European Commission

ISSN 2443-8014 (online)

Report on Public Finances in EMU

2023

INSTITUTIONAL PAPER 295 | SEPTEMBER 2024

EUROPEAN ECONOMY

Economic and Financial Affairs

European Economy Institutional Papers are important reports analysing the economic situation and economic developments prepared by the European Commission's Directorate-General for Economic and Financial Affairs, which serve to underpin economic policy-making by the European Commission, the Council of the European Union and the European Parliament.

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https://ec.europa.eu/info/publications/economic-and-financial-affairs-publications_en.

Luxembourg: Publications Office of the European Union, 2024

PDF ISBN 978-92-68-16966-7 ISSN 2443-8014 doi:10.2765/41155 KC-BC-24-022-EN-N

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Directorate-General for Economic and Financial Affairs

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Institutional Paper 295

ABBREVIATIONS

BE	Belgium	HU	Hungary
BG	Bulgaria	MT	Malta
HR	Croatia	NL	The Netherlands
CZ	Czech Republic	AT	Austria
DK	Denmark	PL	Poland
DE	Germany	PT	Portugal
EE	Estonia	RO	Romania
EL	Greece	SI	Slovenia
ES	Spain	SK	Slovakia
FR	France	FI	Finland
IE	Ireland	SE	Sweden
IT	Italy	EA	Euro area
CY	Cyprus	EU	European Union
LV	Latvia	EU27	European Union, 27 Member States
LT	Lithuania	EA19	Euro Area, 19 Member States
LU	Luxembourg		
UK	United Kingdom (as of 1 February 2020, the UK is no longer a Member State of the EU) [1]		

Other

AMECO	Macro-economic database of the European Commission
CAB	Cyclically-adjusted budget balance
CAPB	Cyclically-adjusted primary budget balance
COFOG	Classification of the functions of government
COM	European Commission
CSR	Country-specific recommendations
DBP	Draft Budgetary Plan
DFE	Discretionary fiscal effort
DG ECFIN	Directorate-General Economic and Financial Affairs
DRM	Discretionary revenue measures
EB	Expenditure benchmark
EC	European Commission
ECB	European Central Bank
ECOFIN	Economic and Financial Affairs Council configuration
EDP	Excessive deficit procedure
EFC	Economic and Financial Committee
EFC-A	Alternates of the Economic and Financial Committee
EMU	Economic and Monetary Union
EPC	Economic Policy Committee
ESA	European system of national and regional accounts
ESM	European Stability Mechanism
GDP	Gross domestic product
HICP	Harmonised index of consumer prices
IMF	International Monetary Fund
MFF	Multiannual financial framework
MTO	Medium-term budgetary objective
NGEU	Next Generation EU
OECD	Organisation of Economic Co-operation and Development

[1] The United Kingdom left the European Union on 31 January 2020 on the basis of the Agreement on the withdrawal of the United Kingdom of Great Britain and Northern Ireland from the European Union and the European Atomic Energy Community ("the Withdrawal Agreement", OJ C 384 I, 12.11.2019, p. 1). Union law, including fiscal surveillance, continued to apply to and in the United Kingdom for the duration of the transition period ending on 31 December 2020.

OG	Output gap
OGWG	Output Gap Working Group
PFR	Report on Public Finances in EMU
PEPP	Pandemic Emergency Purchase Programme
RRF	Recovery and Resilience Facility
RRP	Resilience and Recovery Plans
SB	Structural balance
SCP	Stability and Convergence Programme
SDP	Significant deviation procedure
SGP	Stability and Growth Pact
SPB	Structural primary balance
SURE	European instrument for temporary Support to mitigate Unemployment Risks in an Emergency
TSCG	Treaty on Stability Coordination and Governance
TFEU	Treaty on the Functioning of European Union (TFEU)

Units

bn	Billion
mn	Million
pp./pps.	Percentage point(s)
rhs	Right-hand scale
tn	Trillion
y-o-y	year-on-year

ACKNOWLEDGEMENTS

This report was prepared in the Directorate-General of Economic and Financial Affairs under the direction of Maarten Verwey, Director-General, Declan Costello, Deputy Director-General, Massimo Suardi, Director Macroeconomic Policies, and Gilles Mourre, Head of Unit Fiscal Policy and Surveillance.

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CONTENTS

Executive summary 1

Part I: Public finances in EMU 5

Key findings 7
1. Economic and fiscal environment 8
1.1. Economic activity 8
1.2. budgetary developments 9
1.3. General Government debt 10
1.4. Fiscal stance of the euro area 12

2. Rebuilding fiscal buffers and addressing long-term challenges 14
2.1. Rebuilding fiscal buffers while preserving public investments 14
2.2. Trends, challenges and opportunities on the revenue side 15

Part II: Developments in fiscal surveillance 27

Key findings 29
1. Implementation of fiscal surveillance in 2023 31
1.1. Excessive Deficit Procedure 31
1.2. Fiscal recommendations for 2024 33
1.3. Assessment of Draft Budgetary Plans 34

2. Reform of the Stability and Growth Pact – key aspects of the new economic governance framework 37
2.1. The economic governance review 37
2.2. The reformed economic governance framework 37
2.3. Operation of the reformed framework 39
2.4. Implementation of the framework in 2024 41

3. National budgetary frameworks 48
3.1. Annual update of the Fiscal Governance Database 48
3.2. Planning for public investment: the role of long-term strategies 54
3.3. Fiscal risks 58

References 67
Annex 69

Part III: Fostering investment in times of high public debt 73

Key findings 75
1. Investment trends and needs in the EU 77
1.1. Investment trends: EU versus other advanced economies 77
1.2. Productive and innovative investment 80
1.3. Public investment trends 83
1.4. Capital stock Trends 86
1.5. Investment needs 88

2. The role of the EU in supporting investments: theory and practice 95
2.1. Policies to support investments: a theoretical review 95
2.2. EU investment support in practice: a broadening TOOLkit 104
2.3. Conclusions 115

3. Fiscal drivers of public investment with a focus on public debt 122
3.1. Literature review 123
3.2. A small conceptual framework with three main channels 126
3.3. Fiscal drivers of public investment with a focus on public debt: empirical results 127
3.4. Identifying the fiscal factors mitigating the adverse impact of debt 131
3.5. Robustness: using other definitions of investment 139
3.6. Conclusion 145
3.7. Appendix 150
3.8. Baseline model 151

References 154

LIST OF BOXES

I.2.1. 2024 Ageing Report: update of long-term budgetary projections 24
II.2.1. The DSA-based methodology in the new EU fiscal framework 43
II.2.2. The enhanced role of independent fiscal institutions in the EU fiscal framework 47
II.3.1. Spending reviews and related EU initiatives 51
II.3.2. Green budgeting practices in the EU 53
II.3.3. A structured approach to disaster risk financing 60
III.1.1. The 2023 EIB-Group Report to the Commission on Investment Barriers 90
III.1.2. National Productivity Boards 93
III.2.1. Private and public investments: complements or rivals? 98
III.2.2. Incentivising public investment under the new EU fiscal rules 103
III.2.3. Public-Private Partnerships in the EU 109
III.2.4. InvestEU support to Venture Capital – financing scale-ups for a resilient and autonomous Union 117
III.2.5. Debt of the Institutions and bodies of the European Union – figures and projected development 119
III.3.1. Empirical framework 130
III.3.2. Public investments and debt sustainability – QUEST simulations 147

FOREWORD

Fiscal policy, both at the national and EU level, played an important role in bolstering economic resilience during past years of economic turbulence. Going forward, the legacy of higher government debt of these turbulent times calls for the rebuilding fiscal buffers, while there remains a need to address several long-term challenges. This report sheds light on these issues by reviewing ways to efficiently foster investment and by highlighting how the EU's new economic governance framework, flanked by sound national budgetary frameworks, promotes fiscal sustainability and incentivises investment and reforms.

Economic activity is projected to accelerate, inflation to continue to fall and government deficits across the EU are expected to decline further. In this context, Part I of the report stresses the need to rebuild fiscal buffers, while supporting the twin (climate, digital) transitions and other pressing policy priorities. Public investments should be preserved, including through timely absorption of RRF resources and prioritisation. Trends and challenges on the revenue side of public finances are also reviewed, pointing to the importance of improving the efficiency of tax collection, broadening the tax base and anticipating a possible reduction in certain taxation revenues due to various megatrends at play.

Part II of the report reviews recent developments in fiscal surveillance. The surveillance cycle in 2023 was still shaped by the continued activation of the Stability and Growth Pact general escape clause, while new legislation for a reformed economic governance entered into force on 30 April 2024. The national medium-term fiscal-structural plans will be at the heart of the reformed framework, strengthening national ownership. The reform also calls for a strengthening of national fiscal frameworks, which are well established by now.

Part III of the report focuses on the need and scope to foster investment in the EU. The determined policy responses to recent economic turbulences, including NGEU, have helped preserve and foster investment. The report explores the various channels that governments can rely on to support investment, and notes that initiatives at the EU-level have gradually taken a greater role in incentivising both public and private investments in Europe. Finally, in a context of a need to preserve and foster public investment while government debts are at an historical high, the report analyses the drivers of public investment, focus more specifically on the impact of public debt.

I trust this edition of the Report on Public Finances in the EMU will support discussions among policy-makers, academics and other stakeholders on these trends and challenges.

Maarten Verwey
Director General Economic and Financial Affairs

EXECUTIVE SUMMARY

Following stagnation since Q3-2022, euro area economic activity is projected to accelerate in 2024 and 2025 while inflation would converge to 2% and the government deficit would continue to decline over that period.

According to the Commission 2024 Spring forecast, real GDP is expected to increase by 0.8% in 2024 and 1.4% in 2025, after a mere 0.4% growth in 2023. After peaking at 8.4% in 2022, HICP headline inflation remained high in the euro area in 2023, at 5.4%. It is set to moderate to 2.5% in 2024 and to fall to 2.1% in 2025.

The euro area government deficit is projected to continue to decline. Starting form 3.6% of GDP in 2023 it would reach 3% in 2024, driven by a restrictive discretionary fiscal policy, mainly related to the reduction in energy-related support measures. Based on unchanged policies, the euro area government deficit would fall again in 2025 to 2.8% of GDP. In 2023, the euro area debt-to-GDP ratio was 90%, around 9 pps. lower than the peak recorded at the end of 2020 but remaining above the pre-pandemic level of 85% in 2019. The debt-to-GDP ratio of the euro area is projected to stabilise in 2024 and slightly increase in 2025.

The fiscal stance was broadly neutral in 2023, after an overall expansionary stance of 4% of GDP in 2020-22. A contractionary fiscal stance of ¾% of GDP is projected in the euro area for 2024, though heterogeneous across countries. In 2025, the euro area fiscal stance would be broadly neutral, based on unchanged policies. Implementation of the reformed fiscal framework would imply a moderately contractionary stance.

The legacy of the turbulent times that the EU has faced calls for the rebuilding fiscal buffers, while there is also a need to address a number of long-term challenges.

Economic resilience calls for reducing high debt and deficit levels. Going forward, under the new fiscal rules that came into force on 29 April 2024, Member States are required to respect the net expenditure growth path included in their medium-term fiscal-structural plan, consistent with putting the general government debt on a plausibly downward trajectory. Seven Member States will have to correct excessive deficits.

At the same time, to support the twin (climate and digital) transitions and other policy priorities and to foster potential growth, public investments should be preserved, including through timely absorption of RRF resources. Meanwhile, budgetary pressures from population ageing are intensifying. A special focus on trends and challenges on the revenue side of public finances point to the importance of improving the efficiency of tax collection, broadening the tax base and anticipating a possible reduction in certain taxation revenues due to various megatrends at play.

The general escape clause of the Stability and Growth Pact has been deactivated at the end of 2023.

In March 2023, the Commission did not propose to open new excessive deficit procedures. Taking into account the persistently high uncertainty for the macroeconomic and budgetary outlook, the Commission considered appropriate not to launch the excessive deficit procedure. At the same time, the Commission announced that it would propose to the Council to open deficit-based excessive deficit procedures in spring 2024 on the basis of the outturn data for 2023, in line with existing legal provisions. The same position was reaffirmed in autumn 2023. In the context of the 2024 Spring package, the Commission adopted a Report in accordance with Article 126(3) TFEU. In light of the assessment carried out in the Report and after considering the opinion of the Economic and Financial Committee as established under Article 126(4) TFEU, on 8 July 2024 the Commission issued opinions under Article 126(5) TFEU and proposed to the Council to

adopt decisions establishing the existence of an excessive deficit under Article 126(6) TFEU for Belgium, France, Italy, Hungary, Malta, Poland and Slovakia.

The country-specific fiscal recommendations for 2024 were quantitative and focused on the growth rate for net primary expenditure. With the general escape clause being deactivated at the end of 2023, quantitative fiscal recommendations were made for the first time since 2019. Member States who were not projected to be at their medium-term budgetary objective (MTO) in 2023 were recommended to limit the growth of their net nationally financed primary expenditure to ensure prudent fiscal policy.

Following the legislative proposals for a reformed economic governance presented by the Commission in April 2023, the co-legislators reached a provisional agreement in February 2024 and the new legislation entered into force on 30 April 2024.

In 2024, the reformed economic governance framework entered into force. The main objectives of the reformed framework are to strengthen Member States' debt sustainability, and promote sustainable and inclusive growth and resilience in all Member States through growth-enhancing reforms and priority investments.

The national medium-term fiscal-structural plans (the plans) will be at the heart of the reformed framework, thus strengthening national ownership. They will bring together the fiscal, reform and investment policies of each Member State, within a common EU framework. These reforms and investments should help build the green, digital and resilient economy of the future and make the EU more competitive. The plans will cover a period of four to five years, depending on the regular length of the legislative term.

The legislation specifies 20 September 2024 as the deadline for Member States to submit their first medium-term fiscal-structural plans. Member States could agree with the Commission to extend that deadline by a reasonable period of time. Each year by 30 April, Member States will need to submit a progress report on the implementation of their plans.

National fiscal frameworks appear well established though room for further improvement remains and efforts to address new areas that have gained prominence are underway.

At the national level, recent evidence compiled in the Commission's Fiscal Governance Database suggests that important design elements of national budgetary frameworks (i.e., the scope of IFI activities and the design of fiscal rules and medium-term budgetary frameworks) remained broadly unchanged in 2023, while also pointing at room for improvement in some areas. For example, there is scope for strengthening the relation between annual budgets and medium-term budgetary frameworks or increasing the Independent Fiscal Institution's (IFIs) role in fiscal sustainability assessments. These are highly relevant issues under the reformed EU fiscal surveillance framework that puts emphasis on the medium-term orientation of national fiscal plans and the role of IFIs.

Evidence gathered on green budgeting practices in the EU shows that almost two thirds of the Member States have implemented or plan to establish some form of green budgeting, with several relevant developments taking place in 2023.

Evidence on the use of spending reviews show that in many Member States guidance and support provided by the EU has led to an increase in the use of spending reviews and in the attention devoted to them in budgetary discussions.

At this juncture, efficient public investment management practices deserve particular attention. Our analysis highlights the importance of effective strategic planning, coordinated across government levels and that includes measurable and fiscally realistic objectives. The analysis builds on earlier

analytical work by the Commission which identified key stages of the investment cycle and collected survey evidence on national practices.

Efficient management of fiscal risks at the national level is also crucial, as these risks can cause differences between budget plans and fiscal outcomes. Overall, IFIs are involved in analysing and managing such risks, mostly focussing on risks related to ageing and climate change. At the same time, such risks are not always quantified. The Commission has developed tools to help Member States analyse certain fiscal risks (i.e. in its Ageing Report, Fiscal Sustainability Report, Debt Sustainability Report and Joint Research Center's risk indicators). The Commission also provides analysis on Disaster Risk Financing, which is aimed at mitigating and managing the fiscal impacts of natural disasters.

Since 2010, the productive investment share of GDP in the EU has been lagging the US, though overall investment has been more comparable.

This year, the analytical part of the report focuses on investments.

Productive investment, especially on R&D and other intangible investments are essential for raising EU firms' competitiveness.

Both the private and the public sector should contribute to fulfil the sizeable investment needs in the EU to support the green and digital transitions, energy security and defence.

An adequate economic governance set up and adequate policy responses to economic turbulences and challenges contribute to support and preserve investment.

Contrary to the developments in the wake of the euro-area sovereign debt crisis, public investment has not been negatively affected by the pandemic and the energy crises, thanks to coordinated fiscal policies at the national and the EU level.

The new EU fiscal framework will help to maintain adequate levels of public investment through a more gradual fiscal adjustment in Member States that commit to growth-enhancing reforms and investment, while the RRF will continue support investment in the EU until 2026.

Yet governments can support investments through several channels with public and private investments complementing each other.

Governments can provide the required investment with public resources, through public procurement or state-owned entities. This allows the government to have more control over the investment outcomes and is particularly needed in case of public goods or club goods.

Alternatively, the government can support investments by providing public resources to mobilise private investments, such as tax incentives, subsidies, loans, guarantees or equity injections, or by incentivising investments through regulation and reforms. These instruments are more cost effective compared to relying only on public investment and can help to internalise externalities or to address financial and non-financial frictions. The preferred instrument largely depends on the underlying reason of the underinvestment.

In the last decades, the EU has gradually taken a greater role in incentivising both public and private investments in Europe.

The EU has initially mostly focused on supporting investments in the context of agricultural and cohesion policies, mainly financed through grants, although a slow trend toward more diversified investment supports was seen. In the aftermath of the Great Financial Crisis (GFC) in particular, this trend gained momentum: EU policies broadened their support to private investments markedly, both through the extensive use of financial instruments and by stimulating economic reforms.

Following the Covid-19 crisis, the setup of the Recovery and Resilience Facility at the EU level actively supports both public and private investments, as well as structural reforms. Approximately half of all RRF funds are directed towards public investments, and one third towards supporting private investments. Finally, making RRF disbursements

conditional upon the achievement of concrete objectives (milestones and targets) linked to the delivery of investments and reforms has created effective incentives for implementation.

In a context of a need to foster public investment and historically high levels of public debt, analysing drivers of public investment with a focus on the impact of public debt is key.

Novel empirical results reported here confirm the existence of a negative effect of high public debt on public investment.

The analysis however also confirms that this negative relationship could be mitigated by some fiscal factors, not least compliance with fiscal rules, especially if a track record in this respect can be achieved. Results also suggest that this is particularly the case for high debt countries. In the same vein, the quality of the design of national fiscal rules could, according to the results, further mitigate the negative impact of high public debt on public investment.

There is also evidence in our analysis that the negative effect of the level of public debt on public investment will be lower if the debt dynamic is sustainable, though statistical significance of the findings depends on the indicator used.

While public debt has a bearing on the government's capacity to investment, the reverse is also true, namely when the government invests it has a bearing on the level and dynamic of its debt, though it also generates long-lasting GDP gains.

QUEST-based simulations highlight that public investment tends to cause public debt to increase, though the extent of this increase depends on several factors and, notably, the path of the future growth-interest differential.

The simulations also point at long-lasting GDP gains from public investment, even when fiscal adjustment takes place to cover the cost of public investments and to stabilise debt. This is illustrated in a "prioritisation" scenario where the government implements a fiscally neutral shift from unproductive towards productive (i.e. investment) spending, which yields persistent GDP gains.

Part I

Public finances in EMU

KEY FINDINGS

This part provides an overview of the economic and fiscal situation in the EMU ([2]).

Following stagnation since Q3-2022, euro area economic activity is projected to accelerate in 2024 and 2025 while inflation would converge to 2% and the government deficit would continue to decline over that period

- According to the Commission 2024 Spring forecast, real GDP is expected to increase by 0.8% in 2024 and 1.4% in 2025, after a mere 0.4% growth in 2023. After peaking at 8.4% in 2022, HICP headline inflation remained high in the euro area in 2023, at 5.4%. It is set to moderate to 2.5% in 2024 and to fall to 2.1% in 2025.
- The euro area government deficit is projected to continue to decline. Starting form 3.6% of GDP in 2023 it would reach 3% in 2024, driven by a restrictive discretionary fiscal policy, mainly related to the reduction in energy-related support measures. Based on unchanged policies, the euro area government deficit would fall again in 2025 to 2.8% of GDP. In 2023, the euro area debt-to-GDP ratio was 90%, around 9 pps. lower than the peak recorded at the end of 2020 but remaining above the pre-pandemic level of 85% in 2019. The debt-to-GDP ratio of the euro area is projected to stabilise in 2024 and slightly increase in 2025.
- The fiscal stance was broadly neutral in 2023, after an overall expansionary stance of 4% of GDP in 2020-22. A contractionary fiscal stance of ¾% of GDP is projected in the euro area for 2024, though heterogeneous across countries. In 2025, the euro area fiscal stance would be broadly neutral, based on unchanged policies. Implementation of the reformed fiscal framework would imply a moderately contractionary stance.

The legacy of the turbulent times that the EU has faced calls for the rebuilding fiscal buffers, while there is also a need to address a number of long-term challenges

- Economic resilience calls for reducing high debt and deficit levels. Going forward, under the new fiscal rules that came into force on 29 April 2024, Member States are required to respect the net expenditure growth path included in their medium-term fiscal-structural plan, consistent with putting the general government debt on a plausibly downward trajectory. Seven Member States will have to correct excessive deficits.
- At the same time, to support the twin (climate and digital) transitions and other policy priorities and to foster potential growth, public investments should be preserved, including through timely absorption of RRF resources. Meanwhile, budgetary pressures from population ageing are intensifying. A special focus on trends and challenges on the revenue side of public finances point to the importance of improving the efficiency of tax collection, broadening the tax base and anticipating a possible reduction in certain taxation revenues due to various megatrends at play.

([2]) While this report mainly aims at focussing on euro area countries, in some (sub)chapters EU figures are discussed as well.

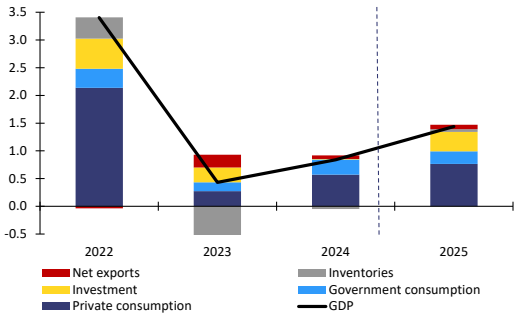
1. ECONOMIC AND FISCAL ENVIRONMENT

1.1. ECONOMIC ACTIVITY

Following stagnation since Q3-2022, euro area economic activity is set to accelerate in 2024 and 2025 (see Graph I.1.1**).** According to the Commission 2024 Spring forecast, real GDP is expected to increase by 0.8% in 2024 and 1.4% in 2025, after a mere 0.4% growth in 2023. The first quarter of 2024 already witnessed a broad-based return to growth in the euro area, after five quarters of stagnation ([3]). The differentiated economic impact of Russia's war of aggression against Ukraine and the related energy price shock implied large heterogeneity in the growth performance of euro area Member States in 2023, with eight countries experiencing a negative growth. Over the forecast horizon, cyclical conditions are expected to improve across the euro area and convergence in Member States' economic performance is set to progress, with dispersion in real GDP growth going down from around 9 percentage points in 2023 to around 3 percentage points in 2025, a growth would range from 1.0% in Germany to 4.3% in Malta.

Private consumption is set to be the main engine of the euro area economic expansion in 2024-2025. Private consumption grew by only 0.3% in 2023 relative to 2022, as employment continued to recover strongly after the pandemic but inflation outpaced wage increases and consumers saved more (households' savings increased by 0.7 pps. in 2023, to 14.4% of disposable income, i.e., well above the 12.5% pre-pandemic level). Higher returns on financial assets and precautionary motives may explain this behaviour. In 2024-2025, the euro area labour market is set to remain rather strong and real wages are projected to recover significantly. As a result, private consumption is projected to accelerate over the forecast horizon, rising by 1.1% and 1.5% in 2024 and 2025, respectively. At the same time, the household saving rate is expected to be even higher in 2024 (15.5%), before dropping marginally in 2025.

Graph I.1.1: **Real GDP growth and its components (euro area, in percentage points of GDP)**



Source: European Commission 2024 Spring forecast.

Investment growth is set to come to a halt in the euro area in 2024. The projected annual increase of 0.1% in 2024 represents a strong deceleration from the 1.2% expansion recorded in 2023, reflecting especially a projected larger contraction in construction investment, particularly sensitive to higher interest rates. Going forward, the improved economic prospects are predicted to boost investment growth to 1.6% in 2025.

Net exports contribution to euro area growth is expected to be broadly neutral in 2024 and 2025. After the contraction recorded in 2023, exports and imports are both forecasted to start increasing again in 2024 (by 0.9%), accelerating further in 2025 (to more than 3%). This reflects the expected improvement in global trade, however geopolitical tensions remain a concern.

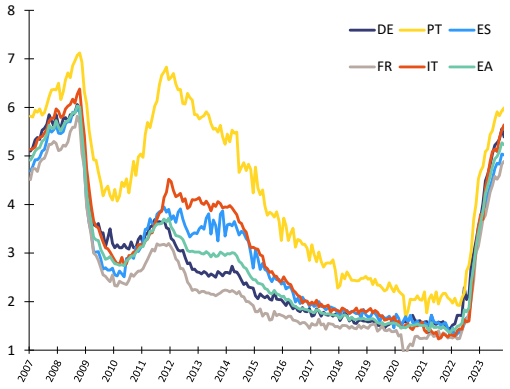
HICP inflation is projected to decline close to the 2% ECB target in 2025. After peaking at 8.4% in 2022, HICP headline inflation remained high in the euro area in 2023, at 5.4%. It is set to moderate to 2.5% in 2024 and to fall to 2.1% in 2025. HICP core inflation (excluding energy and food) is projected to decline at broadly the same pace, reflecting lower pressures from unit labour costs and unit profits that in 2025 are both expected to be broadly consistent with the 2% ECB inflation target.

([3]) Strong inflationary pressures - mainly related to the supply constraints in the wake of Covid-19 and the fallout on food and energy prices from Russia's war of aggression against Ukraine - and the consequent monetary policy tightening were the main driver of stagnation in euro area real GDP from Q3-2022 to Q4-2023.

Financing conditions have tightened (see Graph I.1.2**).** As inflation converges towards the 2% target, a gradual reduction in the level of monetary policy restriction has to be expected. Based on market expectations, short-term interest rates are predicted decrease to 2.6% by the end of 2025. As regards bank lending, recent surveys show a decline of the net demand for loans by firms due to high interest rates and declining fixed investment. On the supply side, euro area banks reported a further slight net tightening of credit standards for loans to corporations.

The labour market remains tight despite some evidence of cooling demand. Over the forecast horizon the unemployment rate in the euro area is expected to hover around the current record-low rates of 6.5%. Nominal wages are expected to decelerate throughout the forecast horizon, while real wages are set to recover as inflation declines.

Graph I.1.2: **Interest rates on loans to non-financial corporations (selected Member States)**



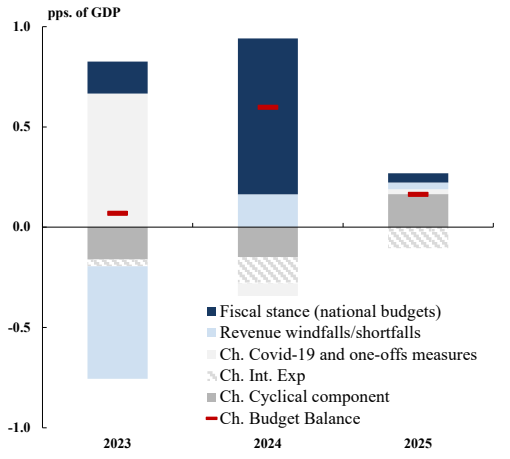
Source: European Commission 2024 Spring forecast.

The balance of risks surrounding the economic outlook for the euro area is tilted towards more adverse outcomes. The main risks relate: (i) to the geopolitical tensions coming from two ongoing wars in our neighbourhood, (ii) to the vulnerability of the global trade and the energy markets and (iii) the persistence of inflation in the US, resulting in somewhat tighter global financial conditions. Internally, the risks come from tighter-than-expected financial conditions and the more restrictive fiscal stance that some Member States will pursue to put their public debt and deficits on a declining path could affect domestic demand in 2025. Finally, as Europe is the continent experiencing the fastest increase in temperature, there are risks associated to climate change and the degradation of natural capital increasingly weigh on the outlook.

1.2. BUDGETARY DEVELOPMENTS

The euro area government deficit is projected to continue declining over the forecast horizon (Graph I.1.3**).** Starting form 3.6% of GDP in 2023, the deficit is projected to decrease to 3% in 2024. This decline is driven by a restrictive discretionary fiscal policy (see section 1.4). This is due to the sizeable reduction in energy support measures as well as lower subsidies to private investment ([4]), which are partly offset by some tax cuts and higher current expenditure related to the purchasing power recovery of pensions and public wages. At the same time, economic growth below potential output growth implies a deficit-increasing impact of the cycle in 2024, which adds to projected higher interest expenditure. Based on unchanged policies, the euro area government deficit is set to fall again in 2025, to 2.8% of GDP, driven by the almost complete phase-out of energy-related measures and a positive contribution from the cycle, while discretionary policy is set to be broadly neutral.

Graph I.1.3: **General government balance change: decomposition of the drivers**

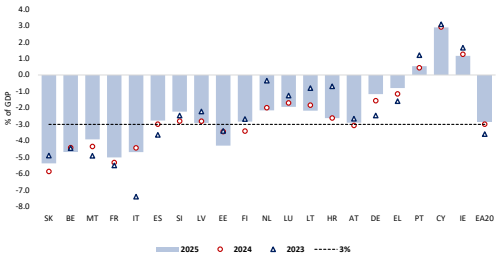


Source: European Commission 2024 Spring forecast.

([4]) The cost of these subsidies increased by around 0.8% of GDP in 2023 compared to 2020, mainly due to measures related to housing renovation (e.g., the so-called Superbonus 110% in Italy). These costs are set to reduce by around 0.5% of GDP in 2024.

The revenue-to-GDP ratio for the EU is expected to recover in 2024 after the fall recorded in 2023, while the expenditure ratio is set to continue declining. Inflation and energy support measures have driven recent fluctuations in the revenue ratio in the euro area. After sizeable revenue windfalls in 2020-22 ([5]), also as a result of high inflation, revenues grew less than nominal GDP in 2023, mainly due to the reversal of some of those windfalls driven by the impact of falling energy prices on indirect taxes. As a result, the revenue-to-GDP ratio declined significantly in 2023 (by 0.5 pps., to 46.4%). It is projected to slightly increase in 2024-2025 (to 46.8%) driven by some revenue windfalls. On the expenditure side, after the decline in 2023 (by 0.6 pps., to 50.0%), the euro area expenditure-to-GDP ratio is projected to further decrease in 2024 (to 49.6%), mainly because of falling subsidies for private investment, and to stabilise in 2025.

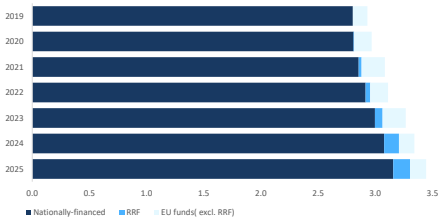
Graph I.1.4: **General government balance (in Member States, 2023-2025, in % of GDP)**



Source: European Commission 2024 Spring forecast.

Seven euro area Member States recorded a deficit exceeding 3% of GDP in 2023 (Graph I.1.4**).** In 2025, this number is forecast to fall to six, under unchanged policies. Except for Cyprus and Ireland, all countries are projected to have budget balance in 2025 lower than before the pandemic, in 2019.

Graph I.1.5: **Public investments in the EA; 2019-25 (% of potential GDP)**



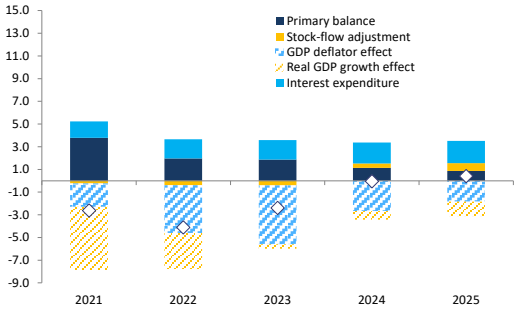
Source: European Commission 2024 Spring forecast.

Public investment is expected to remain at high levels over the forecast horizon. In 2025, public investment in the euro area is expected to rise to 3.4% of potential GDP compared to 2.8% in 2019. Around one third of the projected increase in public investment between 2019 and 2025 is due to new investment financed by RRF grants. At the same time, by 2025 most euro area countries are set to spend more on nationally financed public investment than they did in 2019 (Graph I.1.5).

1.3. GENERAL GOVERNMENT DEBT

The debt-to-GDP ratio of the euro area is projected to stabilise in 2024 and slightly increase in 2025 (Table I.1.1 **and Graph** I.1.6**).** In 2023, the euro area debt-to-GDP ratio was 90%, around 9 pps. lower than the peak recorded at the end of 2020 (99.2%) but remaining above the pre-pandemic level of 85% in 2019. This sizeable decline - despite the large primary deficits - was driven by the debt-decreasing impact of the interest-growth-rate differential ('snowball effect') related to the strong economic recovery in 2021-2022 and to high inflation in 2022-2023. The debt ratio is projected to stabilise in 2024 and to slightly increase in 2025, as the aforementioned interest-growth-rate differential becomes less favourable - due to the higher cost of servicing debts and lower

Graph I.1.6: **Drivers of changes in the debt-to- GDP ratio, euro area**



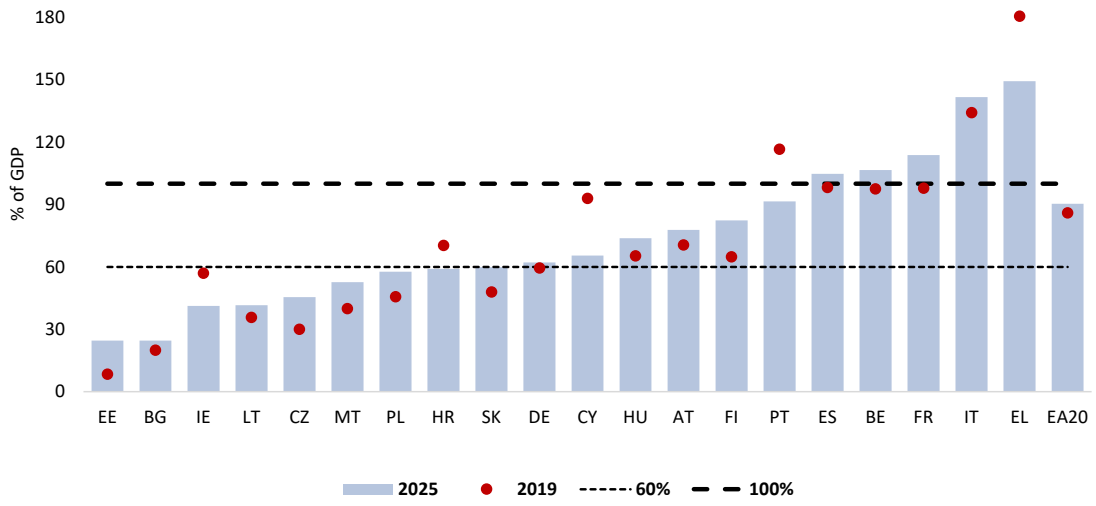
Source: European Commission 2024 Spring forecast.

([5]) Revenue windfalls (shortfalls) are estimated through the increase (decrease) in the revenue-to-GDP ratio that is not explained by discretionary measures or transfers from the EU budget.

nominal GDP growth – and the stock-flow adjustment becomes debt-increasing. Primary deficits, though smaller, are set to continue to weigh on euro area debt developments in 2024-2025.

In 2025, Cyprus, Ireland, Greece, Croatia, Netherlands, and Portugal are expected to have public debt ratios lower than in 2019 (**Table** I.1.1 **and Graph** I.1.7**).** At the end of 2025, eleven euro area Member States are projected to have debt ratios greater than 60% of GDP. Five of them (Belgium, Greece, Spain, France and Italy) are set to be greater than 100%.

Graph I.1.7: **General government debt developments in euro area Member States, 2019 vs 2025 (% of GDP)**



Source: European Commission 2024 Spring forecast.

Table I.1.1: **General government debt and its drivers (% of GDP)**

	Government debt ratio							Change in debt ratio	Change in the debt ratio in 2022-24 due to:		
	2019	*2020*	*2021*	*2022*	*2023*	*2024*	*2025*	2023-25	Primary balance	Snowball effect	Stock-flow adjustment
BE	97.6	111.9	107.9	104.3	105.2	105.0	106.6	1.4	4.7	-3.1	-0.2
DE	59.6	68.8	69.0	66.1	63.6	62.9	62.2	-1.4	0.9	-2.3	0.0
EE	8.5	18.6	17.8	18.5	19.6	21.4	24.6	5.0	6.7	-0.7	-1.0
IE	57.1	58.1	54.4	44.4	43.7	42.5	41.3	-2.4	-3.8	-2.5	3.8
EL	180.6	207.0	195.0	172.7	161.9	153.9	149.3	-12.6	-4.7	-8.3	0.4
ES	98.2	120.3	116.8	111.6	107.7	105.5	104.8	-2.8	0.7	-4.9	1.4
FR	97.9	114.9	113.0	111.9	110.6	112.4	113.8	3.2	5.9	-3.0	0.2
IT	134.2	155.0	147.1	140.5	137.3	138.6	141.7	4.4	1.0	0.0	3.4
CY	93.0	114.9	99.3	85.6	77.3	70.6	65.4	-11.8	-8.5	-5.7	2.3
LV	36.7	42.7	44.4	41.8	43.6	44.5	46.3	2.7	3.5	-2.5	1.7
LT	35.8	46.2	43.4	38.1	38.3	38.9	41.6	3.3	2.4	-1.8	2.7
LU	22.4	24.6	24.5	24.7	25.7	27.1	28.5	2.8	2.8	-1.8	1.8
MT	40.0	52.2	53.9	51.6	50.4	52.0	52.6	2.2	5.6	-4.7	1.3
NL	48.6	54.7	51.7	50.1	46.5	47.1	48.4	1.9	2.7	-2.3	1.5
AT	70.6	82.9	82.5	78.4	77.8	77.7	77.8	0.0	3.2	-3.7	0.5
PT	116.6	134.9	124.5	112.4	99.1	95.6	91.5	-7.6	-5.3	-3.5	1.2
SI	65.4	79.6	74.4	72.5	69.2	68.1	66.4	-2.8	2.2	-4.6	-0.4
SK	48.0	58.8	61.1	57.7	56.0	58.5	59.9	3.8	8.4	-4.2	-0.4
FI	64.9	74.7	72.6	73.5	75.8	80.5	82.4	6.6	3.5	-1.4	4.5
EA	86.0	99.2	96.6	92.4	90.0	90.0	90.4	0.4	2.0	-3.8	1.1
BG	20.0	24.6	23.9	22.6	23.1	24.8	24.6	1.6	4.7	-1.5	-1.7
CZ	30.0	37.7	42.0	44.2	44.0	45.2	45.5	1.5	1.4	-1.0	1.2
DK	33.7	42.3	36.0	29.8	29.3	26.5	25.1	-4.2	-4.8	-1.4	2.0
HR	70.4	86.1	77.5	67.8	63.0	59.5	59.1	-4.0	2.0	-4.9	-1.1
HU	65.3	79.3	76.7	74.1	73.5	74.3	73.8	0.3	0.9	-1.4	0.9
PL	45.7	57.2	53.6	49.2	49.6	53.7	57.7	8.1	5.4	-2.7	5.4
RO	35.1	46.7	48.5	47.5	48.8	50.9	53.9	5.1	9.9	-4.8	0.0
SE	35.6	40.2	36.7	33.2	31.2	32.0	31.3	0.1	0.9	-0.5	-0.3
EU	79.4	91.7	89.0	84.8	82.9	82.9	83.4	0.4	2.1	-3.9	1.1

Source: European Commission 2024 Spring forecast.

