temporary policy, this initiative has led to a significant redistribution of financial resources from the core to the fragile countries of the euro area (Buti and Messori 2020a, b).

5. This set of initiatives, further strengthened by the ECB and refined by the EC during the winter of 2020–2021, allowed all the euro-area member states to greatly expand their national fiscal policies despite the consequent significant increases in government deficits and debt. Moreover, the support offered by the APP/PEPP has put any instability factor in managing government balance sheets under complete control.

As a result, the new European policy mix has allowed for a convergent expansion of monetary policy and national and central fiscal policies. The expansionary coordination of these three policies has been instrumental in coping with the challenges of the pandemic shock. However, two key features should be emphasised further:

1. Implementing a centralised fiscal policy in the EU could become a crucial innovation, even if it were conceived as a temporary initiative aimed at counterbalancing extraordinary shocks;
2. This innovation could prove to be even more critical, considering that the euro area has never experienced the simultaneous expansionary implementation of monetary, national, and centralised fiscal policies.

As already illustrated in several contributions,[12] these two features are instrumental in addressing the role of financial dominance and its interaction with monetary and fiscal policies during the pandemic phase. Given the European response to the pandemic shock, monetary policy has stopped being the "only game in town." Nevertheless, fiscal and financial dominance survived in the undercurrents, and the explicit revival of these forms of dominance cannot be entirely disregarded in the current phase of the European economy, which is affected by the pandemic's persistent impacts on the value chains and by the new and dramatic shock of the war in Ukraine at the EU's eastern border.

Evidence suggests that the ECB's initiatives did not fully overcome the subordination of monetary policy to fiscal policy (fiscal dominance) even in 2020–2021. The PEPP and the APP were crucial in allowing for expansionary national fiscal policies in euro-area member states without available fiscal capacity. Despite the de facto suspension of the Stability and Growth Pact in 2020–2021, a sovereign debt crisis for the high-debt countries of the euro area would have more likely happened if the ECB had not launched the PEPP and thus had not covered the additional government debt issuances caused by the national fiscal responses to the pandemic. Such a crisis would have placed a dramatic additional burden on the pandemic shock and prevented any

[11] See Bańkowski et al. (2021), Di Bartolomeo and D'Imperio (2022), Pfeiffer et al. (2022), and D'Andrea et al. (2023).

[12] See, e.g. European Parliament (2020, 2021); and Messori (2021)

successful policy response.[13] Hence, the innovative European policy mix was still characterised by the monetary policy's sort of ancillary position toward (national) fiscal policies that could have deteriorated into the instability of the financial markets.

From the economic point of view, the Russian invasion of Ukraine (end of February 2022) has dramatically worsened the supply-side bottlenecks inherited from the pandemic and has further pushed up the prices of energy, food, and other raw materials. The consequent acceleration of the average euro-area inflation has been accompanied by a severe slowdown in the EU's economic growth, leading to a high risk of stagflation. Despite this risk, since the beginning of 2022, the stance of the ECB's monetary policy has become more restrictive due to the growing inflationary pressure and the contagion from the United States. In the euro area, the end of the unconventional programmes centred on the net purchase of government bonds (March – June 2022) and the ongoing increases in policy interest rates will determine severe constraints in the national fiscal policies of member states with high public debt. Therefore, in the most recent years (2022 and 2023), the 2020–2021 policy mix is changing and is already causing tensions and fragmentation in financial markets (see Benigno et al. 2022c).

It is too early to assess whether this new policy mix will result in an explicit medium-long-term fiscal- and financial-dominance situation, in which monetary policy should restart absorbing the disequilibria caused by (national) fiscal policies and by the related consequences in financial markets. Therefore, we can only outline a few possible economic scenarios in the following pages.

