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Introduction

The sequence and interplay of the various crises that the global system has been experiencing for several years imply that, in the years ahead, it will be necessary to issue substantial amounts of public and private debt to address the new challenges arising from these crises.

Consider the crises at stake: the climate crisis and the need to support the green transition; the technological crisis, whose speed and scope simultaneously accelerate obsolescence and create new profit opportunities; the energy crisis driven by geopolitical conflicts; the industrial crisis exacerbated by the aggressive unilateral trade policies of the U.S. administration; and, of course, ongoing wars.

As a result of these crises, the global system is undergoing a phase of fragmentation that constrains productivity and output growth. At the same time, each of these crises requires massive investments to sustain the reallocation of capital in its various forms: technological, human, physical, and intangible.

The figures for potential funding needs vary depending on objectives, time horizon, and geographical scope, but in any case, the magnitude approaches several hundreds of billions of euros annually.

This raises a pressing question: will this debt be sustainable?

The question is particularly relevant for Europe, which – unlike other major global economies – must address significant obstacles to define and implement collective actions aimed at supporting the integration process among its member states.

The issue here proposed is that Europe will be able to rely on sustainable debt provided it undertakes adjustments to its financial institutions and beyond, thereby continuing along a path of institutional integration that, although initiated some time ago, cannot be taken for granted. In particular, institutional innovations will be required to ensure debt sustainability.

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What determines debt sustainability

A standard indicator of debt sustainability is the difference between the interest rate on debt and the growth rate. If this value is negative –meaning that the growth rate **g** exceeds the interest rate on debt **r** – the debt is considered sustainable because growth will more than offset interest payments on the same debt. Conversely, if this difference is positive, debt sustainability will require a positive primary surplus **s** sufficient to compensate for the deficit implied by a positive value of **r** – **g**.

$$\mathbf{r\text{-}g{+}s{=}0}$$

This assessment must, however, be framed within the context of the polycrisis currently affecting the global economy. In particular, it is necessary to ask whether and how debt will remain sustainable in an environment of widespread fragmentation. Debt sustainability will depend not only on the scale of fiscal adjustment – and thus on the value of **s** – but also on the impact that adjustments implemented through changes in **s** will have on **r** and **g**. In other words, the relationship can be regarded as a 'reduced form of the debt sustainability mechanism.' Several hypotheses have been advanced on this point. Bini Smaghi (2025), for example, warns against the circularity of the relationship among **r, g**, and **s**. It should also be noted that the difference **r** – **g** depends on the values of variables that separately affect **r** and **g**. Very often, however, we consider analyses of the impact of **s** on the difference between **r** and **g** treated as a single variable, rather than as a combination of two components – thus overlooking important transmission channels within the system.

It should nevertheless be noted that the current crisis context, all else being equal, worsens debt sustainability. More specifically, fragmentation undermines growth, while uncertainty drives up interest rates. From this perspective, the existing institutional framework has significant implications. A specific case is the role of the euro area. According to Heinberger (2023), the **r–g** differential has been more adverse to sustainability in the peripheral countries of the Monetary Union, whereas the opposite has occurred in the core countries – revealing a clear divide between two groups of member states, as well as a debt stabilization policy strategy that serves both as an integration mechanism and, today, as a means of combating fragmentation.

Let briefly recall the state of fragmentation in Europe. Following the outbreak of the global crisis – geopolitical before economic – Europe has become highly fragmented, reversing the integration process that has long underpinned its growth, including its institutional model. It is difficult to envisage a rapid reversal of this fragmentation. Fragmentation, in turn, affects competitiveness and growth prospects, particularly within the new global landscape. Indeed, fragmentation reduces the overall volume of trade and capital flows, while accentuating regionalism phenomena that, by their very nature, entail a decline in integration.

An adequate response to the crisis is both necessary and possible. To build it, it is essential to leverage the founding elements of the EU aimed at strengthening Europe's systemic stability, including through institutional innovation. This response also entails defining the conditions for debt sustainability, without which the system risks plunging into a state of profound uncertainty.

Commercial and financial fragmentation

Figures 1 and 2 illustrate the degree of uncertainty in economic policy with respect to global growth and trade.

In particular, Figure 2 provides a long-term assessment of the global trade regime. The level of protection has generally declined – albeit with fluctuations – since the 1930s, nearly a century ago. The decisive turning point, marking the interruption of the liberalization process, occurred with the sharp reversal introduced by the Trump administration.