1.4. FISCAL STANCE OF THE EURO AREA

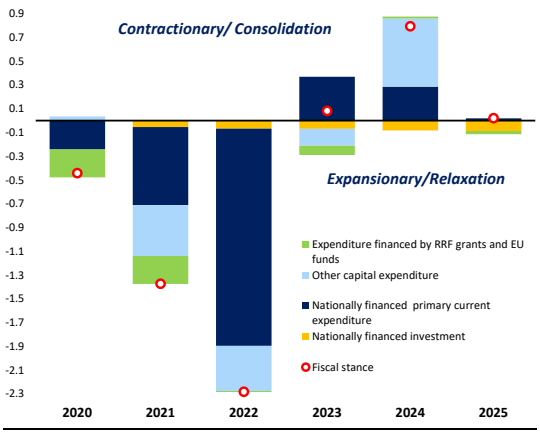
The fiscal stance was broadly neutral in 2023, after an overall expansionary stance of 4% of GDP in 2020-22 ([6]) (Graph I.1.8**).** This neutral stance was the result of some decline in the budgetary cost of the energy support measures - implying a contractionary contribution from net primary current expenditure - which was offset by the expansionary contribution provided by nationally financed investment, expenditure financed by RRF grants and other EU funds, and other capital expenditure.

A contractionary fiscal stance of ¾% of GDP is projected in the euro area for 2024. This contractionary stance is mainly driven by the expected decline in governments' subsidies to private investment (other capital expenditure) and the phase-out of the energy support measures.

([6]) The fiscal stance is measured through the Discretionary Fiscal Effort (see Nicolas Carnot, Francisco de Castro 2015, The Discretionary Fiscal Effort: An Assessment of Fiscal Policy and its Output Effect, *European Economy*, Economic Papers 543). It is based on the increase in primary expenditure (net of discretionary revenue measures) relative to 10-year nominal potential output growth indexed using the annual increase in the GDP deflator. The net expenditure aggregate used to assess the fiscal stance includes expenditure financed by RRF grants and other EU funds and excludes the temporary emergency measures related to COVID-19. COVID-19 temporary emergency measures are not included in the fiscal stance as they were largely implemented in 2020-21, when most economic activities were restrained due to the health situation and a sizeable part of these measures had a cyclical nature (e.g., support for short-time work schemes in substitution of unemployment benefits). This pandemic-related support is assumed to be fully phased out in 2023, however it still has an important bearing on economic activity in the euro area through pent-up demand. The delayed impact of high inflation on some expenditure items makes more difficult the assessment of the fiscal stance at the current juncture.

At the country level, fiscal stances are expected to be heterogenous in 2024 (Graph I.1.9**).** The fiscal stance is set to range from contractionary by more than 3% of GDP in Italy, to expansionary by 1¾% of GDP in Portugal. The divergent fiscal stances across Member States are largely due to differences in the contribution of net current expenditure, which remains expansionary in some and contractionary in others. This is partially linked to developments in measures to mitigate the impact of high energy prices, where the phase-out pace varies across Member States. Other capital expenditure is projected to provide a large contractionary contribution in Italy, as subsidies for housing renovation are phased out. Expenditure financed by RRF grants and other EU funds is expected to provide a neutral or expansionary contribution to the fiscal stance in most countries. However, it is set to be largely contractionary in Croatia and Slovakia as those countries benefited from sizeable inflows of EU funds in 2023, which was the last year to spend funds under the 2014-2020 Multiannual Financial Framework (MFF). In the majority of euro area countries, nationally financed investment is set to be preserved or expanded also in 2024.

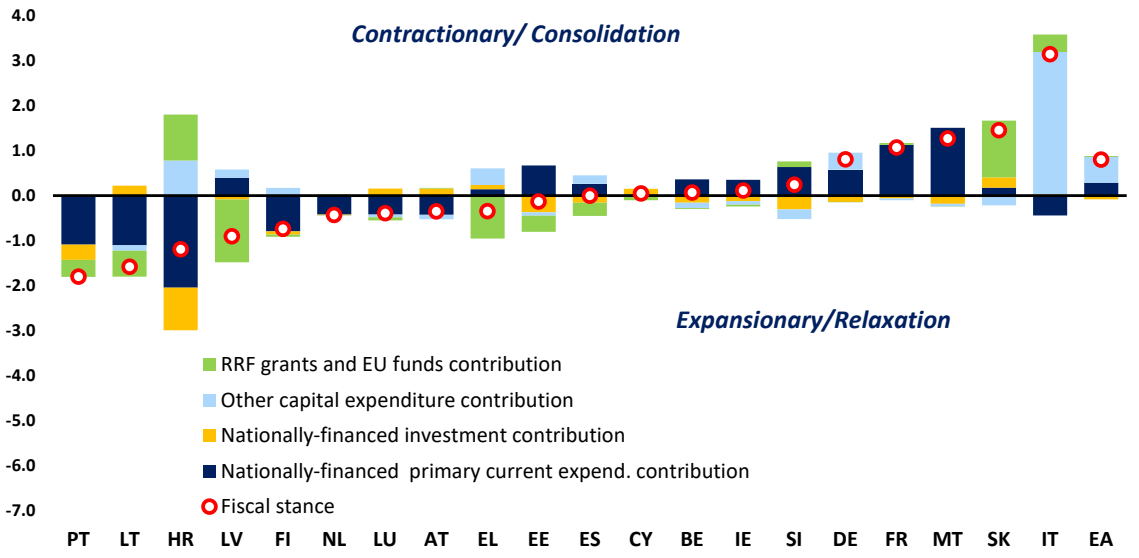
Graph I.1.8: **Euro area: fiscal stance (2020-2025, % of GDP)**



Source: European Commission 2024 Spring forecast.

Under a no-policy-change assumption, the euro area fiscal stance is expected to be broadly neutral in 2025. However, as the implementation of the reformed fiscal framework would imply a moderately contractionary stance ([7]).

Graph I.1.9: **Fiscal stance of the euro area Member States in 2024 (% of GDP)**



Source: European Commission Spring 2024 forecast.

([7]) See Cepparulo et al. (2024), "An Assessment of the Euro Area Fiscal Stance", European Economy Economic Brief nr. 80, July 2024.

2. REBUILDING FISCAL BUFFERS AND ADDRESSING LONG-TERM CHALLENGES

The EU has faced a prolonged period of volatility that has adversely affected its economic and fiscal developments. The pandemic caused sharp recessions among its Member States which called for swift policy support. In turn, Russia's war of aggression against Ukraine put additional strain via various channels and further ignited high and persistent inflation. During these challenging times, policy support of an unprecedented scale was put in place to soften the impact of the different shocks and bolster economic and social resilience and cohesion in the EU. At the EU-level, support was provided through wide-ranging initiatives, notably under the NGEU, and targeted instruments such as SURE ([8]), illustrating the agility and coordination ability of the EU in emergency situations, on the back of lessons learned from past crises.

The legacy of these turbulent times calls for the rebuilding of fiscal buffers, while there is still also a need to address a number of long-term challenges. These include the need to address climate change and support digitalisation, as well as the need to revert the declining trend in defence expenditure of the last decades, in a context of heightened geopolitical tensions. The EU is also facing the economic and fiscal implications of an ageing population (Box I.2.1). The latest Ageing Report projects an increase in ageing-related costs (i.e., spending on pension, health care, long-term care and education) in the EU from 24.4% of GDP in 2022 to 25.6% of GDP in 2070. This chapter will also provide a dedicated focus on trends and challenges affecting the revenue side of public finances in the EU.

2.1. REBUILDING FISCAL BUFFERS WHILE PRESERVING PUBLIC INVESTMENTS

The EU's government budget balance sharply improved after the pandemic and broadly stabilised more recently. The previous chapter reviewed these fiscal developments, stressing, however, that subdued economic activity and the higher interest payments resulting from the needed tighter monetary policy stance prevented a swifter and sharper improvement after the phasing-out of pandemic-and energy-related support measures. The fact that some measures were not sufficiently well targeted and time-bound also contributed to a more sluggish recovery of the budget balance. In turn, the EU's debt-to-GDP ratio is projected to stabilise in 2024 and slightly increase in 2025.

Economic resilience calls for reducing excessive debt levels. The previous chapter highlighted that the number of Member States with a general government deficit exceeding 3% of GDP is projected to decline only as of 2025 based on unchanged policies with still nine countries exceeding the 3% mark by then. With the notable exceptions of Ireland, Spain, Cyprus and Portugal, Member States are projected to have a weaker budgetary position in 2025 than in 2019 (i.e. the pandemic year). Going forward, under the new fiscal rules that came into force on 29 April 2024, Member States are required to respect the net expenditure growth path included in their medium-term fiscal-structural plan, consistent with putting the general government debt on a plausibly downward trajectory and reducing the general government deficit durably below the 3% of GDP or maintaining these values at a prudent level over the medium term.

At the same time, to address challenges such as supporting the twin (climate and digital) transitions and fostering potential growth, public investments should be preserved, including through adequate absorption of RRF resources. Starting from 3.1% of GDP in 2019, the EU public investment ratio rose to 3.5% of GDP by 2023 and is projected to increase further to 3.7% by 2025. The increase between 2019 and 2025 is related to investment financed by both the EU budget - particularly by the RRF – and national budgets. The full implementation of the recovery and resilience plans under the RRF remains also essential to deliver on the policy priorities identified under

([8]) As per legal requirements and the recommendation of the European Court of Auditors, the Commission is currently undertaking the evaluation of SURE, which is tentatively expected to be concluded in the coming month.

the European Semester, as those plans are required to address all or a significant subset of the country-specific recommendations issued in recent years. Moreover, the various EU-wide and country-specific challenges to be addressed in the coming years in the EU ranges across a wide set of issues such as the need to address the recent crises legacy of heightened fiscal burden and longer-term challenges posed, among other things, by ageing, the need to support (climate and digital) transitions, the need to increase competitiveness and raise defence spending in a more tensed geopolitical context. European Commission (2023) ([9]) and the ECB (2024) ([10]) provide a recent overview of these challenges from a fiscal perspective. Part III of the present report presents a review of the need and scope to foster investments in the EU to help address long-term challenges.

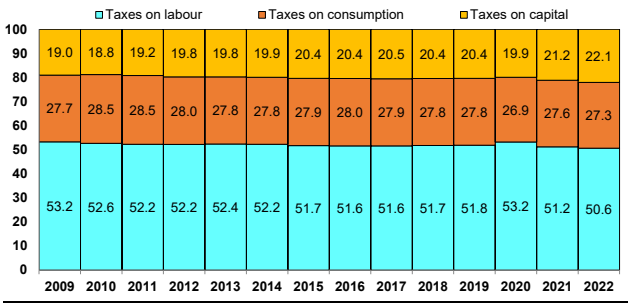
2.2. TRENDS, CHALLENGES AND OPPORTUNITIES ON THE REVENUE SIDE

This section reviews governments revenue prospects, highlighting the evolution of the tax mix over time and across EU Member States. A discussion of challenges Member States face in collecting revenues is then provided, highlighting relevant megatrends in this respect, including the role of ageing and digitalisation. Measure to help address identified challenges are then discussed.

2.2.1. The revenue side in the EU – a birds eye view

The relative importance of different types of taxes for revenue generation have changed only little in recent decades. While the overall tax burden in the EU-27 increased by 2.2 percentage points between 2010 and 2022(from 40.2% to 42.4% of GDP), the composition of the tax structure in the EU-27 has remained rather stable (Graph I.2.1).

Graph I.2.1: **Tax revenues by economic function (i.e. by tax base), EU (% of total)**



Source: TAXUD database - Statistics | Taxation and Customs Union | European Commission (europa.eu).

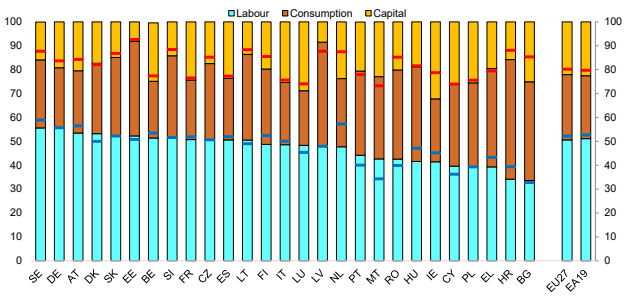
The lion's share of the tax burden continues to be borne by taxes on labour including social security contributions, representing over half of the overall EU-27 total tax revenues (50.6%) in 2022, followed by consumption taxes (27.3%) and capital taxes (22.1%). An increase in the weight of capital taxes can be observed since 2009 (+3.1pp), while the labour tax share has been decreasing by 2.6pp. Tax revenues stemming from consumption taxes have hardly changed in the past 12 years (-0.4pp).

([9]) See Chapter I.2 in the Report on Public Finances in EMU 2022 (i.e., the PFR 2022), European Economy – Institutional Paper nr. 256.

([10]) See article 2 entitled "Longer-term challenges for fiscal policy in the euro area" in the ECB Economic Bulletin – Issue 4 / 2024.

At the same time considerable cross-country differences exist across the EU-27. Graph I.2.2 shows the tax mix per Member State in 2022 and also illustrates its change relative to 2012 with the red and blue markers. In 2022, labour taxation, including social security contributions (SSCs), accounts for between 33.5% and 55.6%, consumption provides between 22.9% and 50.1% and capital taxation makes up between 8.2% and 32.2% of all tax revenues. Therefore, assessing the resilience of the current tax mix and whether this can withstand the large structural changes societies will face, implies a detailed analysis of the whole of the tax base and all types of taxation. While some Member States shifted from labour taxes to capital taxes, the tax structure has remained broadly stable over the last decade within most EU Member States.

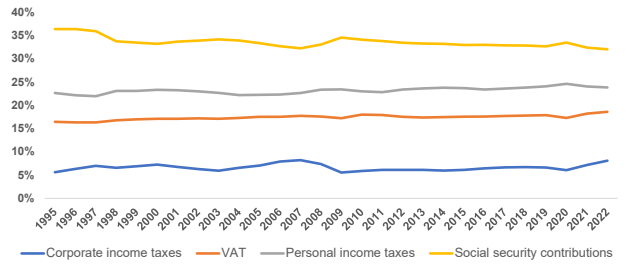
Graph I.2.2: **Tax revenues by economic function in the EU Member States in 2022 (bars) compared to 2012 (markers) (% of total)**



Source: TAXUD database - Statistics | Taxation and Customs Union | European Commission (europa.eu).

The largest share of tax revenues is collected from social security contributions (SSCs) followed by personal income taxes (PIT). During the last decade, SSCs have represented around one third of tax revenues in the EU, although a slight decline has been observed in recent years (32.1% of the total in 2022). PIT revenues have followed a similar amounting to 23.9% of total revenues in 2022 have followed a similar trend and. The two other main tax types in revenue terms are value-added taxes (VAT, 18.6% of the total in 2022) and corporate income taxes (CIT, 8.1% of the total in 2022). For both VAT and CIT revenues a slight upward trend in in the overall tax mix can be observed.

Graph I.2.3: **Evolution of revenue share by tax types, EU**



Source: TAXUD database - Statistics | Taxation and Customs Union | European Commission (europa.eu).

2.2.1.1. The impact of megatrends

Megatrends are long-term driving forces that are observable now and will most likely have significant influence on the future ([11]). Megatrends that are expected to have a substantial effect on governments' tax bases include population ageing, digitalisation and AI, globalisation, technological developments and the ensuing changing nature of work as well as climate change and environmental degradation. This section briefly discusses each of those megatrends in the context of taxation system including the potential impact they may have on tax revenues.

Population ageing is putting pressure on the revenue side. As the share of the working population is projected to decline, there is a risk of dwindling revenues from labour taxation and SSC ([12]). At the same time, public expenditure, notably on healthcare, long-term care and pensions, is projected to increase (see Box I.2.1 below for trends and challenges in relation to population ageing, as highlighted in the 2024 Ageing Report). With projected declining tax revenues and increasing

([11]) See European Commission: *EU FORESIGHT: What is the Megatrends Hub How to use megatrends to make your work future-proof*, available at: https://knowledge4policy.ec.europa.eu/sites/default/files/what_is_the_megatrends_hub_and_how_to_use_it.pdf

([12]) The OECD calculates a revenue loss of on average 5% as a share of GDP (i.e., 8% decrease in per-capita terms) in OECD countries by 2040 due to the strong reliance on personal income taxes and social security contributions. See OECD (2022) Funding the future, (https://doi.org/10.1787/2b0f063e-en).

expenditure for pensions and care, governments will need to alternative revenue sources to stabilise their budgets.

Digitalisation is also a relevant trend on the revenue side, notably through its impact on traditional taxation systems, the labour market and on tax administrations' capacity to collect revenues. Historically, tax systems were designed to tax the profits of companies based on their physical presence in countries, a system which no longer captures the profits of companies with digital business models. The low taxation of the digital companies remains an issue, which will be partially solved for the largest companies (above EUR 750 million turnover) due to the global agreement on minimum taxation of 15%, subsequently introduced in the EU with the Pillar 2 Directive. This issue should be further tackled by the Pillar 1 project once it is finalised, that aims to redistribute the profits of MNEs with combined revenues of at least EUR 20 billion to their market jurisdictions. Furthermore, the ongoing transformation of labour markets due to increasing digitalisation and automation may pose a sustainability challenge for taxation systems relying heavily on labour tax revenues. While it is difficult to evaluate the precise impact due to the evolving nature of AI, some studies estimate a significant impact of AI on the labour force with estimates ranging from 40% of global labour markets being affected by AI and two-thirds of labour markets in the US and Europe being affected ([13]). Moreover, some studies indicate that up to one-fourth of current jobs in the US and Europe could be potentially at risk of substitution due to generative AI ([14]). Specifically, ongoing technological change may contribute to a reduction in the use of labour (relative to capital) in the production process ([15]). So far, technological shift and globalisation, have already contributed to an increase in the capital intensity of production, particularly in the manufacturing, transport and logistics sectors. In particular, compared to previous technological changes, the advent of generative AI opens the scope to also automate non-routine and cognitive tasks, which exposes also higher-skilled occupations to technological disruption ([16]).

For tax administrations, digitalisation produces new developments such as big data and crypto assets, both offering opportunities and challenges. On the one hand, the generation of big data offers opportunities for better and more advanced risk assessment capabilities and foresight systems in taxation, and digitalisation of tax procedures can simplify information flows between tax administrations and taxpayers improving the efficiency of tax procedures. On the other hand, the increasing economic relevance of crypto assets, although currently experiencing turbulences, is creating new questions on how best to tax such assets and their derived income. In particular, the decentralised nature of these assets enhances the risk of non-taxation, as it is often unclear where the assets are produced, traded, or located and to whom they are distributed ([17]).

([13]) IMF (2024), *Gen-AI: Artificial Intelligence and the Future of Work*, IMF Staff Discussion Notes, SDN/2024/001 and Goldman Sachs Economic Research (2023), *The* Potentially Large Effects of Artificial Intelligence on Economic Growth.

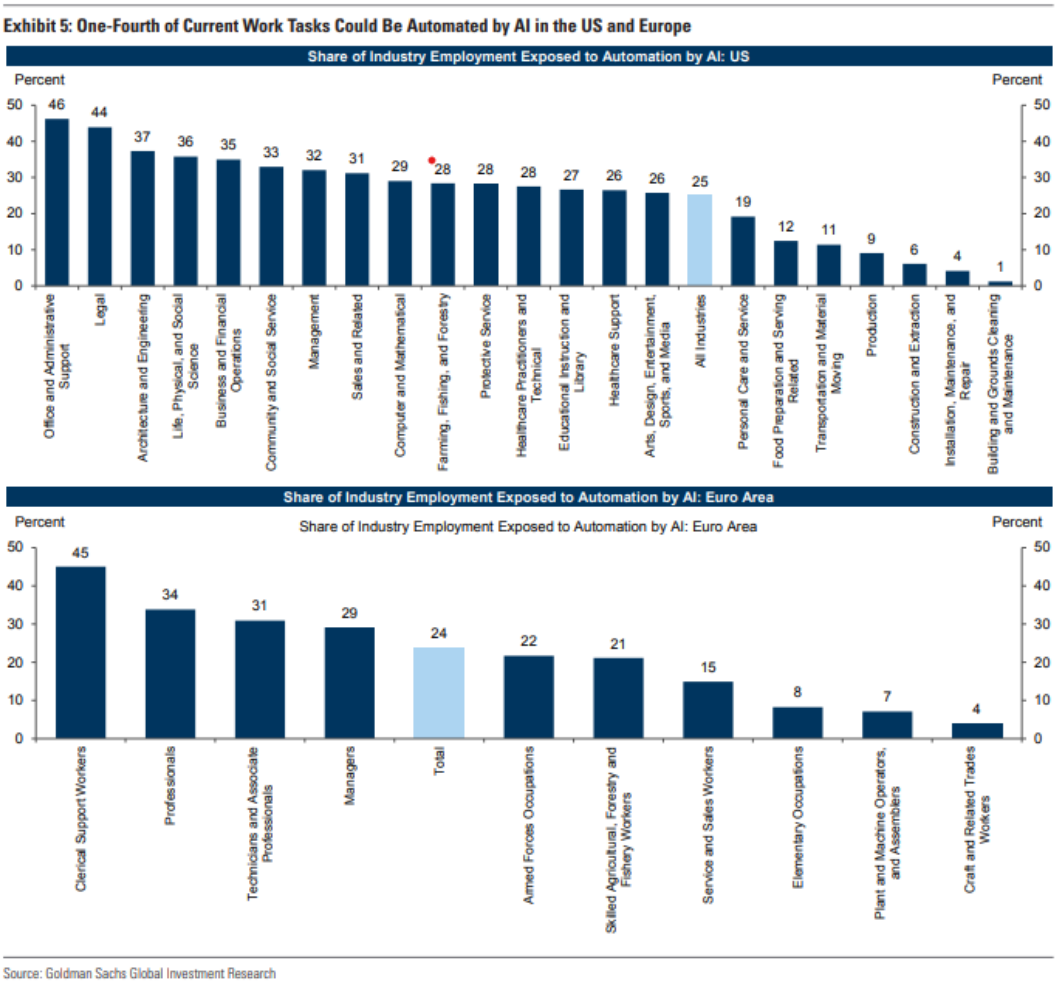
([14]) See Graph I.2.4, taken from Goldman Sachs Economic Research (2023), The Potentially Large Effects of Artificial Intelligence on Economic Growth.

([15]) See for instance Ernst, E. Merola, R. Samaan, D. (2019), Economics *of Artificial Intelligence: Implications for the Future of Work*, IZA Journal of Labour Policy, 9,4.

([16]) See IMF (2024), *Gen-AI: Artificial Intelligence and the Future of Work*, IMF Staff Discussion Notes, SDN/2024/001.

([17]) See European Commission, *Annual Report of Taxation 2023*, available at: https://taxation-customs.ec.europa.eu/taxation-1/economic-analysis-taxation/annual-report-taxation_en, Chapter 6 and Bas Jacobs (2017), *Digitalisation and Taxation, Chapter in* Gupta et al. (2017), *Digital Revolution in Public Finance, IMF, available at:* https://doi.org/10.5089/9781484315224.071

Graph I.2.4: **Impact of AI on US and European Labour Markets by Type of Work**



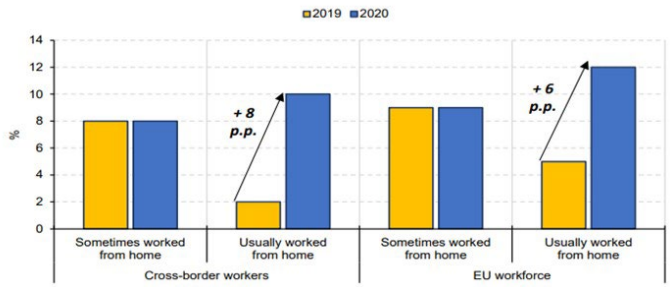
Source: Goldman Sachs Economic Research (2023), The Potentially Large Effects of Artificial Intelligence on Economic Growth.

Globalisation and technological advances have increased workers' access to international labour markets and changed the ways of working. Workers, especially 'white collar' professionals, are increasingly performing their tasks remotely (e.g., by teleworking) and across country borders, while the COVID-19 crisis lockdowns accelerated these developments. According to recent research ([18]), the use of working from home in the EU significantly increased between 2019 and 2020 and again during 2020 and 2021, especially among larger businesses. Graph I.2.5 zooms into the uptake of cross-border telework between 2019 and 2020, most likely driven by the pandemic. More widespread teleworking from abroad, in particular, brought up new policy challenges such as which country should be entitled to taxation under such circumstances, or how to apportion the tax base of people regularly working across several countries. In this context, the principle of tax residence becomes increasingly complex to apply. Moreover, increased mobility is also intensifying competition between countries for taxpayers liable to personal income tax ([19]).

([18]) See Eurofound, (2022). The rise in telework: Impact on working conditions and regulations. Luxembourg: Publications Office of the European Union. Available at: https://www.eurofound.europa.eu/publications/.

([19]) See also European Commission (2023), *Annual Report of Taxation 2023*, Chapter 2.3, available at: https://taxation-customs.ec.europa.eu/taxation-1/economic-analysis-taxation/annual-report-taxation_en

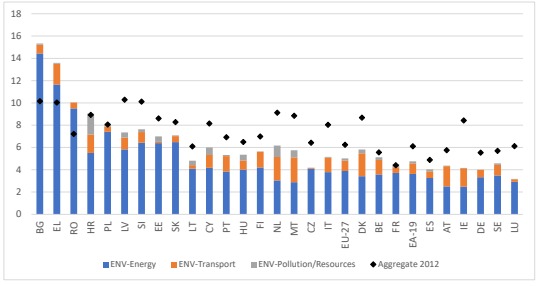
Graph I.2.5: **Work from home among cross-border workers and the EU workforce overall, 2019-2020**



Source: European Commission, Annual Report on Intra-EU Labour Mobility 2022, p.109.

Taxation has also an important role to play in influencing behaviours to fight climate change and environmental degradation. Environmental taxation can help address negative externalities by internalising their cost (i.e., the 'polluter pays' principle). Tax policy in this area can be used to incentivise (e.g., tax breaks) or disincentivise (e.g., taxing) certain behaviours in support of environmental goals. Redistributive measures may also be needed alongside enacting environmental taxes to foster progressivity and help preserve the disposable income of lower income households. Yet, the greening of the economy might reduce certain tax revenues, with studies showing, for instance, that the transition to electric vehicles could imply some losses of excise revenues, while measures to conserve energy in housing will also lead to a reduction of revenues from energy taxes ([20]). As Graph I.2.8 shows, most Members States have room to increase green taxation to support the green transition. Moreover, to support fiscal sustainability, the basket of green taxes and their scope could be adjusted over time to adjust to behavioural responses to such taxes by businesses and individuals to ensure adequate revenue. It should be noted that after 9 years of relatively stable environmental tax revenue (both expressed as a share of GDP or total taxation) 2022 saw a significant drop of environmental tax revenue, in particular revenue from energy taxation. This can be partly explained by a slowdown of economic activity as well as measures put in place by EU Member States to counter inflationary tendencies and alleviate the impact on vulnerable households and businesses. While VAT is a tax applied ad valorem, with inflationary tendencies mechanically being reflected in higher tax revenues, excise duties – such as energy taxes - are usually applied on per quantity.

Graph I.2.6: **Environmental Tax revenue as % of total revenues EU-27 2022 (bars) and 2012 (dots)**



Source: TAXUD database - Statistics | Taxation and Customs Union | European Commission (europa.eu).

The need to address inequality will also continue to influence the evolution of the revenue side in the EU. Over the last 40 years, in the EU, the income share of the top-1% has increased by 3.8 pps. to 11.9% in 2021, while the income share of the top-10% has increased by 5.1 pps. to 36% in 2021 ([21]). According to the latest European Commission's Strategic Foresight report, inequality between Member States has been decreasing, but inequalities within individual Member States are on the rise ([22]). Surveys shown in that report reveal that 81% of the population in EU Member States believe that the differences in income are too large in their country, and 78% think their government should do more to tackle income inequalities ([23]). At the same time, wealth concentration is significantly higher than income concentration and gradually increasing, directly hindering equal opportunities and upward social

([20]) See e.g. https://www.esru.strath.ac.uk/EandE/Web_sites/17-18/paradigmev/tax-revenue-lost.html and https://www.irishtimes.com/ireland/2023/07/19/higher-taxes-may-be-needed-on-larger-cars-to-replace-lost-15bn-revenue-due-to-electric-vehicle-switch/.

([21]) European Commission Calculations based on data from the World Inequality Database (https://wid.world/).

([22]) Available at https://commission.europa.eu/system/files/2023-07/SFR-23_en.pdf

([23]) Special Eurobarometer 529 on fairness, inequality and inter-generational mobility, available at https://joint-research-centre.ec.europa.eu/jrc-news-and-updates/fairness-inequality-and-preferences-social-spending-and-redistribution-policies-new-eurobarometer-2023-02-06_en.

mobility ([24]). High levels of income inequality may negatively affect economic growth and have been associated with a series of negative social outcomes related to education, health, violence and general well-being ([25]). To mitigate income inequality, governments can either compress the market-income distribution using measures such as minimum wages or by promoting collective bargaining, or can redistribute income through the tax-benefit system. The redistributive effect of the tax-benefit system depends both on the tax burden and the progressivity of taxation, as well as on benefit policies ([26]).

2.2.1.2. Future-proofing our tax mix

The above changes are expected to reduce the revenues collected by existing taxation systems. Without policy change, tax revenues from labour, for instance, are foreseen to mechanically decrease, reducing the scope for EU Member States to finance the welfare states and their ability to respond to pressing challenges. Four broad approaches could be considered going forward: 1) improving tax collection, 2) incentivising investment and enhancing the tax-benefit mix to boost economic growth, 3) existing tax bases could be broadened 4) the tax mix could be modified by shifting the tax mix among tax bases. Any solution to overcome the challenges for the tax mix will likely have to rely on a combination of these approaches, aiming at ensuring systems are robust to future changes while avoiding unwarranted trends (e.g. avoid further increasing tax pressure in countries with already high tax burdens).

Improving tax compliance and collection

Simple tax rules and efficient tax collection help harness the full revenue potential of current tax bases. This also help ensure that every taxpayer pays its fair share. Moreover, when tax collection is streamlined and effective, it reduces the need for frequent policy changes, providing stability and legal certainty to individuals and businesses ([27]).

Digitalisation can support tax administrations in increasing tax compliance. The integration of new technologies into tax administration systems offers efficient new ways to counteract tax avoidance, evasion, and fraud. Advanced data analysis, artificial intelligence, and blockchain tools help provide real-time insights, streamline tax processes, and can thus increase transparency, reducing scope for individuals and corporations to exploit loopholes or engage in illicit financial activities ([28]).

Policy coordination and exchange of information are key to boost efficiency, trust and compliance in a tax system. Uncoordinated tax policies may lead to gaps and legal mismatches of tax systems between countries that in turn offer opportunities for business and individuals to engage in tax avoidance and evasion. In contrast, coordinated tax policies among Member State can minimise the chances of double taxation or tax evasion. Similarly, exchange of information among tax jurisdictions enhances transparency, thus deterring tax evasion practices.

([24]) Eurofound, Darvas, Z. and Midões, C., (2021), Wealth distribution and social mobility, https://doi.org/10.2806/129514

([25]) See for example JRC (2021), Monitoring Multidimensional Inequalities in the European Union, available at https://publications.jrc.ec.europa.eu/repository/handle/JRC123911

([26]) See for instance Aronson et al. (2014), *Redistributive Effect and Unequal Tax Treatment*, Economic Journal, Vol. 104, No. 423, pp. 262-270 and Aronson et al. (2014), Decomposing the Gini Coefficient to Reveal the Vertical, Horizontal, and Reranking Effects of Income Taxation, "National Tax Journal, vol. 47(2), pages 273-294, June.

([27]) See for instance European Commission (2023), *Annual Report of Taxation 2023*, Chapter 6, https://taxation-customs.ec.europa.eu/document/download/283669ce-33aa-49dc-ba2e-fd8d669a4482_en?filename=ART%20-%20Report%202023_Digital%20Version_1.pdf

([28]) See for instance:
- European Commission (2024), *Annual Report of Taxation 2024*, Chapter 2, available at: https://op.europa.eu/en/publication-detail/-/publication/154705e0-38ef-11ef-b441-01aa75ed71a1/language-en/format-PDF/source-330633463OECD (2017)
- OECD (2017), *Technology Tools to tackle tax evasion and tax fraud*, available at: https://www.oecd.org/tax/crime/technology-tools-to-tackle-tax-evasion-and-tax-fraud.pdf.
- Bas Jacobs (2017), *Digitalisation and Taxation, Chapter in* Gupta et al. (2017), *Digital Revolution in Public Finance,* IMF, available at: https://doi.org/10.5089/9781484315224.071

Taxation to incentivise investment

Moreover, taxation can also help to stimulate innovation and R&D activity ([29]). While EU Member States invest significant funds, R&D expenditure is relatively low if compared to the other global competitors, notably the private component ([30]). Tax incentives play a role in the R&D support policy mix. Special tax treatment has been used to reduce costs and uncertainty associated with R&D activities, which tend to be riskier than many other production activities ([31]). At the same time, the effectiveness of R&D tax incentive schemes exhibits substantial heterogeneity. While the literature shows that, on average, R&D tax incentives stimulate the level of R&D expenditure, the specific design of tax incentive schemes are crucial for their effectiveness ([32]). The IMF Fiscal Monitor 2024 argues that advanced economies should choose a policy mix that supports innovation more broadly, especially because fundamental research with wide applications is usually underfunded. According to IMF estimations, increasing fiscal support for R&D by 0.5 percentage points of GDP through a combination of public research funding, grants to firms, and tax credits could raise GDP by up to 2% ([33]).

Broadening the tax base

In the short term, a broadening of the labour tax base by increasing employment could bring some relief. This could be achieved by improving work incentives for workers with reduced hours and by increasing the effective retirement age. Overall, women have lower employment rates and a significantly higher proportion of part-time employment than men, mostly due to the unequal sharing of unpaid domestic work and caring responsibilities. Additional structural obstacles, include the lack of affordable early childhood education and care and long-term care and fiscal disincentives to work more hours ([34]). In Member States where joint progressive taxation systems levy income tax on household income rather than individual income, non-working partners and secondary earners, mostly women, may face high marginal tax rates disincentivising labour market participation. The Commission has therefore been consistently promoting a reduction of marginal tax rates for low- and second-income earners.

A sustainable broadening of the tax base can be achieved by reducing tax exemptions. To this end, it may be worthwhile to review existing tax exemptions and reduce or abandon these, especially, where they have lost their policy rationale or benefit narrowly defined groups of taxpayers without positive benefits for society at large. A comprehensive reporting of tax expenditures is a basic requirement to map existing exemptions and allow for a democratic review of these.

Broadening of the capital tax base could be achieved through a more stringent taxation of personal capital. Currently, capital income is often taxed at low rates while some forms of capital income are exempt ([35]). In some countries the capital share of income has been rising at the expense of labour, although the boundary between what is labour income and what is capital income can be blurred. The adoption of labour-saving technologies has been a key driver for rising productivity. As an example, a more widespread adoption of personal capital gains taxation, which is currently not present in all Member States, could be considered.

Broadening of the consumption tax base could be achieved by a more parsimonious use of reduced rates of VAT. Value added taxation is today an important revenue source, and in a few Member States the most important source of tax revenue. Over the years, many countries have

([29]) See Part III for a thematic discussion on how to foster investment in the EU.

([30]) In 2021, EU R&D investment intensity was 2.3% of GDP, which is quite below the US (3.5%), Japan (3.37%), and South Korea (4.8%) (Long-term competitiveness of the EU: looking beyond 2030 (COM(2023) 168 final).

([31]) For a more detailed analysis on the impact on taxation on R&D, see European Commission (2023), *Annual Report of Taxation 2023,* available at https://taxation-customs.ec.europa.eu/taxation-1/economic-analysis-taxation/annual-report-taxation_en

([32]) Blandinières, F., & Steinbrenner, D. (2021). How Does the Evolution of R&D Tax Incentives Schemes Impact Their Effectiveness? Evidence From a Meta-Analysis. ZEW.

([33]) IMF (2024), *Fiscal Monitor*, available at: https://www.imf.org/en/Publications/FM/Issues/2024/04/17/fiscal-monitor-april-2024

([34]) European Commission (2024), Labour and Skills Shortages in the EU: An Action Plan, COM (2024) 131.

([35]) Eurofound, Darvas, Z. and Midões, C., (2021), Wealth distribution and social mobility, https://doi.org/10.2806/129514

introduced reduced VAT rates for certain products to soften the potential regressive effect of VAT or promote the consumption of specific goods seen as carrying merit e.g., books. Besides, the current VAT system features several exemptions and derogations. While there may be a rationale to protect those more vulnerable for which consumption represents a larger share of their budget, the use of reduced rates on specific goods or services may not be the most efficient or effective way of supporting vulnerable households, as a reduction in VAT rates is rarely fully passed on in consumer prices and because it is difficult to target those who ought to benefit the most (all benefit from the reduced rates and some of the reduced rates may not even benefit those more vulnerable such as reduced rates for fuel). Those special rates for certain product groups have made VAT administration very complex and potentially more costly for both Member States and businesses, especially for transborder commerce within the single market. Therefore, a more cautious use of reduced and zero rates could be one approach to broaden the consumption tax base. The regressivity of VAT could more efficiently and effectively be prevented or softened by using more targeted tools (such as subsidies or benefits) to support low-income households, conditional on income level.

Shifting the tax burden

A tax structure that is less reliant on labour taxes can be conducive to growth. A high labour tax burden, including a high tax wedge can stifle labour markets. ([36]) By reducing taxes on labour, including social security contributions, the cost of hiring is lowered for employers, potentially leading to increased employment opportunities and reduced labour market rigidities. Shifting the tax burden to several alternative tax bases can be considered.

Shifting taxation from labour to consumption promotes employment, safeguards tax revenues and encourages savings and investments. A more consumption-based tax system may also provide some revenue resilience, as consumption tends to be less volatile than income.

Taxation can be a powerful tool in incentivising more sustainable choices by producers and consumers. Taxes falling into that category currently only provide a moderate share of tax revenues which could be increased ([37]). Existing taxes which could be considered to belong to this category are environmental taxes (5.5% in the EU), and health taxes, i.e., excise taxes on tobacco and alcohol (1.8%) and taxes on sugar and fat ([38]). It thus seems safe to say that overall, these taxes only make up less than 8% of all tax revenues in the EU. These taxes could thus play a more important role in the tax mix of the future, especially revenues from environmental taxes which would support the green transition.

Well-designed shifts towards wealth-related taxes could support more inclusive growth and reduce inequality. An adequate design of such approach would in particular need to address implementation issues to avoid low tax revenues and high collection costs (e.g., related to valuation complexities).

A shift towards recurrent property tax may help in some cases. Property taxes offer several advantages: property ownership is generally easy to establish and the fixed geographic location of immovable property makes the taxes difficult to evade. Recurrent taxes on residential properties also offer a stable and predictable revenue source. Studies indicate that effective recurrent property taxation has been underutilised in many Member States so far ([39]).

([36]) See for instance Astarita et al. (2018), "Labour Taxation and Inclusive Growth", Discussion Paper 084, European Commission, Directorate General for Economic and Financial Affairs.

([37]) Taxes falling into this category are not distinguished by tax base (labour, consumption, capita) or tax type (PIT, SSC, CIT, VAT etc.) but by objective. While taxes mostly aim for revenue generation, such taxes aim to change behavioural responses.

([38]) Sugar and fat taxes are only present in few Member States.

([39]) See for instance, OECD (2022), *Measuring effective taxation of housing*, available at https://www.oecd.org/tax/measuring-effective-taxation-of-housing-0a7e36f2-en.htm

Land is also a particularly stable tax base ([40]). This makes it is more efficient compared to distortionary taxes like capital and labour income taxes ([41]). As supply of land is fixed, taxing land constitutes a taxing of economic rents. Recent research indicates that a revenue neutral tax shift from labour and capital towards land could yield considerable growth dividends ([42]). At the same time, such a tax should be carefully designed to take into account the redistributive effects on certain sectors such as the agricultural sector. Moreover, an assessment of land values also entails practical challenges that can hamper its use as a major source of tax revenue.

In conclusion, it is important to look at improving the efficiency of tax collection, the broadening of the tax base and the role other taxes may play to compensate for a possible reduction in taxation revenues due to various megatrends at play. It is important to consider the full range of taxes at our disposal and their design to continue to optimise tax systems to secure sustainable revenues and fairness in the face of important transitions that are set to significantly affect those tax systems.

([40]) See for instance Tideman, T. N. (1982). A tax on land value is neutral. National Tax Journal, 35(1):109–111 and Oates, W. E. and Schwab, R. M. (2009). The simple analytics of land value taxation. In Dye, R. F. and England, R. W., editors, Land Value Taxation: Theory, Evidence, and Practice, chapter 4, pages 51–72. Lincoln Inst of Land Policy.