An optimistic scenario would be characterised by a growth path enhanced by the end of the war in Ukraine by the summer of 2023 without the aftermath of a new Cold War and by the successful implementation of the NG-EU programme. Because of these events, European inflation could be controlled through a moderate restriction in the ECB's monetary policy, more than the one compensated for by public and private investments able to sustain the recovery thanks to a spur of productivity gains and growth in the EU's weakest countries. In this very optimistic scenario, the European fiscal policy could be gradually centralised on a recurrent basis due to the sequence of great adverse shocks (the war after the pandemic.) Hence, the convergence of the different national economies within the euro area would be strengthened, and the European economic growth path would become sustainable in the long term. Unfortunately, the probability of this scenario appears to be (at least today) relatively low. The war in Ukraine is likely to last for a long time and will lead—at best—to an even longer Cold War. In this more pessimistic but realistic scenario, if the NG-EU policies were unsuccessful, the European economic perspective would deeply worsen, and the re-affirmation of fiscal and financial dominance would become the only possible alternative to a threatening situation for the future of the euro area.

Let us slightly elaborate on our last statement. The European economy would enter a stagflation with the possibility of a more severe recession. We already mentioned that the supply-side bottlenecks had triggered a surge of inflation before the end of February 2022; the war has only strengthened this trend. Moreover, a large amount of liquidity pumped into the European economic system by unconventional monetary programmes

[13] In this respect, it should be remembered that the ECB does not entirely guarantee countries' debts if not under the conditionality of the OMT programme. This feature of the euro area makes monetary accommodation, through several types of APPs, a necessary tool.

from March 2015 to June 2022 has further fed and generalised the inflationary process. In this setting, an unsuccessful execution of the National Recovery and Resilience Plans would become "the straw that breaks the camel's back." The EU core countries would attribute the responsibility of this situation to the primary beneficiaries of the NG-EU, that is, the most fragile EU member states (such as Italy), and they would thus oppose the launch of a new expansionary and centralised fiscal policy. In this situation, only the revival of fiscal dominance could avoid a deep crisis in the euro area. Therefore, despite the acceleration in inflation dynamics, the ECB should keep real interest rates in negative territory and launch a new purchase of government bonds issued by the most fragile member states to reduce fragmentation.

In an inflationary phase, this anti-fragmentation tool is hard to adopt within the ECB's mandate. In any case, it would have a distortionary impact on financial markets, giving room to an explicit revival of financial dominance. Alternatively, the ECB would pursue a restrictive monetary policy stance leading to a 'sudden stop' in the expansionary national fiscal policies of the most fragile countries of the euro area. By assumption, the unsuccessful implementation of the NG-EU would make it impossible to strengthen an expansionary central fiscal policy. The consequence of this very pessimistic scenario would be a restrictive European policy mix, implying the ordered or disordered government debt restructuring of the distressed euro-area countries unless the old European aid programmes were involved or some related form of debt mutualisation was established.

In the following pages, we do not analyse the possible scenarios outlined above any further. Instead, we refer to the consequences of financial dominance on the private sector. We have already shown that financial dominance positively affects the balance sheets of many agents involved in financial markets (e.g. fund seekers, shareholders, and bondholders trading for capital gains). Hence, the ECB's improvement in the expansionary stance of its monetary policy during the pandemic shock has reproduced favourable conditions for financial dominance. We also mentioned that, in 2020, European financial regulators and supervisors eased prudential and accounting rules and several supervisory requirements, which could have led to more significant risk-taking positions (see Benigno et al. 2022a). Finally, we have shown that, at the national level, EU member states have implemented their expansionary fiscal policies by dramatically increasing government transfers to firms and households and offering generous public guarantees to lending activities. Moreover, these transfers have gradually involved groups of agents who are not directly affected by the pandemic shock and its economic consequences.

These observations imply that the expansionary stance of monetary and national fiscal policies in 2020–2021 significantly contributed to increasing Europe's financial wealth managed by households and financial intermediaries. Moreover, the trend, supported by empirical evidence, has been strengthened by two additional and somewhat contradictory factors: first, the uncertainty that has decreased the various types of propensities by agents to consume and invest during the 2020 economic depression and the first months of the 2021 transition; second, the expansionary stance of the new centralised fiscal policies in the EU that have supported the rapid economic rebounds of some of the most fragile member states and have heralded the opportunity for a recovery.