Fig. 1 - Uncertainty in economic and trade policy

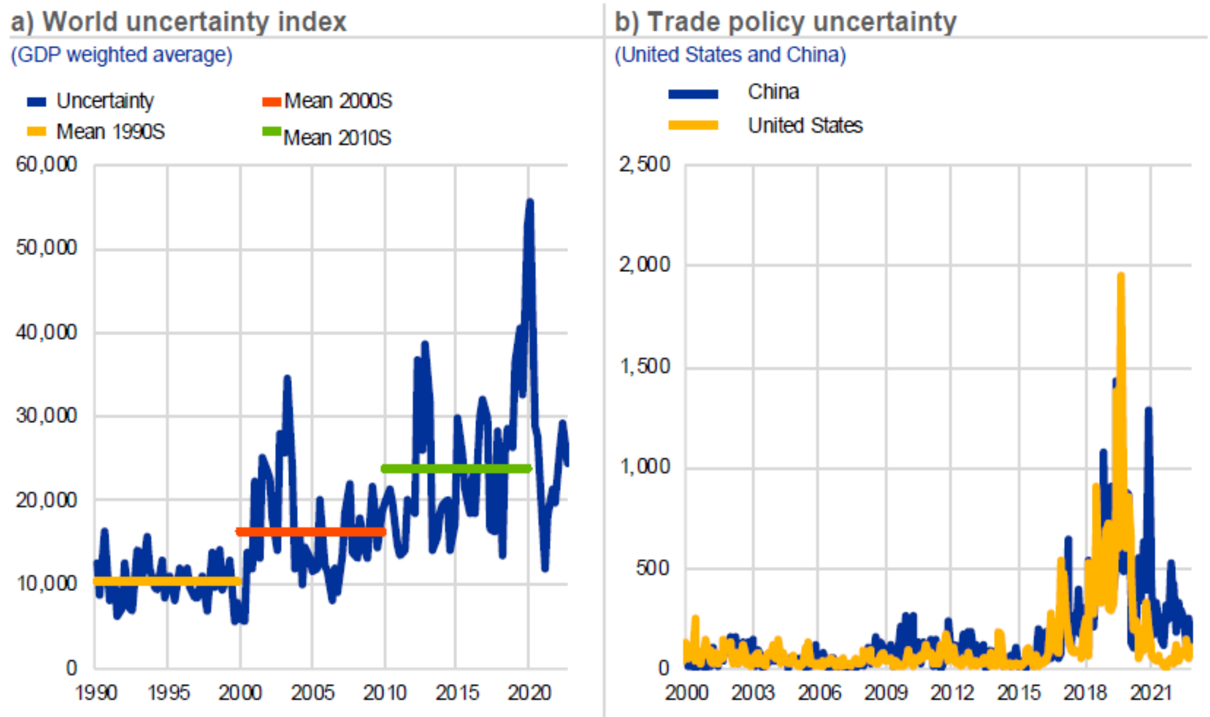
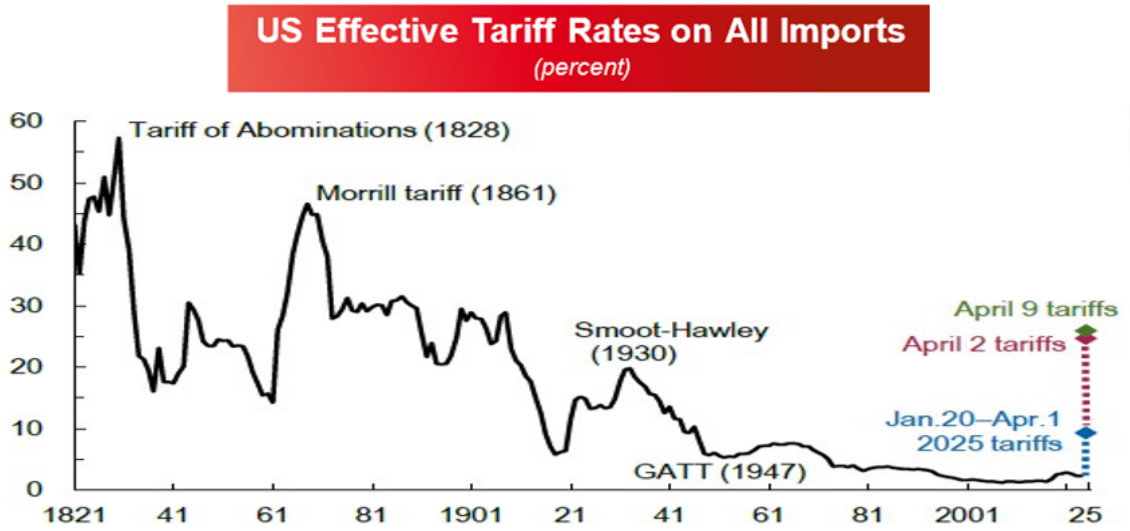


Fig. 2 - Trade Protection in the long term



The increase in trade restrictions actually began earlier, but subsequently expanded to include goods, services, and investments (Figure 3). A significant phenomenon within this context is the impact on global value chains (Figure 4), namely a structural disruption in the organization of production, a clear example of an irreversible event.

A similar process concerns the financial system. As shown in Figure 5, since the onset of fragmentation, financial transactions of various kinds have increased among politically aligned countries, while declining among politically distant ones. At the same time, strictly military conflicts have intensified (Figure 6). This has accelerated the need for a substantial reallocation of resources, requiring significant debt issuance.

The key points identified so far can be summarized as follows: fragmentation is primarily the outcome of geopolitical choices rather than structural dynamics; its consequences include a slowdown in growth, if not outright systemic disintegration. Furthermore, pressures have mounted for a regionalization of trade in goods and capital (Figure 7).