([41]) Ibid.

([42]) Kumhof, M, N Tideman, M Hudson and CAE Goodhart (2021), "Post-Corona Balanced-Budget Super-Stimulus: The Case for Shifting Taxes onto Land", *CEPR Discussion Paper* No. 16652 and Schwerhoff et al. (2022), *Equity and Efficiency Effects of Land Value Taxation*, IMF WP WP/22/263.

Box I.2.1: 2024 Ageing Report: update of long-term budgetary projections

Budgetary pressures from population ageing are intensifying. According to the 2024 Ageing Report ([1]), total ageing-related expenditure (pensions, health care, long-term care and education) would rise in most Member States by 2070, often substantially. Most of this budgetary burden will materialise over the next few decades on the back of fast demographic ageing and, in some cases, because of a phasing-in of reforms to curb the budgetary impact in the longer term.

Population projections indicate a fast demographic ageing in the next decades, with the working-age population expected to decrease sharply. According to Eurostat's latest demographic projections, the median age in the EU would rise by around 4.5 years by 2070 (Eurostat, 2023; EC-EPC, 2023 ([2])). A strong upward shift in the age distribution is expected in all Member States. As a result, the old-age dependency ratio will rise sharply in all Member States over the coming decades ([3]). From about 29% in 2010 in the EU, it rose to 36% in 2022 and would rise further to 59% in 2070, with most of the increase expected already by 2045. Put differently, the EU would go from having nearly thirty people aged 20 to 64 for every ten people aged over 65 years in 2022, to having fewer than twenty people by 2045.

Table 1: **Expected change of ageing costs between 2022-2070 (in pps. of GDP)**

	pensions	healthcare	long-term care	education	total
LU	8.8	1.2	1.6	-0.4	**10.7**
MT	4.4	2.1	2.3	-0.1	**8.6**
SK	2.8	1.6	1.4	0.3	**6.1**
SI	3.8	0.8	1.0	-0.3	**5.4**
HU	4.3	0.5	0.4	0.1	**5.2**
BE	3.5	0.6	1.7	-0.8	**5.1**
ES	3.6	1.2	0.9	-0.6	**5.1**
IE	2.8	1.5	1.4	-0.7	**4.9**
LT	3.2	0.8	0.9	-0.3	**4.6**
CY	3.6	0.8	0.1	-0.5	**4.1**
CZ	1.7	0.2	1.4	0.3	**3.7**
NL	2.0	0.7	1.9	-1.0	**3.5**
FI	1.4	0.6	1.8	-1.1	**2.7**
AT	0.4	1.1	1.5	-0.4	**2.6**
DE	1.2	0.1	0.5	0.2	**2.0**
PL	-0.2	1.1	0.9	0.1	**1.9**
DK	-1.4	0.4	3.3	-0.9	**1.4**
SE	-0.2	0.4	1.3	-0.6	**0.8**
BG	0.1	0.2	0.2	0.1	**0.6**
RO	-0.9	0.7	0.4	0.0	**0.2**
EE	-0.7	0.6	0.7	-0.6	**0.0**
HR	-0.2	0.7	0.1	-0.7	**-0.2**
PT	-1.8	1.0	0.4	-0.1	**-0.5**
FR	-0.9	0.3	0.7	-0.9	**-0.7**
LV	-1.7	-0.3	0.3	-0.2	**-1.9**
IT	-1.9	0.1	0.5	-0.8	**-2.0**
EL	-2.5	0.6	0.0	-0.5	**-2.4**
EU	0.4	0.4	0.8	-0.5	**1.2**

Source: 2024 Ageing Report.

Total cost of ageing

In the baseline, the total cost of ageing (spending on pension, health care, long-term care and education) is set to increase in the EU. Ageing costs amounted to 24.4% of GDP in 2022, including 11.4% for pensions, 6.9% for health care, 4.4% for education and 1.7% for long-term care. They are projected to rise by 1.2 pps over the projection period, to 25.6% of GDP in 2070. The bulk of this increase is expected by the mid-point of the projections in 2045, with ageing costs continuing to rise slightly on average in the EU thereafter. Total ageing-related expenditure would rise in most Member States by 2070. Spending would go up in 20 Member States and by at least 5 pps of GDP in Luxembourg, Malta, Slovakia, Slovenia, Hungary, Belgium and Spain. In 6 Member States, the projections show an overall downward impact, due to a projected decline in pension expenditure by 2070 and, to a lesser extent, lower spending on education. For several of these countries, ageing costs are nevertheless expected to increase in the next decades.

Pensions

16 Member States would see pension spending increase over the projection period, while a small decrease is expected in 11 Member States. Pension spending would rise by 0.4 pps of GDP on average in the EU by 2070. The biggest increase is projected for Luxembourg, at about 8 pps of GDP. At unchanged policy, an increase of 2 percentage points of GDP or more is also expected for Malta, Hungary, Slovenia, Cyprus, Spain, Belgium, Lithuania, Slovakia, Ireland and the Netherlands. Czechia, Norway, Finland and Germany would see pension expenditure increase by between 1 and 2 pps of GDP. Minor increases are projected for Austria and Bulgaria.

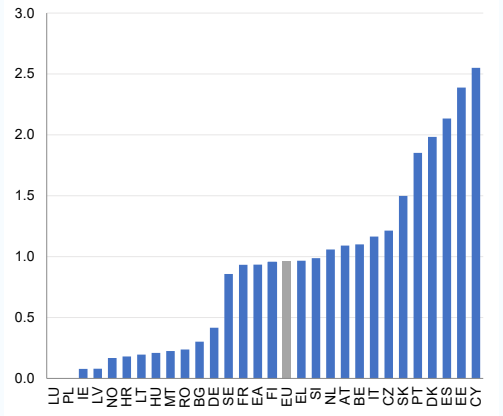
([1]) European Commission and EPC (2024), '2024 Ageing Report: Economic and budgetary projections for the EU Member States (2022-2070)', European Economy, Institutional Paper 279.
([2]) European Commission and EPC (2023), '*2024 Ageing Report: Underlying assumptions and projection methodologies*', European Economy, Institutional Paper 257.
([3]) The old-age dependency ratio is the ratio of the old-age population (65+) to the working-age population (20-64 year-olds).

(Continued on the next page)

Box (continued)

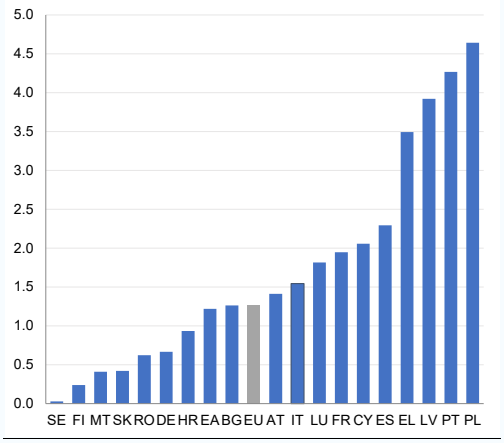
The baseline pension projections are based on current legislation: they take into account planned increases in legal retirement ages and apply the legal indexation rules. There are significant policy risks surrounding the baseline projections. If already legislated but not yet enacted increases in the legal retirement age were to be revoked, pension expenditure would rise more. The same holds for possible measures to counteract the general decline in pension adequacy observed in the baseline projections.

Graph 1: **Constant retirement age: change in public pension spending 2022-2070 (pps. of GDP deviation from the baseline)**



Source: 2024 Ageing Report.

Graph 2: **Constant benefit ratio: change in public pension spending 2022-2070 (pps. of GDP deviation from the baseline)**

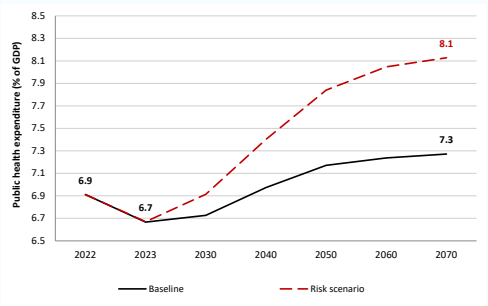


Source: 2024 Ageing Report.

Health care

Growing public health care expenditure due to ageing populations in the EU raises concerns about its long-term sustainability. Public health expenditure in EU was at 6.9% of GDP in 2022 and it is projected to grow to 7.3% of GDP in 2070 on accounts of demographic ageing and income growth as depicted by the baseline. However, if past trends in non-demographic factors beyond income elasticity persist, they can lead to an increase of 1.2 pps of GDP by 2070, as projected in the risk scenario, which is three times higher than expenditure growth of the baseline. This would be due mainly to technological innovations in the health care sector, which have been confirmed in many studies to be crucial in explaining past increases in health care expenditure.

Graph 3: **Public health care expenditure projections in the EU as % of GPD (2022-2070)**



Source: 2024 Ageing Report.

The COVID-19 pandemic and its effects on public health care spending added another layer of uncertainty to the health care projections of the 2024 Ageing Report. Base year 2022 contains a significant amount of COVID-19 related expenditure, which is however assumed to be discontinued in subsequent years. Given the necessity to strengthen the resilience of health systems in the aftermath of the pandemic, it is possible that the projections are rather underestimated for many of the countries, for which the current projections do not contain any long-term effects from the COVID-19 crisis.

In conclusion, ageing and non-demographic drivers of health care are expected to continue putting pressure on the long-term sustainability of public finances. Therefore, balancing the health care needs of the European populations with spending resources, as well as continuous efforts to increase the efficiency and quality of health service delivery, will continue to be high on the political and economic reform agenda of Member States.

(Continued on the next page)

Box (continued)

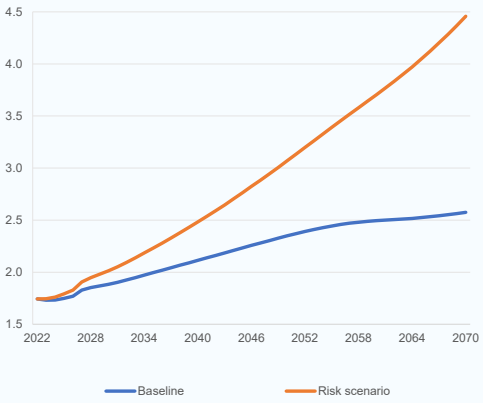
Long-term care

The EU public expenditure on long-term care (LTC) is projected to increase by 0.8 pps of GDP, from 1.7% of GDP in 2022 to 2.6% of GDP in 2070. The variation in projected expenditure ranges from a stable overall pattern in Greece to an increase of 3.3 pps of GDP in Denmark. Although, as a proportion of GDP, the biggest projected increases tend to be observed in Member States that have the highest levels of expenditure in 2022, the highest proportional increases are expected in Malta (due mainly to the interaction of fast population ageing and its steeply increasing dependency as people age) and Estonia (mainly due to expenditure-increasing policy reforms to tackle staff shortages in institutional care).

Cost implications for the EU of changes in the demand for publicly funded long-term care would be substantial if they lead to policy responses. If there was convergence towards the EU average of both coverage rates of LTC dependents and costs per dependent, reflecting an underlying convergence process of EU economies, expenditure would increase up to 4.5% of GDP in the EU in 2070 (+2.8 pps of GDP compared to 2022).

Ageing and non-demographic drivers of long-term care expenditure are likely to exert a continuous pressure on public finances in the long run, extending even beyond the current trends in population ageing. The need for a broadening of formalised coverage of the European populations with long-term care services will thus have to be balanced with the need to ensure the sustainability of public finances. Prevention and improving the institutional set-up and organisation of care can mitigate the impact of ageing on expenditure.

Graph 4: **Long-term care expenditure projections in the EU as % of GPD (2022-2070)**



Source: 2024 Ageing Report.

Part II

Developments in fiscal surveillance

KEY FINDINGS

This part provides an overview of the main developments related to the fiscal governance framework in 2023.

The general escape clause of the Stability and Growth Pact has been deactivated at the end of 2023

- In March 2023, the Commission did not propose to open new excessive deficit procedures. Taking into account the persistently high uncertainty for the macroeconomic and budgetary outlook, the Commission considered appropriate not to launch the excessive deficit procedure. At the same time, the Commission announced that it would propose to the Council to open deficit-based excessive deficit procedures in spring 2024 on the basis of the outturn data for 2023, in line with existing legal provisions. The same position was reaffirmed in autumn 2023. In the context of the 2024 Spring package, the Commission adopted a Report in accordance with Article 126(3) TFEU. In light of the assessment carried out in the Report and after considering the opinion of the Economic and Financial Committee as established under Article 126(4) TFEU, on 8 July 2024 the Commission issued opinions under Article 126(5) TFEU and proposed to the Council to adopt decisions establishing the existence of an excessive deficit under Article 126(6) TFEU for Belgium, France, Italy, Hungary, Malta, Poland and Slovakia.
- The country-specific fiscal recommendations for 2024 were quantitative and focused on the growth rate for net primary expenditure. With the general escape clause being deactivated at the end of 2023, quantitative fiscal recommendations were made for the first time since 2019. Member States who were not projected to be at their medium-term budgetary objective (MTO) in 2023 were recommended to limit the growth of their net nationally financed primary expenditure to ensure prudent fiscal policy.

Following the legislative proposals for a reformed economic governance presented by the Commission in April 2023, the co-legislators reached a provisional agreement in February 2024 and the new legislation entered into force on 30 April 2024

- The main objectives of the reformed framework are to strengthen Member States' debt sustainability, and promote sustainable and inclusive growth and resilience in all Member States through growth-enhancing reforms and priority investments.
- The national medium-term fiscal-structural plans (the plans) will be at the heart of the reformed framework, thus strengthening national ownership. They will bring together the fiscal, reform and investment policies of each Member State, within a common EU framework. These reforms and investments should help build the green, digital and resilient economy of the future and make the EU more competitive. The plans will cover a period of four to five years, depending on the regular length of the legislative term.
- The legislation specifies 20 September 2024 as the deadline for Member States to submit their first medium-term fiscal-structural plans. Member States could agree with the Commission to extend that deadline by a reasonable period of time. Each year by 30 April, Member States will need to submit a progress report on the implementation of their plans.

National fiscal frameworks appear well established though room for further improvement remains and efforts to address new areas that have gained prominence are underway

- Recent evidence compiled in the Commission's Fiscal Governance Database suggests that important design elements of national budgetary frameworks (i.e., the scope of IFI activities and the design of fiscal rules and medium-term budgetary frameworks) remained broadly unchanged in 2023, while also pointing at room for improvement in some areas. For example, there is scope for strengthening the relation between annual budgets and medium-term budgetary frameworks or increasing the Independent Fiscal Institution's (IFIs) role in fiscal sustainability assessments. These are highly

relevant issues under the reformed EU fiscal surveillance framework that puts emphasis on the medium-term orientation of national fiscal plans and the role of IFIs.

- Evidence gathered on green budgeting practices in the EU shows that almost two thirds of the Member States have implemented or plan to establish some form of green budgeting, with several relevant developments taking place in 2023.
- Evidence on the use of spending reviews show that in many Member States guidance and support provided by the EU has led to an increase in the use of spending reviews and in the attention devoted to them in budgetary discussions.
- At this juncture, efficient public investment management practices deserve particular attention. Our analysis highlights the importance of effective strategic planning, coordinated across government levels and that includes measurable and fiscally realistic objectives. The analysis builds on earlier analytical work by the Commission which identified key stages of the investment cycle and collected survey evidence on national practices.
- Efficient management of fiscal risks at the national level is also crucial, as these risks can cause differences between budget plans and fiscal outcomes. Overall, IFIs are involved in analysing and managing such risks, mostly focussing on risks related to ageing and climate change. At the same time, such risks are not always quantified. The Commission has developed tools to help Member States analyse certain fiscal risks (i.e. in its Ageing Report, Fiscal Sustainability Report, Debt Sustainability Report and Joint Research Center's risk indicators). The Commission also provides analysis on Disaster Risk Financing, which is aimed at mitigating and managing the fiscal impacts of natural disasters.

1. IMPLEMENTATION OF FISCAL SURVEILLANCE IN 2023

This chapter summarises the main developments in the implementation of fiscal surveillance in the EU in 2023. First, the chapter presents key developments and procedural steps taken under the excessive deficit procedure (Section 1.1.). It then summarises the 2023 country-specific recommendations on fiscal policy (Section 1.2.). Finally, it presents the Commission's assessment of the euro area Member States' Draft Budgetary Plans for 2024 (Section 1.3.).

The general escape clause of the Stability and Growth Pact has been deactivated at the end of 2023. It was activated for the first time in March 2020, due to the economic and social impact of the COVID-19 pandemic. On 23 May 2022, the Commission indicated ([43]) that heightened uncertainty and strong downside risks to the economic outlook in the context of Russia's war of aggression against Ukraine, energy price hikes and continued supply chain disturbances warranted the extension of the general escape clause through 2023. However, it also stated that the conditions to deactivate the general escape clause would be considered met as of end-2023. In 2023, the European economy recovered beyond its pre-pandemic level and weathered the acute phase of the energy price shock, although uncertainty remained high ([44]).

Following the legislative proposals for a reformed economic governance presented by the Commission in April 2023 ([45]), the co-legislators reached a provisional agreement in February 2024 and the new legislation entered into force on 30 April 2024 ([46]). The new framework aims to strengthen public debt sustainability and promote sustainable, inclusive and resilient growth in Member States through reforms and investment, by improving national ownership, and moving towards a greater medium-term focus, combined with more effective and coherent enforcement. The medium-term plans to be designed and presented by Member States constitute the cornerstone of the new governance ([47]). The reformed fiscal surveillance process will remain integrated in the European Semester for economic policy coordination, which will thus continue to be the central framework ensuring the complementarity between the medium-term plans and the investments and reforms included in RRPs and Cohesion Policy programmes.

1.1. EXCESSIVE DEFICIT PROCEDURE

To establish the existence of an excessive deficit, fiscal developments are monitored with a view to identifying gross policy errors. This section focuses on the implementation of the excessive deficit procedure in 2023 as assessed in May 2023.

In March 2023, the Commission did not propose to open new excessive deficit procedures. Taking into account the persistently high uncertainty for the macroeconomic and budgetary outlook, the Commission considered appropriate not to launch any excessive deficit procedure. At the same time, the Commission announced that it would propose to the Council to open deficit-based excessive

([43]) 2022 European Semester - Spring Package, COM(2022) 600 final, 23.5.2022.

([44]) COM(2023) 141 final.

([45]) On 26 April 2023, the Commission presented three legislative proposals to implement a comprehensive reform of the EU fiscal framework (COM(2023) 240 - 242 final).

([46]) A provisional political agreement on the preventive arm proposal between the co-legislators was reached at the trilogue meeting of 9-10 February. The European Parliament approved the new Regulation in first reading in April, before the parliamentary recess. The Council then also adopted the final act and the co-legislators signed it on 29 April for entry into force on 30 April (http://data.europa.eu/eli/reg/2024/1263/oj). The Council also adopted the Regulation amending the corrective arm (http://data.europa.eu/eli/reg/2024/1264/oj) and the Directive amending the Directive on national budgetary frameworks (http://data.europa.eu/eli/dir/2024/1265/oj) on 29 April for entry into force on 30 April.

([47]) For further details see the next chapter.

deficit procedures in Spring 2024 ([48]) on the basis of the outturn data for 2023, in line with existing legal provisions ([49]). The same position was reaffirmed in autumn 2023 ([50]).

Euro area Member States

On 24 May 2023, the Commission adopted a report in accordance with Article 126(3) TFEU on twelve euro area Member States. The report covered Belgium, Germany, Estonia, Spain, France, Italy, Latvia, Malta, Austria, Slovenia, Slovakia and Finland ([51]). According to data validated by Eurostat on 21 April 2023 ([52]), the 2022 general government deficit exceeded the 3% of GDP in Belgium, Spain, France, Italy, Latvia, Malta, and Austria. In addition, according to their 2023 Stability Programmes, the government deficits in Germany, Estonia, Slovenia and Slovakia were planned to exceed 3% of GDP in 2023 ([53]). Concerning government debt, in Belgium, Germany, Spain, France, Italy, Austria, Slovenia and Finland the general government gross debt at the end of 2022 exceeded 60% of GDP ([54]).

The Commission report assessed compliance with the deficit and debt criteria, also taking into account relevant factors. The report examined whether the government deficits in excess of the reference value were exceptional and temporary, and if the ratio remained close to the reference value. The report considered a series of cross-country relevant factors, namely the macroeconomic impact of the increase in energy prices and of the Russia's war of aggression against Ukraine, including the impact the latter had in driving up the prices of other raw materials and food, and in increasing supply disruptions. High inflation was taken into account as a further relevant factor. Moreover, it has been acknowledged that the European economy was still recovering from the economic and budgetary impact of the COVID-19 pandemic, which determined a substantial increase in public debt ratios. Country-specific relevant factors were also considered as appropriate. These factors included the medium-term macroeconomic outlook, the medium-term budgetary position (including public investment), the medium-term debt position, whether Member States were experiencing macroeconomic imbalances or excessive macroeconomic imbalances, and other relevant factors put forward by the concerned Member States.

The report concluded that the deficit criterion was not fulfilled by ten euro area Member States: Belgium, Germany, Estonia, Spain, France, Italy, Latvia, Malta, Slovenia and **Slovakia** ([55]). For these Member States, while the excess over the Treaty reference value was considered exceptional, the deficit in 2022 was (or was planned to be in 2023 in the case of Germany, Estonia, Slovenia and Slovakia) not close to 3% of GDP. Moreover, for Belgium, Spain, France, Italy, Malta and Slovakia, the excess over the reference value was also not expected to be temporary. In Austria, although the deficit ratio in 2022 and the planned deficit ratio in 2023 exceeded the reference

([48]) Delivering on the commitment of last year, in the context of the 2024 Spring package, the Commission adopted a Report in accordance with Article 126(3) TFEU. In light of the assessment carried out in the Report and after considering the opinion of the Economic and Financial Committee as established under Article 126(4), on 8 July 2024 the Commission issued opinions under Article 126(5) and proposed to the Council decisions establishing the existence of an excessive deficit under Article 126(6) for Belgium, France, Italy, Hungary, Malta, Poland and Slovakia.

([49]) COM(2023) 141 final.

([50]) COM(2023) 900 final.

([51]) COM(2023) 631 final.

([52]) Eurostat Euro indicators 47/2023, 21.4.2023.

([53]) Commission's 2023 Spring forecast (European Economic Forecast – Spring 2023, *European Economy – Institutional Paper*, 200, May) confirmed these figures for Slovenia and Slovakia. Differently, the Commission's forecast indicated for Germany a deficit ratio below 3% of GDP in 2023, while for Estonia a deficit above but close to the reference value.

([54]) In Greece, Croatia, Cyprus and Portugal, the general government gross debt also exceeded 60% of GDP at the end of 2022, but these Member States were not considered in the report, given that they respected the deficit criterion and the debt reduction benchmark.

([55]) Of the Member States exceeding the deficit reference value in 2022, or planning to exceed that value in 2023, the debt ratio did not exceed the 60% of GDP reference value in Estonia, Latvia, Malta and Slovakia. Therefore, relevant factors were taken into account for these Member States. In the remaining euro area Member States exceeding, or planning to exceed, the 3% of GDP deficit reference value (Belgium, Germany, Spain, France, Italy, Austria and Slovenia) the double condition necessary for relevant factors to be taken into account (closeness and temporariness) was met only in Austria, so relevant factors were taken into account for Austria as well.

value, the deficit criterion was fulfilled as the excess turned out to be exceptional and temporary, and remained close to the reference value.

The report concluded that the debt criterion was not fulfilled by France, Italy and Finland. Among the countries covered by the report, general government gross debt exceeded 60% of GDP at the end of 2022 in eight euro area Member States: Belgium, Germany, Spain, France, Italy, Austria, Slovenia and Finland. Among these Member States, the debt reduction benchmark was respected in Belgium, Germany, Spain, Austria and Slovenia, while it was not respected by France, Italy and Finland. However, taken into account all relevant factors, the Commission considered that compliance with the debt reduction benchmark would have implied a too demanding frontloaded fiscal effort risking to jeopardise economic growth. Therefore, in the view of the Commission, compliance with the debt reduction benchmark was not warranted under the prevailing economic conditions.

Non-euro area Member States

The report also covered Bulgaria, Czechia, Hungary and Poland. According to Eurostat data, the 2022 general government deficits exceeded the 3% of GDP Treaty reference value in Czechia, Hungary and Poland. Moreover, based on its Convergence Programme, the government deficit in Bulgaria was planned to exceed 3% of GDP in 2023. This expected excess was confirmed by the Commission's 2023 Spring forecast. The debt ratio was below 60% of GDP in the case of Bulgaria, Czechia and Poland whereas it exceeded the reference value for Hungary.

The report concluded that the deficit criterion was not fulfilled by all four non-euro area Member States ([56]). The excesses over the Treaty reference value were considered to be exceptional as defined by the Treaty. However, they were not close to 3% of GDP. Moreover, for Bulgaria, Hungary and Poland, the excess over the reference value was not expected to be temporary.

Conversely, the report concluded that the debt criterion was fulfilled by all four Member States. The debt ratio did not exceed the 60% of GDP reference value in the case of Bulgaria, Czechia and Poland. In Hungary, the general government gross debt at the end of 2022 exceeded the 60% of GDP reference value. However, data for 2022 implied that Hungary did respect the debt reduction benchmark that year.

Romania is the only Member State under an excessive deficit procedure, as a result of pre-pandemic fiscal developments. On 3 April 2020, the Council decided that an excessive deficit existed in Romania in 2019. In its revised recommendation of 17 June 2022, the Council asked Romania to put an end to the excessive deficit situation by 2024 at the latest. Romania's general government deficit in 2022 was in line with the Council recommendation. At the same time, the adjustment in the structural balance was below the level recommended by the Council, while the nominal growth rate of net primary government expenditure was above the one recommended. The procedure was kept in abeyance ([57]).

1.2. FISCAL RECOMMENDATIONS FOR 2024

On 8 March 2023 ([58])**, the Commission published a communication providing Member States with guidance on the conduct and coordination of their fiscal policies in 2024.** In light of the challenges facing public finances and the economy and the discussions on the future economic governance framework, the guidance called for fiscal policies in 2023-2024 to ensure medium-term debt sustainability and raise potential growth in a sustainable manner.

([56]) Since the debt ratio did not exceed the 60% of GDP reference value for Bulgaria, Czechia, and Poland, relevant factors could be taken into account for these Member States. In Hungary, the double condition necessary for relevant factors to be taken into account (closeness and temporariness) was not met, so relevant factors coudn't be taken into account.

([57]) COM(2023) 600 final.

([58]) COM(2023) 141 final.

Public finances were set to continue improving in 2024 according to the Commission 2023 Spring forecast. The European economy entered 2023 on a healthier footing than projected in autumn 2022. According to the 2023 Spring forecast ([59]), the economic recovery supported the reduction in the EU government deficit in 2022 (to 3.4% of GDP from 4.8% in 2021). The gradual phasing out of discretionary policy measures was expected to drive further deficit reductions in 2023 and 2024 (with deficit projected at 3.1% and 2.4% of GDP, respectively). After significant expansion in 2022, the EU fiscal stance ([60]) was projected to turn slightly contractionary in 2023. In 2024, based on unchanged policies, the EU fiscal stance was projected to be contractionary, mainly as a consequence of the lower net current spending related to the phasing out of energy support measures.

The fiscal recommendations for 2024 were quantitative, country-specific and focused on a maximum growth rate for net expenditure. On 24 May 2023, the Commission recommended to the Council to issue country-specific recommendations for 2024, including in the area of fiscal policy ([61]). The recommendations were adopted by the Council on 14 July 2023 ([62]). In view of the envisaged deactivation of the general escape clause at the end of 2023, a resumption of differentiated fiscal recommendations formulated in quantitative terms as well as qualitative guidance on investment and energy measures were considered appropriate to provide the necessary clarity for Member States. Specifically, Member States who were not projected to be at their medium-term budgetary objective (MTO) in 2023 were recommended to limit the growth of net nationally financed primary expenditure ([63]) to a differentiated amount that would ensure prudent fiscal policy. Countries that were projected to be at the MTO in 2023 were recommended to maintain a sound fiscal position in 2024, without such a quantitative limit. Member States were recommended to wind down the energy support measures as soon as possible in 2023 and 2024 and to use the related savings to reduce the government deficit. Finally, all Member States were also recommended to preserve nationally financed investment and ensure the effective absorption of the Recovery and Resilience Facility (RRF) and other EU funds, in particular in light of the green and digital transition and resilience objectives.

The Council also recommended policy action on structural fiscal issues. These recommendations concerned several Member States and covered issues such as the sustainability of pension systems (Czechia, Germany, Ireland, Luxembourg, Poland), the sustainability of long-term care (Belgium, Austria, Slovenia), the sustainability of healthcare (Austria, Slovenia), taxation (Belgium, Denmark, Germany, Greece, Italy, Latvia, Luxembourg, the Netherlands, Austria, Portugal, Slovenia, Slovakia, Sweden), public administration and expenditure efficiency (Greece, Hungary, Poland) and the investment framework (France). Furthermore, recommendations to improve the adequacy of their social protection systems were issued to Latvia and Lithuania and to Finland on efficiency aspects.

1.3. ASSESSMENT OF DRAFT BUDGETARY PLANS

In autumn 2023, the Commission assessed the 2024 Draft Budgetary Plans, submitted by the euro area Member States against the recommendations adopted by the Council on 14 July 2023 (Table II.1.1**).** For Spain, Luxembourg and Slovakia, Draft Budgetary Plans (DBPs) were submitted in autumn to the Commission by caretaker governments and no draft budgets were sent to the national parliaments. Therefore, those DBPs might have simply reflected fiscal forecasts at unchanged policies without necessarily establishing political commitments or policy objectives ([64]). On

([59]) European Economic Forecast – Spring 2023, *European Economy – Institutional Paper*, 200 (May).

([60]) Following the Council recommendations on the 2021 Stability and Convergence Programmes, the net expenditure aggregate used to assess the fiscal stance was adjusted to include expenditure financed by RRF grants and other EU funds and to exclude the temporary emergency measures related to COVID-19.

([61]) https://commission.europa.eu/publications/2023-european-semester-country-specific-recommendations-commission-recommendations_en

([62]) Council Recommendations of 14 July 2023 (2023/C 312/01 to 312/27), OJ C 312, 1.9.2023, p.1.

([63]) Net nationally financed primary expenditure is defined as nationally financed expenditure net of discretionary revenues measures and excluding interest expenditure as well as cyclical unemployment expenditure (COM(2022) 583 final).

([64]) As for these Draft Budgetary Plans, the budgetary figures presented did not represent policy targets (draft budget laws were not presented to national parliaments).

12 December 2023, Slovakia submitted an updated DBP for 2024 and the related Commission opinion was adopted on 16 January 2024. Luxembourg submitted the updated DBP on 6 March 2024 and the Commission opinion was adopted on 18 April 2024. Differently, Spain has not submitted an updated DBP for 2024.

The Draft Budgetary Plans targeted a further decline in the euro area deficit in 2024. As reported in the Communication on the overall assessment of the 2024 Draft Budgetary Plans ([65]), the aggregate deficit ratio of the euro area was expected to further decline in 2023 to just above 3% of GDP, after having fallen to almost half of its 2020 peak at the end of 2022. In 2024, a slight further decline was planned according to the Draft Budgetary Plans and projected in the Commission autumn 2023 forecast to just below 3% of GDP (and was expected to be even lower in the April 2023 Stability Programmes). This was largely due to the almost complete phase out of the remaining energy support measures foreseen in 2024 and lower subsidies for private investment, outweighing rising interest expenditure. However, the 2024 deficit was projected to remain well above the 2019 pre-pandemic level (0.6% of GDP) due to additional non-temporary current expenditure and tax cuts adopted after the pandemic. The aggregate debt-to-GDP ratio was set to decline only marginally in 2024 due to less favourable differentials between nominal GDP growth and the cost of servicing public debt. Both the Draft Budgetary Plans and the Commission autumn 2023 forecast projected the debt ratio to slightly fall compared to 2023, to around 90% at the end of 2024.

In its assessment of the Draft Budgetary Plans, the Commission followed a two-step approach. In the first step, for Member States not projected to be at the MTO, the Commission assessed whether net expenditure growth in 2024 was projected to respect the recommended maximum growth rate set by the Council recommendation. In the second step, other elements of the Council recommendation were assessed, notably those concerning the phasing out of the energy support measures, the use of the related savings to reduce the deficit, as well as the preservation of nationally financed investment.

The Commission Opinions on the 2024 Draft Budgetary Plans can be summarised as follows ([66]):

- Estonia, Ireland, Cyprus, Lithuania and Portugal were projected to be at or close to their MTO in 2024. Net expenditure was projected in line with the recommended maximum for Germany, Greece, Spain, Malta, Austria and Slovenia. Net expenditure was projected to be not fully in line with the recommended maximum for Italy, Latvia and the Netherlands. In Belgium, Croatia, Luxembourg, Slovakia, Finland and, to a lesser extent, France, net expenditure was projected at risk of being not in line with the recommended maximum.
- Most Member States were projected to phase out the remaining energy measures in 2023 and 2024. This was not the case for Germany, France, Croatia, Luxembourg, Malta, Portugal and Slovakia, which were projected to have significant measures still in force in 2024. Concerning the use of savings from the phasing out of the energy measures to reduce government deficit, Belgium, Germany, Croatia, Latvia, Luxembourg, the Netherlands, Austria, Slovakia and Finland risked being not in line with the recommendation. Italy was assessed as not fully in line with this part of the recommendation.
- All Member States were considered in line with the recommendation to preserve their nationally financed investment in 2024.

Overall, seven Member States (Estonia, Ireland, Greece, Spain, Cyprus, Lithuania and Slovenia) were considered to be in line with the fiscal recommendations, seven (Germany, Italy, Latvia, Malta, the Netherlands, Portugal and Austria) were not fully in line and six (Belgium, France, Croatia, Luxembourg, Slovakia and Finland) risked being not in line.

([65]) COM(2023) 900 final.

([66]) The Commission Opinions for Luxembourg and Slovakia presented in this session refer to the updated Draft Budgetary Plans.

The Commission invited six euro area Member States to take the necessary measures to ensure that fiscal policy in 2024 will be in line with the Council recommendation of 14 July 2023. This concerned Belgium, France, Croatia, Luxembourg, Slovakia and Finland. In addition, the Commission invited Germany, Malta and Portugal to phase out energy measures. Finally, it invited Italy, Latvia and the Netherlands to stand ready to take the necessary measures within the national budgetary process to ensure that fiscal policy in 2024 will be in line with the Council recommendation.

Table II.1.1: **Summary of assessment of the 2024 Draft Budgetary Plans' consistency with the Council Recommendations**

Member State	Limiting expenditure growth or being at the MTO	Energy measures		Nationally financed investment	OVERALL ASSESSMENT	Invitation to Member States
		Phase-out	Use of savings			
Belgium	Risks being not in line	In line	Risks being not in line	In line	Risks being not in line	Take necessary measures
Germany	In line	Risks being not in line	Risks being not in line	In line	Not fully in line	Phase out energy measures
Estonia	In line	In line	N.A.	In line	In line	None
Ireland	In line	In line	N.A.	In line	In line	None
Greece	In line	In line	In line	In line	In line	None
Spain	In line	In line	In line	In line	In line	None
France	Risks being not in line	Risks being not in line	In line	In line	Risks being not in line	Take necessary measures
Croatia	Risks being not in line	Risks being not in line	Risks being not in line	In line	Risks being not in line	Take necessary measures
Italy	Not fully in line	In line	Not fully in line	In line	Not fully in line	Stand ready to take necessary measures
Cyprus	In line	In line	N.A.	In line	In line	None
Latvia	Not fully in line	In line	Risks being not in line	In line	Not fully in line	Stand ready to take necessary measures
Lithuania	In line	In line	N.A.	In line	In line	None
Luxembourg*	Risks being not in line	Risks being not in line	Risks being not in line	In line	Risks being not in line	Take necessary measures
Malta	In line	Risks being not in line	N.A.	In line	Not fully in line	Phase out energy measures
Netherlands	Not fully in line	In line	Risks being not in line	In line	Not fully in line	Stand ready to take necessary measures
Austria	In line	In line	Risks being not in line	In line	Not fully in line	None
Portugal	In line	Risks being not in line	N.A.	In line	Not fully in line	Phase out energy measures
Slovenia	In line	In line	In line	In line	In line	None
Slovakia*	Risks being not in line	Risks being not in line	Risks being not in line	In line	Risks being not in line	Take necessary measures
Finland	Risks being not in line	In line	Risks being not in line	In line	Risks being not in line	Take necessary measures

(*) Based on updated Draft Budgetary Plan.

Source: Commission services

2. REFORM OF THE STABILITY AND GROWTH PACT – KEY ASPECTS OF THE NEW ECONOMIC GOVERNANCE FRAMEWORK

This chapter recalls the steps of the reform of the Stability and Growth Pact and the key aspects of the new economic governance frameworks to which it led to.

2.1. THE ECONOMIC GOVERNANCE REVIEW

The Commission launched a review of the EU economic governance framework in February 2020. The Commission presented a Communication on 5 February 2020 ([67]) taking stock of the functioning of the governance framework in the period following the Global Financial Crisis. The Communication examined how the framework interacted with changes in the economic context and the emergence of new challenges. It highlighted a number of strengths and weaknesses facing the economic governance framework and opened a public debate on the basis of its findings. This debate was put on hold shortly afterwards due to the need to focus on the immediate challenges posed by the outbreak of COVID-19. On 19 October 2021, the Commission relaunched the public debate, inviting other EU institutions and key stakeholders to engage and actively participate in the consultations ([68]). On 28 March 2022, the Commission published a summary report on the replies to an online survey ([69]). On 9 November 2022, the Commission presented orientations for a reform of the EU economic governance framework ([70]).

In April 2023, the Commission tabled legislative proposals to build an economic governance framework fit for the challenges ahead ([71]). These proposals sought to put in place an economic governance framework that is simpler, more transparent and effective, with greater national ownership and better enforcement. The Commission's proposals concerned Council Regulation (EC) 1466/97 (the "preventive arm"), Council Regulation (EC) 1467/97 (the "corrective arm"), and Directive 2011/85/EU on requirements for budgetary frameworks of the Member States. It was decided that the operation of the macroeconomic imbalances procedure (MIP) (Council Regulation (EC) 1176/2011 and Council Regulation (EC) 1174/2011) and post-programme surveillance (PPS) (Council Regulation (EC) 472/2013) could be left unchanged, while adjustments in their implementation could be made within the existing legal framework. The Council and the European Parliament reached a provisional political agreement on the new framework on 10 February 2024 and the new legislation entered into force on 30 April 2024.

2.2. THE REFORMED ECONOMIC GOVERNANCE FRAMEWORK

The main objectives of the reformed framework are to strengthen Member States' debt sustainability, and promote sustainable and inclusive growth and resilience in all Member

([67]) Communication from the Commission to the European Parliament, the Council, the European Central Bank, the European Economic and Social Committee and the Committee of the Regions - Economic Governance Review, COM(2020) 55 final.

([68]) Communication from the Commission to the European Parliament, the Council, the European Central Bank, the European Economic and Social Committee and the Committee of the Regions - The EU economy after COVID-19: implications for economic governance, COM(2021) 662 final.

([69]) Commission Staff Working Document - Online public consultation on the review of the EU economic governance framework: Summary of responses, Final Report, SWD(2022) 104 final.

([70]) Communication from the Commission to the European Parliament, the Council, the European Central Bank, the European Economic and Social Committee and the Committee of the Regions - Communication on orientations for a reform of the EU economic governance framework, COM(2022) 583 final.

([71]) The Commission proposals included the following legislative acts: a proposal to replace Regulation (EC) No 1466/97 on the strengthening of the surveillance of budgetary positions and the surveillance and coordination of economic policies; a proposal to amend Council Regulation (EC) No 1467/97 on speeding up and clarifying the implementation of the excessive deficit procedure; and a proposal to amend Council Directive 2011/85/EU on requirements for budgetary frameworks of the Member States. The reform proposals did not include legal changes for the operation of the Macroeconomic Imbalances Procedure or of the framework for post-programme surveillance.