At least in the short term, the factors described above have positively affected the balance sheets of many agents involved in financial markets. As a result, fund seekers, shareholders, active bondholders, and financial intermediaries have had the chance to improve their economic conditions. In this respect, it is helpful to consider the price dynamics in the European stock and bond markets. During the 2020–2021 period, financial investors enjoyed abnormal positive returns and capital gains in both stock and bond markets despite the economic depression.

However, not the entire set of agents involved in the EU's financial markets has exploited these favourable opportunities. Instead, many European wealth owners have allocated the prevailing part of their financial portfolios to liquid securities (mainly bank deposits). In the medium-long term, this composition represents a severe macroeconomic distortion. The prevailing investments in liquid securities respond to a precautionary attitude that is fully understandable at the individual level in phases of moderate inflation; however, from an aggregate point of view, the same choice hinders the possibility of directly financing the 'real' economy. This fallacy of composition would be strengthened by a revival of fiscal dominance in the current situation, in which all the segments of the financial markets are penalising illiquid investments.

This implication matters in terms of the distortionary impact of financial dominance. Strong economic growth is the only way for European financial wealth owners and fund seekers not to be entirely dependent on the ECB's monetary policy decisions and, vice versa, for monetary policy not to be constrained by fiscal dominance. In the current phase, the euro area's economy is threatened by stagflation. Hence, it is not surprising that decreases in the amount of liquidity pumped into the economic system and the long sequence of increases in policy interest rates imply severe corrections in the stock and bond markets; and these corrections can have destabilising effects on fixed-income and risk-averse investors, even in the case of a revival of some form of fiscal dominance.

4 A Model for Financial Dominance

Let us analytically specify our previous examination of the recent evolution in the European policy mix and show the efficient contribution a central fiscal capacity could offer. In this respect, we extend the model that Smets (2014) and Ueda and Valencia (2014) developed.[14]

We extend the single-country framework proposed by Smets (2014) by referring to a stylised monetary union (MU) with two heterogenous groups of countries, labelled—respectively—the 'core' (c) and the 'fragile' (f) countries, and the common central bank. Increases in public expenditure and public deficit in c do not undermine the MU's financial stability, while the opposite holds when corresponding increases happen in f. A growing deficit in the balance sheet of countries with a pre-existent high public debt stock can be sustainable only if monetary policy eases their fiscal capacity

[14] Following these two papers, we limit significant interactions to the assumption that macroprudential regulation broadly affects credit growth (or the cost of financing.) Thus, increases in banks' capital requirements (or more binding constraints for leverage) raise the cost of banks' capital. This higher cost reduces financial instability (weakening fiscal and financial dominance) but decreases output.

by absorbing a significant part of their government bonds (fiscal dominance). In the short period, this accommodative active monetary policy can sterilise the destabilising impact of f's fiscal policy but at the cost of a resource misallocation.

Our stylised model is composed of two equations, which describe the financial stability of the MU (θ) and the dynamics of the output gap (x_i) in the two subsets of countries c and f (with $i = c, f$)[15]:

$$\theta = -\left(p - p^e\right) + \rho_f g_f + \delta \tag{1}$$

$$x_i = \left(p - p^e\right) + g_i + tr_i + \delta - u \quad i \in \{c, f\}. \tag{2}$$

Equation (1) is the ex-post leverage augmented by the effects of instability due to excessive deficits (g_f) in f. Parameter ρ_f captures the importance of fiscal dominance for the achievement of financial stability.[16] Higher unexpected inflation ($p - p^e$) tends to reduce the debt overhang. The variable δ measures the impact of the central bank's unconventional policies or changes in macroprudential regulation, which affect the public and private sources of financial instability.[17] Equation (2) determines the outputs in c and f, which are positively influenced by inflationary surprises, expansionary national fiscal policies, and an accommodative monetary stance.[18] In (2), tr_i is a potential transfer from c to f, i.e. $tr_f = -tr_c > 0$, whereas u captures the effects of the real shock.

We focus on the interaction between fiscal policies (g_i) and unconventional monetary policies (δ). We assume that the central bank is credibly committed to achieving the inflation target (p^T) as a primary objective so that $p = p^T = p^e$ is always implemented.[19] In our set-up, given an expansionary fiscal stance, negative values of δ map accommodative monetary actions that reduce the sovereign debt risk in the financial markets.[20] We assume that $\rho_f < 1$. As shown by Eq. (1), this implies that strengthening macroprudential regulatory instruments is more effective for reducing financial instability than restrictive fiscal policies in f.