Fig. 3 - Trade protection in the short term

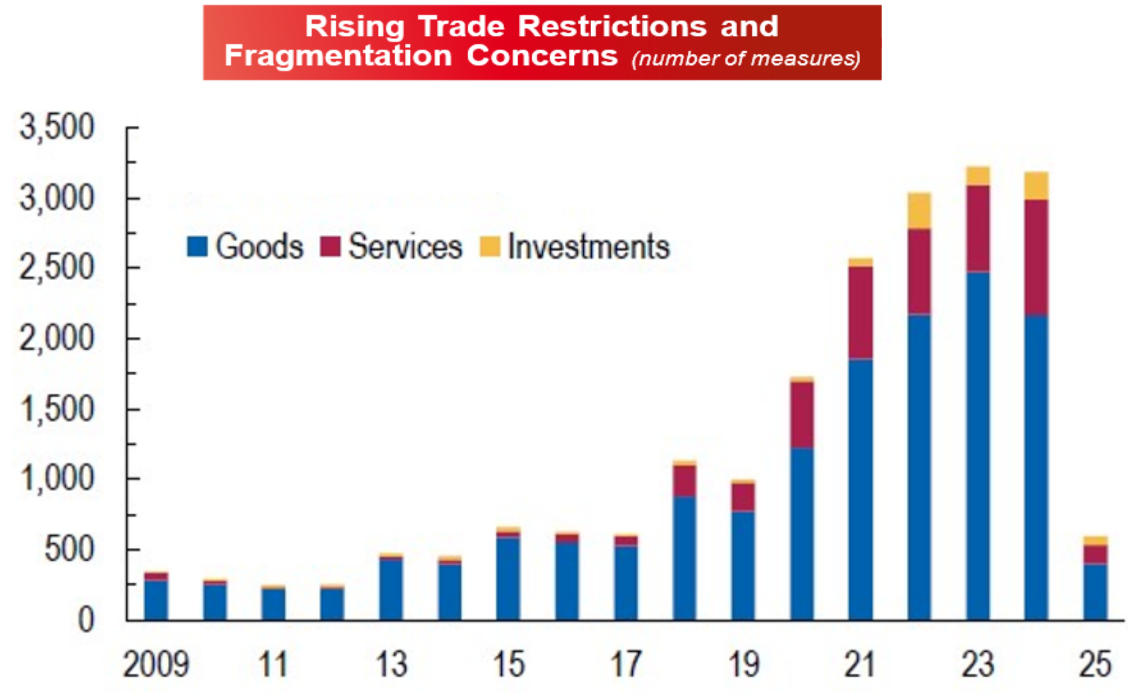


Fig. 4 - Pressure on global value chains

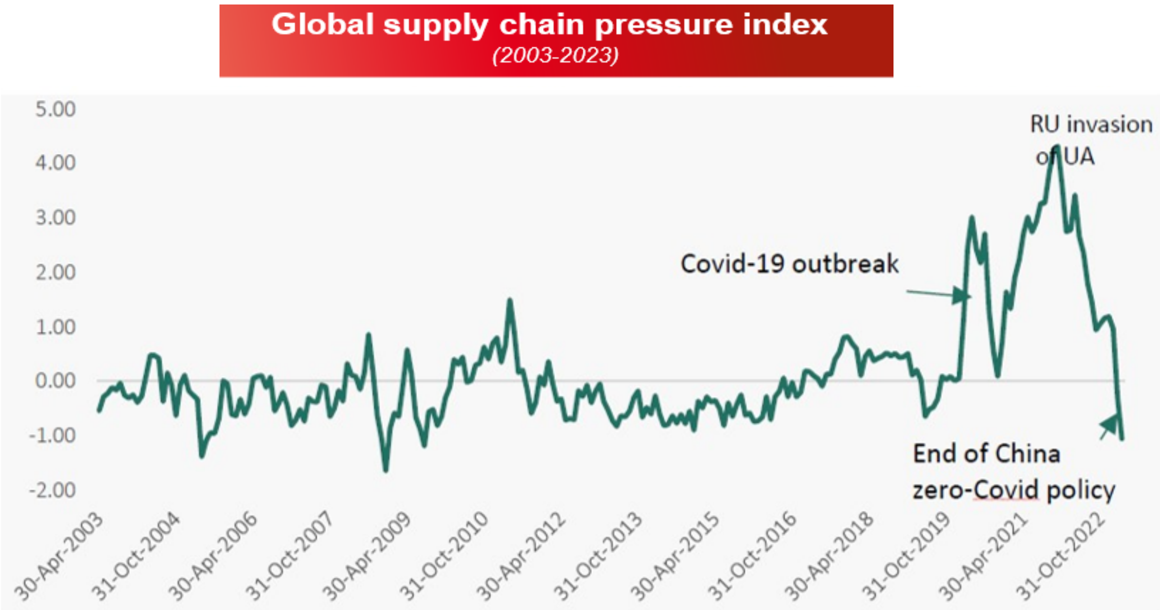


Fig. 5 - Financial fragmentation

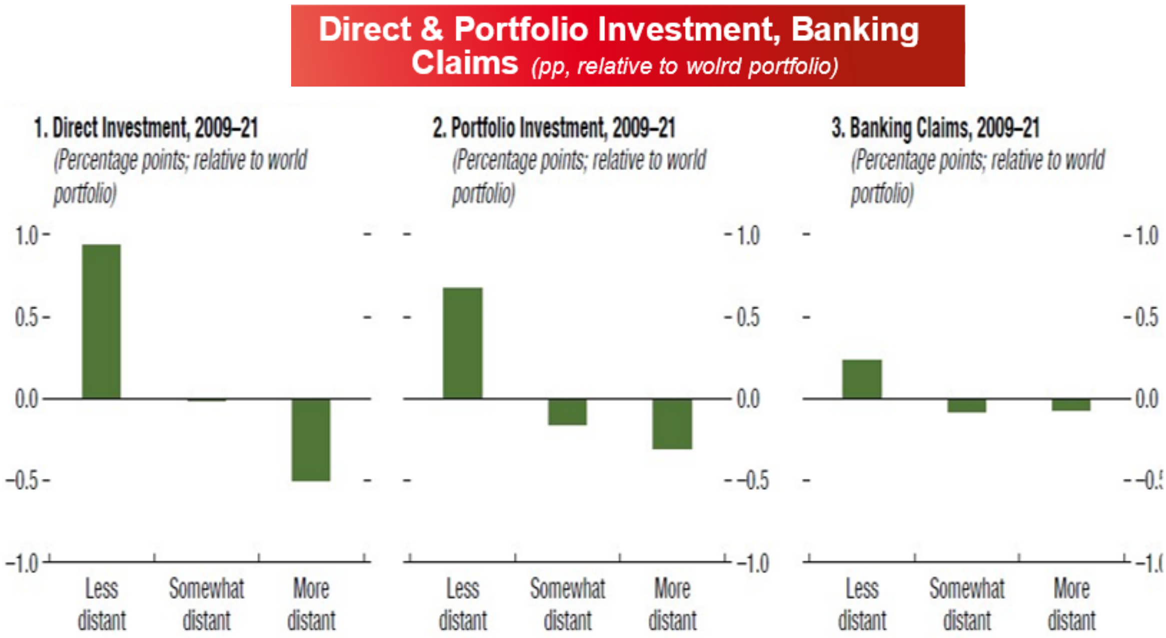


Fig. 6 - Military conflicts

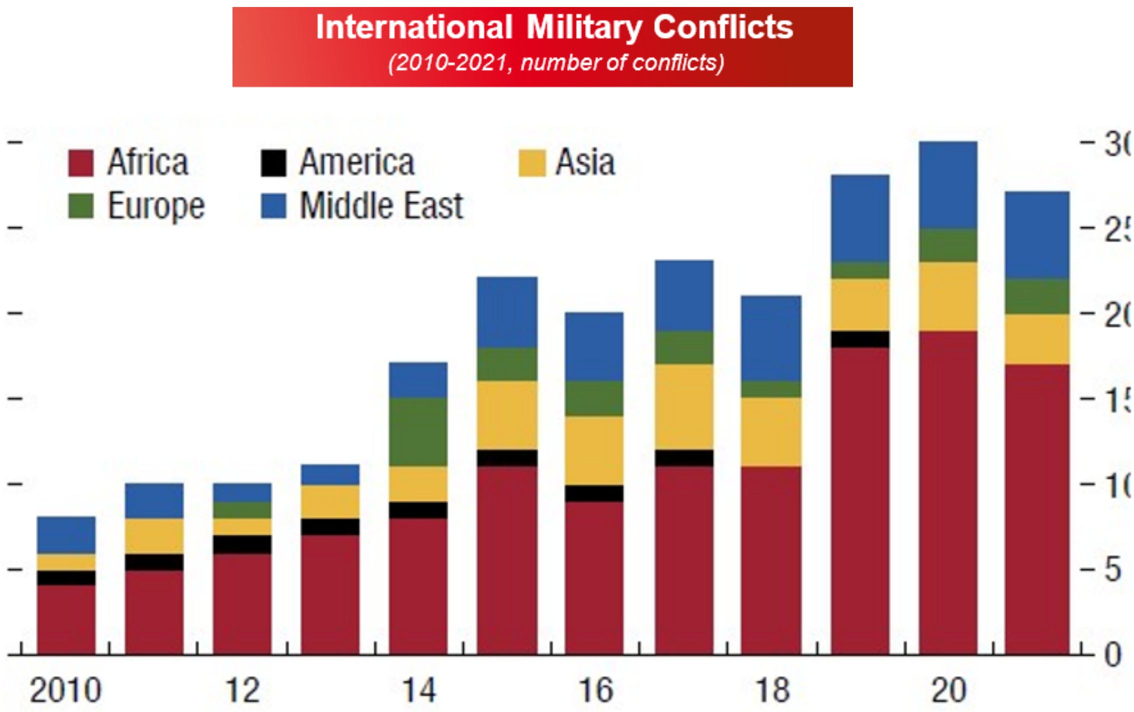
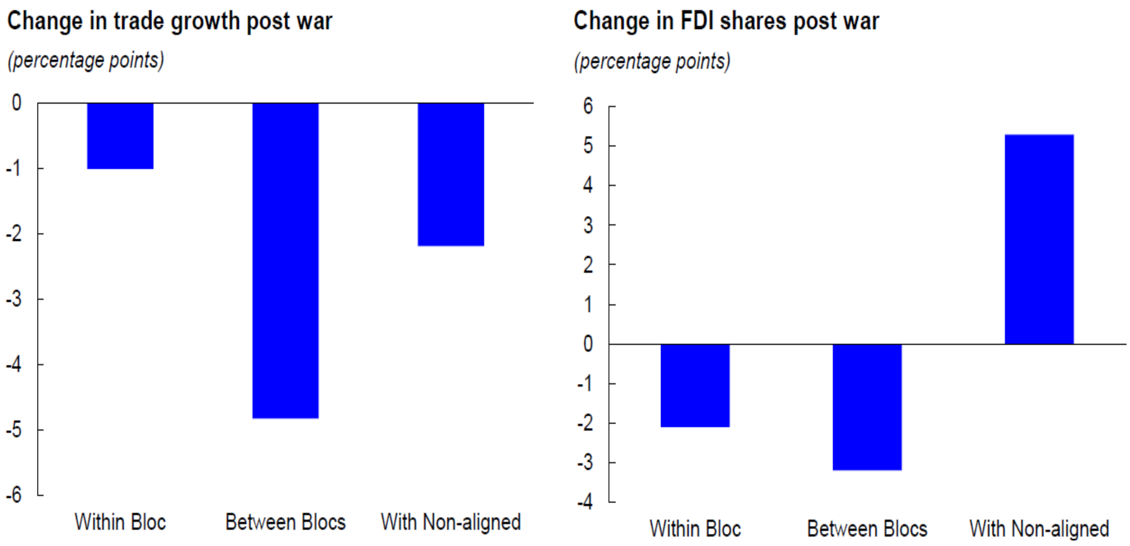


Fig. 7 - Consequences of the new geopolitics



Given the extent of fragmentation, it is clear that rebuilding the global system should restart from a perspective different from the one that prevailed during the post-war decades, particularly by assigning more important role to security and defense.

From this standpoint as well, the role of debt dynamics will be crucial. In the European case, in particular, a potential virtuous circle (or its opposite) can be identified. A favorable r–g trajectory for debt sustainability (that is, $r < g$) allows for a lower primary surplus, which in turn creates fiscal space that can be used to increase g and reduce r.

Conversely, an initial unfavorable r–g trajectory ($r > g$) can trigger a vicious circle leading to debt unsustainability. This framework can also be extended to euro area participation. Countries belonging to the core area can benefit from a favorable market assessment which, through a decline in r, will set in motion a virtuous cycle. By contrast, for countries on the periphery, this would result in growing fragility within Europe.

New governance regimes

Global governance is crumbling. When governance is weak, pressures on debt intensify.