States through growth-enhancing reforms and priority investments. The reformed framework will help make the EU more competitive and better prepared for future challenges by supporting progress towards a green, digital, inclusive and resilient economy. The reform also promotes national ownership within a robust common framework.

The main features of the reformed framework are as follow:

- **National medium-term fiscal-structural plans proposed by Member States, embedded in a common EU framework.** The national medium-term fiscal-structural plans (the plans) will be at the heart of the reformed framework, thus strengthening national ownership. They will bring together the fiscal, reform and investment policies of each Member State, within a common EU framework. These reforms and investments should support a sustainable debt reduction, help build the green, digital and resilient economy of the future and make the EU more competitive. The plans will cover a period of four to five years, depending on the national electoral cycle.
- **A country-specific net expenditure path as the main operational fiscal indicator.** While Member States can use other indicators in their national budgetary frameworks, EU fiscal surveillance will now focus on a single operational indicator, namely Member States' multi-year net expenditure paths, as endorsed by the Council. This simplifies the framework by focusing it on one fiscal requirement. It also enhances the counter-cyclical properties of national fiscal policies as the indicator contains mainly a-cyclical elements, allowing automatic stabilisers to operate in full. The net expenditure paths will be calibrated to ensure that public debt converges to prudent levels in the medium term and that the deficit is brought and maintained below the 3% of GDP Treaty reference value. These paths will serve as a basis for carrying out annual fiscal surveillance over the period covered by the plans.
- **A differentiated, country-specific pace of fiscal adjustment, adapted to the level of debt sustainability risks with common numerical safeguards.** The new risk-based surveillance framework puts debt sustainability at its core. It differentiates between countries by taking into account their debt sustainability challenges, notably due to a high debt level, a large deficit and/or fiscal headwinds due to population ageing or other macro-financial features. Common numerical safeguards, in the form of a debt sustainability safeguard and a deficit resilience safeguard, will apply to ensure *ex ante* a minimum level of fiscal adjustment and debt reduction in all Member States above the Treaty's deficit and debt reference values of 3% and 60% of GDP. These safeguards will apply in the design of the reference trajectories and planned net expenditure paths. Once the net expenditure path is endorsed by the Council, it will be the basis of EU fiscal surveillance.
- **Extension of the adjustment period, underpinned by a relevant set of reforms and investments.** Member States will be able to benefit from a more gradual fiscal adjustment path by putting forward a specific set of reform and investment commitments that comply with certain criteria, such as the need for the commitments to be growth-enhancing and improve fiscal sustainability, and be consistent with EU priorities. The adjustment period could thus be extended from four to up to seven years. This is the main channel through which additional incentives for reforms and investment are introduced into the framework. Other incentives consist of excluding national co-financing of EU programmes from the net expenditure indicator and taking Member States' commitments under the RRF into account for extensions under the first vintage of the plans (see also Box III.2.2 on this in Part III).
- **General and country-specific escape clauses for extraordinary situations.** The reformed framework maintains the general escape clause, which can be activated in case of a severe economic downturn in the EU and/or the euro area. A national escape clause will also apply for exceptional circumstances outside the control of the Member State with a major impact on public finances. These clauses authorise the Council to allow Member States a deviation from the endorsed net expenditure paths, provided that this does not endanger fiscal sustainability in the medium term.

- **Enhanced enforcement.** The new framework strengthens the enforcement regime to ensure Member States deliver on their commitments. Member States need to present annual progress reports to facilitate more effective monitoring and enforcement of the implementation of the commitments set out in their plans. The Commission will set up a control account to record deviations from the endorsed net expenditure path. When the balance of the control account exceeds certain numerical thresholds and the Member State's debt is above 60% of GDP, the Commission has to prepare a report to assess whether a debt-based excessive deficit procedure (EDP) should be opened, unless the budgetary position is close to balance or in surplus. A failure to deliver on reform and investment commitments may result in the adjustment period being shortened, unless there are objective circumstances preventing the implementation by the initial deadline. Moreover, simpler, more transparent and more predictable fiscal rules will generate reputational costs for the Member States that deviate from them.
- **The reformed governance framework strikes a balance between a number of elements**. On the governance side, increased country differentiation and flexibility for Member States are achieved while preserving a common framework with simple rules that are better enforced. A risk-based approach is used to derive a prudent debt trajectory on which the net expenditure path is anchored, while simplicity is achieved by anchoring the net expenditure path to debt developments once every four years and by moving to net expenditure as the sole operational indicator on which surveillance will be based. In addition, more leeway is given *ex ante* to Member States to design their plans and propose a fiscal adjustment path, but with more stringent enforcement *ex post* due to a reinforced debt-based EDP with clear activation and abrogation criteria. More broadly, simpler fiscal rules based on Member State's own commitments will also generate reputational costs if Member States deviate from them.

Positive outcomes require an equilibrium between realistic adjustment requirements that allow space for growth-friendly policies and ensuring debt sustainability through an effective adjustment process. It is important to combine growth-friendly policies with fiscal prudence. The previous framework of one-size-fits-all fiscal rules did not take into account the need for reforms and investment to increase long-term growth. In the reformed framework, low-debt Member States will be able to use available financial resources to implement reforms and investment, with a positive impact on growth. Moreover, all Member States, including those with high debt, will be able to benefit from a more gradual fiscal adjustment when committing to a set of reforms and investment that, among other criteria, have to be growth-enhancing. The requirements in the reformed framework will also better take into account national circumstances, being set by the Member States themselves, taking into account their growth agenda, debt situation and possibility of lower adjustment requirements through an extension of the adjustment period. Moreover, the requirement of putting debt on a plausibly downward path is easy to grasp, is grounded in the economic reality and allows keeping a medium-term memory of the adjustment process, unlike the old rules, which relied on annual adjustment requirements with less memory built into the system. The anchoring of the net expenditure path to deficit and debt developments is also closer to the reality of the budget process, compared to defining an adjustment requirement based on a structural balance, based on unobservable variables.

2.3. OPERATION OF THE REFORMED FRAMEWORK

2.3.1. Setting the fiscal adjustment requirement

As a first step, the Commission will provide Member States with technical guidance. The new framework introduces a risk-based approach which differentiates between Member States based on their individual fiscal situations (see Box II.2.1). For Member States with a government deficit above 3% of GDP and/or public debt above 60% of GDP, the Commission will issue a country-specific "reference trajectory". This trajectory will provide guidance to Member States to prepare their plans and will represent a net expenditure path that puts debt on a plausibly downward path or keeps it at prudent levels. For Member States that are not under an excessive deficit procedure, this trajectory will also ensure that the projected debt ratio decreases over the adjustment period by a minimum annual

average, depending on the level of the debt ratios (the minimum annual average adjustment is increased for Member States with a debt-to-GDP ratio above 90%). A deficit resilience safeguard will also create a safety margin below the 3% of GDP reference value. For Member States with a government deficit below 3% of GDP and public debt below 60% of GDP, the Commission will provide, upon request, "technical information", namely the level of the structural primary balance ensuring that the deficit remains below 3% of GDP and that debt remains below 60% of GDP over the medium term. This information will also be consistent with the deficit resilience safeguard.

On the basis of the technical guidance provided by the Commission and following a technical dialogue, Member States will come forward with their national medium-term fiscal-structural plans. Each Member State will submit a plan for assessment by the Commission and endorsement by the Council, outlining the medium-term fiscal path expressed as a net expenditure path, and reform and investment to respond to the main challenges identified in the context of the European Semester, including those needed to prevent or correct macroeconomic imbalances. Before the submission of the plans, a technical dialogue between Member States and the Commission will allow to clarify the different aspects of the draft plans, including possible reforms and investment that the governments intend to implement and that could underpin an extension of the fiscal adjustment period. The plans should ideally be drawn up following political and technical debates at national level and taking into account the advice of national independent fiscal institutions (see Box II.2.2). They should last four or five years, according to the electoral cycle of the country ([72]).

The Commission's assessment of the plans will be based on a common EU assessment framework and transparent methodologies. For Member States that received a reference trajectory (i.e., those with a government deficit above 3% of GDP and/or public debt above 60% of GDP), the net expenditure path of the plan should respect the same requirements as the reference trajectory, while any deviations from the latter should be based on sound and data-driven economic arguments. For other Member States, the net expenditure path should only keep debt below 60% of GDP and maintain the government deficit below 3% of GDP over the medium term. After the Commission has assessed the medium-term plan, the Council will either endorse the plan or recommend that the Member State submits a modified plan. Once the plan is endorsed, the Member State will implement the plan, with annual monitoring by the Commission and the Council under the European Semester. Member States' annual budgets will need to be compatible with the net expenditure path set in the plans, as endorsed by the Council.

When submitting their plans, Member States will have the possibility of requesting an extension of the fiscal adjustment period. The set of reform and investment commitments put forward by the Member State will be endorsed by the Council after an assessment by the Commission against the common criteria set out in the legislation. The reforms and investments need to be growth-enhancing, support debt sustainability, and respond to common EU priorities, targets and relevant country-specific recommendations addressed to the Member State in the context of the European Semester. The set of reform and investment commitments could include reforms and investments agreed in the context of NextGenerationEU's Recovery and Resilience Facility. Over the lifetime of the plans, non-compliance with the reform and investment commitments can lead to shortening of the adjustment period, unless there are objective circumstances preventing the implementation by the initial deadlines.

2.3.2. Monitoring implementation of Member States' plans

Each year by 30 April, Member States will need to report on the implementation of their plans. The annual progress reports prepared and submitted by Member States will include reporting on implementation of the net expenditure path, implementation of reforms and investments under the European Semester, and implementation of the set of reforms and investments underpinning an

([72]) New governments may ask to revise the existing plans before their expiration, especially if they have different policy priorities for reforms, investment or the budget composition. However, the new fiscal adjustment path should not lead to a lower or backloaded fiscal adjustment effort.

extension of the adjustment period. Member States can also request national independent fiscal institutions to assess compliance of outturns with the plan and to analyse factors underlying a possible deviation.

The Commission will set up a control account to keep track of deviations from the endorsed net expenditure path. The control account will record both positive and negative deviations from the endorsed net expenditure path, in annual and cumulative terms, based on outturn data. When the debt ratio is above 60% of GDP, the budgetary position is not close to balance or in surplus and the balance of the control account exceeds certain numerical thresholds (either 0.3 percentage points of GDP annually or 0.6 percentage points of GDP cumulatively), the Commission will prepare a report under Article 126(3) TFEU assessing the existence of an excessive deficit. This could lead to the opening of a debt-based EDP. There will be no recording of deviations from the endorsed net expenditure path when an escape clause is active. The balance of the control account will be reset after endorsement of a new plan, as the over or under-adjustment will be taken into account in the reference trajectory and net expenditure path being prepared for the next plan.

2.3.3. Enforcement

The EDP for government deficit breaches of the 3% of GDP reference value remains largely unchanged. The deficit-based EDP is a well-established element of EU fiscal surveillance that has been effective in influencing fiscal behaviour and is well understood by policy makers and the general public, thanks to its simplicity. As in the previous framework, a planned or observed breach of the Treaty threshold value will require the Commission to prepare an Article 126(3) TFEU report, which could lead to the opening of an EDP. For Member States with debt below 60% of GDP, or those with debt above 60% of GDP where the general government deficit remains close to the reference value and its excess over the reference value is temporary, the Commission has to make a balanced assessment of relevant factors when assessing the existence of an excessive deficit. An increase of government investment in defence is to be explicitly recognised as one such relevant factor; substantial public debt challenges are to be considered as a key aggravating factor. The minimum annual adjustment in a deficit-based EDP will be of 0.5% of GDP as a benchmark (in structural balance terms) ([73]).

The EDP for public debt breaches of the 60% of GDP reference value has been strengthened. It will focus on departures by Member States with public debt above 60% of GDP from the endorsed net expenditure path. For a Member State with debt above the 60% of GDP reference value, annual and cumulative deviations from the endorsed net expenditure path recorded in the control account that exceed certain thresholds will lead to the preparation of an Article 126(3) TFEU report by the Commission, unless the budgetary position is close to balance or in surplus. The report will include a balanced assessment of relevant factors, with substantial public debt challenges considered as a key aggravating factor. The corrective path in a debt-based EDP will be as demanding as the endorsed net expenditure path, with as a rule a correction of cumulated deviations (i.e., the balance of the control account).

2.4. IMPLEMENTATION OF THE FRAMEWORK IN 2024

The legislation specifies 20 September 2024 as the deadline for Member States to submit their first medium-term fiscal-structural plans. Member States could agree with the Commission to extend that deadline by a reasonable period of time. The Commission transmitted the reference trajectories and technical information (if requested) to Member States on 21 June 2024. These aimed to inform Member States' fiscal strategies that will be the basis of their plans. The Commission also provided guidance to Member States on the content of the plans and the annual progress reports that they will need to submit. The technical dialogues with Member States began after the Commission provided these inputs. The Commission will begin assessing the plans immediately after their

([73]) In line with the revised corrective arm regulation, for the period 2025-27, the Commission will take into account the increase in interest expenditure in the benchmark for the proposed corrective path.

submission and should publish its assessments within six weeks of receiving the plans. This deadline can be extended by a further two weeks provided the concerned Member State agrees. Such an extension may be needed for the first round of plans. Following endorsement by the Council, the first year of implementation for the medium-term fiscal-structural plans will be 2025.

Box II.2.1: The DSA-based methodology in the new EU fiscal framework

The reform of the EU fiscal rules gives a central role to the Commission's debt sustainability analysis (DSA) methodology to set the adjustment requirements under the preventive arm. Chapter II.1 of the 2023 Debt Sustainability Monitor (DSM) ([1]), to which the preventive arm Regulation ([2]) explicitly refers, describes the methodology used for the computations, ensuring transparency and replicability. This box summarises the main features of the DSA-based approach, while further details and illustrative examples can be found in the DSM chapter.

THE DSA-BASED METHODOLOGY USED TO ASSESS THE DEBT AND DEFICIT DYNAMICS OVER THE MEDIUM TERM IN THE EU FISCAL FRAMEWORK

The approach under the Commission's standard DSA consists in projecting debt over 10 years under a no-fiscal-policy-change baseline and applying deterministic and stochastic stress tests around it ([3]). The no-fiscal-policy-change assumption means that the structural primary balance (SPB) is kept unchanged at its forecast level – in the 2023 DSM, it is the SPB forecast for 2024 – plus changes in the cost of ageing, as projected in the 2024 Ageing Report ([4]). The deterministic stress tests include four scenarios ('historical SPB', 'lower SPB', 'adverse r-g' and 'financial stress') in which selected macro-financial and fiscal assumptions differ from the baseline, while the stochastic projections apply a broader range of 10,000 shocks around the baseline. The aim of the DSA is to assess risks to debt sustainability if no new fiscal policy measures are taken.

In the context of the new EU fiscal framework, the Commission uses a methodology that largely draws on the standard DSA approach, but with slight adjustments to fit the specific aim of budgetary planning. The objective in this context is to check whether a chosen fiscal adjustment path effectively leads to a declining or sufficiently low debt, even under adverse conditions. This assessment applies twice: once when the Commission calculates the reference trajectories to be provided to Member States for guidance ([5]), and once when it assesses the adjustment paths put forward by Member States in their own plans. This new approach calls for three methodological adaptations compared with the standard DSA. First, the time horizon is shifted, as the 10-year no-fiscal-policy-change assumption and the stress tests start only after the end of the adjustment period. Second, the 'lower SPB' scenario applies an exogenous shock on the SPB rather than one that depends on the planned adjustment. If the shock on the SPB depended on the planned adjustment, a larger adjustment would imply a larger shock and therefore require an even larger adjustment. To avoid this circularity effect, the shock is exogenously set to a fixed amount. Finally, the 'historical SPB' scenario of the standard DSA, which assesses the risks linked to reverting to past fiscal behaviour, is dropped as it is not relevant in a context of Member States setting (and committing to) adjustment paths.

THE ADJUSTMENT SCENARIO

The adjustment scenario starts with an adjustment period, followed by a 10-year no-fiscal-policy-change period. While there are similarities with the standard DSA baseline, by design, the assumptions during the adjustment period differ from it.

- For the first plans, the adjustment starts in 2025, taking the fiscal position in 2024 as the initial level. During the adjustment period, a linear fiscal adjustment is assumed to compute the DSA-based requirements, although this linear profile can be modified once the benchmark and safeguards are applied

([1]) European Commission (2024), 'Debt Sustainability Monitor 2023', *European Economy – Institutional Paper* 271, https://economy-finance.ec.europa.eu/publications/debt-sustainability-monitor-2023_en
([2]) Regulation (EU) 2024/1263 of the European Parliament and of the Council of 29 April 2024 on the effective coordination of economic policies and on multilateral budgetary surveillance and repealing Council Regulation (EC) No 1466/97.
([3]) The methodology and findings of the standard DSA are described in Chapter I.2 of the 2023 DSM.
([4]) European Commission and EPC (2024), '2024 Ageing Report. Economic and Budgetary Projections for the EU Member States (2022-2070)', *European Economy – Institutional Paper* 279, https://economy-finance.ec.europa.eu/publications/2024-ageing-report-economic-and-budgetary-projections-eu-member-states-2022-2070_en
([5]) Reference trajectories are provided to Member States expected to have a deficit exceeding 3% of GDP or debt exceeding 60% of GDP in 2024.

(Continued on the next page)

Box (continued)

(see below). When computing the reference trajectories, the Commission does not make any particular assumptions on whether the adjustment comes from changes in primary expenditure or discretionary revenue measures. Beyond the adjustment period, a no-fiscal-policy-change assumption applies, with primary expenditure being only modified by changes in the cost of ageing as projected in the 2024 Ageing Report, and with revenue remaining broadly stable as a share of GDP.

- GDP growth relies on the 'T+10 projections' based on the EU commonly agreed methodology within the Output Gap Working Group of the Economic Policy Committee, minus the feedback effect of fiscal adjustment on GDP growth via a standard fiscal multiplier of 0.75, and with the output gap closing over 3 years after the end of adjustment. Beyond the first 10 years, the macroeconomic projections of the 2024 Ageing Report are used ([6]).

The remaining assumptions are in line with the standard DSA:

- Market interest rates and inflation are assumed to converge over a 10-year horizon to country-specific values reflecting financial markets' expectations. Beyond this horizon, they further converge over a long horizon to common values in line with the latest Ageing Report for interest rates and with the monetary policy targets for inflation.

- Stock-flow adjustments are in line with the Commission forecast up to T+2 and set to zero afterwards, except for some specific cases reflecting the building-up of public pension funds and interest deferrals on official loans. This currently applies to Luxembourg, Finland and Greece.

DETERMINISTIC STRESS TESTS

To account for macroeconomic uncertainty and ensure that debt plausibly declines even under more adverse assumptions, three stress tests are applied around the adjustment scenario. All three stress tests apply as from the first year after the adjustment period and are largely similar to the standard DSA stress tests.

- 'Lower SPB' scenario: the SPB is assumed to be reduced by 0.5 pp. of GDP in total, with a reduction of 0.25 pp. each year over the first two years, and to remain at that level afterwards, plus changes in the cost of ageing. The 0.5 pp. shock corresponds to half of the historical standard deviation of the SPB over all EU countries;

- 'Adverse r-g' scenario: the interest/growth-rate differential is assumed to be permanently increased by 1 pp. over the projection horizon;

- 'Financial stress' scenario: market interest rates are assumed to temporarily increase for one year by 1 pp., plus a risk premium for high-debt countries.

STOCHASTIC ANALYSIS

In line with the standard DSA, stochastic simulations are applied around the adjustment scenario to account for wide-ranging uncertainty. The 10,000 shocks affecting governments' budgetary positions, economic growth, interest rates and exchange rates are generated based on the historical distribution of shocks of each country.

DSA-BASED CRITERIA

The reference trajectories and Member States' plans need to ensure that, without further adjustment, three criteria are met:

1. By the end of the adjustment period at the latest, and over the 10 following years, debt declines or stays below 60% of GDP both in the adjustment scenario and under all three deterministic stress tests;

([6]) The use of these projections is needed given the longer horizon of the projections compared with the standard DSA (up to 17 years in case of extension of the adjustment period).

(Continued on the next page)

Box (continued)

2. In the 5 years following the adjustment period, debt declines with a sufficiently high probability, i.e. at least 70%, in line with the threshold used in the Commission's standard DSA;

3. The deficit is brought and remains below 3% of GDP over the medium term.

In case a smaller adjustment than the one implied by the first two criteria is sufficient to ensure that debt is brought or remains below 60% of GDP under both the adjustment scenario and all deterministic stress tests while ensuring that the third criterion is met, then that smaller, 'eased-up' adjustment is chosen.

BENCHMARK AND SAFEGUARDS

In the new framework, three provisions need to be fulfilled in addition to the DSA-based criteria:

- The 'deficit benchmark' ensures consistency with the corrective path, where applicable. It implies a minimum annual adjustment of 0.5 pp. of GDP if a Member State is in EDP, which is operationalised by applying this minimum adjustment if the deficit exceeded 3% of GDP in the previous year. This adjustment is measured in terms of structural balance as from 2028 but, over the transition period of 2025-2027, it is applied in structural primary terms.

- The 'debt sustainability safeguard' requires debt to decline on average by at least 1 pp. of GDP per year as long as debt exceeds 90% of GDP, and by at least 0.5 pp. of GDP per year as long as debt stands between 60% and 90% of GDP. The average decrease is calculated from the year before the start of the adjustment period or from the year in which the excessive deficit procedure is projected to be abrogated, whichever occurs last, until the end of the adjustment period.

- The 'deficit resilience safeguard' requires an adjustment of at least 0.4 pp of GDP (0.25 pp. in case of extension) in structural primary terms until the structural balance is above or equal to -1.5% of GDP.

Unlike the debt sustainability safeguard, the deficit benchmark and the deficit resilience safeguard are applied year by year. They may therefore lead to nonlinear adjustment profiles. The principle of not backloading the effort is met by construction, except for the impact of the end of the transitory period for the deficit benchmark. Moreover, the benchmark and safeguards can only be added to the DSA-based requirements when they are binding and cannot reduce the DSA-based requirements.

EQUIVALENCE BETWEEN REQUIREMENTS IN TERMS OF NET EXPENDITURE GROWTH AND SPB

As the Commission's debt projection model is based on the SPB and some articles of the regulation refer to this metric, the reference trajectories are computed in terms of change in SPB and translated in terms of net primary expenditure growth. This is done by using the standard formula below, as already used in the EU fiscal rules:

Nominal net primary expenditure growth = (yearly) potential GDP growth + inflation (as measured by the GDP deflator) – required change in the SPB / primary expenditure-to-GDP ratio

TECHNICAL INFORMATION

Technical information regards those Member States for which both the deficit and debt already stand below the Treaty reference values. For these countries, the information provided by the Commission, if requested by the Member State, is the SPB level ensuring that, under the adjustment scenario:

1. The headline deficit is maintained below 3% of GDP during the adjustment period (if any) and over a subsequent 10-year no-fiscal-policy-change period;

2. Debt is maintained below 60% of GDP during the adjustment period (if any) and over a subsequent 10-year no-fiscal-policy-change period;

3. The deficit resilience safeguard is fulfilled.

(Continued on the next page)

Box (continued)

Depending on the projected dynamics, some countries would need to improve their SPB to maintain their debt and deficit below the Treaty reference values, while others could deconsolidate to some extent while maintaining their debt and deficit below the Treaty reference values over the medium term.

Box II.2.2: The enhanced role of independent fiscal institutions in the EU fiscal framework

In recognition of the potential role that independent fiscal institutions (IFIs) can play to foster sustainable fiscal policies in the Member States, the new EU fiscal framework reinforces the existing provisions regarding these institutions, both with regard to their tasks and to the safeguards concerning their resources and independence. A new chapter in the Council Directive on national budgetary frameworks (Chapter V) is dedicated to IFIs. Both the preventive and corrective arms of the Stability and Growth Pact also now include IFI-related provisions.

The amended national budgetary framework Directive ([1]) extends the provisions regarding IFIs of the so called Two-pack Regulation from 2013 ([2]) from euro area Member States to all EU Member States. This concerns assessing, endorsing or producing the (annual and multiannual) macroeconomic forecasts underlying the national budgetary plans ([3]) as well as monitoring the compliance with national fiscal rules. It also confers new tasks to IFIs, such as assessing the consistency, coherence and effectiveness of the national budgetary framework. The importance of IFIs' dialogue with parliaments is underlined by the request that they participate, upon invitation, in regular hearings and discussions at the national parliament. Moreover, the status of IFI opinions and recommendations stemming from its official tasks is strengthened by obliging Member States to either comply with these assessments or explain why they depart from them (the "comply or explain" principle). The Directive also includes several provisions aiming at protecting IFIs' independence, which are largely based on the Fiscal Compact's common principles proposed by the Commission ([4]). These concern the Curriculum Vitae requirements of IFI Members, the procedures by which they are recruited and the statement that IFIs should not take instructions from any other body. IFIs should also have the capacity to communicate publicly and in a timely manner, have adequate and stable resources, have adequate and timely access to the necessary information, and be subject to regular external evaluations by independent evaluators. Member States will have until end 2025 to make sure the Directive is fully transposed into national legislation. The Commission is requested to report by end 2025 and every five years thereafter on the state of play regarding capacities and tasks of IFIs.

The preventive arm Regulation ([5]) envisages two main roles for IFIs. First, Member States may ask their IFI to deliver an opinion on the macroeconomic forecast and the macroeconomic assumptions underpinning the multiannual net expenditure path included in the national medium-term fiscal-structural plan. Eight years after the entry into force of the Regulation, issuing such an opinion will be compulsory for the IFI, provided it has built up sufficient capacity. Second, IFIs may be requested by Member States to assess whether the budgetary outcome data reported in the annual progress reports are in line with the net expenditure path endorsed by the Council. Member States may, where applicable, also request their IFI to analyse the factors underlying a deviation from the agreed net expenditure path. These analyses should be non-binding and additional to those provided by the Commission.

When effective action is assessed, according to the corrective arm Regulation ([6]), a Member State may invite the IFI to produce a non-binding report on the sufficiency of the measures taken and envisaged with respect to the targets.

([1]) Council Directive (EU) 2024/1265 of 29 April 2024 amending Directive 2011/85/EU on requirements for budgetary frameworks of the Member States, published in OJ L, 2024/1265, 30.4.2024.
([2]) Regulation (EU) No 473/2013 of the European Parliament and of the Council of 21 May 2013 on common provisions for monitoring and assessing draft budgetary plans and ensuring the correction of excessive deficit of the Member States in the euro area.
([3]) These refer to the budgetary plans drawn up in accordance with their national medium-term budgetary framework and can be different from the national medium-term fiscal-structural plans of the preventive arm.
([4]) Communication COM(2012) 342 final of 20 June 2012 from the Commission 'Common principles on national fiscal correction mechanisms'.
([5]) Council Regulation (EC) 1466/97.
([6]) Council Regulation (EC) 1467/97.

3. NATIONAL BUDGETARY FRAMEWORKS

This chapter presents recent and topical developments in national budgetary frameworks. Section 3.1 reviews developments that took place in 2022 and were reported by EU Member States in the Commission's Fiscal Governance Database. Section 3.2 is dedicated to the review of use of efficient public investment management in the EU, a key topic in a context of important investment needs and recent crises legacy of constrained public finances (see also Part III, on this topic). Section 3.3 gives insights on the IFIs activities related to fiscal risks, including climate-related ones. Finally, a set of boxes provide dedicated focus on a toolkit to manage fiscal risks from climate change in a structured way, on green budgeting, notably summarising the outcome of the last green budgeting survey, and on insights gathered on proper design of spending reviews.

3.1. ANNUAL UPDATE OF THE FISCAL GOVERNANCE DATABASE

The European Commission's Fiscal Governance Database (FGD) aims to provide an up-to-date and comprehensive overview of the national budgetary frameworks of the EU Member States. Particularly important elements are national fiscal rules (NFRs), medium-term budgetary frameworks (MTBFs), and independent fiscal institutions (IFIs). Through the FGD, the European Commission collects information on these elements every year ([147]), following the mandate given by the ECOFIN Council ([148]). The Commission uses this information to provide data to substantiate EU policy proposals, develop policy studies ([149]) and help with the assessments of implementation of EU-legislation ([150]).

This section describes recent changes to national budgetary frameworks, as reported by Member States and IFIs in the annual update of the Fiscal Governance Database in 2023. These changes are based on the traditional numerical indicators, which capture the strength of the fiscal framework design. These indicators include design features for numerical fiscal rules, medium-term budgetary frameworks and the tasks of IFIs. The information was updated by all 27 EU Member States and all 32 EU IFIs and refers to the situation by the end of 2022.

The average design strength of numerical fiscal rules in the EU remained broadly the same as it was a year earlier. To capture the design features of fiscal rules, the Commission has constructed an index which reflects information on i) the legal base, ii) how binding the rule is, iii) monitoring bodies, iv) correction mechanisms, and v) resilience to shocks. Based on this, a comprehensive time-varying fiscal rule index for each Member State is constructed. A new nominal expenditure rule was added for France (increasing the country's total design score for fiscal rules), but there were no other changes in the EU27 that impacted the overall fiscal rules design index in 2022. Additionally, 12 rules were changed in six Member States (BE, DK, FI, IT, PL, SK) in ways that do not have a bearing on the scores for the fiscal rule design index. These changes included, *inter alia*, an increase of the expenditure or budget balance limits (BE, DK, FI) and adding exceptions for different types of public expenditure (FI, IT, PL).

About half of the national fiscal rules remained suspended in 2022. In addition to the General Escape Clause at EU-level, national fiscal rules can also have an escape clause of their own. In 2022, 56 out of the 114 fiscal rules in the database remained suspended as many national authorities kept their rules' escape clauses activated. In a handful of cases, the fiscal rules were suspended by

([147]) More information on the surveys and the indicators is available at: https://economy-finance.ec.europa.eu/economic-and-fiscal-governance/fiscal-governance-eu-member-states_en

([148]) See the ECOFIN Council conclusions of October 2006, October 2007, May 2008, and December 2009.

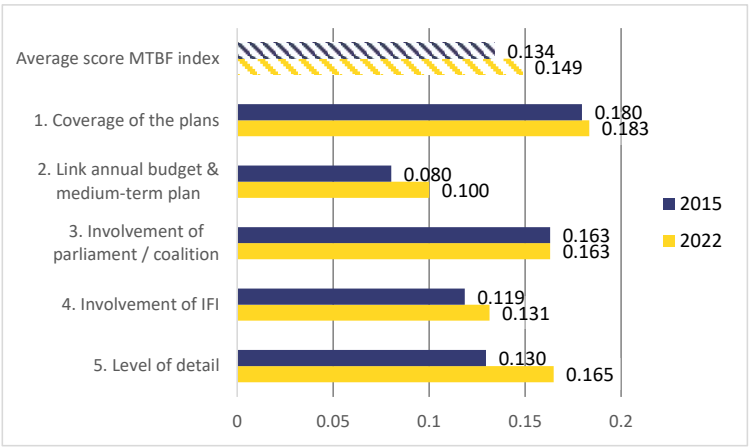
([149]) FGD data is used in the European Semester Country Reports to provide Member States with country-specific recommendations, but also for European Economy Discussion Papers. See for example Belu Manescu et al. 2023, Weise 2023 and Axioglou et al. 2023. It is also used in academic research, see for example Davoodi et al 2022 and Kraemer & Lehtimäki 2023.

([150]) See for example Radu (2023) for an implementation assessment of MTBF-requirements.

parliamentary votes or governmental decisions. As the General Escape Clause was lifted in 2024, the number of suspended rules is expected to return to pre-pandemic levels in the coming years.

The average design strength of the medium-term budgetary frameworks has improved in EU Member States, but room for improvement remains. The MTBF survey allows the Commission to create an index that measures the design strength of MTBFs across various dimensions: i) the coverage of the plans, ii) connectedness of the medium-term plans and the annual budgets, iii) involvement of national parliaments, iv) involvement of IFIs in the preparation of the plans and v) the level of detail included in the medium-term plans. Although the average score of the MTBF-design index has slightly increased over the years, there is still room for improvement. Specifically, the connection between medium-term plans and annual budgets remains the weakest point (see Graph II.3.1), since annual budgets can often deviate from targets or ceilings set in the medium-term plans. In addition, targets or ceilings are not always fixed for the plan's duration or plans are adopted at the same time as the annual budget (meaning medium-term targets have less of a bearing on the annual budgets and are changed every year).

Graph II.3.1: **Average score by dimension of MTBF Index**



Source: Commission services.

Several Member States recently reported reforms of their MTBFs. In Croatia, for example, the IFI now endorses the multiannual macroeconomic forecasts, and their plan now covers more than 90% of the general government expenditure. Germany reported a new booking system for the extra budgets, a new specification of a restructuring target and an amendment to account for the creation of a special fund for modernising the German military. Finland introduced a new government sub-sector (wellbeing service counties) and exceptional circumstances allowing changes to sectoral targets in line with the provisions of the Fiscal Compact ([151]). France introduced a new expenditure goal broken down by government sub-sector. The Dutch medium-term expenditure ceilings were updated and certain aid for Ukraine was exempted from the ceilings. In Slovenia, the ceilings were updated to account for changed macroeconomic circumstances.

While increasing year-on-year, the average index score for involvement of IFIs highlights differences in IFI mandates across the EU. The SIFI-survey gathers responses on the scope of activities of independent bodies ([152]). Six separate groupings of tasks underpin the SIFI index: (i) monitoring of compliance with fiscal rules; (ii) macroeconomic forecasting; (iii) budgetary forecasting and policy costing; (iv) sustainability assessment; (v) promotion of fiscal transparency; and (vi) normative recommendations on fiscal policy ([153]). The database includes independent bodies that are involved in either monitoring compliance with national fiscal rules or endorsing or producing macroeconomic forecasts (annual and over the medium term). It contains entries from 32 institutions,

([151]) Chapter III of the Treaty on Stability Coordination and Governance (TSCG), also known as the Fiscal Compact, included additional provisions on budgetary governance and was signed in 2012 between the majority of EU Member States. With the 2024 EU economic governance review, these provisions have been incorporated into EU law. Available here: https://www.consilium.europa.eu/media/20399/st00tscg26_en12.pdf

([152]) For Poland, the Supreme Audit Office is currently reporting in the database, as it is involved in monitoring compliance with fiscal rules and because the country does not yet have a fiscal council.

([153]) Axioglou et al 2023 discuss these tasks in more detail and find that more IFIs could be involved in policy costing or long-term sustainability assessments.

with five Member States having two IFIs (AT, BE, LU, NL, SI). These answers feed into the index, which reflects the extent of the IFIs mandates and has an emphasis on EU-mandated tasks ([154]).

11 IFIs reported changes to their activities, composition or legal basis. Eight IFIs mentioned an expansion of their tasks through legal reform or otherwise (AT ([155]), HR, FR, IT, PT, RO, SE, SI), while the other three reported changes to the composition or term limits of the board (CZ, EL, IE). Scores have slightly improved for the Italian and Portuguese IFIs since they now perform ex-post evaluations of the accuracy of the macroeconomic forecasts. The IFIs from the other countries reported new tasks which do not fall under the SIFI-index, such as checking the consistency of new legislation with the existing fiscal rule (FR) or providing ex-post evaluations of spending reviews (RO).

Overall, in 2022, the design elements of national budgetary frameworks remained largely unchanged. The index scores for NFRs remained stable, while the MTBF and IFI index scores have improved slightly. Room for improvement remains, for example by strengthening the relation between annual budgets and MTBFs or by increasing the IFI's role in fiscal sustainability assessments. Such improvements are highly relevant in the reformed EU fiscal surveillance framework that puts emphasis on the medium-term orientation of national fiscal plans and the role of IFIs.

The Commission also conducts surveys on other budgetary tools and processes. Such tools and processes can also contribute to the overall design of national budgetary frameworks. The Commission does not calculate specific indices, but it does conduct surveys on green budgeting and previously also on spending reviews. The boxes below show recent findings for both topics.

([154]) The index should not be read as a full proxy for the effectiveness of the respective institutions, but rather as a depiction of the scope and intensity of their mandates and IFI-related activities.

([155]) This is the Austrian Fiscal Council (Fiskalrat).

Box II.3.1: Spending reviews and related EU initiatives

Spending reviews are an important tool for Member States to increase the sustainability and efficiency of public spending. These reviews are typically defined as "the process of identifying and weighing saving options, based on the systematic scrutiny of baseline expenditure" ([1]). By comparing allocated budgetary resources to achieved output, such reviews check whether an existing expenditure item is still a priority. If so, in turn, they check the implementation efficiency and cost-effectiveness of these items. This allows national authorities to identify scope for efficiency improvement in or additional savings from existing programmes. Spending reviews are thus seen as a tool to stabilise or even reduce public expenditure and to create fiscal space for new reforms, without resorting to across-the-board budget cuts.

In 2016, the Eurogroup adopted Common Principles for improving expenditure allocation and asked the Commission to perform analyses on this topic. These Common Principles outlined best practices for spending reviews, pointing at key features: (i) high-level political commitment, (ii) design and implementation, (iii) monitoring and communication and (iv) consistency with annual budget planning ([2]). In 2017 and 2019, the European Commission held surveys on the scope, design and challenges of the reviews undertaken in the euro area Member States. These surveys revealed that the take-up of the Common Principles was limited, with low political commitment and minimal integration of the reviews' findings in budgets. Respondents mentioned that lack of data, limited staff, unclear objectives and limited ownership by (and cooperation from) the responsible entities presented challenges to improving spending reviews and increasing the take-up of Common Principles.

The EU encourages Member States to make use of spending reviews and supports their implementation. The European Commission provides guidance on this topic by responding to ad-hoc requests from national authorities and by conducting relevant research. Beyond this, the EU supports Member States on spending reviews through three initiatives. First, Country-Specific Recommendations (CSRs) issued in the context of the European Semester call for Member States to implement or improve on existing reviews. Second, spending reviews feature among key reforms and investments supported through the Recovery and Resilience Facility (RRF). Third, through the Technical Support Instrument (TSI), the Commission provides technical support to Member States that seek to develop tools and strengthen their capacity in conducting spending reviews. Graph 1 provides an overview of different initiatives on spending reviews in the EU.

Member States that received EU guidance or support introduced meaningful improvements to their spending review processes. In many of the countries that received guidance and support through the CSRs, the RRF or the TSI, spending reviews were given a new impetus and the use of these reviews regained attention in budgetary discussions. More importantly, improvements in terms of frequency, governance and alignment with annual budget cycle were achieved, which brought the spending review practices generally closer to the standards set out in the Common Principles ([3]). For example, several Member States introduced a legal basis for the regular conduct of spending reviews, ensuring prolonged institutional backing and associated gains in experience and expertise. An overview of the most relevant improvements in the recent reviews is found in Graph 2 below. However, room for improvement remains including as regards ambition of the reviews (in terms of size of the review and their intended results), monitoring of the follow-ups, consistency with multiannual budgets and the performing of ex-post evaluations.

([1]) Bova et al., 2020, available here: https://economy-finance.ec.europa.eu/system/files/2020-12/dp135_en.pdf
([2]) European Commission (2016): https://www.consilium.europa.eu/media/23664/spending-reviews_commission_note.pdf
([3]) For more information, see Hoogeland et al, 2024 available here: https://economy-finance.ec.europa.eu/publications/how-have-spending-reviews-recently-evolved-through-eu-initiatives_en.