[15] All the variables are deviations from their long-run (or 'natural') equilibrium. We assume that sovereign debts are stable in the absence of shocks. The analysis of systemic sustainability is, in fact, beyond the scope of the present paper (see Ghosh et al. 2013).

[16] Problems of sovereign debt sustainability and financial stability reinforce each other due to mutual exposures between the public and the private sectors. The deteriorating creditworthiness of the public sector hurts the balance sheets of banks and other financial intermediaries, which are significant holders of public debt. Thus, this deterioration forces the government to bail out the most fragile banks and intermediaries. It follows a further deterioration of fiscal capacity, which triggers a vicious circle (the doom-loop view).

[17] According to the Fiscal Theory of the Price Level, our model can be used to prove that price stability would be at risk if the central bank was too accommodative in lowering the financing costs of increasing government debts. However, this extension is beyond the scope of the present paper, which is why the result is taken for granted. Further elaborations are offered in: Canofari et al. (2023).

[18] Equation (2) represents a generalisation of Acocella et al. (2007).

[19] If we assumed that the inflation rate is not a priority that is always met, our findings would not be qualitatively affected. However, the implicit reference to the European Treaties would require a discussion of the central bank's objectives and targets that would make the illustration of our analytical results more complex. Our simplified setting implies that the central bank controls the current inflation rate.

[20] Following Smets (2014) or Ueda and Valencia (2014), one can interpret δ as a macroprudential regulatory instrument affecting credit growth or the cost of finance.

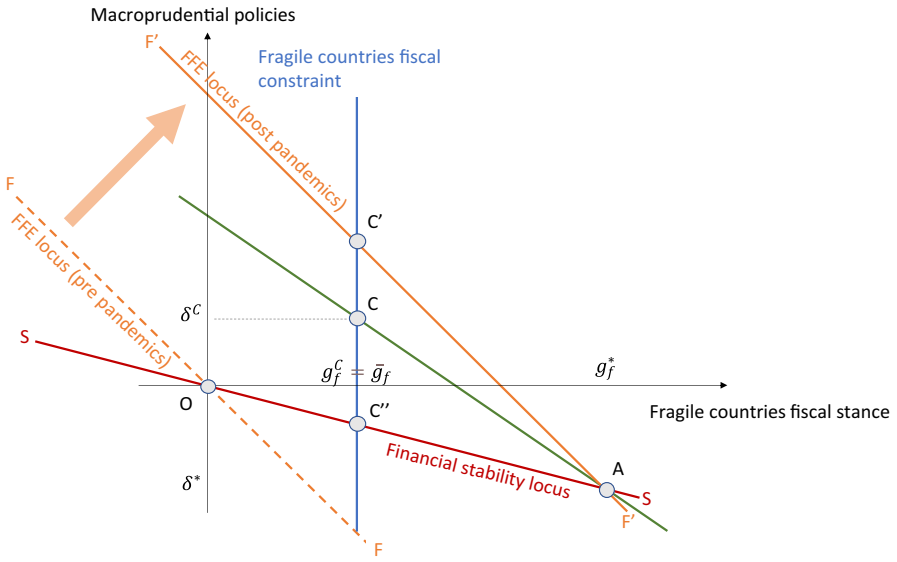

Fig. 3 Solutions associated with different policy regimes

In the absence of shocks, the economy is at its 'natural' equilibrium: $\theta = x_f = x_c = 0$, as Fig. 3 illustrates for the fragile countries.[21] The financial stability (FS) and the fragile countries' Full Employment (FFE) loci are drawn. The former represents the combinations of policies that ensure the financial stability of the MU, i.e. $\theta = 0$. The latter represents the corresponding combinations that ensure $x_f = 0$.