However, fragmentation – largely irreversible – paves the way for new governance regimes. We can envisage three scenarios, limiting to considering the role of trade and defense.

The literature on global governance systems has made clear that a sustainable international regime, i.e. a cooperative arrangement, requires addressing both economic and security aspects simultaneously. The way these dimensions intertwine, however, varies depending on the counterparts. With countries where relations are partly conflictual and therefore subject to high uncertainty, any agreements will be complex and based on limited mutual trust. With allied countries – those engaged in long-standing relationships, often bilateral, but also within "club goods" arrangements and permanent alliances – it is more productive to adopt a long-term strategic vision. With "intermediate" countries, where relations are more unstable, a pragmatic, case-by-case approach will be useful. With equal bilateral relations, relative size – economic and security – will matter. In such a case, a larger country may assume a hegemonic or at least a leadership role. A special case is represented by China, given the strong dynamics of its growth and technological competitiveness.

A similar reasoning applies to monetary and financial relations, particularly in the presence of a key currency (such as the dollar, euro, or yuan) around which aggregation processes may develop.

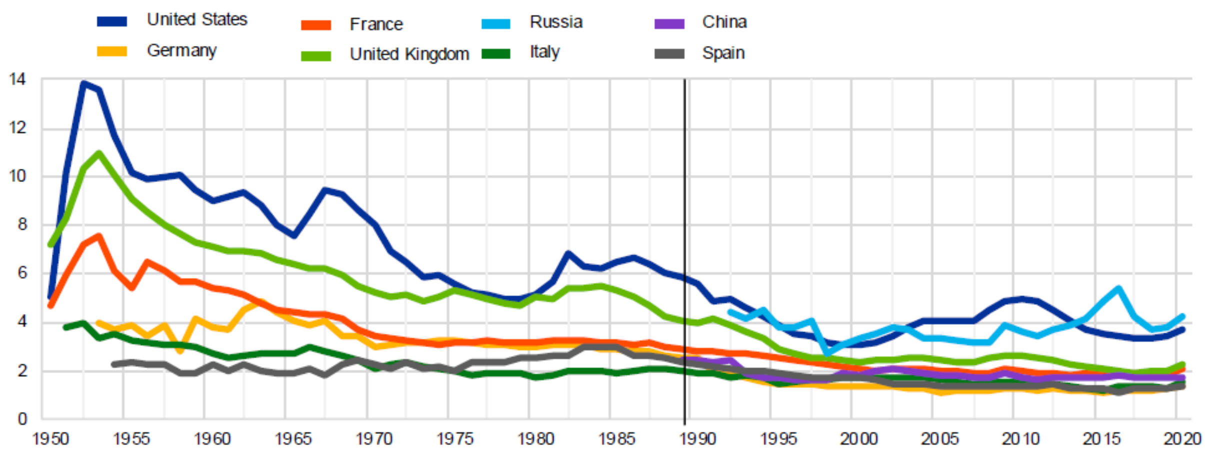
Europe, which must strengthen its governance and avoid the risks of fragmentation, currently finds itself in an intermediate position between pursuing and consolidating alliances (the second scenario) and adopting a pragmatic approach (the third scenario).