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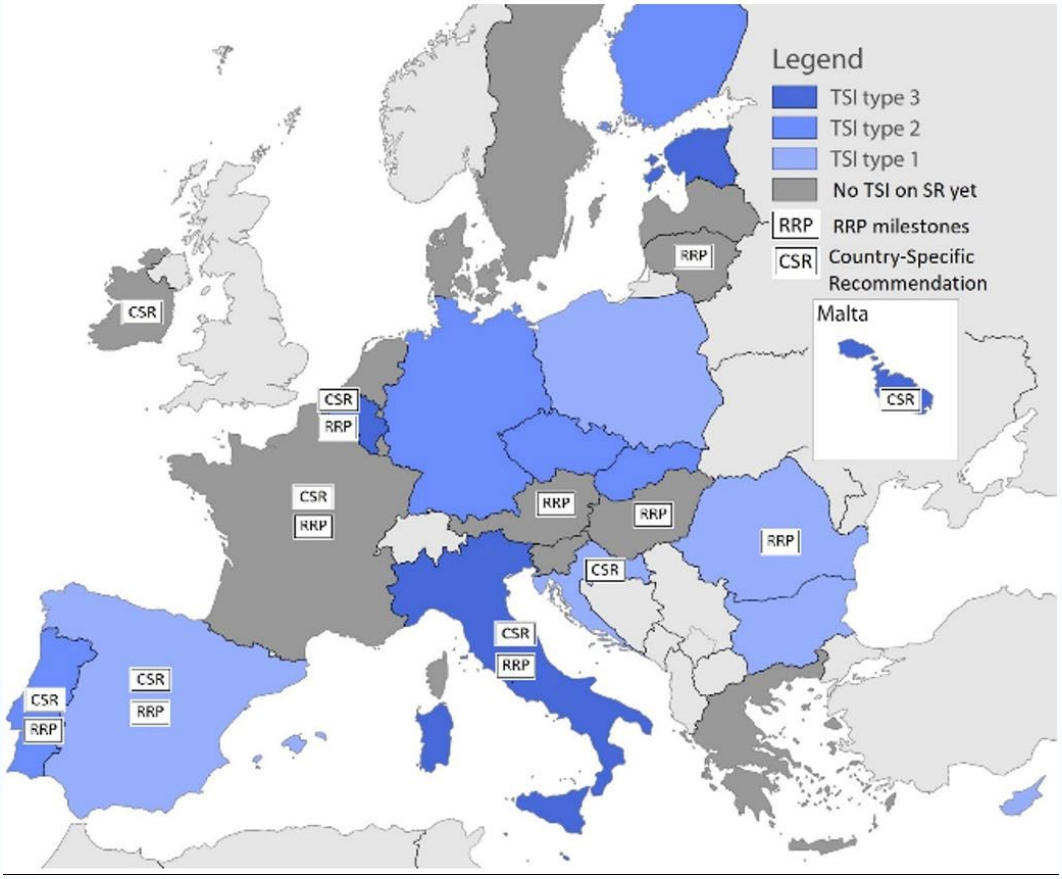
Box (continued)

Graph 1: ***Fostering spending reviews in TSI projects, CSRs and RRP milestones, across the Member***



(1) The TSI projects that include spending reviews can be divided into 3 types. Type 1 projects focus on building capacity to conduct spending reviews. Type 2 seek to better align the spending review process with the (multi)annual budget cycles. Type 3 projects explore the integration of spending review with performance management systems.
Source: Commission services.

Graph 2: ***Recent improvements made to spending reviews pertaining to each Common Principle***

1. Strong and sustained political commitment	2. Design and implementation	3. Monitoring and communication to the public	4. Consistency with (multi)annual budgets
• More frequent reviews → fosters culture of reviewing and builds expertise • Including line ministries in process → more ownership • Legal basis → more institutional backing in the long term	• Setting up a dedicated task force → adequate resources for review • Clear objectives up front → more guidance to decide on scope of review and reform options • More use of terms of reference → clears up deadlines, objectives and responsibilities	• More monitoring of follow-ups → ensures selected reform options are implemented • More contacts in line ministries → speeds up process • More reports made public → more transparency • More ex-post evaluations → more lessons for the future	• Starting review early → results available on time for budget discussions • Legal basis for using results → commitment to use results in budgets • More performance budgeting → more potential savings for budgets

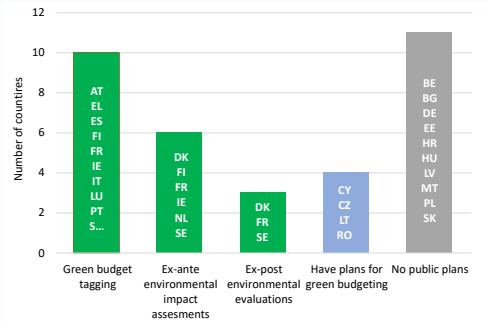
Source: Commission services.

Box II.3.2: **Green budgeting practices in the EU**

This box presents an overview of green budgeting practices in the EU. It reflects both the main findings of the 2023 European Commission survey on green budgeting practices ([1]) as well as major recent developments. This second edition of the survey was launched in January 2023 ([2]). The survey evidence is presented in a database ([3]).

Currently, almost two thirds of the Member States have implemented or plan to establish some form of green budgeting (Graph 1). 13 Member States are practicing some form of green budgeting (green bars), while four plan to introduce such practices in the future (blue bar). Compared to 2021, when the first Commission survey was conducted, Greece, Portugal, Spain and Slovenia have developed and implemented new practices and several countries have expanded their existing methods (AT, FI, FR, IE, SE). This survey relies on a narrow definition of green budgeting, namely the following practices: (i) green budget tagging, (ii) *ex-ante* environmental impact assessments, and (iii) *ex-post* environmental evaluations. The reason for focusing on these practices is that these allow an assessment of the 'greenness' of the budget and can be directly tied to the budgetary process.

Graph 1: ***Green budgeting practices across EU Member States***



(1) Slovenia started implementing green budgeting in 2024.
Source: 2023 European Commission survey on green budgeting; recent developments.

Several relevant developments have taken place during 2023. France has integrated the green budgeting process into its regular budget cycle, including and strengthening its role in the policy decision-making process. Slovenia started implementing green budgeting in 2024 ([4]). Ireland has published, for the first time, a stand-alone green budgeting report ([5]). Austria has further deepened its green budgeting analysis as evidenced in a new report entitled "Budget Supplement Climate and Environmental Protection BVA 2024" ([6]). Italy has performed ex ante green budgeting in the RRF context.

Overall, since the 2021 Commission survey, an increasing number of countries are covering a comprehensive set of environmental objectives under their green budgeting processes, including keeping track of 'unfavourable' budget items with respect to such objectives. Concretely, green budget tagging remains the most common tool used across the Member States. Moreover, compared with previous (2021) survey evidence, an increasing number of countries report looking beyond strictly climate-related issues in their tagging process, to allow covering a wider set of environmental dimensions (e.g., account for the six environmental objectives of the EU

([1]) More details on the key findings are available at: https://economy-finance.ec.europa.eu/document/download/40851e31-78eb-43fe-8e6d-a08fa4105638_en?filename=2023%20Green%20Budgeting%20survey%20key%20findings.pdf
([2]) https://economy-finance.ec.europa.eu/document/download/d1321ccc-3865-4e17-8d03-10809757ca12_en?filename=2023%20European%20Commission%20Survey%20on%20Green%20Budgeting.pdf
([3]) https://economy-finance.ec.europa.eu/document/download/0a441ab8-971b-4970-81b9-5cd930e22919_en?filename=Green%20Budgeting%20Database%20European%20Commission%202023%20Survey.xlsx
([4]) https://www.gov.si/assets/ministrstva/MF/Proracun-direktorat/Drzavni-proracun/NRP/Metodologija-za-zeleno-proracunsko-nacrtovanje.pdf
([5]) https://www.gov.ie/pdf/?file=https://assets.gov.ie/279629/8aa57df7-6358-4e8d-860b-43445e2cec5a.pdf#page=null
([6]) https://www.bmf.gv.at/themen/klimapolitik/green_Budgeting/budgetbeilage_klima--und_umweltschutz.html

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Box (continued)

Taxonomy) ([7]). Similarly, more countries are tracking budget items that are unfavourable to the environment (i.e., 'brown' items), both when conducting budget tagging and/or when performing ex-ante environmental impact assessments (*ex-post* environmental evaluations remain limited).

Yet, the methods for green tagging in the budgetary process still vary widely across countries, reflecting for example: (i) different definitions of what is green, (ii) different budgetary frameworks within which green budgeting is performed, (iii) different national green agendas and commitments, and (iv) different capacity at the government level, partly reflecting different degree of political backing for this practice.

Most countries also use tools outside the budget process that foster the "greening" of public finances and the promotion of green policies. The issuance of sovereign green/sustainable bonds is an increasing practice that aims to support green budgeting. Other tools include regular reviews of environmentally-motivated tax expenditures and subsidies, while accounting for a green dimension is also promoted in regulatory impact assessments, spending reviews and performance budgeting ([8]).

Most Member States that already perform green budgeting have plans to further develop their practices in this area. Some countries have committed to either implementing or further developing green budgeting in their Recovery and Resilience Plans or in other national plans, showcasing strong commitment for this objective.

Member States are facing several challenges with introducing or implementing green budgeting practices. The most common impediments relate to the identification of sound methodologies, access to relevant knowledge, and adequate expertise in line ministries. The Commission country-specific technical support, which has been provided to 23 Member States, has helped tackle some of these issues. Another major challenge relates to the proper integration of green budgeting into the regular budget process, to ensure adequate accounting of the green dimension in decision making and budget allocation. In addition, there are no tools developed to measure/track the impact of the green budgeting process on the promotion of the climate and environmental dimensions in policy making, with only Austria reporting ongoing work on the development of such tools.

([7]) The Taxonomy Regulation sets out six environmental objectives: climate change mitigation, climate change adaptation, the sustainable use and protection of water and marine resources, the transition to a circular economy, pollution prevention and control, the protection and restoration of biodiversity and ecosystems. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32020R0852

([8]) "Performance budgeting" is defined as the systematic use of performance information to inform budget decisions, either as a direct input to budget allocation decisions or as contextual information to inform budget planning. For details see: https://one.oecd.org/document/GOV/SBO(2023)1/en/pdf

3.2. PLANNING FOR PUBLIC INVESTMENT: THE ROLE OF LONG-TERM STRATEGIES

3.2.1. Introduction

The efficiency of public investments is an important element of sound public finances. In Europe, about one-fifth of public investment spending on infrastructure is lost to inefficiencies, according to some estimates (Baum et al. 2020). Half of this efficiency gap is shown to be closed by adopting best practices of public investment management. Moreover, the new economic governance framework in the EU places renewed emphasis on investments and reforms in the new medium-term fiscal-structural plans ([156]). Similarly, the RRF improves efficiency of public investment planning, by (i)

([156]) See chapter II.2 for further details on the new economic governance framework.

fostering medium-term planning, (ii) setting concrete and measurable deliverables and (iii) setting a performance-based approach. To support this increased focus on the need to foster investment in the EU, recent analytical work by the Commission has identified key stages of the investment cycle and collected evidence for the EU, based on a survey run in 2022 (Belu Manescu (2021, 2022)).

Sound management of public investment starts with strategic planning. In the current juncture of large investment needs for the green and digital transition against the backdrop of limited fiscal space, the quality of public investment management is more important than ever ([157]). Demographic changes, the much-needed green transition and rapid adoption of artificial intelligence and digitisation are expected to imply profound societal and economic changes. These elements underline the importance of strategic planning of public investment, namely an anchoring of investment projects into a long-term development vision for the country and designing processes for the monitoring and implementation of this vision.

Effective planning includes a vision for long-term development, coordination across government levels and setting measurable objectives against realistic fiscal constraints. A vision for long-term development helps to identify key strategic goals for the country, that are shared rather than competing between decision makers and society at large. Usually, a meaningful horizon for these visions is of at least ten years. This vision requires significant coordination and consultation with stakeholders, usually best placed in a central unit close to the highest decision-making level. As such a vision can only be very general, setting measurable objectives is indispensable to anchoring the shorter-term plans into the vision and to monitoring how the vision is being delivered. Finally, Kim et al. (2020) emphasise that high-level, long-term visions are useful for setting the scene, but they are most helpful for public investment management when supplemented by more operational strategies, which can include sufficient detail on timeline, deliverables and costings.

This section aims to highlight the processes, institutions and practices of strategic planning that support effective management of public investment in the EU, with Ireland presented as key illustrative case ([158]). Drawing on the 2022 DG ECFIN Public Investment Management survey (see Annex), the analysis presented here focuses primarily on investment strategies that were flagged in the survey as covering the entire economy ([159]).

3.2.2. Effective strategic investment planning in Ireland and in other selected countries

The case of Ireland illustrates well the setup of a comprehensive and integrated planning system that was recently reformed and is complemented with examples from selected countries based on data availability.

Strategic investment planning in Ireland

Ireland offers a useful concrete example of good practice in the design of a long-term investment strategy. Effectively introduced in 2018, Ireland's strategic vision for the country, Project Ireland 2040, consists of two aligned and mutually reinforcing documents. First, an overarching spatial planning framework outlining ten national strategic desired/planned outcomes ([160]) over a 20-year horizon (called "The National Planning Framework"), which guides planning and investment at all levels of government and all economic sectors ([161]). Second, a separate 10-year national investment plan

([157]) See Part III for a broad thematic discussion on the need and ways to foster investment in the EU.

([158]) The case of Ireland illustrates well the setup of a comprehensive and integrated planning system that was recently reformed and is complemented, while examples from selected countries based on data availability will also be provided.

([159]) The findings of this note also reflect two fruitful exchanges with national experts on public investment management held during 2023.

([160]) For example, transition to a Low Carbon and Climate Resilient Society, enhanced regional accessibility and sustainable mobility feature among those 10 desired/planned outcomes.

([161]) According to Wikipedia, spatial planning systems refer to the methods and approaches used by the public and private sector to influence the distribution of people and activities in spaces of various scales. Spatial planning can be defined as the coordination of practices and policies affecting spatial organisation and it typically is a component of land use, urban, regional, transport and environmental planning.

presenting the financial envelopes for each outcome ("The National Development Plan"). The National Planning Framework is the result of extensive coordination within and across levels of government and is underpinned by assumptions on the long-term evolution of key variables (such as long-term population growth projections). It is then further detailed in regional and sectoral strategies ([162]), all based on the same long-term projections.

The National Development Plan (NDP) sets out the funding available to support the delivery of the ten national strategic outcomes identified in the National Planning Framework over a ten-year period. Produced by the "Ministry of Public Expenditure, NDP Delivery and Reform", the plan includes indicative five-year capital allocations and overall ten-year expenditure ceilings ([163]). The capital allocations and priority programmes are the outcome of negotiation and engagement across departments, including with the Treasury Department, based on evidence and analysis. As a result, all departments' capital programmes are fully funded for the five-year period. The strategic investment priorities underpinning the expenditure commitments are determined by the relevant departments themselves and in such a way that they are central to the delivery of the planning framework vision.

Other elements supporting the effectiveness of the strategic planning process include monitoring of the strategy implementation, enhanced transparency and a clear calendar for update. Verifying alignment with the National Planning Framework both in the assessment/selection phase and in the sectoral strategies contributes to effective delivery. While the National Investment Office monitors the alignment between the sectoral strategies and the National Planning Framework, the Office of the Planning Regulator ([164]) oversees how the regional targets are being translated into County Development Plans. The Major Capital Projects Tracker ([165]), which is published on the website of the "Department of Public Expenditure, NDP Delivery and Reform", details the capital investments due to commence in the next four years and is updated regularly. Finally, the revision of the planning documents follows a well-defined process. A revised national planning framework is currently planned to be published in September 2024, according to a clear roadmap (Government of Ireland, 2023b).

Specific features of strategic investment planning in other selected countries

High-level visions guide public investment plans in Bulgaria, Croatia, Latvia, Lithuania, Poland, and Portugal. These visions are reflected in documents that usually define key strategic objectives at the level of the entire economy, a set of measurable performance indicators to monitor their achievement via the sectoral strategies and an integrated view on funding sources and main users. Some long-term development visions are rooted in spatial planning (Croatia, Latvia, Lithuania) and accompanied by a clear monitoring and reporting process (Croatia, Latvia, Lithuania, Poland). Indicative expenditure allocations accompany the high-level visions in Bulgaria, Latvia and Lithuania. In Portugal, the National Investment Programme outlines the 10-year expenditure allocations detailed by programme and project level as well as by main funding sources (such as national, European and the private sector) and main users (public administration, state-owned enterprises, and private operators). In Poland, the crucial role of the Ministry of Finance in implementing the strategy is explicitly acknowledged.

In federal states, spatial planning provides a common framework underpinning investment planning across all levels of government. In Austria, for example, the Austrian Conference on Spatial Planning (OEROK) – founded in 1971 – is an organisation established by the federal

([162]) Sectoral strategies are further defined and described in the next sub-section.

([163]) The Exchequer capital ceilings set out in the 2021-2030 National Development Plan are informed both by the Macro-Economic Analysis produced in Phase 1 of the NDP Review as well as by the level of demand indicated in the submissions from Departments, and the subsequent engagement at official-level and Ministerial bilateral meetings involving each Department.

([164]) The Office of the Planning Regulator was setup in 2019 to ensure that strategies of, *inter alia*, local authorities correctly implement national and regional policy at all stages of the planning process.

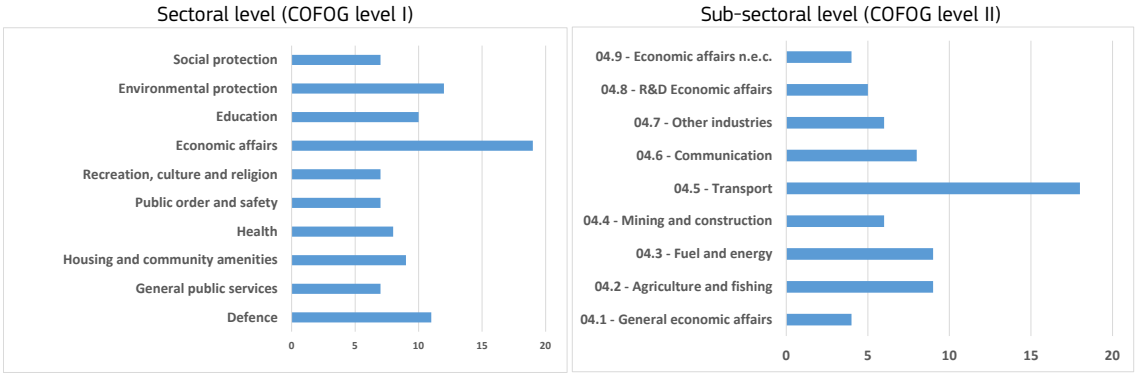
([165]) Both MyProjectIreland Interactive Map, available in a desktop and mobile phone version, and the Major Capital Projects Tracker (in excel format) can be found here. As of Q1 2023, the Tracker focuses on almost 320 projects and 140 programmes, including almost 100 projects in excess of €50 million.

government, the Länder and municipalities to coordinate spatial development at the national level. It prepares the Austrian Spatial Development Concept, a set of guidelines followed by all represented institutions. OEROK 2030, the latest plan, was prepared in 2021 and contains a ten-point programme with priority themes to be implemented by 2030 ([166]). Germany also has in place a shared system of responsibilities for spatial planning, defined at the federal, state (Länder) and local level and managed via the Conference of Ministers of Spatial Planning. Unlike Austria, the federal government in Germany defines legally binding basic goals and principles of the country's spatial organisation, which then the Länder operationalise at the state level and ensure compliance by local level plans (Scharmann, 2020).

3.2.3. Sectoral strategies

All countries have sectoral or sub-sectoral strategies in place. A sectoral plan for public investment is a document that gives guidance for public investment priorities for relevant sectors (e.g., infrastructure, transport, industrial strategy) over the medium to long term. It is a subset of the national plan ([167]). Sectoral investment strategies are usually prepared by line ministries. In the data, while transport is the most well-represented sub-sector within the economic affairs category, other typical strategies would cover defence, environmental protection, and education (see Graph II.3.2).

Graph II.3.2: COFOG sectoral coverage of investment planning (in number of Member States)



Source: Commission's public investment management survey, 21 responses (6 respondents did not answered this question).

The transportation sector, being the sector with typically the largest investment needs, generally benefits from well-developed sector-specific strategic planning and costed investment plans. Strategic plans in transportation often cover a longer than 10 years horizon. Many transportation planning systems are characterised by a unified modal approach to strategic planning. For example, Austria, Estonia, Finland, Germany, Greece, and the Netherlands prepare long-term strategies that jointly cover all modes of transport (i.e., road, railway, maritime transport, and airports). Such a unified approach to transportation infrastructure planning facilitates synergies with other goals (e.g., climate efficiency goals), with Austria, Denmark, Estonia, Finland, and Germany providing illustration of this approach. Indicative capital allocations are for example in place in Denmark, Germany, the Netherlands and Sweden.

Planning for and delivery of transportation infrastructure often benefits from well-established specialised institutions. These include, for example, the National Transport Agency in Finland, the National Infrastructure Institution in Ireland ([168]), and the Transportation Authority in Sweden. In Estonia, in 2019, the task of creating a unified administration for transport planning and investments and a unified administration for transport supervision was explored.

([166]) See Oerok 2030 in Brief, 2021, available here

([167]) There is no standard definition of sector. The closest to a standard definition would be the UN Classification of the Functions of Government, the COFOG functional classification.

([168]) Establishment of the National Transport Authority (NTA) in 2009 was intended to deliver a more focused and integrated approach to the planning and delivery of integrated transport infrastructure and services both on a national basis generally and especially in the Greater Dublin Area (GDA) where the NTA has a more detailed remit.

3.2.4. Conclusions

Over the last decade, many Member States have kept reforming their strategic planning for public investment. To justify this, Member States notably pointed at the need to continuously adapt to rapidly changing technologies and to competing demands. At the same time, Member States stress the merit of putting in place such strategic planning given the need for a common and inclusive vision that allows for exploiting synergies and attract private capital for balanced growth across regions. In some cases, the reforms are far-reaching such as setting-up new bodies, alongside streamlined or new processes. This dynamic environment underlines the magnitude of challenges faced by Member States and their efforts to put in place efficient processes to tackle them.

3.2.5. Annex

Table II.3.1: **List of all reviewed planning documents**

Country	Document name in English
Austria	Austrian conference on spatial planning (Örok) overview, at www.oerok.gv.at
Austria	Austria's 2030 Mobility Master Plan (2021)
Belgium	(federal) SNCB company plan 2023-2032
Bulgaria	National development programme Bulgaria 2030 (January, 2020)
Croatia	National development strategy of the Republic Croatia by 2030 (2020?)
Denmark	Denmark Forward - Infrastructure plan 2035 (April 2021)
Estonia	Transport and mobility development plan 2021-2035 (2020)
Estonia	Road maintenance plan for national roads (2021-2030)
Finland	The national transport system plan for 2021-2032 (2020)
France	France 2030
Germany	Federal transport infrastructure plan 2030 (2016)
Greece	Greece growth plan to 2030 (2020)
Greece	EU Partnership Agreement 2021-2027
Hungary	EU Partnership Agreement 2014-2020
Ireland	Project Ireland 2040
Ireland	National development plans 2018-2027 and 2021-2030
Italy	Strategic Guidance Document for Infrastructure and Mobility
Latvia	Sustainable development strategy of Latvia until 2030 (June 2010)
Latvia	National development plan of Latvia for 2021-2027 (July 2020)
Lithuania	Lithuania progress strategy "Lithuania 2030" (May 2012)
Lithuania	National progress plan 2021-2030 (Sept.2021)
Luxembourg	National mobility plan 2035 (2022)
Malta	National transport strategy 2050 (2016)
the Netherlands	Multiannual programme for infrastructure, space and transport
Poland	The strategy for responsible development by 2020 with a perspective to 2030 (February 2017)
Poland	The national investment programme 2021-2030
Romania	National strategy for sustainable development of Romania 2030
Slovakia	Priorities for road infrastructure construction by 2030 (September 2020)
Spain	Spain 2050 - grounds and proposals for a long-term national strategy (2021)
Sweden	Proposal national plan for transport infrastructure 2022-2033

Source: Commission services

3.3. FISCAL RISKS

3.3.1. Introduction

This section reviews 2023 Commission survey on fiscal risks and reflects IFIs activities in all 27 Member States. For each annual update of the Fiscal Governance Database (FGD), the European Commission sends a survey to the independent fiscal institutions (IFIs) in the EU Member

States ([169]). In addition to the standard questions on the scope of their activities, IFIs were asked about fiscal risk analyses and risk management activities in their countries. Their answers are the basis of the analysis below.

Fiscal risks can have major impacts on a government's budget plans. Fiscal risks can be seen as factors that will cause differences between budget plans and actual fiscal outcomes ([170]). The timing and probability of these factors can be unknown (such as a war breaking out or a stock exchange crash) or largely anticipated but with a fiscal impact hard to estimate (such as climate change). Moreover, a specific type of fiscal risk tends to affect a specific type of expenditure. For example, military tensions could trigger higher defence spending, while sudden jumps in inflation may potentially lead to higher interest expenditure or increase in expenditures indexed to inflation. Such sudden fluctuations caused by the materialisation of fiscal risks may prompt a government to amend their previous budgetary plans. In 2020 and 2021, an unexpected number of calls on COVID-guarantees led to amendments of national budgets in eight and seven EU Member States, respectively. In 2022, the energy crisis led to at least six Member States amending their budgets ([171]).

The Commission provides Member States with tools to analyse certain fiscal risks. It has developed valuable tools on fiscal sustainability indicators and macroeconomic trends. On the sources of fiscal risks, the Ageing Report provides separate budgetary projections that include different risks scenarios for four major spending categories: pensions, healthcare, long-term care and education and has recently expanded the analysis to the impact of climate change on health ([172]), While the 2021 Fiscal Sustainability Report had provided an analysis on the fiscal risks related to climate change ([173]). Also, the Commission's Debt Sustainability Monitor provides composite indicators to identify the risk of short to long-term fiscal stress ([174]). Additionally, the Commission's Joint Research Centre has developed the Disaster Risk Management Knowledge Centre (DRMKC), which provides relevant risk indicators related to global conflicts, humanitarian crises and natural disasters ([175]). The Commission also provides analysis on Disaster Risk Financing, which is aimed at addressing the fiscal impacts of such natural disasters (see box below).

([169]) There are at least 31 IFIs in the European Union. Five countries have two IFIs (AT, BE, LU, NL, SI) and one country does not yet have an IFI (PL). In the annual updates, however, only independent institutions that perform one of two IFI tasks that stem from EU-legislation. Therefore, the handful of national IFIs that only perform tasks derived from national legislation are omitted. Although it is not technically an IFI in the sense of Directive 2011/85/EU article 4(4), the Polish Supreme Audit Office was asked to provide input for Poland, as it performs at least one these tasks.

([170]) Other institutions provide other definitions with, for instance, the OECD suggesting a split of fiscal risks into four major categories: macroeconomic, government policy or programmes, uncertain budgetary claims and balance sheet risks (see OECD 2020, p.5), while having also noted that that fiscal risks are either of a social, technical or political nature, adding that they have very different causes for this reason (see Kopits, 2014, p.48). The World Bank see fiscal risks as "deviations from fiscal outcomes expected at the time of budget formulation" (See World Bank website: https://www.worldbank.org/en/programs/debt-toolkit/fiscal-risk).

([171]) Source: Fiscal Governance Database, 2021-2023 updates.

([172]) European Commission 2023, Ageing Report 2024

([173]) European Commission 2021, Fiscal Sustainability Report 2021 (Volume) (europa.eu)

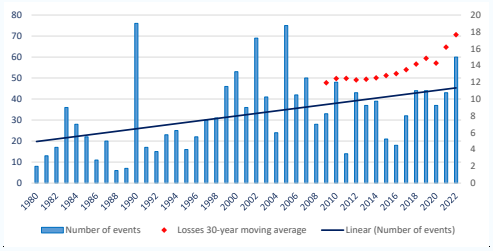
([174]) European Commission 2024, Debt Sustainability Monitor 2023

([175]) See the DRMKC website: https://drmkc.jrc.ec.europa.eu/

Box II.3.3: A structured approach to disaster risk financing

All EU Member States practice some form of disaster risk financing as all of them have been confronted with such events at various moments in time. The most common way to deal with the financial consequences of disasters in EU Member States is ad-hoc financing. In fact, there is limited evidence of natural disaster funds or other pre-arranged funding in the national budgets of EU Member States (Radu, 2021 and 2022). But ad-hoc financing is sub-optimal as it rests on identifying the funds needed to cover the cost of a disaster in a given budget that had not specifically taken such events into account. At the same time, extreme weather events are becoming more frequent in the EU and the 30-year moving average of total losses is increasing (Graph 1). Corroborating these data, recent figures from the European Commission ([1]) estimate that exposing the present economy to global warming of 3°C would result in annual climate-related losses of at least € 170 bn (1.38% of GDP) (Szewczyk et al., 2020). It is therefore of growing importance to treat recurrent disasters as belonging to a new normal.

Graph 1: **Number of extreme weather events in the EU, 1980-2021**



Source: Emergency Events Database (EM-DAT), European Commission.

Budgets that consider the potential macro-fiscal impact of disaster risks are an essential complement to disaster risk prevention and reduction and part of the adaptation to climate change. Climate-related events will impact GDP levels and public finances, through revenue and expenditure channels. Therefore, assessing the (past and expected future) impact of climate-related disasters on the economy and on public finances and monitoring public expenditure allocated to address the consequences of disasters are indispensable steps to inform the authorities in their policy decisions. This implies progressively upgrading budgetary processes to reflect the macro-fiscal risks from climate-related disasters in a transparent way ([2]).

Making budgets more climate resilient is part of efforts to increase the resilience of our societies to climate change. Currently, national processes for disaster risk management and financing are fragmented and national budgets' account of the fiscal impacts of climate change is limited. A first step towards more climate resilient budgets is to take stock of national practices to cover the fiscal costs from disasters. The information available for DRM and DRF varies greatly in scope and detail. This stock taking exercise could follow a structured and articulated logic, looking at the main steps and actors along different stages of development (i.e., essential, intermediate, advanced). Such a structured approach should also account for differences across countries, although some common features are identifiable (i.e., shared challenges related to loss data collection and loss estimates, ad-hoc approach to DRF, fragmentation). Finally, beyond flagging country-specific needs, a shared understanding of DRF across EU Member States is meant to reflect new methods and financial instruments that meet the increasing challenges posed by climate-related and natural disasters. This toolkit would guide Member States aiming to improve their approach to DRF and the European Commission in its analyses, taking into account the heterogeneity in starting points and

([1]) The JRC PESETA IV project on the economic analysis of selected climate impacts
([2]) Article 9(2)(d) and Article 14(3) of the amended Directive on National Fiscal Frameworks (OJ L. 2024/1265, 30.4.2024) includes national reporting requirements on the fiscal losses and contingent liabilities from climate-related disasters and on the macro-fiscal risks from climate change

(Continued on the next page)

Box (continued)

national ambition as well as methodological, capability and institutional challenges that would have to be overcome in the process.

The key elements of a structured approach to disaster risk financing could be structured along 4 pillars and in 3 development stages (Table 1). Pillar 1 would cover the economic and fiscal impact of disasters, realised and estimated. Pillar 2 would cover the risk owned by the private sector notably through the offer of disaster insurance policies, while pillar 3 would cover the risk owned by the public sector and how disaster-related costs are managed by public authorities. Pillar 4 would cover the institutional aspects of governance, provisions for transparency and accountability. EU Member States already have in place some of the above-mentioned elements with different degrees of sophistication. Following this structure would also allow the authorities to see the development stage of specific aspects of DRF and identify areas that could be developed. Accordingly, the 'essential' stage refers to the necessary minimum, the 'intermediate' stage is more developed with wider coverage, methods, and clear allocation of responsibilities across actors, while the 'advanced' stage is more detailed including technical expertise, methodologies and transparency arrangements and broadens the scope of DRF to include conditional compensation, resilience objectives, ex-post assessment and feedback loops.

(Continued on the next page)

Box (continued)

Table 1: **Key elements of a structured approach to disaster risk financing**

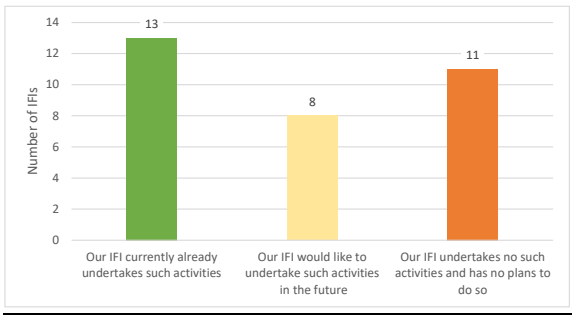
	Elements	Basic / Essential	Intermediate	Advanced
1. Fiscal impact from disasters	*Historical losses from physical damage*	**Some** data available for **some** events Publicly available	Data available for **all** events with a significant budgetary impact Publicly available	Systematic and comparable data collected for **all** events with a significant budgetary impact **Public database**
	Historical disaster-related expenditure	**Partial** tracking disaster-related expenditure Transfers to local authorities	Tracking **main** disaster-related expenditure Transfers to local authorities	Tracking **all** disaster-related expenditure Transfers to local authorities
	Future economic loss estimates	**Identification**, **qualitative** and/or **quantitative** assessment of risks within bandwidths Publicly available **methodology** In budgetary documents	**Qualitative** and **quantitative** assessment **within bandwidths** for risks with high budgetary impact Publicly available **methodology** In budgetary documents	**Quantitative** assessment for risks with high budgetary impact for different **scenarios** Publicly available **methodology** In budgetary documents
	Disaster-related public expenditure estimates	**Identification** and **qualitative** disclosure in **budgetary documents**	**Quantitative** disclosure for **some** risks with a significant budgetary impact in **budgetary documents**	**Quantitative** disclosure for **all** relevant risks with a significant budgetary impact in **budgetary documents**
2. Private sector Insurance	*Private assets insurance*	**Assessment** of disaster insurance penetration	**Assessment** of disaster insurance penetration **Regulatory measures** for insurance take-up	**Assessment** of disaster insurance penetration **Regulatory measures** for insurance take-up **Conditional** compensation from public money
3. Public sector fiscal risk management	*Public insurance schemes (for private and/or public assets)*	optional	mandatory (in no private insurance)	mandatory (if no private insurance)
	National budgets	Managed under the **overall budget** of different ministries **Ad-hoc financing** via budgetary reallocations, deficit, debt	Managed under the **overall budget** of different ministries **Mainly ad-hoc financing** **Some contingent financing** **Some pre-arranged financing**	Managed under the **overall budget** of different ministries **Some ad-hoc financing** **Contingent financing** in the budget **Support** Schemes **Reconstruction** expenditure Mainly pre-arranged financing
	Public assets insurance	Main public assets **list,** insurance status in high-risk areas, hazard map	Main public assets **list,** insurance status everywhere, hazard map, exposure	Public assets **repository,** insurance status and promotion, hazard map, exposure, vulnerability
	Compensation	Ad-hoc decision	Legal base and thresholds for some sectors/disasters	Legal base for compensation Comprehensive compensation system with link to insurance
	Disaster prevention and preparedness	**No link** between spending for prevention and preparedness and disaster resilience objectives	Spending for prevention and preparedness is **linked to broad** disaster resilience objectives	**Explicit link** between spending for prevention and preparedness and disaster resilience objectives **Ex-post review**
4. Instit(l) arrangements	*Transparency and monitoring*	All information is **public**, information on **DRM funds** and expert assessment of **methodology**	All information is **public** in budget documents, **expert opinion** on methodology and post-disaster risk management	All information is **public** in budget documents, **expert opinion** on methodology and post-disaster risk management, **monitoring** funds use
	Governance and coordination	Some coordination across public services **Ad-hoc task force**	Clear role and resources across relevant ministries and services Permanent DRM/ DRF service	Established correspondents in relevant ministries Permanent DRM/DRF in MoF for coordination

Source: Commission services.

3.3.2. The 2023 Commission survey on fiscal risks

Most IFIs already support their governments in managing fiscal risks or intend to do so in the future. In close to half of EU Member States, IFIs already perform activities related to fiscal risks (see Graph II.3.3), while eight IFIs say they are building analytical capacity or developing new models to perform them in the future. The activities mentioned include DSAs, policy costing, long-term sustainability analyses, or identifying fiscal risks in their independent opinions or research papers. The remaining 11 institutions mention that they do not plan to perform analysis on fiscal risk management, as it is not in their mandate or another national IFI is already doing it. However, IFIs may also indirectly contribute to risk analysis through other activities they perform. They produce, endorse or assess macroeconomic forecasts, which may include demographic or social factors that can affect fiscal outcomes ([176]). Some IFIs also perform debt sustainability analysis, policy costings or macroeconomic modelling ([177]), which may help to identify fiscal risks.

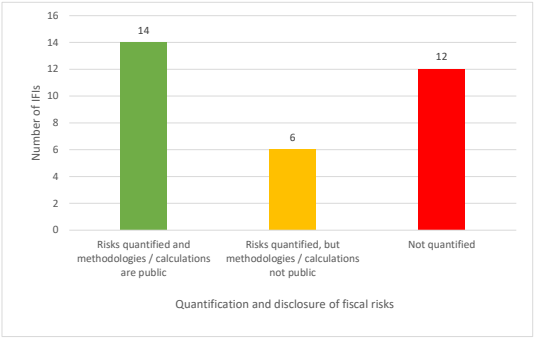
Graph II.3.3: **Does your IFI (plan to) perform risk management activities?**



Source: Commission services.

About two thirds of IFIs report that fiscal risks are quantified, but the calculations/methodologies are not always public. For 2023, 14 IFIs mention that fiscal risks are quantified and results and methodologies are also explained in public reports. Six IFIs mention that some fiscal risks are quantified and used in the national fiscal plans, but the specific calculations or methodologies are not public. A further 12 IFIs claim that there is no quantification of fiscal risks in their countries (see Graph II.3.4). In nine cases, the analyses are at least partially performed and published by the IFI itself, while in the other cases this is done by the Ministry of Finance.

Graph II.3.4: **Are risks quantified in some way, and are calculations made public?**



Source: Commission services.

The risks that IFIs analyse and identify vary across countries, with most focusing primarily on risks related to ageing or climate change. For six IFIs, public reports cover a range of fiscal risks, while the others' reports focus mostly on specific risks such as ageing, climate change, war or inflation spikes. As to the main sources of fiscal risks for their countries, IFIs identified the following factors (ranked here from most to least frequently mentioned) (**Table** II.3.2 and **Graph** II.3.5):

([176]) E.G.: projecting to what extent a global economic slowdown results in higher public unemployment spending.

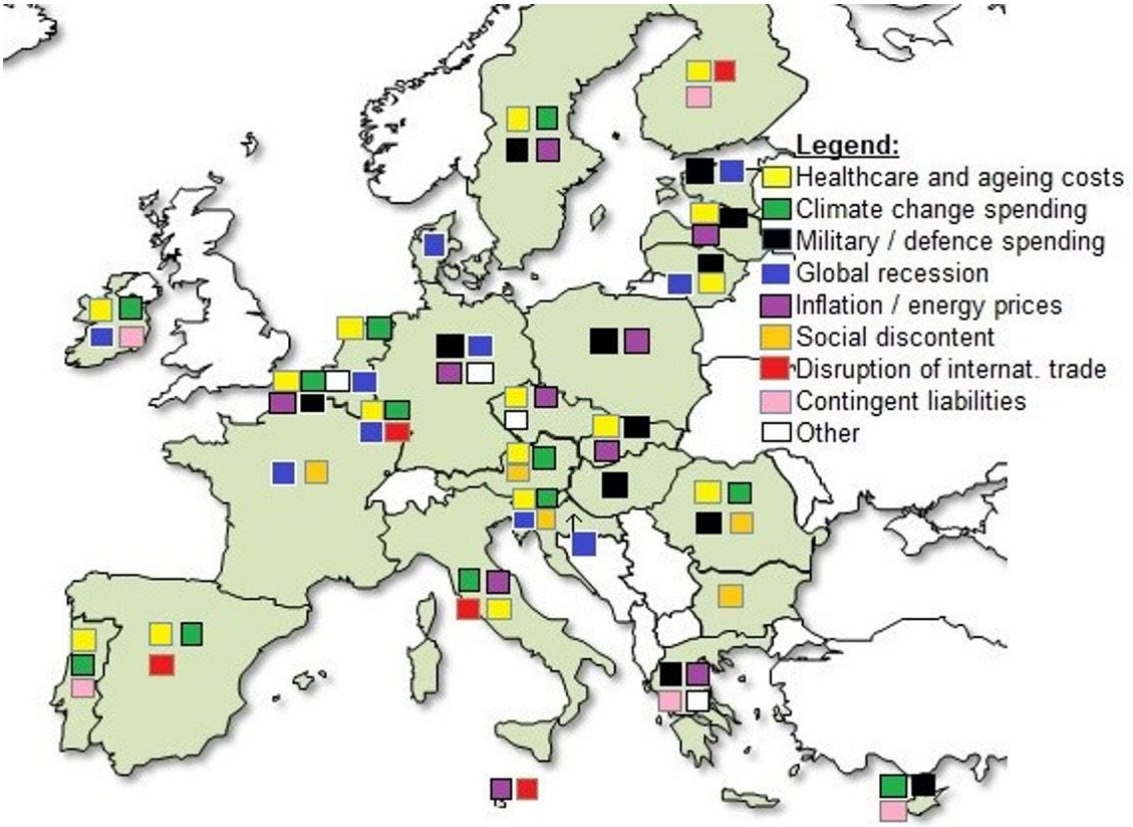
([177]) E.G.: For example, improving population growth models to better estimate future long-term care expenditure.