The points below FFE and above FS imply negative output gaps and financial instability, respectively.[22] In short, the FS curve (that is, SS in Fig. 3) indicates that expansive fiscal policies should be accompanied by accommodative monetary policies to ensure financial stability; otherwise, expansive fiscal policies destabilise financial markets (above FS). The lower FFE curve (that is, FF in Fig. 3) shows that the easing of macroprudential regulation and expansionary fiscal policies affect the output gap in the same direction so that non-accommodative monetary policies offset expansionary fiscal policies. Above (below) FFE, monetary or fiscal policies are excessively (insufficiently) expansionary to warrant the achievement of full employment. Let us assume that an external adverse shock hits a fragile country. Even in this case, the natural equilibrium could be restored with an appropriate assignment of policy interventions. In line with the target-instrument tradition of Tinbergen and Theil,[23] Eqs. (1) and (2) represent an economy which is characterised by three fixed targets (i.e. the natural levels for x_c, x_f, θ) and three instruments (i.e. g_c, g_f, δ.)

[21] It is worth noting that, for any δ and observed shock, a value of $g_c$can be chosen to stabilise the core output ($x_c = 0$.).

[22] Formally, $FS: \theta = 0 \Leftrightarrow \delta = (p - p^e) - \rho_f g_f and FFE: x_f = 0 \Leftrightarrow \delta = -(p - p^e) - g_f - tr_f + u$.

[23] See Acocella et al. (2012).

The shock under examination shifts the FFE curve upward (that is, F'F' in Fig. 3). Then, as fiscal (monetary) policies are relatively more efficient in stabilising the output gap (financial stability), the optimal assignment requires an expansionary fiscal stance ($g_f > 0$) to stabilise the pandemic shock and an accommodative monetary policy ($\delta < 0$) to mitigate the effects of the fiscal expansion in f on the union's financial stability (Point A). By indicating the optimal solution with an asterisk, it follows that: $g_f^* > 0$ and $\delta^* < 0$ (note $g_c^* = u - \delta > 0$), and $x_c^* = x_f^* = \theta^* = 0$. The optimal deficit of f positively deviates from its long-run equilibrium, whereas monetary policy compensates for the possible effects of deviation on financial instability.

Formally, the fixed-target solution (with $tr_f = tr_c = 0$) requires:

$$\delta^* = \frac{\rho_f}{1 - \rho_f} u \tag{3}$$

$$g_f^* = g_c^* = \frac{u}{1 - \rho_f} \tag{4}$$

to which the first best corresponds, i.e. $\theta^* = x_c^* = x_f^* = 0$.

The optimal solution requires that policy instruments be set without binding constraints or costs. The optimal fiscal policy (g_f^*) implies a deficit in f that grows with the shock's size. Hence, if the fiscal stance in f is limited by an upper bound ($\overline{g}_f$), the probability of a fiscal binding constraint increases with the intensity of the shock; and if this probability happens ($\overline{g}_f < g_f^*$), optimal policies will be required to switch from a fixed-target to a flexible-target approach.[24]

In the above respect, we need to define a simple loss-welfare function:

$$L = \frac{a}{2}\left(p - p^T\right)^2 + \frac{1}{2}\left(x_c^2 + x_f^2\right) + \frac{b}{2}\theta^2 \tag{5}$$

Once the policymaker is committed to $p = p^T$, (3) shows that there are three targets and two instruments available, as g_f is constrained by $\overline{g}_f < g_f^*$. The lack of instruments implies that policies face trade-offs.

Minimising (5), we get:

$$\delta = -\frac{g_c}{2 + b} - \frac{1 + b\rho_f}{2 + b} g_f + \frac{2u}{1 + b} \tag{6}$$

$$g_c = -\delta + tr_f + u \tag{7}$$

$$g_f = \overline{g}_f \tag{8}$$

The solution of (6)—(8) is illustrated in Fig. 3. It implies that fiscal policy in f (g_f^C) is smaller than in the case of the optimal unconstrained solution, i.e. $g_f^C = \overline{g}_f < g_f^*$.