Military expenditures

Security considerations affect interactions with trade agreements as well as spending policies, both private and public, and thus also debt dynamics.

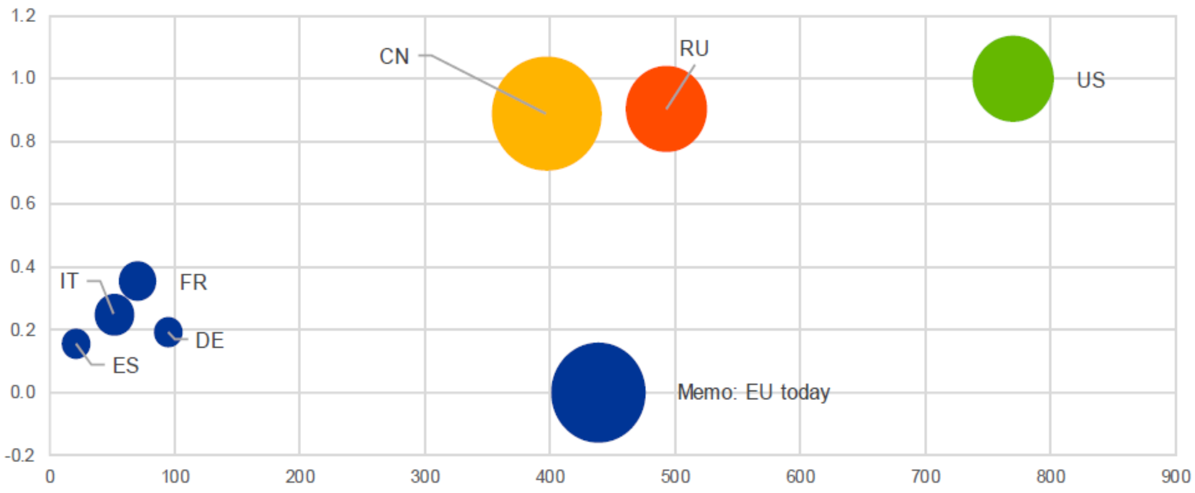
Figure 8 provides a concise overview of the evolution of military expenditures in the post-war period. The United States has consistently allocated the largest share of spending, both in relative and absolute terms. However, the recent policy directions of the Trump administration rule out the possibility that the United States could maintain a permanent leadership role of the kind established under the Bretton Woods agreements.

Fig. 8 - Defense expenditures



The quantity of military spending must be accompanied by its quality (Figure 9), which may conceal significant inefficiencies. For example, the varying degrees of inefficiency among European countries reflect the lack of integration of national defense industries and point to potential increases in debt to finance the restructuring of the industry itself.

Fig. 9 - Quality of military spending



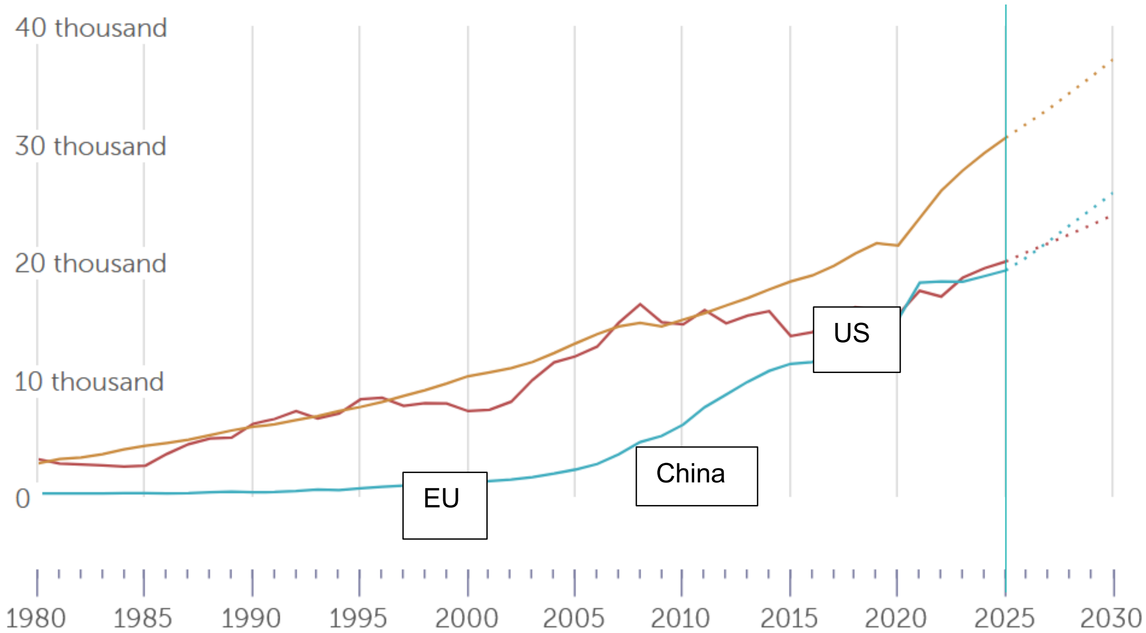
Europe

The main challenge for Europe over the past twenty years has been, and still is, the lack of growth, which in turn requires substantial investment.

After the 2007–2008 financial crisis, investments recovered rapidly in the United States and continued to expand, whereas in the EU they rebounded only gradually. The gap widened further in the following years.

In Europe, investments even declined after the financial crisis and have since remained below U.S. levels. All this has unfolded in a context of heightened uncertainty, further exacerbated by fragmentation, which depresses investments.