Table II.3.2: **Types of risks, number of IFIs mentioning them and given reasoning**

Risk type	Nbr of IFIs	Reasons given by the IFIs
Ageing	19	Demographic changes will inevitably lead to rising costs in long-term care and pensions. They mention that uncertainties stem from national budget plans not looking far enough ahead and lacking structural reforms to address the sustainability of long-term care.
Climate change	14	Either unexpected damages through natural disasters (implicit and explicit contingent liabilities) or difficulties in estimating true costs of the green transition and climate adaptation.
Global recession	11	Their economy is particularly susceptible to this risk due to its openness. They expect a rise in public unemployment expenditure and decreased tax income, should a global recession occur.
Military tensions	11	Escalating tensions, foreseeing higher defence spending and more necessary emergency aid in case this risk further materialises.
Inflation spikes	9	Strong inflation leading to higher energy prices and increased pension expenditure due to higher interest rates.
Social discontent	5	Protests potentially disrupting parts of the economy, or dissatisfaction about public services such as social security (implying higher pressure to spend more on these services).
Trade disruptions	5	Their country's high dependency on international trade as an exacerbating factor and rising geopolitical tensions as a catalyst.
Contingent liabilities	5	The relatively large number of COVID-related guarantees or non-performing loans on PPPs or SOEs as being particularly dangerous in case of an economic downturn.

Source: Commission services.

Graph II.3.5: **Most prevalent sources of fiscal risk according to IFIs**



(1) IFIs could select up to four answers (to distil the most prevalent sources of risk), which several IFIs did. As such, the graph does not intend to say that the other issues are not important to them at all. For countries that have 2 IFIs, more than four answers are possible and IFIs could also select fewer than four answers.

Source: Commission services.

Most IFIs see room to improve budgetary tools/strategies to better manage fiscal risks. In only two cases, the IFI states that the national fiscal framework is well-equipped to manage fiscal risks, referring to established macroeconomic modelling and well-defined correction mechanisms (see figure XX below). According to 13 IFIs, these tools/strategies exist, but could be improved. Another 10 IFIs find that there are insufficient budgetary tools/strategies in place, and more needs to be done to properly identify fiscal risks in their countries. To further improve fiscal risks management tools/strategies, IFIs call for:

- better quantification of medium-term fiscal indicators;
- more stochastic debt sustainability analysis;
- a more systemic approach to managing risks, rather than using an ad-hoc approach;
- strategies to better integrate the quantification of fiscal risks into their national plans;
- integrating climate change modules in medium- or long-term projections;
- more adaptation strategies to limit the impact of climate change;
- a reform of the pension policies;
- or more effectively limiting the increase of contingent liabilities.

Lastly, seven IFIs indicate that that they are unable to assess the adequacy of fiscal risks management tools and strategies. This is either because the identification of fiscal risks falls outside their mandate, because they do not have a full overview due to insufficient disclosure of risks by the government or due to the inherently non-fiscal nature of the risk (e.g.: rising global military tension).

Overall, IFIs are involved in analysing and managing fiscal risks. Most IFIs are (or seek to become) involved in fiscal risk management activities. IFIs show an interest in DSA and environmental risks analysis, but in many Member States the fiscal risk calculations done by the government are not quantified or the calculations are not yet made public. More transparency and quantification would allow more IFIs to expand the scope of their risk (management) analyses to specific sources of risks like ageing or climate change. This would be justified by the fiscal relevance of such risks, especially with the stronger focus on debt sustainability and medium-term expenditure under the reformed EU fiscal governance framework.

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Table II.A.1: **Overview EDP steps – Euro area Member States**

Steps in EDP procedure	Treaty Art.	Member State																
		IE	FR	ES	LV	MT	LT	BE	DE	IT	NL	AT	PT	SI	SK	CY	FI	MT
Starting phase																		
Commission adopts EDP-report = start of the procedure	126(3)	18.02.2009	18.02.2009	18.02.2009	18.02.2009	13.05.2009	13.05.2009	07.10.2009	07.10.2009	07.10.2009	07.10.2009	07.10.2009	07.10.2009	07.10.2009	07.10.2009	12.05.2010	12.05.2010	21.05.2013
Economic and Financial Committee adopts opinion	126(4)	27.02.2009	27.02.2009	27.02.2009	27.02.2009	29.05.2009	29.05.2009	27.10.2009	27.10.2009	27.10.2009	27.10.2009	27.10.2009	27.10.2009	27.10.2009	27.10.2009	27.05.2010	27.05.2010	21.06.2013
Commission adopts:																		
opinion on existence of excessive deficit	126(5)																	
recommendation for Council decision on existence of excessive deficit	126(6)	24.03.2009	24.03.2009	24.03.2009	02.07.2009	24.06.2009	24.06.2009	11.11.2009	11.11.2009	11.11.2009	11.11.2009	11.11.2009	11.11.2009	11.11.2009	11.11.2009	15.06.2010	15.06.2010	29.05.2013
recommendation for Council recommendation to end this situation	126(7)																	
Council adopts:																		
decision on existence of excessive deficit	126(6)																	
recommendation to end this situation	126(7)	27.04.2009	27.04.2009	27.04.2009	07.07.2009	07.07.2009	07.07.2009	02.12.2009	02.12.2009	02.12.2009	02.12.2009	02.12.2009	02.12.2009	02.12.2009	02.12.2009	13.07.2010	13.07.2010	21.06.2013
deadline for correction of excessive deficit		***2013***	***2012***	***2012***	***2012***	***2010***	***2011***	***2012***	***2013***	***2012***	***2013***	***2013***	***2013***	***2013***	***2013***	***2012***	***2011***	***2014***
Follow-up																		
Commission adopts communication on action taken					27.01.2010			15.06.2010	15.06.2010	15.06.2010	15.06.2010	15.06.2010	15.06.2010	15.06.2010	15.06.2010	27.01.2011	27.01.2011	15.11.2013
Commission adopts recommendation for NEW Council recommendation to end situation of excessive deficit	126(7)	11.11.2009	11.11.2009	11.11.2009		27.01.2010	27.01.2010				29.05.2013		27.09.2012					
Council adopts recommendation for NEW Council recommendation to end situation of excessive deficit	126(7)	02.12.2009	02.12.2009	02.12.2009		16.02.2010	16.02.2010				21.06.2013		09.10.2012					
new deadline for correction of excessive deficit		***2014***	***2013***	***2013***		***2011***	***2012***				***2014***		***2014***					
Commission adopts communication on action taken		15.06.2010	15.06.2010	15.06.2010		06.01.2011	21.09.2010	11.01.2012			15.11.2013					11.01.2012		
Commission adopts recommendation for Council decision establishing inadequate action	126(8)							29.05.2013										
Council adopts decision establishing inadequate action	126(8)							21.06.2013										
Commission adopts recommendation for a Council decision to give notice	126(9)							29.05.2013										
Council adopts decision to give notice	126(9)							21.06.2013										
Commission adopts recommendation for NEW Council recommendation to end situation of excessive deficit	126(7)	03.12.2010	29.05.2013	06.07.2012									29.05.2013	29.05.2013		07.05.2013		
Council adopts recommendation for NEW Council recommendation to end situation of excessive deficit	126(7)	07.12.2010	21.06.2013	10.07.2012									21.06.2013	21.06.2013		16.05.2013		
new deadline for correction of excessive deficit		***2015***	***2015***	***2014***				***2013***					***2015***	***2015***		***2016***		
Commission adopts communication on action taken		24.08.2011	15.11.2013	14.11.2012				15.11.2013						15.11.2013		06.09.2013*		
Commission adopts recommendation for NEW Council recommendation to end situation of excessive deficit	126(7)		27.02.2015	29.05.2013														
Council adopts recommendation for NEW Council recommendation to end situation of excessive deficit	126(7)		10.03.2015	21.06.2013														
new deadline for correction of excessive deficit			***2017***	***2016***														
Commission adopts communication on action taken			01.07.2015	15.11.2013														
Commission adopts recommendation for Council decision establishing inadequate action	126(8)			07.07.2016									07.07.2016					
Council adopts decision establishing inadequate action	126(8)			12.07.2016									12.07.2016					
Commission adopts recommendation for Council implementing decision imposing a fine for failure to take effective action	126(8)			27.07.2016									27.07.2016					
Commission adopts recommendation for Council decision to give notice	126(9)			27.07.2016									27.07.2016					
Council adopts decision to give notice	126(9)			08.08.2016									08.08.2016					
new deadline for correction of excessive deficit				***2018***									***2016***					
Council adopts implementing decision on imposing a fine for failure to take effective action	126(8)			08.08.2016									08.08.2016					
Commission adopts communication on action taken				16.11.2016									16.11.2016					
Commission adopts proposal for Council opinion on Economic Partnership Programme													16.11.2016					
Abrogation																		
Commission adopts recommendation for Council decision abrogating existence of excessive deficit	126(12)	18.05.2016	23.05.2018	05.06.2019	29.05.2013	14.11.2012	29.05.2013	02.06.2014	30.05.2012	29.05.2013	02.06.2014	02.06.2014	22.05.2017	18.05.2016	02.06.2014	18.05.2016	29.06.2011	12.05.2015
Council adopts decision abrogating existence of excessive deficit	126(12)	17.06.2016	22.06.2018	14.06.2019	21.06.2013	04.12.2012	21.06.2013	20.06.2014	22.06.2012	21.06.2013	20.06.2014	20.06.2014	16.06.2017	17.06.2016	20.06.2014	17.06.2016	12.07.2011	19.06.2015

Notes: * In line with Regulation (EU) No 472/2013 on the strengthening of economic and budgetary surveillance of Member States in the euro area experiencing or threatened with serious difficulties with respect to their financial stability (Two-pack) the assessment of effective action is carried out in the context of the programme surveillance.

Source: Commission services

Table II.A.2: **Overview EDP steps – Non-euro area Member States**

Steps in EDP procedure	Treaty Art.	Member State							
		HU	PL	RO	CZ	BG	DK	HR	UK
Starting phase									
Commission adopts EDP-report = start of the procedure	126(3)	12.05.2004	13.05.2009	13.05.2009	07.10.2009	12.05.2010	12.05.2010	15.11.2013	11.06.2008
Economic and Financial Committee adopts opinion	126(4)	24.05.2004	29.05.2009	29.05.2009	27.10.2009	27.05.2010	27.05.2010	29.11.2013	25.06.2008
Commission adopts:									
opinion on existence of excessive deficit	126(5)								
recommendation for Council decision on existence of excessive deficit recommendation for Council recommendation to end this situation	126(6) 126(7)	24.06.2004	24.06.2009	24.06.2009	11.11.2009	06.07.2010	15.06.2010	10.12.2013	02.07.2008
Council adopts:									
decision on existence of excessive deficit	126(6)								
recommendation to end this situation	126(7)	05.07.2004	07.07.2009	07.07.2009	02.12.2009	13.07.2010	13.07.2010	21.01.2014	08.07.2008
deadline for correction of excessive deficit		***2008***	***2012***	***2011***	***2013***	***2011***	***2013***	***2016***	***fin. Year 2009/10***
Follow-up									
Commission adopts communication on action taken			03.02.2010		15.06.2010	27.01.2011	27.01.2011	02.06.2014	
Commission adopts recommendations for Council decision establishing inadequate action	126(8)	22.12.2004							24.03.2009
Council adopts decision establishing inadequate action	126(8)	18.01.2005							27.04.2009
Commission adopts recommendation for NEW Council recommendation to end excessive deficit situation	126(7)	16.02.2005		08.02.2010					24.03.2009
Council adopts NEW recommendation to end excessive deficit situation	126(7)	08.03.2005		16.02.2010					27.04.2009
new deadline for correction of excessive deficit		***2008***		***2012***					***fin. year 2013/14***
Commission adopts communication on action taken		13.07.2005	11.01.2012	21.09.2010					
Commission adopts recommendations for Council decision establishing inadequate action	126(8)	20.10.2005							
Council adopts decision establishing inadequate action	126(8)	08.11.2005							
Commission adopts recommendation for NEW Council recommendation to end excessive deficit situation	126(7)	26.09.2006							11.11.2009
Council adopts NEW recommendation to end excessive deficit situation	126(7)	10.10.2006							02.12.2009
new deadline for correction of excessive deficit		***2009***							***fin. year 2014/15***
Commission adopts communication on action taken		13.06.2007							06.07.2010
Commission adopts recommendations for Council decision establishing inadequate action	126(8)								12.05.2015
Council adopts decision establishing inadequate action	126(8)								19.06.2015
Commission adopts recommendation for NEW Council recommendation to end excessive deficit situation	126(7)	24.06.2009	29.05.2013						12.05.2015
Council adopts NEW recommendation to end excessive deficit situation	126(7)	07.07.2009	21.06.2013						19.06.2015
new deadline for correction of excessive deficit		***2011***	***2014***						***fin. year 2016/17***
Commission adopts communication on action taken		27.01.2010							16.11.2015
Commission adopts recommendations for Council decision establishing inadequate action	126(8)	11.01.2012	15.11.2013						
Council adopts decision establishing inadequate action	126(8)	24.01.2012	10.12.2013						
Commission adopts recommendation for NEW Council recommendation to end excessive deficit situation	126(7)	06.03.2012	15.11.2013						
Council adopts NEW recommendation to end excessive deficit situation	126(7)	13.03.2012	10.12.2013						
new deadline for correction of excessive deficit		***2012***	***2015***						
Commission adopts communication on action taken		30.05.2012	02.06.2014						
Abrogation									
Commission adopts recommendation for Council decision abrogating existence of excessive deficit	126(12)	29.05.2013	12.05.2015	29.05.2013	02.06.2014	30.05.2012	02.06.2014	22.05.2017	22.11.2017
Council adopts decision abrogating existence of excessive deficit	126(12)	21.06.2013	19.06.2015	21.06.2013	20.06.2014	22.06.2012	20.06.2014	16.06.2017	04.12.2017
Starting phase									
Commission adopts EDP-report = start of the procedure	126(3)			14.02.2020					
Economic and Financial Committee adopts opinion	126(4)			24.02.2020					
Commission adopts:									
opinion on existence of excessive deficit	126(5)								
recommendation for Council decision on existence of excessive deficit recommendation for Council recommendation to end this situation	126(6) 126(7)			04.03.2020					
Council adopts:									
decision on existence of excessive deficit	126(6)								
recommendation to end this situation	126(7)			03.04.2020					
deadline for correction of excessive deficit				**2022**					
Follow-up									
Commission adopts communication on fiscal situation in Romania				18.11.2020					
Commission adopts recommendation for Council recommendation to end this situation	126(7)			02.06.2021					
Council adopts recommendation to end the excessive deficit situation	126(7)			18.06.2021					
Commission adopts communication on action taken				24.11.2021					

Source: Source: Commission services.

Table II.A.3: **Overview EDP steps – Greece**

Steps in EDP procedure	Treaty Art.	Greece
Starting phase		
Commission adopts EDP-report = start of the procedure	126(3)	18.02.2009
Economic and Financial Committee adopts opinion	126(4)	27.02.2009
Commission adopts:		
opinion on existence of excessive deficit	126(5)	
recommendation for Council decision on existence of excessive deficit	126(6)	24.03.2009
recommendation for Council recommendation to end this situation	126(7)	
Council adopts:		
decision on existence of excessive deficit	126(6)	27.04.2009
recommendation to end this situation	126(7)	
deadline for correction of excessive deficit		***2010***
Follow-up		
Commission adopts recommendations for Council decision establishing inadequate action	126(8)	11.11.2009
Council adopts decision establishing inadequate action	126(8)	02.12.2009
Commission adopts Council recommendation for decision to give notice	126(9)	03.02.2010
Council decision to give notice	126(9)	16.02.2010
new deadline for correction of the excessive deficit		***2012***
Commission adopts communication on action taken		09.03.2010
Council adopts conclusions thereon		16.03.2010
Commission adopts recommendation for NEW Council decision to give notice	126(9)	04.05.2010
Council decision to give notice	126(9)	10.05.2010
new deadline for correction of the excessive deficit		***2014***
Follow-up - 1st review		
Commission adopts communication on action taken		19.08.2010
Commission adopts recommendation for Council decision amending the Council decision to give notice	126(9)	19.08.2010
Council decision amending the Council decision to give notice	126(9)	07.09.2010
Follow-up - 2nd review		
Commission adopts communication on action taken		09.12.2010
Commission adopts recommendation for Council decision amending the Council decision to give notice	126(9)	09.12.2010
Council decision amending the Council decision to give notice	126(9)	20.12.2010
Follow-up - 3rd review		
Commission adopts communication on action taken		24.02.2011
Commission adopts recommendation for Council decision amending the Council decision to give notice	126(9)	24.02.2011
Council decision amending the Council decision to give notice	126(9)	07.03.2011
Follow-up - 4th review		
Commission adopts communication on action taken		01.07.2011
Commission adopts recommendation for Council decision amending the Council decision to give notice	126(9)	05.07.2011
Council decision amending the Council decision to give notice	126(9)	12.07.2011
Follow-up - 5th review		
Commission adopts communication on action taken		26.10.2011
Commission adopts recommendation for Council decision amending the Council decision to give notice	126(9)	26.10.2011
Council decision amending the Council decision to give notice	126(9)	08.11.2011
Follow-up - Second Adjustment Programme		
Commission adopts communication on action taken		09.03.2012
Commission adopts recommendation for Council decision amending the Council decision to give notice	126(9)	09.03.2012
Council decision amending the Council decision to give notice	126(9)	13.03.2012
Follow-up - Second Adjustment Programme		
Commission adopts communication on action taken		30.11.2012
Commission adopts recommendation for Council decision amending the Council decision to give notice	126(9)	30.11.2012
Council decision amending the Council decision to give notice	126(9)	04.12.2012
new deadline for correction of the excessive deficit		***2016***
Follow-up - Third Adjustment Programme		
Council adopts decision to give notice	126(9)	20.08.2015
Abrogation		
Commission adopts recommendation for Council decision abrogating existence of excessive deficit	126(12)	12.07.2017
Council adopts decision abrogating existence of excessive deficit	126(12)	25.09.2017

Source: Commission services.

Table II.A.4: **Overview SDP steps – Romania and Hungary**

Steps in SDP procedure	Treaty Art.	Romania	Romania (cont.)	Romania (cont.)	Hungary	Hungary (cont.)
Starting phase						
Commission adopts:						
recommendation with a view to giving warning on the existence of a significant observed deviation	121(4)	22.05.2017	23.05.2018	05.06.2019	23.05.2018	05.06.2019
recommendation for Council recommendation with a view to correcting the significant observed deviation	121(4)	22.05.2017	23.05.2018	05.06.2019	23.05.2018	05.06.2019
Council adopts recommendation with a view to correcting the significant observed deviation	121(4)	16.06.2017	22.06.2018	14.06.2019	22.06.2018	14.06.2019
deadline for report on action taken		***15.10.2017***	***15.10.2018***	***15.10.2019***	***15.10.2018***	***15.10.2019***
Follow-up						
Commission adopts:						
recommendation for Council decision on no effective action	121(4)	22.11.2017	21.11.2018	20.11.2019	21.11.2018	20.11.2019
recommendation for Council recommendation with a view to correcting the significant observed deviation	121(4)	22.11.2017	21.11.2018	20.11.2019	21.11.2018	20.11.2019
Council adopts:						
decision on no effective action	121(4)	05.12.2017	04.12.2018	05.12.2019	04.12.2018	05.12.2019
recommendation with a view to correcting the significant observed deviation	121(4)	05.12.2017	04.12.2018	05.12.2019	04.12.2018	05.12.2019
new deadline for report on action taken		***15.04.2018***	***15.04.2019***	***15.04.2020***	***15.04.2019***	***15.04.2020***
Commission adopts:						
recommendation for Council decision on no effective action	121(4)	23.05.2018	05.06.2019	*Superseded by the Excessive Deficit Procedure*	05.06.2019	*Council decision on effective action taken**
Council adopts:						
decision on no effective action	121(4)	22.06.2018	14.06.2019		14.06.2019	

Notes: *this conclusion was reached by the Council on 20 July 2020 as part of the Council Recommendation on the 2020 National Reform Programme of Hungary and delivering a Council opinion on the 2020 Convergence Programme of Hungary. The conclusion was based on the Commission's overall assessment and took into account the activation of the general escape clause for 2020, which allowed for a temporary departure from the adjustment path towards the medium-term budgetary objective.

Source: Commission services.

Part III

Fostering investment in times of high public debt

KEY FINDINGS

This part reviews the need and scope to foster investment in the EU.

Since 2010, the productive investment share of GDP in the EU has been lagging the US, though overall investment has been more comparable

- Productive investment, especially on R&D and other intangible investments are essential for raising EU firms' competitiveness.
- Both the private and the public sector should contribute to fulfil the sizeable investment needs in the EU to support the green and digital transitions, energy security and defence.

An adequate economic governance set up and adequate policy responses to economic turbulences and challenges also contribute to support and preserve investment

- Contrary to the developments in the wake of the euro-area sovereign debt crisis, public investment has not been negatively affected by the pandemic and the energy crises, thanks to coordinated fiscal policies at the national and the EU level.
- The new EU fiscal framework will help to maintain adequate levels of public investment through a more gradual fiscal adjustment in Member States that commit to growth-enhancing reforms and investment, while the RRF will continue support investment in the EU until 2026.

Yet governments can support investments through several channels with public and private investments complementing each other

- Governments can provide the required investment with public resources, through public procurement or state-owned entities. This allows the government to have more control over the investment outcomes and is particularly needed in case of public goods or club goods.
- Alternatively, the government can support investments by providing public resources to mobilise private investments, such as tax incentives, subsidies, loans, guarantees or equity injections, or by incentivising investments through regulation and reforms. These instruments are more cost effective compared to relying only on public investment and can help to internalise externalities or to address financial and non-financial frictions. The preferred instrument largely depends on the underlying reason of the underinvestment.

In the last decades, the EU has gradually taken a greater role in incentivising both public and private investments in Europe

- Initially, the EU mostly focused on supporting investments in the context of agricultural and cohesion policies, mainly financed through grants, although a slow trend toward more diversified investment supports was seen. In the aftermath of the Great Financial Crisis (GFC) in particular, this trend gained momentum: EU policies broadened their support to private investments markedly, both through the extensive use of financial instruments and by stimulating economic reforms.
- Following the Covid-19 crisis, the setup of the Recovery and Resilience Facility at the EU level actively supports both public and private investments, as well as structural reforms. Approximately half of all RRF funds are directed towards public investments, and one third towards supporting private investments. Finally, making RRF disbursements conditional upon the achievement of concrete objectives (milestones and targets) linked to the delivery of investments and reforms has created effective incentives for implementation.

In a context of a need to foster public investment and historically high levels of public debt, analysing drivers of public investment with a focus on the impact of public debt is key

- Novel empirical results reported here confirm the existence of a negative effect of high public debt on public investment.

- The analysis however also confirms that this negative relationship could be mitigated by some fiscal factors, not least compliance with fiscal rules, especially if a track record in this respect can be achieved. Results also suggest that this is particularly the case for high debt countries. In the same vein, the quality of the design of national fiscal rules could, according to the results, further mitigate the negative impact of high public debt on public investment.
- There is also evidence in our analysis that the negative effect of the level of public debt on public investment will be lower if the debt dynamic is sustainable, though statistical significance of the findings depends on the indicator used.

While public debt has a bearing on the government's capacity to investment, the reverse is also true, namely when the government invests it has a bearing on the level and dynamic of its debt, though it also generates long-lasting GDP gains

- QUEST-based simulations highlight that public investment tends to cause public debt to increase, though the extent of this increase depends on several factors and, notably, the path of the future growth-interest differential.
- The simulations also point at long-lasting GDP gains from public investment, even when fiscal adjustment takes place to cover the cost of public investments and to stabilise debt. This is illustrated in a "prioritisation" scenario where the government implements a fiscally neutral shift from unproductive towards productive (i.e. investment) spending, which yields persistent GDP gains.

1. INVESTMENT TRENDS AND NEEDS IN THE EU

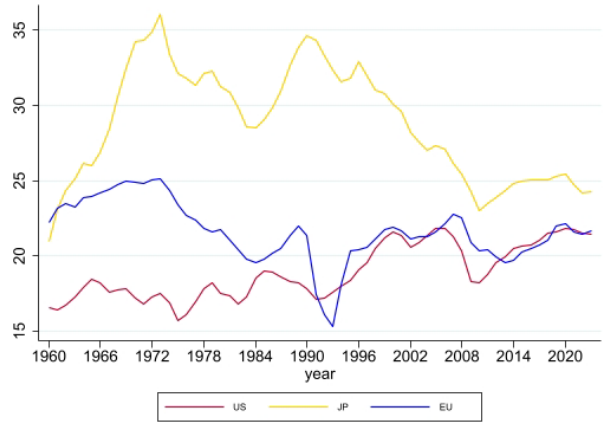
Setting the scene for this thematic part of the report on need and ways to foster investment in the EU, this chapter reviews EU investment trends and needs ([105]).

Recently, the investment environment has been affected by large shocks. Those included the Covid-19 crisis and the ensuing supply-side disruptions, followed by the biggest inflation spike in 40 years, which was notably linked to sharp increases in energy (and food) prices related to Russia's war of aggression against Ukraine. More recently, the Middle East conflict has further darkened the geopolitical landscape. The recent environment also witnessed tightening financing conditions.

At the same time, the EU faces large-scale investment needs to tackle structural issues such as the green and digital transitions, energy security and to strengthen defence capabilities. Both the public and the private sector should play a role in addressing these investment needs - "*Public finance needs to lead the way, private actors need to provide the scale*" (European Commission 2020). Importantly, the new economic governance framework is set to strengthen debt sustainability while providing clear incentives for reforms and investment, while the implementation of the RRF will continue to support investment (and other growth-enhancing spending) and reforms until 2026.

1.1. INVESTMENT TRENDS: EU VERSUS OTHER ADVANCED ECONOMIES

Graph III.1.1:**Total real investments (% Real GDP)**



Source: Elaborations on European Commission 2024 spring forecast.

Several economic shocks have shaped investment developments in the EU over the past decades (Graph III.1.1). The EU real investment share of GDP fell by around 5 pps. over the ten years that followed the oil shock of 1973, dropping below 20% at the beginning of the 80s. The investment share then recovered during that decade but then was hit by the global recession in 1990 and the Exchange Rate Mechanism (ERM) crisis in 1992 ([106]), bringing back EU investments below 20% of GDP. EU investment resumed its recovery in 1995 and peaked ahead of the Great Financial Crisis (GFC) at close to 23% of GDP, a level last seen in the 1970s. However, in the aftermath of the GFC and especially the subsequent euro-area sovereign debt crisis, the EU experienced the largest investment decline among advanced economies, causing its share of GDP to drop again below 20%. Only by 2014 did the EU investment share of GDP resumed positive developments, halted only by the Covid-19 outbreak and without however ever reaching the high levels seen just ahead of the GFC. The recovery

([105]) In this chapter, investment is meant as gross fixed capital formation. The national account (ESA2010) definition of gross fixed capital formation includes the following different types of investment: (1) dwellings; (2) other buildings and structures (including major improvements to land); (3) machinery and equipment; (4) weapons systems; (5) cultivated biological resources (e.g. trees and livestock); (6) costs of ownership transfer on non-produced assets, like land, contracts, leases and licences; (7) R&D, including the production of freely available R&D; (8) mineral exploration and evaluation; (9) computer software and databases; (10) entertainment, literary or artistic originals; (11) other intellectual property rights. See Eurostat (2013).

([106]) For an overview of the ERM crisis, see Corsetti et al. (eds., 2023, part.2).

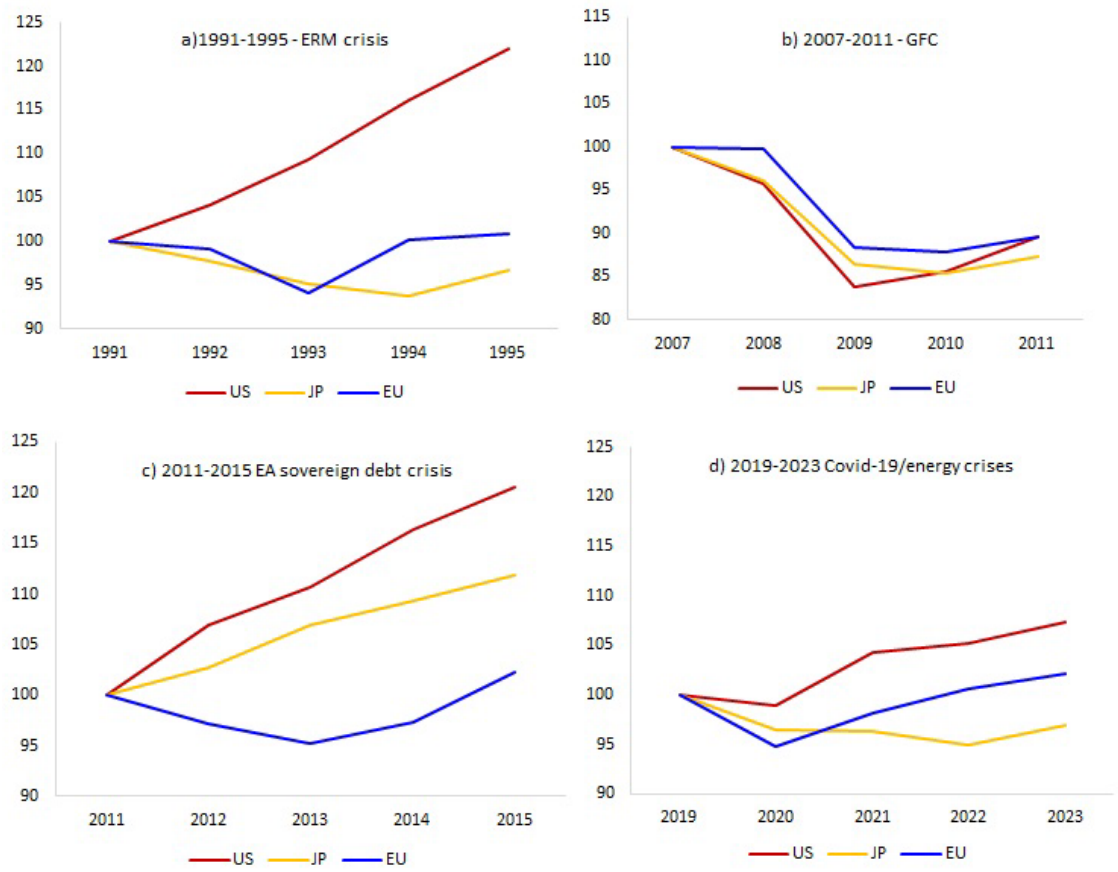
episode ahead of the Covid-19 crisis was supported by the Juncker plan (European Commission, 2015), which was specifically aimed at addressing weakness of the investment trend seen in the EU ([107]).

Various shocks caused EU investment growth to decelerate compared to the US. Reviewing investment developments during major shocks since the beginning of the 1990s (Graph III.1.2), we note that these caused investment growth to decelerate compared to the US, with the notable exception of the EU performance during the GFC and ahead of its sovereign debt crisis (Graph III.1.2b). During the GFC, after the sharp decline recorded in 2008 and 2009, US real investment (in absolute terms) recovered somewhat to reach in 2011 90% of its 2007 level. In 2011 the EU posted the same performance but showed more investment resilience over the period 2007-2011. However, the EU was then hit by the euro-area sovereign debt crisis causing investment to fall again, whereas investment recovery stayed on track in the US, and in Japan (Graph III.1.2c).

The fact that the Covid-19 pandemic did not have any long-lasting negative impact on EU real investment in absolute terms is also noteworthy (Graph III.1.2d**)**. This positive outcome was underpinned by an unprecedented and prompt policy response at both the national and EU level of fiscal and monetary authorities. In particular, the activation, already by March 2020, of the general escape clause of the Stability and Growth Pact allowed national governments to undertake the fiscal policies necessary to keep households and firms afloat. At the EU level, since 2021, the Recovery and Resilience Facility - the core tool of NGEU - has been supporting investments in the green and digital transitions, facilitating the modernisation and restructuring of the EU economy. In turn, the ECB and national Central Banks also took extraordinary measures to ensure the provision of liquidity needed in the economy. This allowed the EU to post better investment performance than Japan during the Covid-19 crisis, though it was still outperformed by the US.

([107]) With an initial contribution of € 21 billion from the EU and national budgets, the plan mobilised - based on Commission's official estimates - up to € 315 billion of additional investments in key areas like infrastructure, education, research and innovation, renewable energy, and energy efficiency, providing an important boost to the European investment climate. Christensen et al. (2019) estimate that the additional investments mobilised by the Junker plan were even bigger, at € 408 billion, with an expected positive impact on EU economic growth of around 1.8 percentage points by 2022.

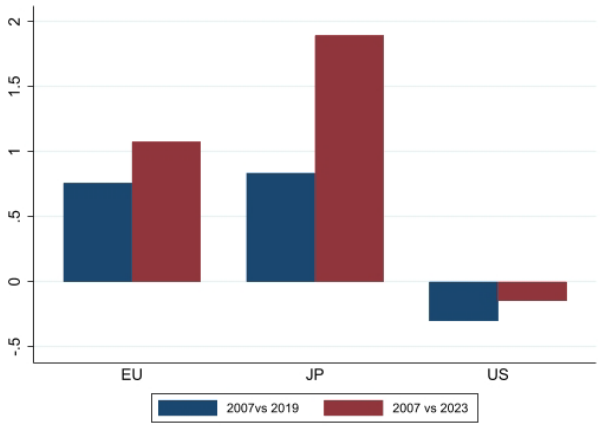
Graph III.1.2: **Real investment developments during different shocks**



Note: index, base year = 100.

Source: Elaborations on European Commission 2024 spring forecast.

Graph III.1.3: **Investment gaps following the Great Financial Crisis and the Covid-19 crisis**



Note: Positive gaps imply that investment as a share of GDP is lower in 2019 (or 2023) than in 2007.

Source: elaborations on European Commission 2024 spring forecast.

Despite this recent positive performance, the EU investment as a share of GDP remains below the levels observed prior to the pandemic and the Great Financial Crisis (Graph III.1.3). By 2023, the EU investment ratio was still 1% of GDP lower than in 2007 ([108]). By contrasts, the US investment share of GDP had already overtaken its pre-GFC levels by 2019 and has remained above that level, despite a small decline observed after the pandemic. Finally, Japan's investment share of GDP stands lower than in 2007 and has experienced a sharp decline since the pandemic, substantially stronger than the one observed in the EU. Nonetheless, at around 25% of GDP in 2023, investment continues to play a stronger role in Japan than in other advanced economies.

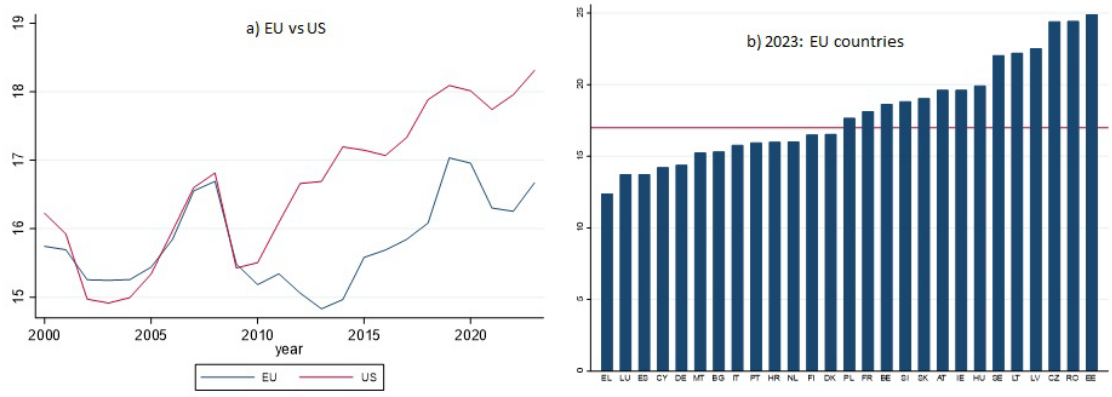
1.2. PRODUCTIVE AND INNOVATIVE INVESTMENT

The US has registered a stronger rise in productive investment than the EU since 2010. Investment excluding dwellings as a share of GDP – productive investment – was similar in the EU and the US in the first decade of this century, but the EU has lagged behind the US by around 1.5 pps. since 2010 (Graph III.1.4a). More specifically, a recent study ([109]) reveals that the EU appears relatively less specialised in key productivity-enhancing technologies. Noting that the EU excels in green technologies, this study however notes that it lags in critical digital domains such as artificial intelligence (AI), the Internet of Things (IoT), blockchain technologies and quantum computing. Yet the picture is uneven across EU countries (Graph III.1.4b) with, in 2023, twelve Member States having a productive investment share of GDP below the EU average of 16.7%, ranging from 12.4% in Greece to 24.9% in Estonia.

([108]) Note that 2007 was inflated by the real estate bubble, in some countries, implying some possible overestimation of the gaps. Using 2007 as a reference year is however commonly used across studies to highlight gaps that materialised in the aftermath of the GFC.

([109]) See the "Science, Research and Innovation Performance of the EU" (SIRP) 2024 report by the Directorate-General for Research and Innovation at the European Commission, released in June 2024.

Graph III.1.4: **Productive real investments (% real GDP)**



Source: elaborations on European Commission 2024 spring forecast.

The gap between the US and the EU in terms of productive investment reflects a steady difference in terms of investment composition (Graph III.1.5a**).** Investment in dwellings still represents more than 20% of total investment in the EU, despite a downward trend since 2000 (Graph III.1.5b). Overall, construction continues to be the largest component of total investments in the EU (more than 45%).

By contrast, the share of investment in dwellings and other construction is lower in the US. Yet, the share of investment in equipment ([110]), currently stand at around 30% of total investments in the EU, close to the US level, though lower than in Japan. Finally, since 2000, the EU investment composition has implied a rise in the 'other' component, which largely consists of intangible investment (e.g. R&D and computer software and databases). Large differences across these three regions however remains in terms of the level of this highly productive investment, with 4.4% of GDP in the EU in 2023, compared to 6.8% in the US and 5.8% in Japan. This weaker share of the 'other' component in the EU thus weighs on its competitiveness. In particular, the sizeable share of intangible investments seen in the US since the start of the century contributes to its stronger performance in terms of total factor productivity (Graph III.1.6).

Most EU countries have rather low levels of intangible investment. This low and diversified share of intangible investment reflects an overall low propensity to research, innovation and digitalisation across the EU Member States. Progress with the Capital Markets Union ([111]) and taxation systems that reduce the debt bias in corporate financing ([112]) would help to support this high-risk investment, contributing to a higher productivity of the EU economy. At the same time, a further deepening of the single market is needed, reducing regulatory barriers to entry and barriers to growth, reducing administrative burden and improving the business environment. The benefits from new AI technologies for EU productivity will largely depend on an increasing intangible capital stock and the possibility to train and reallocate labour towards sectors with the highest complementarity with those innovative technologies ([113]). Ireland, which benefits from intangible investment made by US and other foreign firms, is an outlier, with a share of the 'other' component in total investments of around 50% (Graph III.1.5c).