Under the binding constraint of $\overline{g}_f$, the policymaker should choose between absorbing financial instability or reducing the f's output gap. Point C' (see Fig. 3) shows that

[24] The fiscal constraints in fragile economies are discussed in Sect. 2.

the f's output gap is minimised under the given constraints at the cost of allowing for the most extensive financial instability given the shock size. In Point C'', the opposite happens. Solution C' would be optimal if $b = 0$, that is, if there were negligible losses due to the financial instability of the MU. By contrast, C'' would be optimal if $b = \infty$, that is, if there was a very high probability of a breakdown of the MU due to financial instability. A more realistic case is given by a strictly positive but finite b. In this last case, the better solution would be between C' and C'', e.g. in Point C.

The FFE line indicates the optimal use of the macroprudential instrument for any given fiscal constraint. Denoting the better-constrained policies with g_c^C and δ^C, we observe that $g_c^C < g_c^*$ and $\delta^C < \delta^*$. Although these policies are consistent with $x_c^C = 0$, they lead to financial instability and a recession in f. The sizes of these adverse outcomes are proportional to the fiscal space constraint, i.e. $g_f^* - \overline{g}_f$.

Analytically, without transfers, the constrained solution of (6)–(8) leads to:

$$\delta^C = -\frac{1 + b\rho_f}{1 + b}\overline{g}_f + \frac{1}{1 + b}u \tag{9}$$

$$g_c^C = \frac{1 + b\rho_f}{1 + b}\overline{g}_f + \frac{b}{1 + b}u \tag{10}$$

$$\theta^C = -\frac{1 - \rho_f}{1 + b}\overline{g}_f + \frac{1}{1 + b}u \tag{11}$$

$$x_c^C = 0 \tag{12}$$

$$x_f^C = \frac{1 - b\rho_f}{1 + b}b\overline{g}_f - \frac{b}{1 + b}u. \tag{13}$$

In a nutshell, the model illustrates how fiscal constraints—while adversely hitting countries with limited fiscal capacity—can make the pandemic shock a source of unavoidable financial instability for the entire monetary area. The adverse effects are proportional to the difference between g_f^* and $\overline{g}_f$. Because g_f^* is dependent on the size of the shock, the existence of an upper limit for the fiscal policy in the fragile countries ($\overline{g}_f$) implies that the second-best allocation is more likely the more significant the shock.

These results lead to our last step: a transfer from c to f can be used as an additional policy instrument. In such a case a positive transfer (proportional to the shock) can restore the first-best solution. Following Tinbergen-Theil's approach, the rationale is trivial: an additional instrument re-equilibrates the number of targets and instruments. Formally, given that $g_f = \overline{g}_f < g_f^*$, it is easy to verify from (6)-(8) that an optimal transfer from the core to the fragile country ($tr^O = u - \left(1 - \rho_f\right)$) can restore the first best. However, if the transfer also finds a binding-upper limit because of political unfeasibility and the intensity of the shock makes this threshold binding, the transfer solution will be between the previous constrained case and the first best.

We can thus conclude that our model rationalises the idea that a well-coordinated policy mix is required to alleviate the cost of shocks in a MU. Fiscal authorities should stabilise the output gap, while monetary authorities should keep financial stability

under control, offsetting the risk of financial dominance and keeping the inflation rate under control. However, the existence of fiscal constraints implies that a different policy mix cannot eliminate the mild risk of financial instability. Therefore, f suffers heavier negative consequences from the common shock. In this setting, transfers from c to f can alleviate the negative impact of large shocks. In a long-run perspective, the financial stability of the MU depends on the policies that eliminate the constraints on fiscal policies (e.g. high government debt) and favour centralised transfers.

5 Conclusions

European institutions responded promptly to the pandemic crisis with an appropriate fiscal and monetary policy mix. The EC has launched pan-European emergency and investment plans, the most important being based on the NG-EU framework. The expansionary fiscal policy at the national and central levels was complemented by strengthening the ECB's already accommodative monetary policy.

We maintain that, although appropriate, the new policy mix could require a revival of fiscal dominance if the implementation of the NG-EU does not achieve its ambitious objectives and if the new and dramatic shock due to the current war in Ukraine leads to an EU stagflation. In this adverse situation, the ECB would be constrained to rescue the various financial market actors, including national governments, even in the post-pandemic and post-war periods. Moreover, the medium-long-term consequences of the revival of financial dominance could result in further distortions of the European financial markets; however, the alternative would be a more significant and potentially unmanageable financial instability and unsustainable government debts.