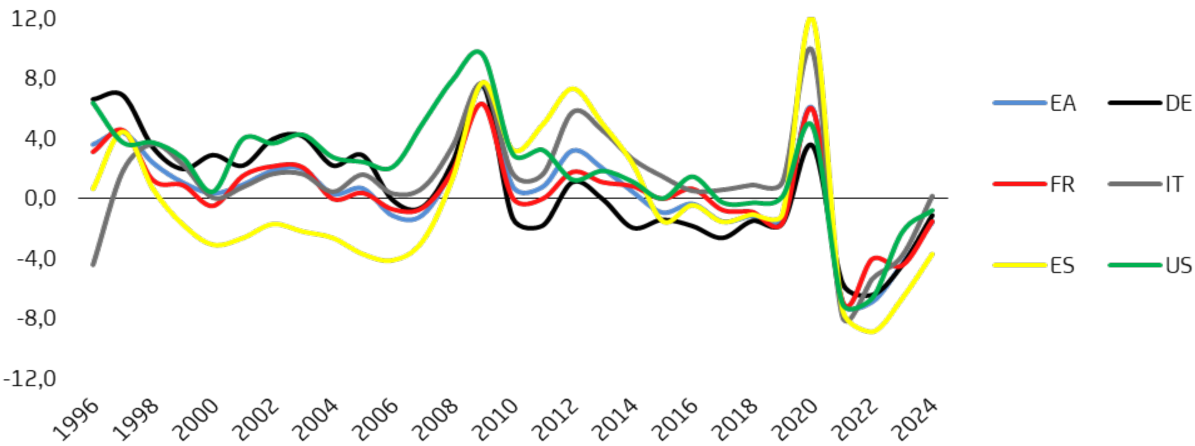
Fig. 10 - Per capita growth



As shown in Figure 10, the trajectory of European growth appears as a sequence of accelerations that eventually fade, requiring a new acceleration often triggered by exogenous shocks, frequently policy-induced. With this in mind, we can return to the issue of debt sustainability.

Despite modest growth, the r–g trend for advanced economies has been declining, albeit with significant fluctuations, suggesting substantial debt sustainability in the most recent period (Figure 11). However, upon closer examination, it is more difficult to support the notion of identical behavior between the EU and the United States.

Fig. 11 - r-g



For this purpose, it is useful to consider the different components of debt dynamics in the U.S. and the EU.

Fig. 12 - Components of US and EU debt dynamics

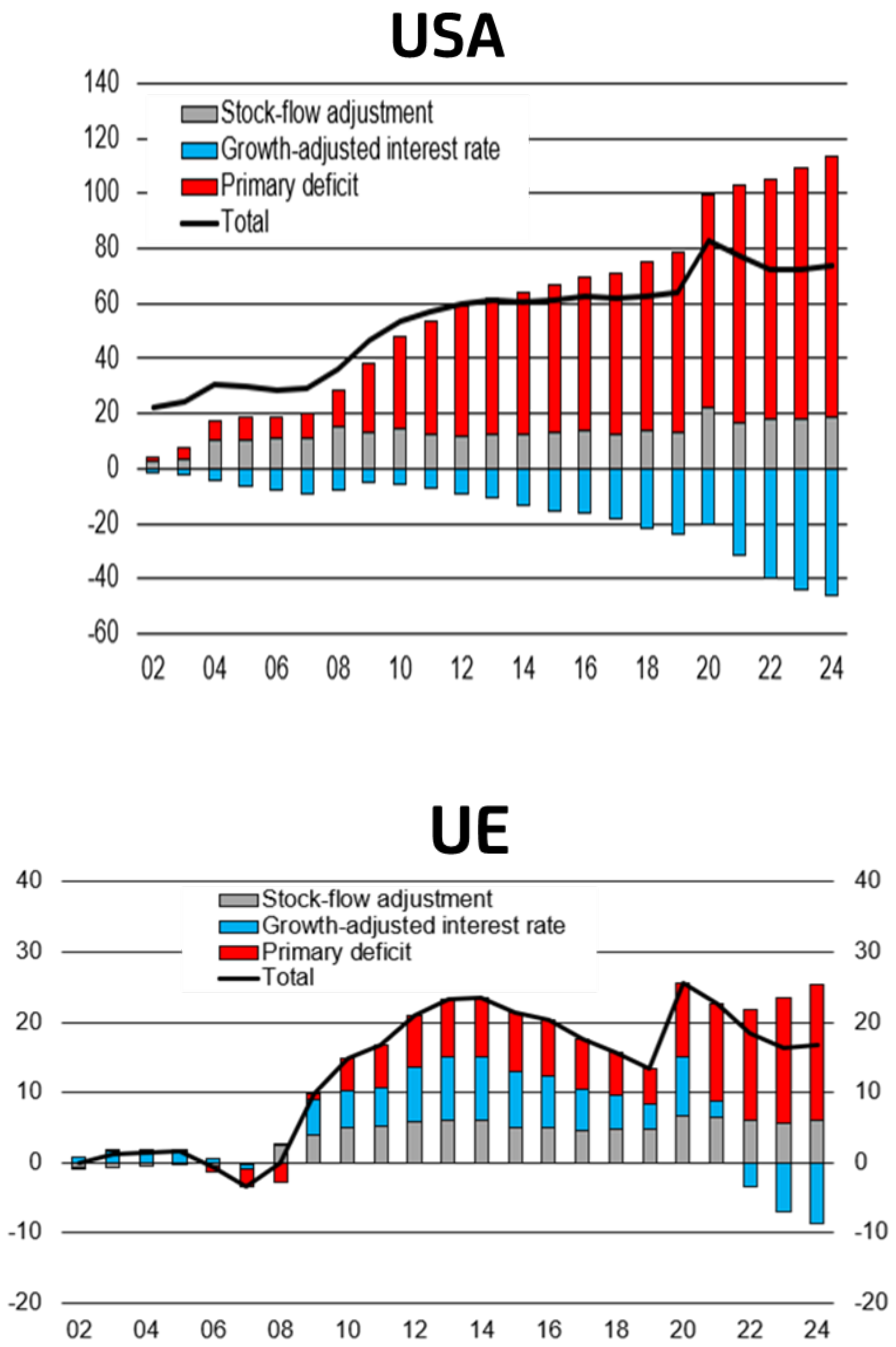
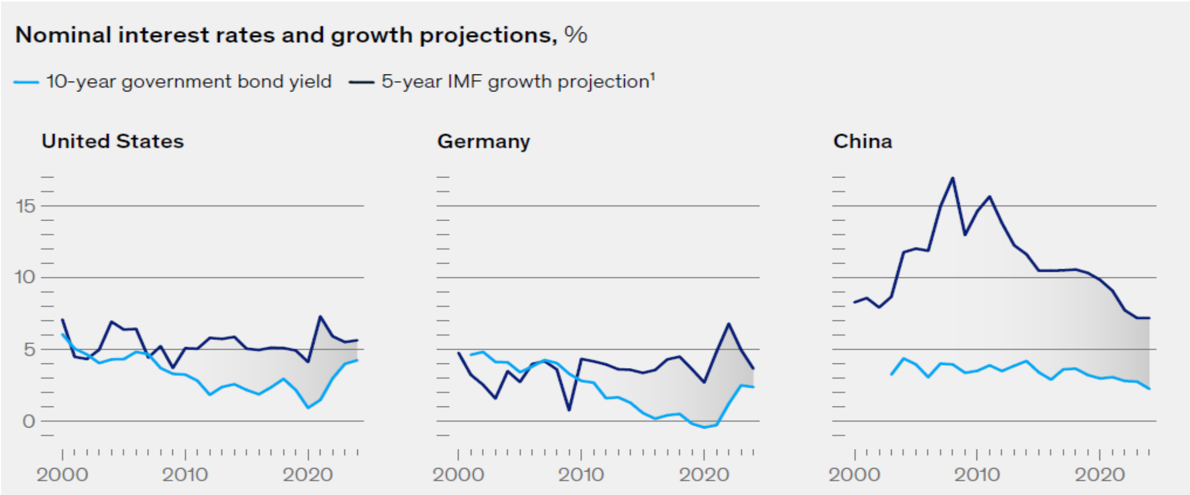