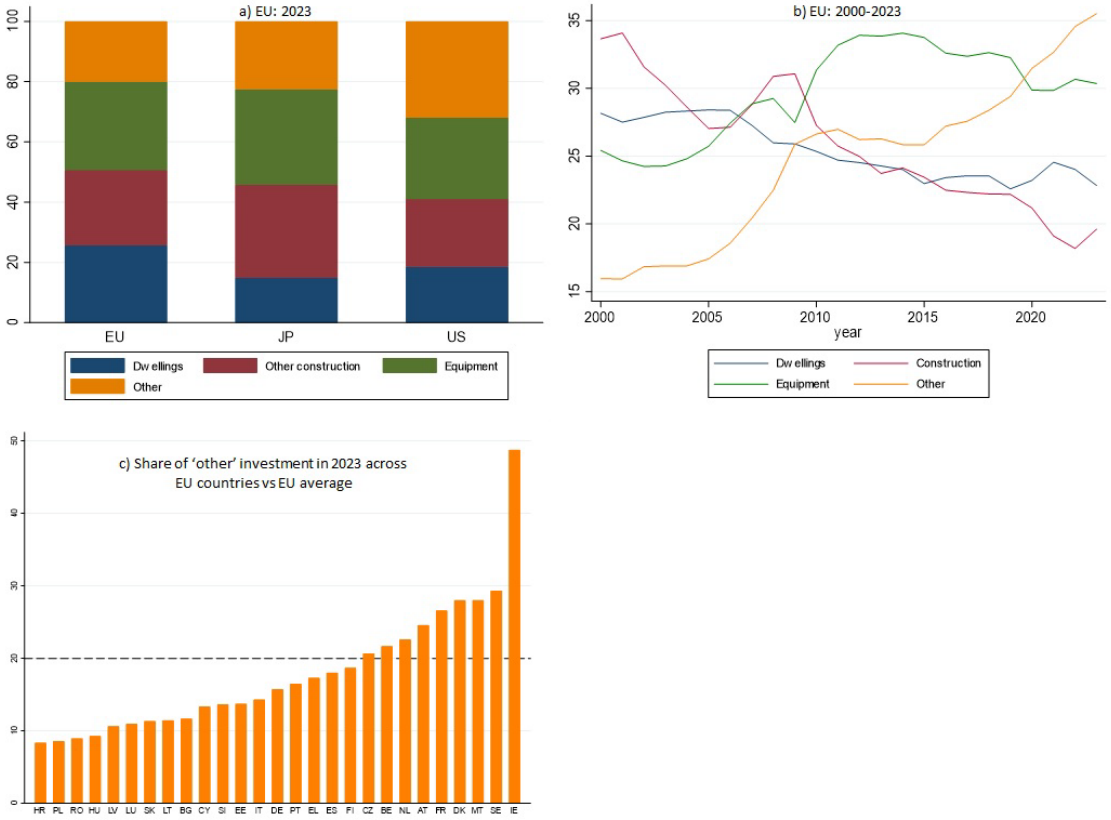
([110]) Equipment, together with infrastructure investment in energy and transport represent key items to support overall productivity.

([111]) Capital markets union - European Commission (europa.eu)

([112]) debt-equity bias - European Commission (europa.eu)

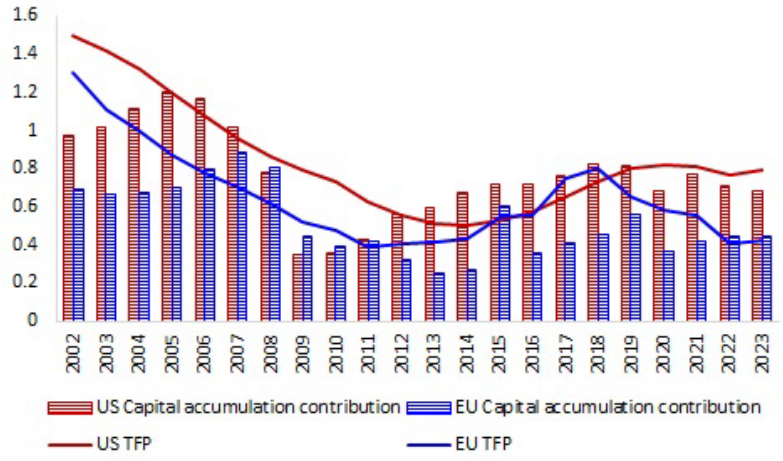
([113]) See IMF (2024a).

Graph III.1.5: **Nominal investment composition by asset type**



Source: elaborations on European Commission 2024 spring forecast.

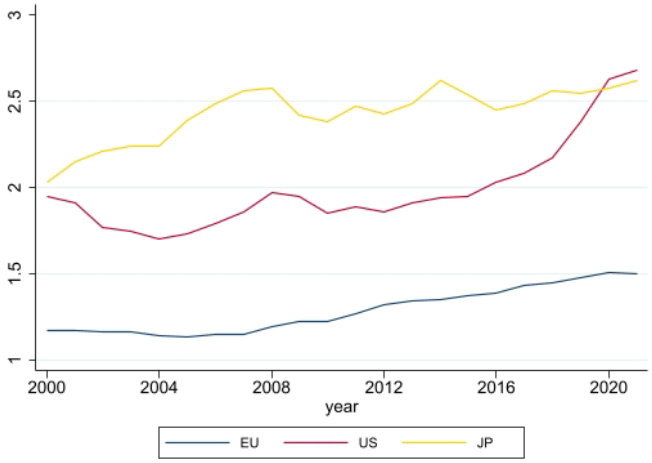
Graph III.1.6: **EU vs US: Total factor productivity (TFP) and capital accumulation contributions to potential output growth**



Source: European Commission 2024 spring forecast report.

More investment in R&D would be required to maintain and enhance EU's competitiveness in the global market. Specifically, despite an increasing trend since the beginning of this century, there has been a persistent gap between EU corporations' spending on R&D and that of the US and Japan ([114]), which in 2022 was more than 1% of GDP higher in those countries than in the EU (Graph III.1.7). The smaller average size of EU firms plays a role, at least in the digital adoption (EIB, 2020). Meanwhile, the Japan and the US have converged, both recently registering private R&D investment slightly above 2.5% of GDP.

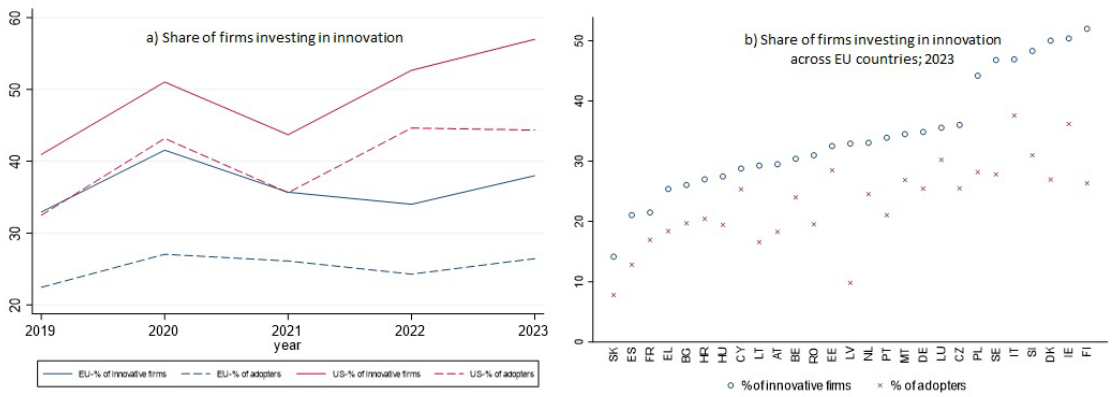
Graph III.1.7: **Private investment in research and development (% of GDP)**



Source: Eurostat.

The share of businesses that do not innovate is larger in the EU than in the US (EIB, 2023). Based on most recent data, across the EU, only Finland, Ireland and Denmark have a share of innovative firms comparable to the one of the US (more than 50%). In most other EU countries that share is lower than 40% (Graph III.1.8b). The percentage of businesses that adopt innovative technologies to produce goods or services (i.e., 'adopters' in Graph III.1.8a) is about 45% in the US, significantly higher than the around 25% seen in the EU. Only Italy, Ireland, Luxembourg and Slovenia show adoption rates of more than 30%.

Graph III.1.8: **Firms' investment in innovation**



Source: EIBIS (2023).

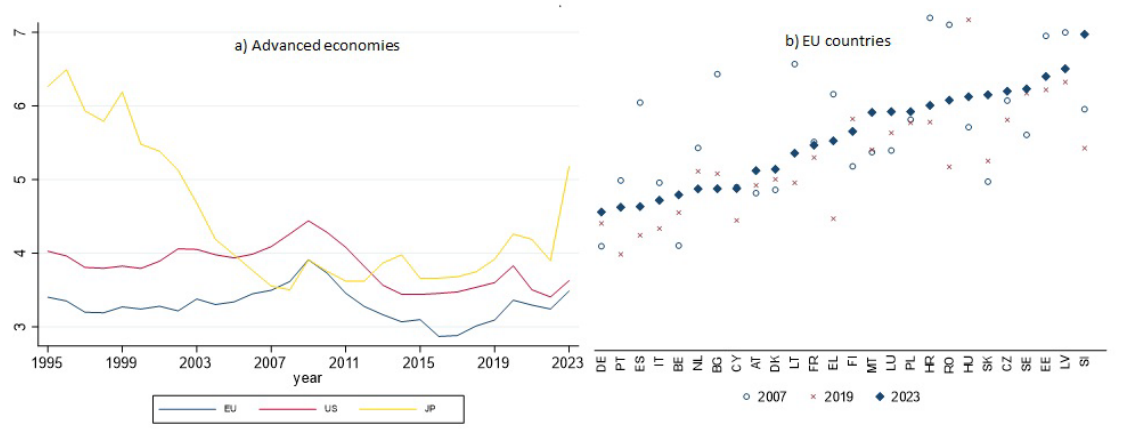
1.3. PUBLIC INVESTMENT TRENDS

A persistent negative gap between public investment in the EU and the US is also observed (Graph III.1.9a**).** Since the mid-1990s, this gap has been around 1% of GDP, but it has shrunk in the last few years, thanks to post-pandemic acceleration in EU public investment. Part of the gap is related to investment in defence, which in 2022 represented around EUR 213 billion in the US compared to EUR 58 billion in the EU (see for more details on EU defence spending, Cepparulo and Pasimeni, 2024). In Japan, after a sharp fall from the extremely elevated levels recorded in the mid-1990s, the public

([114]) The SIRP 2024 report, op. cit., mentions that: "The EU has increased its R&D investments over the past two decades. Yet a gap remains to some of its main competitors, and the EU's relative weight in the global R&D landscape is decreasing".

investment share of GDP stands now again as the highest among advanced economies (around 2 pps higher than in the EU).

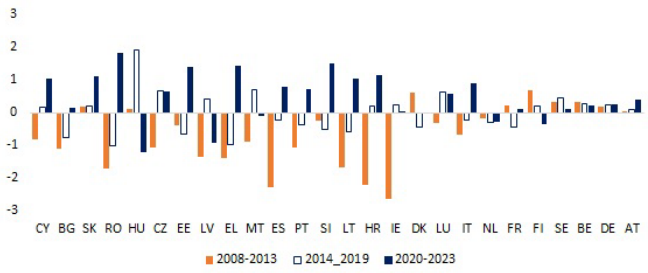
Graph III.1.9: **Public investment (% of GDP)**



Source: elaborations on European Commission 2024 spring forecast.

Public investment in the EU was preserved during the Covid-19 crisis. The shortfall in EU public investment since 2007 - i.e., after the Great Financial Crisis and especially in the wake of the euro-area sovereign debt crisis - was reverted only by 2017, followed by a continuous upward trend during and after the pandemic. In 2023, 21 EU Member States had a higher public investment share of GDP than in 2019, while 16 Member States recorded public investment higher than the EU average of 3.5% of GDP. However, for 12 EU countries the public investment share of GDP in 2023 was still lower than in 2007 (Graph III.1.9b).

Graph III.1.10: **Cumulative changes in public investment across periods, (% of GDP)**



Source: European Commission 2024 spring forecast.

Public investment fell substantially across EU countries in the wake of the euro-area sovereign debt crisis. Public investment annual reductions over 2008-2013 averaged 0.7% of GDP in the EU, with the worst outcome occurring in programme and eastern countries (Graph III.1.10). While in those years the implementation of the so-called "six-pack" reform of the SGP took place, evidence (see European Commission, 2022) suggests fiscal rules have neither significantly hampered nor promoted public investment. Yet other (related) factors such as market pressure and the need to preserve debt sustainability may have affected public investment decisions (Bacchiocchi et al. 2011; Heinemann, 2006). Other empirical evidence however suggests that fiscal policy may become more pro-cyclical and shift the adjustment to public investment when it is constrained by fiscal rules (Easterly 1999; Galí and Perotti 2003; Breunig and Busemeyer 2012). Yet, novel evidence presented in this report, in Chapter III.3, suggests that compliance with adequately designed fiscal rules appear to preserve/foster public investment.

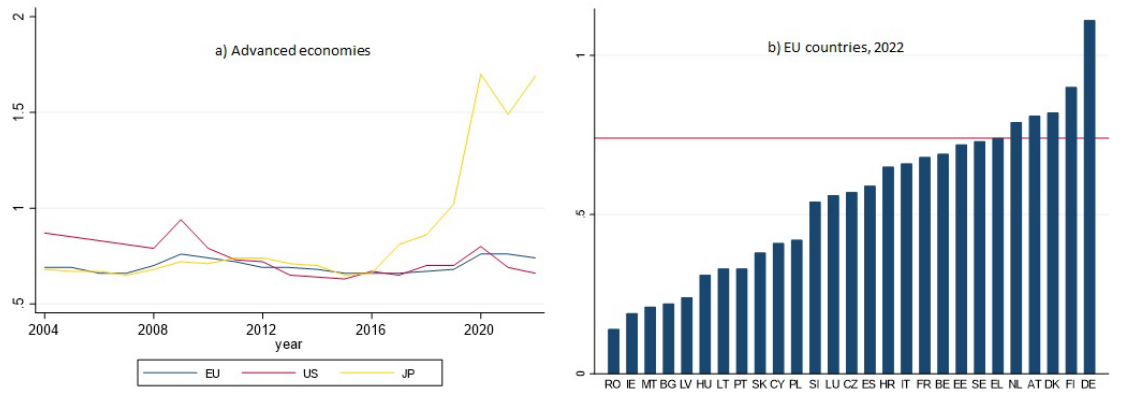
In the post pandemic period, by contrast, public investment increased. Over 2020-2023 (see Graph III.1.10), public investment annual increase averaged 0.5% of GDP in the EU. This positive outcome was due to the bold policy response at the national and the EU level, including the prompt activation of the general escape clause of the Stability and Growth Pact and the creation of NGEU/RRF (see Chapter III.2), complemented by Council's recommendations inviting governments to increase public investments for the green and digital transitions. The higher public investment underpinned by the RRF is expected to have a lasting impact on EU economic growth, including via its combination with

structural reforms and a crowding in of productive private investment over the medium term, on the back of enhanced public infrastructure, which raises the productivity of the private capital stock (Pfeiffer et al., 2022).

The new EU fiscal framework is designed to avoid that future fiscal adjustments negatively affect public investment. The revised Stability and Growth Pact, which entered into force on 30 April 2024 (see Chapter II.2), reflects the lessons learned from the policy response in the wake of the euro-area sovereign debt crisis which saw net public investment becoming negative in several EU Member States, implying a depletion of their public capital stock. In episodes of fiscal adjustment, politicians may opt for reducing government investments rather than government consumption, to retain voters' support (Blanchard and Giavazzi 2004; Mehrotra and Välilä 2006). Yet, as observed by Bergman and Hutchison (2015), Gootjes and de Haan (2020) and Keita and Turcu (2022) a sensible design of fiscal rules might be effective at minimising their negative impact on the quality of public expenditure. The new EU fiscal rules aim at strengthening debt sustainability and at promoting sustainable and inclusive growth through reforms and investment. In practice, Member States that seek to obtain an extended fiscal adjustment period (i.e., up to 7 years instead of the normal 4 years) – allowing for a more gradual fiscal adjustment - will need commit to at least preserve the level of public investments (financed by their national budget) during the adjustment period.

The public sector can also play a key role in supporting R&D investment. Among advanced economies, the EU governments currently spend on average 0.75% of GDP on R&D, in line with levels currently seen in the US. However, in the early 2000s the US outpaced the EU (and Japan) (Graph III.1.11). Japan has recorded a significant increase in public R&D investment in recent years, more than doubling its value since 2016. The majority of EU governments invest less than the EU average. Germany, Finland, Denmark, Netherlands and Austria are the only five countries that stand out in terms of public R&D investment effort. According to Moretti et al., (2021), increases in government-funded R&D for an industry or a firm result in significant increases in private sector R&D, with evidence of international spillovers (within the same industry) and with evidence of positive effects on overall productivity growth as well. According to Bloom et al. (2013), social returns of R&D investments doubled the private returns on US firms over 1981-2001, raising the gross value of investments in R&D. This points at a market failure whereby private choice likely implies a less than (socially) desired level of R&D. As observed by IMF (2024b) this is also true in sectors where the innovation driven by R&D would lead the provision of a public good featuring societal benefits (i.e., lower emissions, improvement in public health). At the same time, the intervention of the public sector to support innovation in specific sectors can be beneficial only when "*externalities can be correctly identified and precisely measured (for example carbon emissions); domestic knowledge spillovers from innovation in targeted sectors are strong; government capacity is high enough to prevent misallocation (for example to politically connected sectors); policies do not discriminate against foreign firms, so as to avoid triggering retaliation by trade partners*" (Frick, 2024).

Graph III.1.11: **Budget allocation for R&D (% of GDP)**



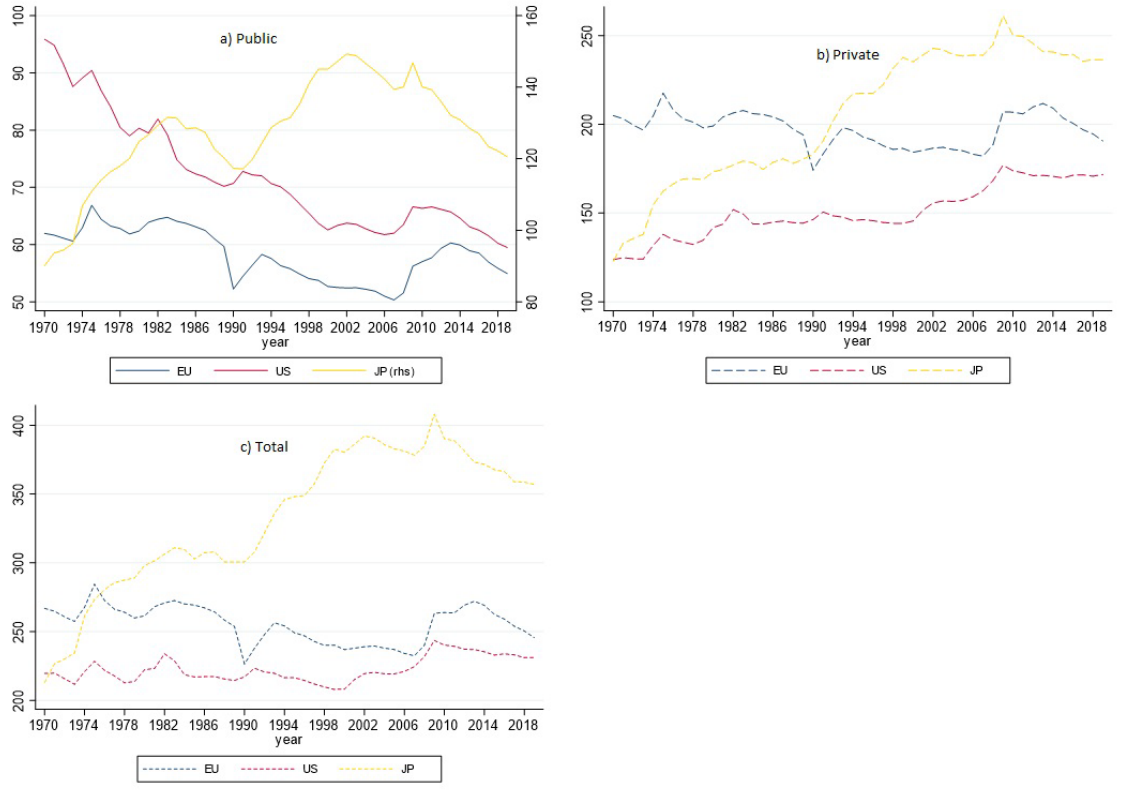
Source: Eurostat.

1.4. CAPITAL STOCK TRENDS

The EU public capital stock-to-GDP ratio has been on a secular downward trend since the beginning of the 1970s, while the private capital stock ratio has remained broadly stable. Barring the post GFC/euro-area sovereign debt crisis period (2008-2013), when the stagnation in economic activity implied a sudden temporary increase (denominator effect) in capital stock ratios (both private and public), the EU public capital stock-to-GDP ratio has been on a steadily declining trend (Graph III.1.12a). This trend was mainly driven by low levels of public investment, as the rate at which the EU is replacing its public capital stock with flows of new public investment is lower than the rate at which this capital is consumed and the increase that would be needed to match the economy's expanding rate (i.e., the denominator). The public capital stock ratio in the EU has been constantly lower than in other advanced economies, though downward trends are also visible in the public capital stock ratio of the US and Japan.

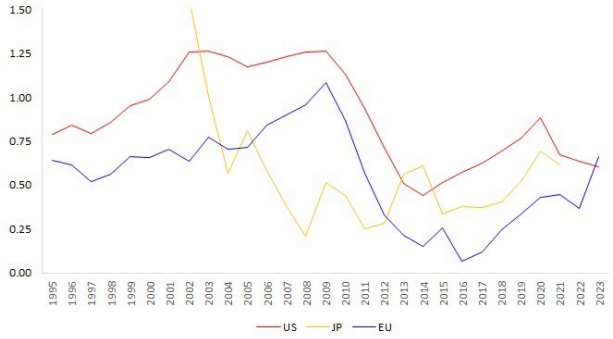
Contrary to other advanced economies, the EU's total capital stock ratio has stagnated and even declined over the past five decades (Graph III.1.12c**).** This is underpinned by a mild secular decline in both the public and private capital stock in the EU over the past five decades (Graph III.1.12a/b). In contrast to the EU, the US and Japan exhibited a rising trend in the private capital stock ratio (though the EU level is still higher than in the US). In those two economies, the increasing private capital stock ratio has more than compensated for the negative trend in the public capital stock, resulting in a rising total capital stock-to-GDP ratio over since the 1970s. According to the golden rule of capital accumulation - Phelps, (1961) - the optimal capital-to-output ratio increases when total factor productivity and population growth (or employment) declines. The latter two features closely characterise developments in the EU over the past decades, implying that the optimal capital-to-output ratios is now probably higher than in the past, at odds with the observed decline in the EU capital stock.

Graph III.1.12: **Capital stock (% of GDP)**



Source: IMF Investment and Capital Stock Dataset, 2021.

Graph III.1.13: **Net public investment across advanced economies (% of GDP)**

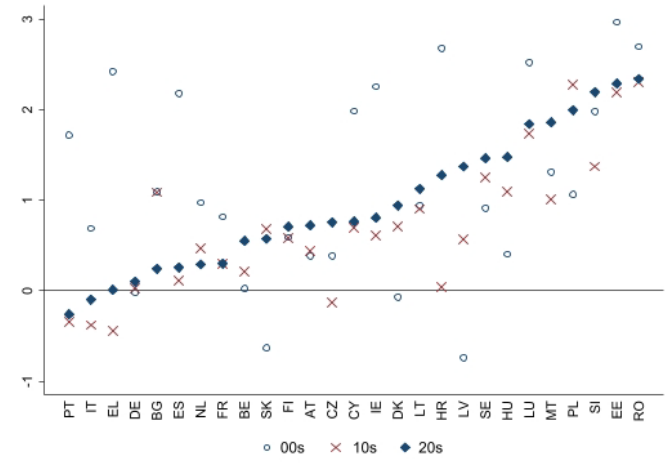


Source: elaborations on European Commission 2024 spring forecast.

Privatisations may be a factor driving divergence in trends between public and private capital stocks. Over the last five decades, governments have implemented large privatisation programmes, notably involving energy and transport infrastructures. Privatisations may be driven by efficiency concerns, but in some cases are also motivated by the need to curb high public debts. Statistically, the sale of those economic entities implies a shift from public to private capital stock, a point to bear in mind when assessing relative trends across public and private stocks of capital ([115]).

EU net public investment was close to zero in the wake of euro-area sovereign debt crisis. Following the Great Financial Crisis, the decline in general governments' net investment - i.e., gross fixed capital formation minus consumption of fixed capital - was more marked and protracted in the EU than in other advanced economies, mainly due to the advent of sovereign debt crisis in the euro area (Graph III.1.13). As a result, in 2016, EU net public investment was at a historically low level of less than 0.1% of GDP. In contrast, the Covid-19 and the energy crises did not cause such prolonged declines in net public investment, thanks to an unprecedented policy response that critically aimed at also preserving investment, with a key role of the RRF in this respect. In 2023, EU net public investment was again in a clearly positive territory at 0.7% of GDP, a level close to that seen in other advanced economies and consistent with at least preserving the public capital stock-to-GDP ratio.

Graph III.1.14: **Net public investment trends across EU countries (% of GDP)**



Source: European Commission 2024 spring forecast.

Extremely low or negative net public investment levels have been a common feature of high-debt EU countries after the euro-area sovereign debt crisis. Those countries implemented sizeable and quick fiscal adjustments that particularly hit public investment (see also Chapter III.3). At the same time, Member States with more fiscal space, like Germany or the Netherlands, have still experienced low levels of net public investment since the 2000s (Graph III.1.14). In most EU countries, the average net public investment in the 2010s was less than the average in the previous decade. Specifically, in the 2010s, net public investment was negative in Greece, Italy, and Portugal, and extremely low in Germany, Spain, France, and Belgium. Despite the recovery, in the first years of the 2020s, in half of EU Member States net investment levels are still lower than in the 2000s, i.e., prior to the euro-area sovereign debt crisis.

([115]) Most state-owned enterprises - SOEs - currently operate under market conditions and are thus recorded withing the private sector. This was not always the case in the past and the move of these entities from under the general government sector to the private sector has also implied a shift in the capital stock from public to private.

1.5. INVESTMENT NEEDS

The green and digital transitions require massive investments in the EU. In order for the EU to achieve its 2030 climate and energy targets, it is estimated that the annual average investment needs (excluding transport) will be about EUR 570 billion in the current decade by 2030, or about EUR 320 billion (1.6 percentage points of GDP) additional compared to the previous decade 2011-2020 ([116]). Yearly investments in transport ([117]) linked primarily to the purchase of private vehicles are estimated to be around EUR 170 billion higher than in 2011-2020. For the period of 2021–2027, around 110 billion dollars (0.8% of GDP, EUR 2022) are estimated to be needed per year in addition to the current and projected financing to ensure the implementation of our environmental priorities and support the EU's green transition. They include meeting our objectives with regards to pollution, water, biodiversity and natural capital, and for the circular economy and waste management (European Commission (2022) 438 final). To boost the additional net zero manufacturing capacity as outlined in the Net Zero Industry Act, approximately EUR 11 billion in annual investments will be needed from 2023 to 2030 ([118]). While a consolidated quantified projection for the climate adaptation needs at EU level does not exist, estimates range between EUR 35 billion to EUR 500 billion per year. This significant range results from varying methodological approaches and underlying assumptions (Forster et al. 2017). The investment gap in the EU in relation to digital transformation is estimated to be 0.9% of GDP per year. The figure includes investments in digital infrastructure, digital skills and advanced technologies, but leaves out other dimensions such as digital public services ([119]).

Current infrastructure is also inadequate to support the competitiveness of the EU economy. There is a lack of overall estimates on the investment needs in public infrastructure, both in terms of new capacity and rehabilitation of existing facilities. According to the European Investment Bank (EIB 2016), transport and telecommunications infrastructure investment requirements were estimated to be at around EUR 160 billion, to modernise transport networks, to reduce congestion costs and to reduce trade bottlenecks. Investment needs in new transport infrastructure has been estimated to EUR 100bn annually (EC, SWD(2020(98)). Social infrastructure (health, education, and social housing) would also require additional funding, which is projected at EUR 142 billion annually (Zachariadis, 2018). These investments are particularly relevant since infrastructure is a positive driver of growth (although it varies over time or between nations) and plays a central role in enhancing human welfare (Romp and de Haan, 2005). As reviewed by Dissou and Didic (2013), this occurs via a direct effect on private productivity which in turn increases private investment. In general, due to the public good nature of infrastructure and their positive externalities, the source of financing has typically been public rather than private. The presence of private financing started in the '90s thanks to the development of PPPs (see Box III.2.3 in Chapter III.2).

Given the size of the investment needs, a mix of private and public sector investments is required ([120]). As mentioned above, the new EU fiscal framework incentivises public investment by allowing an extended and more gradual fiscal adjustment for Member States that commit to investment and reforms (see Box III.2.2 in Chapter III.2). However, there is a limit for governments to increase public investment, as the additional debt would require higher primary balances, unless the cost of servicing debt is lower than economic growth (i.e., r<g) (see Box III.3.2 in Chapter III.3). When considering this budget constraint, it becomes clear that the quality of public investment - and public finances in general – can affect the effective fiscal space at the disposal of governments to increase

([116]) Derived from the NZIA Impact Assessment [SWD(2023) 68 final] aligning the scope to [SWD(2024) 63 final. Figures are reported in 2023 EUR.

([117]) The estimates account for the full acquisition cost of the required zero-emission vehicles, rolling stock, vessels or aircrafts, as well as the related recharging/refuelling infrastructure but exclude non-energy transport infrastructure such as road or rail.

([118]) These investment needs include only a part of the net-zero technologies in the annex of the Net-Zero Industry Act: i.e., excluding solar thermal, tidal and wave technologies, storage other than batteries, geothermal, fuel cells, biogas and biomethane technologies, grid technologies.

([119]) Langedijk et al. (2023).

([120]) See Langedijk et al. (2023) for the different role of private and public funding for the digital and green transitions.

public investment. Public investment that contributes to the economy's productive capacity will in fact have a higher fiscal multiplier on economic growth.

The Letta report (2024) identifies key elements to foster investments in the EU. According to the report, in order to avoid falling short of achieving the desired EU investment objectives, four main actions should be put in place: (i) deepening the Single Market to improve its integration and allow EU companies to gain larger size, comparable to companies in other jurisdictions, (ii) create a more integrated and robust European financial market, by supporting the formation of a Savings and Investments Union; (iii) a more stringent enforcement of State aid regulations at the national level to prevent competition distortions; and iv) increasing EU level funding to counterbalance recently enacted instruments by other major powers (e.g. the US Inflation Reduction Act).

Tackling investment barriers and improving productivity also provide concrete avenues to foster investment in the EU. In this respect, the monitoring of investment barriers provided by the EIB (see Box III.1.1 below) and the expanding role of national productivity boards across the EU (see Box III.1.2 below) are noteworthy.

Finally, the challenging geopolitical environment also implies more EU investment on defence, as part of an overall increase of defence spending. Russia's war of aggression against Ukraine has led to terrible human suffering and large economic losses on European soil, and heralds heighted security risks for EU countries. Defence spending consequently regained increased importance. In this regard, there are two relevant commitments:

defence investment expenditure: NATO (2014) ([121]) and the European Council (2017) fixed a target for defence investment expenditure calling for a "medium-term increase in defence investment expenditure to 20% of total defence spending (collective benchmark)".

defence expenditure on Research and Technology (R&T): this component is supposed to represent close to 2% of total defence expenditure in all Member States (European Council, 2017).

The first commitment is not binding because the 20% collective target was met in 2019 and positive developments since then ensure that this benchmark is still met on average. Yet, 7 countries now stand with defence investment levels still below 20% of total defence spending, moreover "…it remains imperative to maintain the upward trajectory of defence investments to ensure that European armed forces are adequately equipped with cutting-edge capabilities" (EDA, 2023). As for the second commitment, investment effort is needed there, as defence expenditure on Research and Technology (R&T) in 2021 average only 1.7%.

([121]) In addition, the NATO (2014) commitments required member countries to reach a minimum spending of 2% of GDP considering that at that time the United States accounted for over 65% of all transatlantic defence spending (Becker, 2019). According to NATO forecasts, the number of countries spending more than 2% of GDP (9 countries) in 2023 is nearly doubling compared to 2022. Poland is predicted to have the greatest increases, with a growth of more than 60%, followed by Finland and Romania, where spending is expected to rise by more than 40%. Only three nations, Greece, Italy, and Belgium, are likely to experience a reduction.

Box III.1.1: The 2023 EIB-Group Report to the Commission on Investment Barriers

This box summarises key findings of the latest EIB-Group's report on investment barriers.

Context and structure

The Report's ([1]) main objective is presenting to the Commission (once per year) barriers and bottlenecks to investment as encountered by the European Investment Bank (EIB) and the European Investment Fund (EIF) – jointly named EIB-Group (EIBG) – while carrying out their investment operations. The requirement to produce such reporting is stipulated in the EFSI Regulation ([2]) and was carried over to the InvestEU Regulation ([3]). Currently, the EIB reports to the Commission on barriers encountered during legacy EFSI operations and on actual barriers encountered while carrying out InvestEU operations.

The country-specific evidence provided in the EIB Report is relevant to help prioritise areas where reforms can address investment bottlenecks, thereby being relevant for surveillance activities, notably in the context of the European Semester and the implementation of the Recovery and Resilience Facility. The report also helps shaping views on areas where regulatory bottlenecks could be tackled via EU legislative initiatives.

Conceptually, the 2023 Report is the first of its kind (made available to the general public) and consists of two parts. In Part I, the report investigates an ad hoc selection of industries and certain areas of economic activities, reporting on observed investment barriers in those sectors. The choice of specific thematic areas to look at will change in each report going forward, to be released annually. The areas covered in the present report are the following ([4]):

- Forestry
- Commercial power purchase agreements
- Resilient roads investments
- Antimicrobial resistance
- Cross-border projects

In Part II, the report provides complementary findings based on EIB-Group surveys, interviews and illustrative case studies focusing on SMEs and smaller corporations.

Main findings of the 2023 Report

In its 2023 Report, the EIBG highlights that corporate investment remained relatively resilient till mid-2023, though with strong country differentiation. However, decelerating economic activity, high uncertainty and tighter monetary policy constituted a more challenging environment for firms' investment activities. At the same time, the competitiveness of EU firms is increasingly challenged by structural factors (e.g., comparably higher costs for energy), while investment needs related to digitalisation and climate change are ever more pressing. Overall, the EIBG stresses that preserving investment will be key to support needed transformation and safeguard the competitiveness of the EU corporate sector and that in times of tightening

([1]) The 2023 Report is available here: https://www.eib.org/en/publications/20230330-investment-barriers-in-eu-2023.
([2]) Consolidated text: Regulation (EU) 2015/1017 of the European Parliament and of the Council of 25 June 2015 on the European Fund for Strategic Investments, the European Investment Advisory Hub and the European Investment Project Portal and amending Regulations (EU) No 1291/2013 and (EU) No 1316/2013 — the European Fund for Strategic Investments.
([3]) Regulation (EU) 2021/523 of the European Parliament and of the Council of 24 March 2021 establishing the InvestEU Programme and amending Regulation (EU) 2015/1017.
([4]) The selection of project areas each year will jointly be agreed by the Commission and the EIB Group, accounting also for availability of relevant examples among the investment projects carried out by the EIB Group and avoiding repetition of areas already covered in previous reports. The general intention is thus to choose topics that cover a broad spectrum of subjects across all four InvestEU investment windows.

(Continued on the next page)

Box (continued)

fiscal space this will call for an effective and targeted approach which ensures proper incentives are in place and public investment act as a catalyst for needed investment efforts.

At the sectoral level, the 2023 Report highlights remaining barriers to climate-related investments in the forestry sector, in commercial power purchase agreements and in the development of climate resilient roads. The report also provides a focus on investment needs in the health sector related to the issue of antimicrobial resistance. Finally, investment barriers are examined in the context of cross-border projects, a key aspect to ensure efficient functioning of the Single Market. The main investment barriers / obstacles identified under these various topics are summarised in the Table below.

Table 1: ***Sectoral investment barriers highlighted in the 2023 EIBG report***

Sector	Barrier	Description
Forestry	Policy Coordination	Policies tackling a broad spectrum rendering the economic activity in the sector, lack of coordination between those policies
	Energy intensity	Wood processing companies' characteristically have high energy consumption, i.e. sector is sensitive to energy price shocks / relevant regulations
	Insurance Mechanisms	Inadequate insurance mechanisms, especially with view at extreme weather events which tend to increase in frequency
	Fragmented Structures	High unit costs due to fragmented industrial structures (many SMEs and micro-firms), making investments rather risky and uncertain
Commercial Power Purchase Agreements	Market Complexity	Complexities and counterparty risk requirements limit the market to a small number of corporate buyers.
	Attractiveness for investors	Fragmented market structure, lack of standards, regulatory uncertainty, insufficient creditworthiness of offtakers, and challenges with long-term contracts.
Resilient Roads Investments	Regulatory Environment	Fast-evolving and complex regulatory environment with lack of legal clarity and methodological standards.
	Market Fragmentation	High market fragmentation and immature supply of specialized services hinder investment.
	National Investment Eligibility	Limited eligibility under national investment budgets; need for resilience programmes to be classified as fiscal investments.
Antimicrobial Resistance (AMR)	Reimbursement Model	Traditional model unfit for purpose, undervaluing novel solutions and disincentivizing R&D.
	Healthcare System Fragmentation	Different systems and budgetary constraints among Member States create a fragmented environment with investment disincentives.
	Commercial Risk	Uncertainties regarding commercial outcomes increase financial risk for (researching) SMEs and mid-caps, thus affecting their access to finance
Cross-border Projects	Project Complexity	Large upfront investments and cross-border differences in administration and regulatory requirements (lack of common / EU-wide standards)
	Project Coordination	Coordination issues among decision-makers.
	Political Will	Need for political support from multiple jurisdictions, which often is not sufficiently ensured (over entire project horizon).

Source: The 2023 EIBG report.

In turn, the report indicates that survey evidence (esp. the 8th EIBIS) reveals that high uncertainty and tightening monetary policy were seen as factors shaping the investment outlook and relevant to the issue of investment barriers. The share of finance-constrained firms has been picking up both in the EU and the US, especially among SMEs, while firms queried on longer-term barriers to investment cited most frequently the following contributing factors (see also Graph 1):

- high uncertainty,
- a shortage of skilled staff, and,
- high energy costs (particularly in the EU).

Overall, survey evidence (i.e., the EIBIS, conducted in April-July 2023) shows that EU businesses remain relatively optimistic. 85% of firms confirm that they kept investing over the 12 months, bringing the share of investing firms back to pre-pandemic levels. In addition, asked about intentions for the future, a larger share of firms expected to increase rather than decrease investment. Surveyed firms however noted that some developments casted some shadow on this positive overall picture, notably slowing economic growth and tightening monetary policy. Moreover, on balance, firms indicated that political, regulatory and economic context rather undermine investment. Firms however remained slightly positive in terms of own business prospects and access to internal finance, though a deterioration in the outlook for access to external finance is anticipated.