As stated above, the likelihood of the adverse scenario is inversely related to two events: first, the success of the NG-EU and other national plans in spurring sustainable medium-term economic growth, specifically for the weakest economies of the euro area; second, the capability of the EU institutions to react to the Ukraine crisis by extending over time and strengthening in different forms that central fiscal capacity temporarily built by the NG-EU. Only robust growth can validate the sustainability of the public finance of European countries at higher nominal interest rates and with the termination of the ECB's net purchases of government bonds, as well as the sustainability of risky financial positions taken by other actors in the financial market.[25]

Our considerations emphasise that European institutions should limit the conditions for reproducing financial dominance as the crucial factor for overcoming the consequences of the adverse scenario. In this respect, the lesson to draw for the future is dual.

Regarding the specific risks of fiscal dominance, the return to normality cannot take the form of the pre-pandemic model with monetary policy as the "only game in town" and with the national fiscal policies constrained by the 2011–2013 rules of the Stability

[25] Note that these last positions are necessary for allocating a significant part of European wealth to the financial assets generated by productive activities and required to support innovative and sustainable investments. More generally, a rapprochement between the composition of private financial wealth and the composition of the firms' demand for financing is necessary to support macroeconomic growth and to free public resources, thus allowing for a reduction in government debt and – at the same time – a drop in poverty and inequality.

and Growth Pact. However, the decisive solution should not only be sought in changing the European fiscal rules or – what would be a visionary mistake – in maintaining that centralised fiscal rules are unnecessary in an uncompleted economic union such as the euro area. Instead, it would be better to pursue a two-arm architecture: (i) a centralised fiscal policy with the gradual creation of union debt as the most appropriate tool to cope with macroeconomic stabilisation; (ii) a monetary policy able to limit future conditions of fiscal dominance without causing recessionary impacts even in the most fragile economies.[26] As a prerequisite, this design requires coping with the problem of the sustainability of the highest national government debts through forms of partial mutualisation based on the coordination between national balance sheet adjustments and the gradual implementation of centralised fiscal policies (see Buti and Messori 2021). The unpleasant long-term alternative is just restructuring the most vulnerable national debts.

Regarding the risk of financial dominance, the pre-pandemic bank-centric model should be replaced with the integration of market-based sources of firms' financing, possibly exploiting a common European capital market. However, the resistance to the completion of the Banking Union and the implementation of the legal setting offered by the Capital Markets Union is often ideological rather than being based on economic arguments (e.g. costs/benefits). For instance, the Banking Union process has remained incomplete due to the ill-founded opposition between risk sharing and risk reduction; and the refusal of several small and medium European firms to make recourse to market debt and to issue equities is due to the protection of rigid property rights and the firms' one-person governance. However, despite criticisms, a glimmer of optimism can be seen in the conduct of macroprudential monetary rules. These rules have often been counter-cyclical and effective.

The pandemic crisis and the war in Ukraine represent a significant challenge to the global economy. However, unlike in the past, European institutions responded promptly to the first challenge. The fiscal/monetary mix has contained the pandemic effects and has proposed a relaunch of the European economy through the new horizons opened by the NG-EU: digital innovations, ecological transition, and social inclusion. The hope is that European institutions can implement these challenges despite the new shock triggered by the excessive inflation rates and the war at the EU's eastern border.

However, even in the most optimistic forecast this adverse situation is characterised by substantial risks. From an economic point of view, there is still doubt concerning the evolution associated with the potential reproduction of policies feeding stronger and more distortionary financial dominance. In a virtuous/vicious circle, the success/failure of the implementation of the national plans linked to the NG-EU and of the effective utilisation of an additional central fiscal capacity in the medium run, as well as in the completion of the union process in the long run, is based on a positive/negative possibility to overcome resistance, often ideological, and to institutionalise the European response to the global shocks. The virtuous circle is necessary for overcoming the shocks that will be more and more frequent in an increasingly turbulent European economy affected by a likely new Cold War.

[26] In this respect, it should be emphasised that the same concept of the ECB's independence evolves through time (see Borio 2019.).

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Data availability The data supporting the findings of this study are available upon request.

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