Fig. 13 - r-g in three countries



Figures 11–13 show that, for all the countries considered – including China – the r–g gap has narrowed, making sustainability more challenging. The underlying reasons, however, differ. In the United States, the increase in debt primarily reflects the role of the primary deficit, while (r–g) has acted as a supporting factor. The situation in the euro area is markedly different, with a lower initial debt accumulation and a much less adverse primary balance, but with (r–g) becoming a supportive factor only after the pandemic.

This suggests that the EU needs to better define and consolidate its borrowing policy, particularly regarding the role of new strategic priorities, which generate additional financing needs. This, however, requires compliance with the Stability Pact rules and ensuring that debt management relies on financing mechanisms that are themselves sustainable.

The EU has three options to finance its strategic priorities at Union level:

1) Reallocate existing EU budget resources to new priorities, while keeping its overall size broadly unchanged. The main challenge with this option lies in reconciling the diverse preferences of Member States and the associated trade-offs;

2) Raise new own resources – the primary sources of EU budget revenue – to increase the size and scope of the European budget. The difficulty here is the resistance in many countries to the use of tax-based instruments (own resources).

3) Borrow on capital markets at the EU level to finance off-budget programs. The main obstacle in this case is the reluctance to mutualize debt.

Let examine the issue of debt mutualization in greater detail. Article 122 of the Treaty on the Functioning of the European Union (TFEU), which provides the legal basis for financing targeted and temporary economic measures in exceptional circumstances, would continue to underpin new EU borrowing on capital markets. Ideally, however, the joint issuance of common debt should serve as a bridge toward a new long-term framework in which new investments could be fully integrated within the EU budget. Judging by the preliminary discussions on the size, composition, and own resources envisaged for the EU budget for the 2028–34 period, such a framework still appears to be a distant prospect.

In recent years, despite the broadening of the investor base, interest in EU bonds has been constrained by the following factors:

- Unlike sovereign states, the EU lacks an independent capacity to raise own resources, therefore its credit risk primarily reflects the political commitment of Member States to the EU budget;
- Based on current issuance projections, the outstanding volume of EU bonds is expected to reach EUR 1 trillion by 2026, an intermediate size between the Belgian and Spanish sovereign bond markets. This would be supplemented by EUR 150 billion under the Readiness 2030 program, which could also be financed through common debt. However, even under scenarios where the rearmament program is expanded or new programs are added, the outstanding volume of EU bonds will remain significantly below that of Germany and France, which will weigh on liquidity;
- At present, the "European" asset class is perceived as temporary, given that the EU is expected to start repaying NGEU debt from 2028. Renewing maturing NGEU debt would free up approximately EUR 30 billion annually to allocate to new strategic priorities and help shift investor perceptions regarding the durability of this asset class;
- EU bonds are not included in the main sovereign bond indices and therefore do not benefit from the same level of demand as other sovereign securities.

At first approximation, recourse to European financing would not pose insurmountable technical challenges. However, it is essential to consider not only how much debt is required, but under what conditions its sustainability can be strengthened. This calls for an assessment of the impact on **r–g** of institutional policy measures and their evolution.

Some contributions in the literature downplay the effect of r–g on debt (Heilen et al., 2024; Heimberger, 2023), but these observations do not fully account for the potential impact of institutional change on the same variables. In other words, institutional innovation affects sustainability by improving long-term allocation, thereby reinforcing r–g in a way that supports sustainability.

In this regard, it is useful to explore in greater detail the possible institutional changes. As noted, the EU's new priorities exert additional pressure on resources, making new instruments necessary. Below, we consider several such instruments and their potential impact on r–g.

The instruments are: the transformation of the NGEU program, the creation of safe assets, the strengthening of the role of European public goods (EPG), and the establishment of a Saving and Investment Union (SIU).

We assess the role of each.

Next Generation EU: a new beginning?

The most recent example of European economic policy is represented by Next Generation EU (NGEU), the instrument launched to counter the negative consequences of the pandemic crisis. It is based on a combination of public and private investments, structural reforms, and EU-wide financing.

To date, the results of NGEU's activation have been only a partial success, primarily reflecting the growth stimulus provided by public investment as a tool to support demand rather than as an instrument of productivity-oriented policy.

Structural reforms have so far been the major absentee in European economic policy. It is well known, however, that the effects of such reforms materialize over long time horizons. They are expected to have a positive impact on potential output but face numerous bureaucratic and administrative hurdles that slow their implementation and weaken their macroeconomic impact. From this perspective, strengthening financial markets and creating a Saving and Investment Union (SIU) would have effects comparable to structural measures introduced in other sectors.

Initial analyses suggest that the full impact will be felt only after 2030 – an even longer timeframe than initially expected – due to limited implementation capacity and administrative burdens.

The main limitation of NGEU is that it remains a strategy for individual countries. It lacks a truly European dimension, particularly in the provision of public goods. The risk is perpetuating a growth model in which Europe's excess savings finance investments outside Europe, primarily benefiting the United States. The result is a euro-area trade surplus that generates deflationary pressure. This represents a new version of the global imbalances problem (Guerrieri P., P.C. Padoan, Edgar Elgar, 2025), where growth capacity depends on the availability and application of new technologies, which in turn stimulate investment. In this context, the United States and China are at the forefront, while Europe's lag continues to widen. Additional pressures are emerging from the security front, requiring increased resources, while ambiguities in climate policy hinder greater private-sector involvement in the green transition.

The interaction between instruments: the Saving and Investment Union

NGEU alone is not sufficient. Additional European instruments are required. In many cases, these are versions of existing tools that need to be simplified and consolidated. The Tinbergen principle – one policy instrument for each objective – no longer applies. A systemic approach is needed.

EU policy must move beyond the national dimension: it is necessary to shift to a truly European dimension to benefit from economies of scale and to focus not only on the quantity of growth but also on its quality, a factor that entails difficult trade-offs, particularly between the short and medium-to-long term, as well as between growth and sustainability.

There are, however, conditions for launching a new growth model capable of leveraging emerging technologies (AI, quantum computing, etc.), which are general-purpose technologies whose benefits will materialize in the medium-to-long term, while in the short term focusing on security, competitiveness, and combating exclusion. Greater clarity is needed on the green transition, which faces the risk of stalling or at least slowing down. The surge in global trade uncertainty is particularly harmful to Europe's current export-oriented growth model. Rising trade tensions disrupt global flows of trade and investment, leaving Europe in a vulnerable position, squeezed between the United States and China.

Deepening the integration of European financial markets through the Saving and Investment Union (SIU) would enable a more efficient allocation of savings and investments to finance domestic drivers of growth and enhance Europe's global competitiveness.

The United States' retreat from multilateralism and traditional alliances compels Europe to become more self-reliant. A European Union for Savings and Investments would help reduce dependence on external capital and the dollar, thereby increasing Europe's resilience to shocks and strengthening its strategic autonomy. Private capital could play a key role in supporting the EU's efforts to boost defense spending as the U.S. security umbrella recedes.

This would allow Europe to channel more capital toward long-term growth opportunities that best reflect EU values, particularly in relation to the green transition and broader environmental objectives. It would also provide a stable flow of risk-willing domestic capital to finance frontier technologies needed to close the EU's productivity gap. More broadly, cross-border capital flows would foster better resource allocation and improve the bloc's shock-absorption capacity. Within the Eurozone, the SIU would promote economic and financial stability by reducing financial imbalances among Member States.

European public goods (Epg)

A growing role for European public goods would support the transition toward a more sustainable and growth-oriented EU fiscal policy. This is because the current multi-crisis environment requires addressing new challenges – also from a debt perspective – that exhibit the characteristics of public goods. Common defense is perhaps the clearest example, both because European public goods enhance efficiency through collective action and because they help smooth the edges of trade-offs. Naturally, support for public goods faces limits due to differing preferences among countries and sectors within Europe. However, in the long run, convergence of preferences is more achievable and would make the EU budget role more effective.

Safe assets

Safe assets can become important supporting factors for a new sustainable debt policy, provided certain conditions are met. In particular, if issued with a clear financing mission, they exhibit sufficient liquidity, and therefore carry low risk.

Safe assets could be issued to finance truly European projects – i.e., projects that are not merely an aggregation of national initiatives, as was the case with the COVID-19 response. This concept underpins the SURE mechanism, later extended to NGEU to promote growth and innovation and, it is hoped, security and defense.

In this way, safe assets would benefit from a risk premium: lower than that of high-risk countries (short of full integration), but higher than that of top-rated borrowers.

This can be explained by recent experience, which shows that markets are not yet fully convinced of the future of European financial integration and therefore cannot consider the risk premium definitive.

A new institutional framework for debt management

The new institutional pillars briefly examined can form a framework capable of generating positive effects on sustainability conditions. This points to a process of institutional innovation that can be summarized in the following steps:

1) Political negotiations among Member States define spending priorities. This leads to the identification and implementation of European public goods, resulting in an **increase in g**;
2) Once spending priorities are established, safe assets are issued to finance European public goods. Consequently, financing costs decline due to scale effects, and **r decreases**;
3) NGEU implements the new industrial strategy, leveraging economies of scale, which further **increases of g**;
4) A well-functioning Saving and Investment Union improves both the demand and supply conditions for financing, leading to a **decrease in r and an increase in g**.

Ultimately, if the strategy outlined here were applied, debt stability conditions in Europe would be strengthened, potentially creating a virtuous cycle in which growth and sustainability reinforce each other. To assess this hypothesis, the framework described should nonetheless be linked to the Stability Pact, which, in its revised version, places greater emphasis on growth dynamics.

Conclusions

The global system has entered a phase of governance crisis, driven by the unilateral choices of two of its main actors. The resulting crisis is characterized by growing fragmentation in trade, finance and geopolitics. This has led to a decline in long-term growth, which will require substantial investment to address new structural imbalances and to revive growth and environmental sustainability. Moreover, the new geopolitical landscape demands a significant increase in defense spending. It is legitimate to ask whether and how the resulting debt can be sustainable.

A first answer lies in the behavior of the r–g variable (interest rate minus growth rate), which must be negative to ensure debt sustainability.

Europe, which continues to exhibit lower growth than the United States, must not only make major efforts to enhance competitiveness but also strengthen its institutional framework for debt management. This should be built on four pillars: NGEU, Safe assets, European public goods and the

Saving and Investment Union. Their interaction would reinforce stability conditions by boosting income growth and reducing interest rates.

If properly implemented, such a strategy would represent a response consistent with Europe's tradition of institutional adjustment to economic crises. In this case, however, a greater leadership effort will be required than initially expected, given the complexity and scale of the shocks to be addressed. In other words, this is about initiating a positive response to a crisis of collective action – European but also global – by leveraging EU Member States' willingness to adjust their preferences and maintain a long-term perspective, conditions that are all the more necessary in the absence of adequate leadership within the Union.

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