Graph 1: ***Survey-based evidence on (long-term) investment barriers by country***

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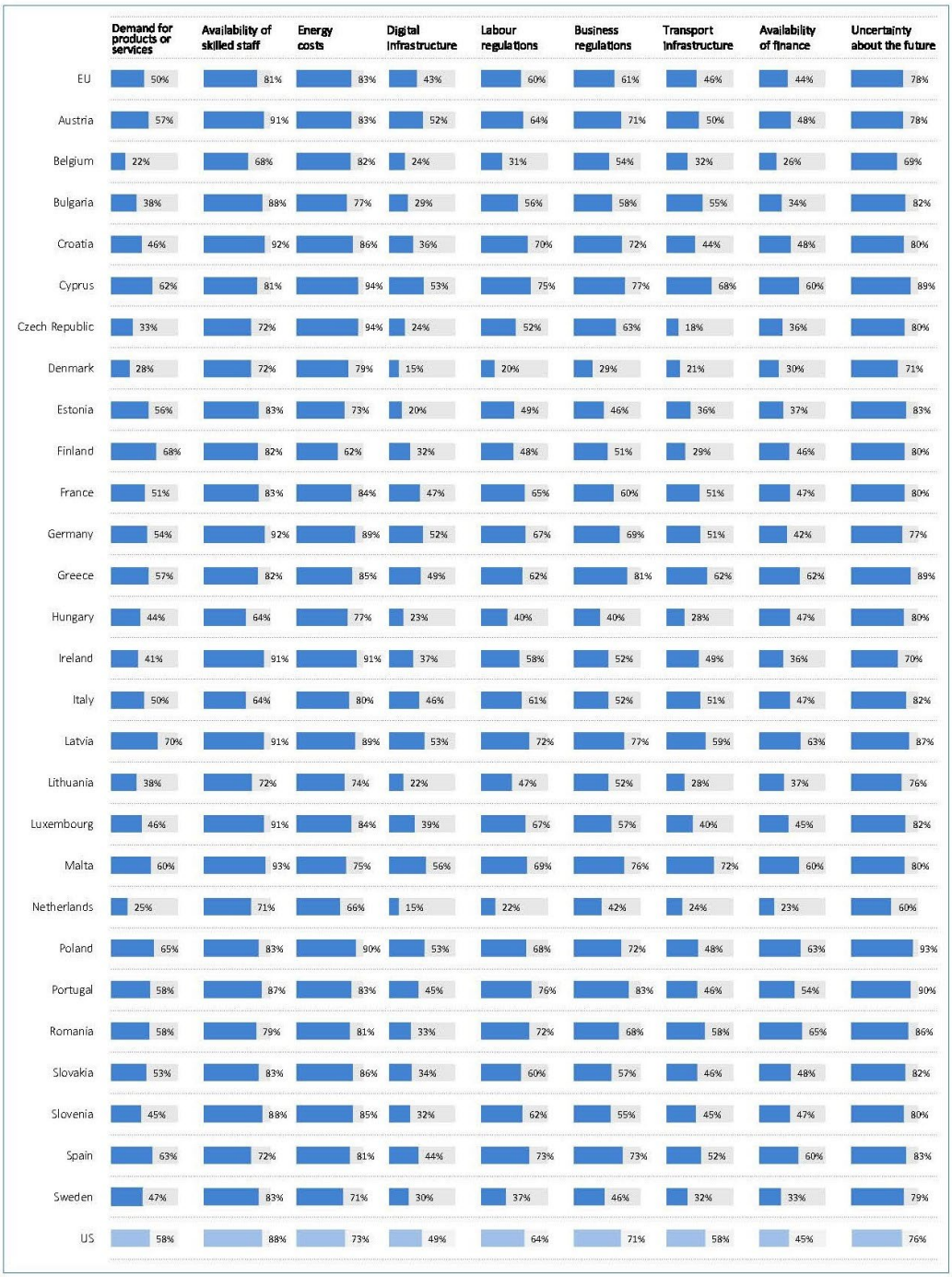
Box (continued)



	Demand for products or services	Availability of skilled staff	Energy costs	Digital infrastructure	Labour regulations	Business regulations	Transport infrastructure	Availability of finance	Uncertainty about the future
EU	50%	81%	83%	43%	60%	61%	46%	44%	78%
Austria	57%	91%	83%	52%	64%	71%	50%	48%	78%
Belgium	22%	68%	82%	24%	31%	54%	32%	26%	69%
Bulgaria	38%	88%	77%	29%	56%	58%	55%	34%	82%
Croatia	46%	92%	86%	36%	70%	72%	44%	48%	80%
Cyprus	62%	81%	94%	53%	75%	77%	68%	60%	89%
Czech Republic	33%	72%	94%	24%	52%	63%	18%	36%	80%
Denmark	28%	72%	79%	15%	20%	29%	21%	30%	71%
Estonia	56%	83%	73%	20%	49%	46%	36%	37%	83%
Finland	68%	82%	62%	32%	48%	51%	29%	46%	80%
France	51%	83%	84%	47%	65%	60%	51%	47%	80%
Germany	54%	92%	89%	52%	67%	69%	51%	42%	77%
Greece	57%	82%	85%	49%	62%	81%	62%	62%	89%
Hungary	44%	64%	77%	23%	40%	40%	28%	47%	80%
Ireland	41%	91%	91%	37%	58%	52%	49%	36%	70%
Italy	50%	64%	80%	46%	61%	52%	51%	47%	82%
Latvia	70%	91%	89%	53%	72%	77%	59%	63%	87%
Lithuania	38%	72%	74%	22%	47%	52%	28%	37%	76%
Luxembourg	46%	91%	84%	39%	67%	57%	40%	45%	82%
Malta	60%	93%	75%	56%	69%	76%	72%	60%	80%
Netherlands	25%	71%	66%	15%	22%	42%	24%	23%	60%
Poland	65%	83%	90%	53%	68%	72%	48%	63%	93%
Portugal	58%	87%	83%	45%	76%	83%	46%	54%	90%
Romania	58%	79%	81%	33%	72%	68%	58%	65%	86%
Slovakia	53%	83%	86%	34%	60%	57%	46%	48%	82%
Slovenia	45%	88%	85%	32%	62%	55%	45%	47%	80%
Spain	63%	72%	81%	44%	73%	73%	52%	60%	83%
Sweden	47%	83%	71%	30%	37%	46%	32%	33%	79%
US	58%	88%	73%	49%	64%	71%	58%	45%	76%

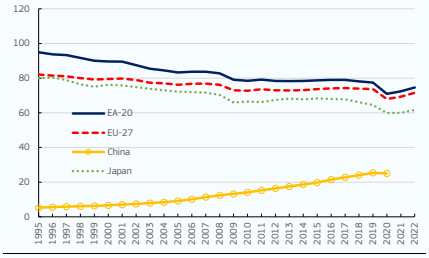
Source: The 2023 EIBG report.

Box III.1.2: National Productivity Boards

This box reviews the role of National Productivity Boards (NPBs), a network of national institutions set up across the EU to help identify and foster needed reforms and investments.

Productivity is key to raising living standards sustainably. This includes macroeconomic, social, and environmental sustainability. However, the EU has fallen behind the US in terms of labour productivity since the 1990s (Graph 1), owing to weaker Total Factor Productivity ([1]) growth and investment. Similarly, the EU lags the US on R&D spending (2.2% vs. 3.5% of GDP, respectively), while other countries, notably China (2.4% of GDP), have caught up ([2]).

Graph 1: ***Labour productivity relative to the US (US = 100)***



(1) GDP per person employed relative to US, at constant prices and purchasing power standards (PPS).
Source: AMECO.

Graph 2: ***NPBs by date of incorporation***

(1) Romania and Hungary wounded down their national productivity boards in 2020 and 2022, respectively.
Source: Commission services.

Since 2016, NPBs in the EU increase awareness for developments in productivity and competitiveness at the country level. These NPBs are tasked to advocate country-specific productivity-enhancing policies. They are also increasing country ownership of reforms by triggering a national debate on these issues. Overall, by helping build consensus, inform and convince stakeholders, NPBs also help avoid status quo bias and foster needed policy action.

In 2016, the Council of the European Union called on all euro-area Member States to set up a National Productivity Board, to "analyse developments and policies in the field of productivity and competitiveness, thereby contributing to foster ownership and implementation of the necessary reforms at the national level" ([3]). Specifically, the NPB recommendation sets out several characteristics for NPBs to be able to fulfil their objectives, namely: i) functional autonomy from government, ii) board members are elected based on experience and qualifications, iii) NPBs can communicate in public in a timely manner, iv) appropriate access to information to carry out high quality economic and statistical analyses, and v) stakeholder involvement in an unbiased manner. These characteristics are those advocated for Independent Fiscal Institutions (IFIs) and, more generally, for independent bodies, albeit with two main differences. Firstly, the legal framework of IFIs sets out that they should have adequate resources to fulfil their mandate, whereas in the case of NPBs, that is only implied in the NPB recommendation. Secondly, unlike NPBs, IFIs are "plugged into" the policy making through several attributions within the budget procedure such as the task of producing or endorsing the macroeconomic forecasts underlying the government's medium-term planning. Moreover, the IFI legal framework requires that governments should either follow the IFI recommendations, or, if they decide not to do so, provide the reasoning in public ("comply or explain" principle), whereas this practice is absent from the NPB framework.

Currently, there are NPBs in 18 EU Member States (Austria, Belgium, Croatia, Cyprus, Denmark, France, Finland, Germany, Greece, Ireland, Latvia, Lithuania, Luxembourg, Malta, the Netherlands,

([1]) Total factor productivity is a measure of productive efficiency in that it measures how much output can be produced from a certain amount of inputs.
([2]) 2021 data. Source: OECD (2024), Gross domestic spending on R&D (indicator). doi: 10.1787/d8b068b4-en (Accessed on 24 May 2024).
([3]) Council Recommendation of 20 September 2016 on the establishment of national productivity boards, OJ C 349, 24.9.2016, p. 1, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32016H0924(01).

(Continued on the next page)

Box (continued)

Portugal, Slovenia, and Slovakia), the majority of which were set up in the two years following the adoption of the NPB recommendation in 2016 (Graph 2). Moreover, most NPBs broadly comply with the spirit of the NPB Recommendation. In most cases, their functional autonomy is established in the legislation of the respective Member State. Also, in most cases, the domestic legislation sets out eligibility criteria for the NPB members/management in terms of professional qualifications *or* experience. Transparent access to NPB related information is also commonly ensured, with all but one NPBs publishing annual reports, actively contributing to the debate on policies to boost productivity and competitiveness and contribute to evidence-based policymaking. Concrete examples in this respect include the analyses of the macroeconomic effects of recovery and resilience plans ([4]), the specification of criteria for the design of support measures in the context of the COVID-19 pandemic ([5]), the assessment of the effects of the 2022 energy price hikes on corporate profits ([6]), and the evaluation of the implications of the green transition on productivity and competitiveness ([7]). These topical themes complement the regular analysis of productivity, competitiveness and investment developments commonly covered by NPBs reports.

Some NPB reports paid specific attention to the issue of investment recently ([8]). The 2023 Latvian NPB report provides an illustration with analyses of investment dynamics, investment gaps, and barriers to investment. The 2023 German NPB report evaluates to what extent investment can compensate for the declining labour force, against the backdrop of skill shortages and ageing populations. It also shows that capital intensity varies across sectors and assesses the feasibility of substituting labour with capital in each sector. Luxembourg's 2023 NPB report quantifies the contribution of intangible capital to Luxembourg's productivity growth in 1995-2019. Finally, the 2023 Finnish NPB report relates low levels of tangible and intangible investment to the observed Finish productivity slowdown.

The establishment of the network of EU NPBs showed significant progress since its inception but room for improvement remains. Nine Member States (Bulgaria, Czechia, Estonia, Hungary, Italy, Poland, Romania, Spain ([9]), and Sweden) at present do not have an NPB. Moreover, there have been reversals in the process of setting up NPBs, as the Romanian and Hungarian NPBs were wound down in 2020 and 2022, respectively. Furthermore, there is scope for greater alignment of NPBs legislation with the NPB recommendation in several cases, notably to boost their functional autonomy from government, setting out robust eligibility criteria for board members (i.e., based on experience *and* qualifications), and ensuring that NPBs have access to information they need to perform their duties.

Overall, the effectiveness of NPBs could benefit from legal provisions guaranteeing sufficient financial resources and guaranteeing the embedding of NPBs in domestic policy making ([10]). In particular, a "comply or explain" principle for policy recommendations issued by NPBs, as is done for IFIs recommendations, could help raise the profile of NPBs in domestic policy discussions. Further progress in establishing the NPB network (i.e., completion of the network, strengthening NPBs' functional autonomy, resources and participation in domestic policy processes) could also be helpful in a context of significant new policy challenges – such as the urgent need to support twin (digital, green) transitions, as the energy crisis and the heightened geopolitical tensions attest ([11]).

([4]) Belgian NPB (2021), Annual Report 2021, Brussels, pages 48-61.
([5]) Danish Economic Councils (2022), Productivity 2022, Copenhagen, pages 7-11.
([6]) Soederhuizen, B., Bettendorf, L., Elbourne, A., Kramer, B., Meijerink, G., Wache, B., 2023, 'A simulation of energy prices and corporate profits', CPB Netherlands Bureau for Economic Policy Analysis, April 2023.
([7]) Conseil National de Productivité (France) (2023), Assessment of crises, competitiveness, productivity and climate transition, Paris, chapers 1 and 3.
([8]) For further details on this topic, see Part III dedicated to analysing investment needs and ways to foster investment in the EU.
([9]) At the time of writing, the Spanish government had put draft legislation on the establishment of an NPB in Spain for public consultation.
([10]) These elements are only implied in the NPB recommendation, although they feature prominently in the literature on pro-productivity institutions' effectiveness.
([11]) For more details, see García, L., Leodolter, A., and Turrini, A., (2024), National Productivity Boards after seven years. An assessment. *ECFIN discussion paper 203*. May 2024.

2. THE ROLE OF THE EU IN SUPPORTING INVESTMENTS: THEORY AND PRACTICE

This chapter discusses how Member States and the EU can most effectively support the closing of investment gaps *in theory* and how the EU has done so *in practice*. To support investment, and notably the needed transition towards a green and digital economy, Member States and the EU will need to adequately target and efficiently implement public investments and properly incentivise private investments.

Europe faces considerable investment needs. Meeting the objectives of the twin transitions (green and digital) have been estimated to call for substantial additional investment, as discussed in the previous chapter in section 1.5.

At the same time, the macroeconomic environment for investments is constrained. While public finances in the EU are forecasted to improve in the coming years, with both deficits and debt ratios declining in 2024 and 2025, debt levels will only gradually recover from their historically high peaks reached in the midst of the Covid-19 crisis and the recent episode of high energy prices. Euro area debt is projected to be around 90% of GDP by 2025. According to the latest economic forecast, in the absence of policy changes, a third of the Member States are still expected to post a deficit greater than 3% of GDP by 2025. This calls for fiscal prudence in the coming years in a context where investment needs to be supported. The relatively high interest rate environment is also expected to put downward pressure on private investments.

The remainder of this chapter is organised as follows. Section 2.1 reviews the existing literature on the role of the government in incentivising investments. It describes the main tools at the disposal of the government, stressing their relative merits and drawbacks, while also recalling findings on risks of crowding out effects. Section 2.2 describes the evolving role that the EU has played in supporting investments. The EU, almost since its inception, has been active in supporting public and private investments. However, this role has evolved over time. While the EU's focus has long been – mainly in the context of cohesion policy – to incentivise investments through grants directed at fostering public investments, it then gradually added other ways to incentivise investments, including notably by crowding in private finance. Section 2.3 concludes.

2.1. POLICIES TO SUPPORT INVESTMENTS: A THEORETICAL REVIEW

This section reviews the literature depicting the main instruments to support investment that are at the disposal of Member States' governments and the EU. By providing an overview of the main instruments, the chapter aims at contributing to the ongoing policy discussion on how to address investment gaps in the EU. In particular, it appears that identifying the reason for an investment gap is an important step to select an adequate instrument to address this gap. The framework presented in this section also proves useful to help analyse past and current approaches used in the EU to support investments.

This theoretical section will start by discussing what individual Member States can do to incentivise investments to then shift its focus to the EU level. Most of the academic literature focuses on the instruments that are available to national governments. After reviewing this literature, a discussion of how to translate these findings to an EU-level context is presented.

2.1.1. Supporting investments: the role of the government

There are three main reasons why a government should support investments. First, it should do so to support the provision of public or club goods. Goods are public if they satisfy two criteria: they are non-exclusive and non-rivalrous. A good (or service) is exclusive if those who do not pay for it can be excluded from consumption (no free-riding behaviour). A good is rivalrous if it cannot be consumed simultaneously and without additional costs by different people (Cornes and Sandler, 1996). Defence is a classic example of a public good, as nobody can be excluded from it and the costs

of defending a country do not considerably change based on the size of the population. Public goods, such as defence, cannot be provided by the market and therefore have to be provided by the government through public investments ([122]). In contrast, club goods are exclusive but non-rivalrous. Club goods tend to naturally create monopolies because of large fixed costs leading to economies of scale. Therefore, they also call for government intervention, although not necessarily in the form of government investment. Often in the case of natural monopolies, the government can resort to state-owned enterprises or regulation to address the potential negative consequences of a monopoly.

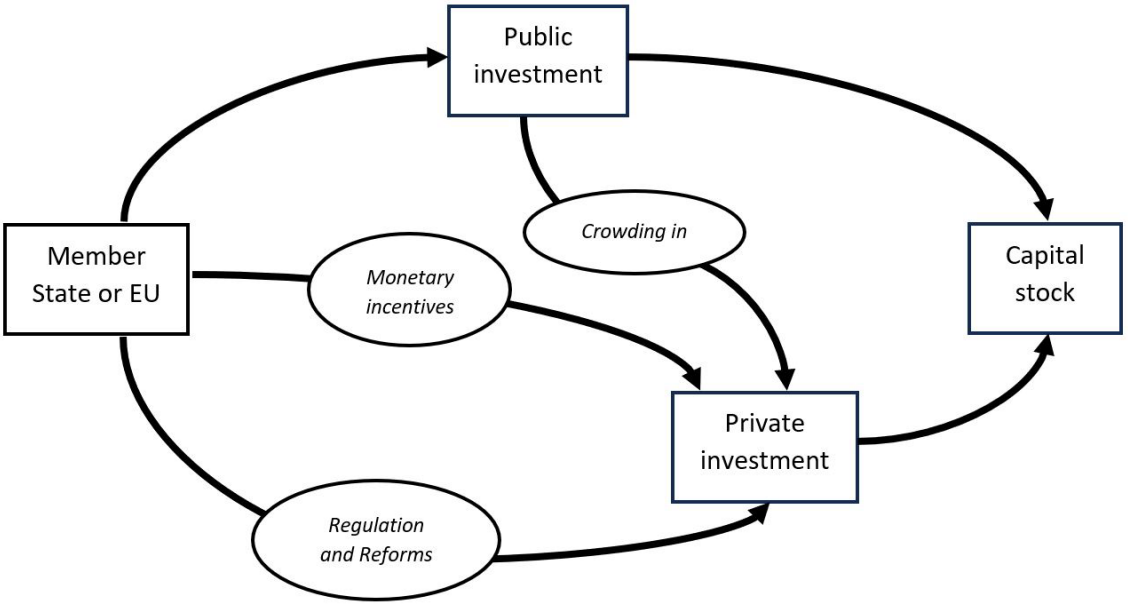
Second, government intervention to foster investments, particularly private investments, is warranted to exploit positive externalities or to internalise negative externalities. Public intervention might also be needed in the case of private goods (exclusive and rivalrous) generating externalities. For example, if a private good generates social benefits that exceed the benefits for consumers (positive externalities), the government may decide to subsidise its production or consumption (e.g. investments in solar panels). Moreover, some public investment (e.g., infrastructure, public R&D, education) also feature positive externalities, for instance by raising return on private investment over time (causing a crowing in effect, see also Box III.2.1).

Third, financial or non-financial frictions might lead to underinvestment, which may warrant policy interventions. Financial frictions can be defined as situations in which the market does not finance all investments that are economically viable. This can happen for two main reasons. First, due to non-sufficient levels of available capital. Second, because of information asymmetries, which prevent investors from correctly assessing which projects are profitable and which ones are not. Non-financial frictions can pertain for instance to regulatory barriers, insufficient supply of labour or skills, or regulatory fragmentation that hampers the ability of companies to grow and reach optimum size.

The government can support investments through three main channels (Graph III.2.1**).** First, it could finance such investments itself without involving private resources. Second, it could use public resources to incentivise private investments, for example through subsidies, guarantees or public-private-partnerships. Finally, it could stimulate private investments through non-monetary incentives such as reforms or regulations. Below we describe in detail these channels and their relative merits and drawbacks (see also Table III.2.1).

([122]) While pure public goods are rare, several goods exhibit a weak form of rivalry and exclusivity.

Graph III.2.1:**Schematic overview of channels through which Member States and the EU can increase the capital stock**



Source: Commission services.

Public investments

By directly investing, the government retains more control over the process and the results of its investment but may be burdened by inefficiencies and information asymmetries. In this chapter, we will refer to public investments when the investment is fully financed by public resources. These investments are often initiated by the general or local government, through a public procurement process or through state-owned enterprises ([123]). This approach is particularly attractive if the government wants more control over the investment results. Also, given that the government can finance itself at lower interest rates on financial markets compared to private investors, this may prove optimal in case of large capital-intensive projects. Public investments can also be the only viable option when investment returns are highly uncertain or likely negative for a considerable amount of time, as is often the case with new technologies (Burger and Hawkesworth, 2011). In the longer term, public investments can also crowd in private investments, as the provision of public goods can often lead to higher private returns on investments (see Box III.2.1).

Public investments should primarily focus on the provision of public goods. As discussed above, public goods cannot be produced by the market. Therefore, investments in public goods such as defence should be initiated by the government. However, there are also cases where public investments are an effective instrument to tackle underinvestment in other types of goods in the event of positive externalities and financial frictions. When investments generate large or widespread externalities across the population or cause important distributional effects, public investments may be warranted. This is for example the case of the provision of education, which strictly speaking is a private good. On a similar note, if financial frictions are arising due to the very large size of a capital-intensive project, the government may need to resort to public investment rather than the other instruments discussed below.

([123]) We refrain from a statistical definition of investments and rather focus on a broad concept which includes, but is not limited to investments in physical and human capital.

Box III.2.1: Private and public investments: complements or rivals?

Public and private investment affect each other through several channels. First, public investment can have a catalysing effect for private investment ('crowding-in effect'), as it can increase the productivity of private investment. For example, a more efficient network of railways and roads can lead to significant improvements to economic efficiency and therefore increase returns on private investment. But public and private investment might also hamper each other, as they might compete for the same resources. In particular, public investment needs to be financed, which might imply a higher demand of funds in capital markets. In a similar vein, public investment might compete with the private sector for the use of other factors of production, both on the goods and on the labour market. In all these cases, the increase in public investment might cause private investors to face scarcity and higher prices in the context of their investment projects. Increased overall investment activity as a result of increased public investment may imply higher interest rates in capital markets, higher wages in labour markets or higher goods prices which will negatively affect private investment ('crowding-out effect'). Finally, while public investment affects private investment, the reverse is also at play, with private investment affecting public investment. In particular, private investment positively affects economic growth, leading to higher tax revenues and, therefore, more fiscal space for public investment. Similarly, a lack of private investment might lead to cuts in public investment.

From a policy perspective, it is important to acknowledge and exploit these channels. As governments attempt to address investment gaps by mobilising both public and private investments, it is key to grasp the interaction between public and private investment.

Empirical studies commonly report a positive link between public on private investments, though some studies point at less conclusive results. After the seminal work of Aschauer (1989) gathered evidence suggesting that public investment raises private investment, considerable research was devoted to assessing whether public investments crowd in or crowd out private investments. While a large number of authors found very large crowding in effects (see for example Baxter and King, 1993 and Argimon et al., 1997), new estimation techniques seemed to lead to less convincing results. For example, Voss (2002) and Perotti (2007) found negative marginal products of public capital, while Afonso and Aubyn (2009) find heterogeneous effects across countries. These papers argue that the existence of some reversed effect from private to public investment had led to overestimation of the crowding in effect in earlier papers. However, when correcting for reversed causation, a positive crowding-in effect is still found in most cases (see for example Afonso and Aubyn, 2018 and Dreger and Reimers, 2016).

Mixed results in the literature might be explained by the fact that crowding out effects are likely to apply mostly in the short term, while crowding in effects are likely to prevail in the longer term. Several recent papers have documented empirically the existence of a short term (negligeable) negative effect, and a long-term positive effect of public on private investment (Matvejevs and Tkacevs, 2023, Baussola and Carvelli, 2023, Afonso and Rodrigues, 2023). These empirical results pointing at a changing nature of the effect over time appear intuitively plausible from a theoretical point of view: the effect of the competition for resources, as well as a temporary rise in interest rates, are not likely to persist beyond the first years of an increase in public investment. In turn, the increased returns on private investments is likely to materialise only gradually following the increase in public investment.

The type of investment also matters. Aschauer (1989) showed that nonmilitary public capital was the sole component of the capital stock relevant for productivity. Furthermore, he showed that 'core' infrastructure, such as streets, highways, or sewers, had the highest explanatory power for productivity. Similarly, several papers stress that while public investment leads to crowding in effects, notably through the positive impact of infrastructure on private investment productivity, government consumption appears to crowd out private investment (Argimon et al, 1997 and Mahmoudzadeh et al., 2013). Xu and Yan (2014) show that while investment in public goods (power, transportation, education, etc.) in China significantly crowds in private investment, government investment in private goods crowds out private investment. More recently, Matvejevs and Tkacevs (2023) report estimates for OECD countries showing that public investments in economic infrastructure and education exhibit the largest crowding in effects. Azoulay et al (2019) and Moretti et al (2019, 2023) also showed that public R&D spending crowds-in private R&D investment.

(Continued on the next page)

Box (continued)

In conclusion, while public investment might crowd out private investment in the short term, in the long run public investment is likely to crowd in private investment, especially when such public investment is productivity enhancing. This result has important implications for fiscal policy. First, given that the literature finds crowding in effects to prevail in the long term, maintaining a sufficient level of public investment is warranted to preserve long term potential growth prospects, which, in turn, enhance to fiscal sustainability prospects. Second, the existence of possible crowding out effects in the short run entails that swings in public investment could potentially be procyclical, as large increases in public investment in times of high economic growth would coincide with a pick up in private investment while undermining it, at least in the short term. At the same time, a fall of public investment during a recessionary period (such as the one experienced after the GFC), will not only contribute to lower aggregate demand in the short term, but will also lead to lower crowding in of private investment in the longer term, undermining longer term growth and fiscal sustainability prospects. Given that the implementation period of public investments is often long, they shall rather be planned in an acyclical manner over the business cycle to avoid procyclicality. Third, heterogeneity in the magnitude of crowding in effects across different types of investments imply that these effects should be taken into account when considering new public investment projects, so that public investments with the highest crowding in effects are chosen over those with lower crowding effects in case of budget constraints.

Monetary incentives to private investments

Monetary incentives can be divided in macroeconomic and microeconomic instruments. In this chapter we define monetary incentives as those financial instruments that (potentially) use public resources to incentivise private investments. We consider four types of microeconomic instruments, namely guarantees, loans, equity instruments and grants. ([124]) These instruments are often mobilised through national investment institutions. On the other hand, macroeconomic instruments rather take the form of general investment subsidies (as opposed to targeted grants or a mix of grants and other instruments) and tax incentives and are controlled by the government itself.

Raising investment by fostering private investment via monetary incentives may be more cost-efficient than relying on public investments, though risks of crowding out of private investments should be accounted for. Mobilising private investments can be more efficient than fully publicly financing projects because private parties might be better at evaluating the profitability of specific investment projects and at managing such projects. Crowding in private capital and expertise – rather than fully relying on governmental bodies - can be particularly important for investments in competitive markets or when technology is rapidly changing. At the same time, similarly to the case of public investments (see Box 1), incentivising private investments with public resources might lead to crowding out effects as the government might subsidise investments that would have taken place even in absence of the intervention.

Microeconomic instruments can be properly targeted and can generate direct positive returns for the government, but are mostly effective when directed towards younger and smaller firms. The main advantage of microeconomic instruments is that – thanks to their case-by-case approach - the risk of crowding out effects are considerably smaller compared to macroeconomic instruments. Yet, a key challenge for these instruments remains to identify and finance only projects that would not have taken place without government intervention (Lach et al 2021). The literature shows that the crowding out effects of project finance are smallest in the case of younger and smaller firms as they face higher financial frictions (Chiappini et al. 2022; Martin-Garcia & Moran Santor 2019; Santoleri et al., 2022; Zhao & Ziedonis, 2020). Financial instruments can also be very cost-efficient in terms of budgetary resources as the government could earn a positive return on its financing or investment. A government guarantee to a financial intermediary has the scope to generate a manifold amount of financing, thanks to the multiplier effect of bank reserves. At the same time, financial instruments involve more lengthy and costly processes, as the government (often through an

([124]) Other terms, such as project finance or financial instruments, are frequently used to refer to these types of instruments as well. We define microeconomic instruments as instruments that are targeted at individual firms and that are temporary.

investment institution or other intermediaries) needs to negotiate the terms of each deal with several private parties (ECA, 2018).

The effectiveness of microeconomic instruments partly rests on the cause of the underinvestment it seeks to address. For example, in the case of R&D investments, the private returns might be too uncertain for the investment to be economically viable, while accounting for social returns would justify fostering such investment. In this case, loans or loan guarantees will not be very effective, because they do not reduce the uncertainty of the investment and require a continuous cash flow to pay the cost of debt. Therefore, in this case grants or equity injections are more effective options. While the literature has shown the effectiveness of grants in this context (Bronzini and Iachini, 2014), empirical studies on the effectiveness of equity injections seem less conclusive (Bertoni & Tykvová, 2015; Buzzacchi et al., 2013). In contrast, in the case of financial frictions, investment projects are economically viable, thus equity injections are not the appropriate option. Instead, the literature shows that loans or loan guarantees can be effective in the presence of financial frictions (Bach, 2014; Cowan et al., 2015), though they may lead to considerable crowding out effects in the case of larger or listed companies (Ornelas Haas et al., 2021). The literature also shows that grants are an effective way to facilitate access to external financing, acting as a catalyst for the access to such financing, linked to a so-called 'certification effect' (Chiappini et al., 2022; Howell, 2017; Santoleri et al., 2022; Söderblom et al., 2015) whereby private lenders take note of the fact that a project is supported/validated by the government.

Macroeconomic instruments can be effective at incentivising investments across a large set of firms or households at the same time, but risks of crowding out effects might be larger. The economic literature mostly finds positive effects of subsidies and tax incentives on private investment (Becker, 2015). The one-size-fits-all nature of macroeconomic instruments ensures quick implementation and the reaching of millions of firms and households at once. However, it raises the risk that a (large) part of the incentivised investment would have also taken place in the absence of the enacted measure, which also complicates the assessment and monitoring of the impact of these macroeconomic instruments. Also, there is some evidence that these types of instruments lead to relabelling, with expenditures that are not truly investments being relabelled as such to access the support provided by macroeconomic instrument (Chen et al 2019). In the same vein, evidence of relocation across countries rather than actual overall increase in investment has also been reported in the presence of macroeconomic instruments in support of investment (Moretti and Wilson, 2017).

Incentivising private investments through regulation and economic reforms

Finally, regulations or economic reforms can also boost private investments by internalising externalities or reducing financial and non-financial frictions. Reforms and regulation can sometimes be more effective in stimulating private investments than monetary incentives. Regulation is the main instrument to set the right framework conditions for private initiative and investments. For example, the energy taxes are shown to be a very effective way to incentivise firms to invest in more sustainable production processes, while not requiring any form of public money (Dechezleprêtre et al 2016). In practice, thanks to these taxes the negative (or positive) externality of polluting (less) is internalised by private companies. The main drawback of regulation is that it can induce firms to relocate to other countries (Millimet and Roy, 2016). Finally, the implementation of economic reforms that increase a country's potential growth, is also a very effective way of stimulating private investments (Varga and In 't Veld, 2014). More specifically, structural reforms can boost investments through three channels (Kerdrain et al., 2010): they can reduce the cost of investment projects (e.g., reforms that reduce financial frictions), they can boost expected revenues from investment projects (e.g., efficiency enhancing tax reforms), and they can decrease the level of uncertainty (e.g., strengthening property rights).

Table III.2.1: **Summary table of main options for the government to support investments**

Public investment *(i.e., State-owned enterprises, public procurement)*
- Needed in case of public or club goods - Lower financing costs, so effective in case of large capital needs - Gives the government more control over the outcome of the investment - Effective when risks are too high for private sector but potential returns are high
Monetary incentives to private investments
- Crowding in private capital, therefore cost-effective, but still risk of crowding out - Crowding in private expertise and information, and private partner assumes risks in case of cost overruns or project failure - Effective in case of competitive markets and rapidly changing technology
of which **Microeconomic instruments** *(i.e., Equity, loans, guarantees, grants)*
- Effective for smaller firms, but crowding out effects for larger and older firms - Certification effect important - Grants and equity instruments effective in case of positive externalities, loan (guarantees) mostly in case of financial frictions - High transaction costs - Often off-balance for the government
of which **Macroeconomic instruments** *(i.e., Tax incentives and subsidies)*
- Reach large number of beneficiaries, but crowding out might be larger - Risk of relabelling and relocation instead of actual higher investment
Non-monetary incentives to private investments *(i.e., Regulation and economic reforms)*
- Cost-effective way to address positive externalities or financial frictions - Risk of relocation

Source: Commission services.

2.1.2. Incentivising investments: the role of the EU

As for individual Member States, there is a rationale for the EU to stimulate specific types of investment. In the previous section, it was illustrated that the government should primarily focus on directing public investment towards public goods and services. The section discussed that the government has also a role to play in the case of positive externalities or financial frictions. Similar arguments apply for the EU as a whole, implying that a focus on supporting investments in European public goods is warranted, while supporting private goods that provide positive externalities for the Union as a whole and addressing financial frictions at the European level deserve particular attention to foster investment appropriately.

A few goods can be considered as pure European public goods. Following the definition of public goods in the previous section, goods would be European public goods if they are non-excludable and non-rivalrous among European citizens. A strict application of this definition would primarily point at global public goods, such as protections against virulent pathogens or curbing climate change (Buchholz and Sandler, 2021). For these types of goods, global coordination would be a first best approach. In particular, it would help ensure foster provision of the good by addressing the issue of free-riding, whereby consumption of the good cannot be restricted to those that contributed to it, causing many (free-riders) to seek to enjoy it without contributing to its provision. However, if global coordination is politically infeasible, a European approach constitutes a second-best solution in this context. The notion of European Public Goods has been illustrated in the economic literature mainly referring to the fields of climate change, healthcare, defence, digitalisation, raw materials and research and development ([125]).

Even if some public or club goods could be provided by individual Member States, it may still be economically more efficient to provide them at a European level. As discussed in the previous section, public or club goods often exhibit economies of scale. This is for example the case of large infrastructure such as 5G or navigation satellite systems. Economies of scales make it less expensive to provide such infrastructure at a European level than providing them for each country separately.

([125]) See for example Buti et al. (2023) and Wyplosz (2024).

Goods that are not strictly public, but exhibit considerable positive externalities for other Member States, are also ideally coordinated at European level. For example, investments in high-speed rail in Belgium, will create benefits also for travellers from the Netherlands to France. If Belgium does not 'internalise' these positive externalities for foreign travellers, there will be underinvestment from a European perspective. Given the strong interconnectedness of European economies under the internal market, the European Union is characterised by significant cross-country externalities whereby economic conditions in one Member State will have a strong positive spillover effect for all other European economies. This is why the European Union has historically invested extensively in economic cohesion and convergence among European regions.

The EU can both act itself and incentivise Member States to increase public and private investments. The RRF is a good example of an instrument through which the EU incentivises Member States to apply all of the three strategies described above, namely increasing public investments, incentivising private investments through monetary incentives and implementing ambitious sets of reforms. Similarly, the EU significantly contributes to investment growth in Europe by incentivising harmonisation of national laws, allowing European firms to expand their activities in other Member States. In this context, a further deepening of the European Single Market was recently advocated by the Letta Report (2024). At the same time, the EU can also apply these strategies itself when it has the competence. First, the EU budget can be used to finance public or private investments, for instance with the support of the InvestEU Programme. Second, a wide range of reforms at the European level can foster private investment. in this context, reforms aimed at establishing a European Capital Markets Union and those underpinning the European Banking Union are particularly important, for example by significantly contributing to enhancing the EU's financial sector capacity to provide adequate funding across the EU to meet investment needs. Similarly, reforms of economic governance can enhance ability and incentive to invest in the EU (see Box III.2.2). The following section will illustrate in more concrete terms the strategy followed at the EU level to incentivise investment.

Finally, it should be stressed that various EU instruments have indirectly contributed to supporting investment during the recent crises, despite the fact that this was not their primary aim. The European instrument for temporary Support to mitigate Unemployment Risks in an Emergency (SURE) was set up in 2020, one year before the RFF, with an envelope of 100 billion euro. It significantly helped keeping vulnerable firms afloat, avoiding a risk of meltdown, which would have harmed the capacity of firms to survive and invest in the aftermath of the crisis. The Pan-European Guarantee Fund was another important safety net for firms in this context.

Box III.2.2: Incentivising public investment under the new EU fiscal rules

The main objective of the new framework is to promote sustainable and inclusive economic growth and to ensure that public debt levels remain sustainable. It recognises that, in addition to fiscal consolidation, reforms and investment are crucial to promote growth and reduce debt, and that they are needed to address common EU challenges, in particular the green and digital transition, social and economic resilience, energy security and the build-up of defence capabilities.

The new framework encourages the implementation of investment and reforms in a number of ways:

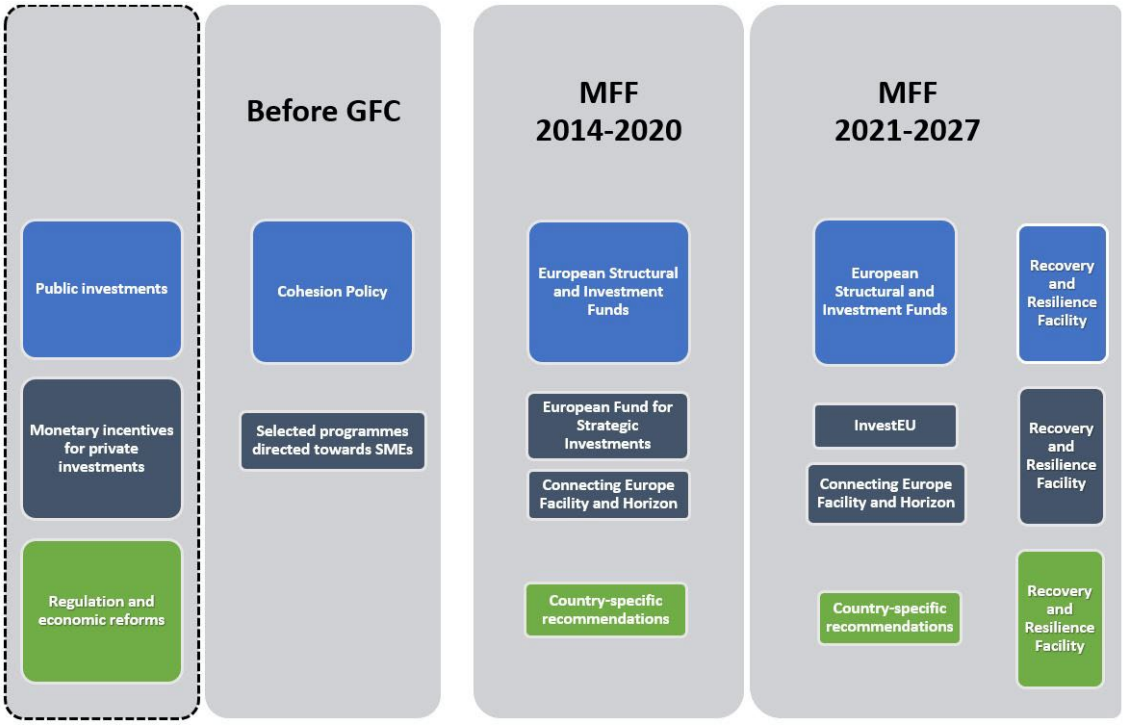
- Member States will have more realistic adjustment requirements compared to the old framework.
  - Member States with low fiscal challenges (in general meaning debt below 60% of GDP and deficit below 3% of GDP) will be able to spend more than under the old framework if needed.
  - Member States facing fiscal challenges will have to ensure that their debt is put on a downward path or stays at prudent levels and/or that their deficit is brought or remain below 3%. However, they will have the option to do this in a more gradual way if they commit to implementing certain investment and reform measures that address common EU priorities and that address country-specific recommendations issued in the context of the European Semester and that support fiscal sustainability and growth. In that case, the adjustment period (i.e. the timeframe within which, through a combination of fiscal adjustments, reforms and investments, a Member State's debt level is put on a sustainable downward path) can be extended from four to up to seven years. The new framework also introduces a new enforcement regime to ensure these commitments are delivered by the Member States.
- The new framework introduces a single operational indicator, namely the growth rate of net expenditure, for assessing Member States' compliance with the new rules. This indicator is not affected by fluctuations in revenues and unemployment expenditure that are due to economic circumstances.
  - That is to say, if tax revenues are lower due to slower economic growth, Member States do not need to cut expenditure to compensate for the lower revenues. Similarly, if unemployment rises and expenditure on unemployment benefits increases, Member States will not have to spend less on other policies. This means that Member States will be able to better support their economies during more difficult economic periods.
  - At the same time, when revenues increase quickly thanks to strong economic growth or windfalls, Member States will have to use those revenues to build up fiscal buffers for later and cannot use these temporary revenues to deliver an adjustment nor finance any permanent measures.
  - The single indicator is defined as government expenditure net of new revenue measures, such as new taxation measures. This means that Member States can choose to spend more than the expenditure ceiling if this additional spending is financed by new revenue measures. The system therefore does not limit Member States' ability to increase public spending where they so choose, so long as the increase in public spending is properly financed.
- The new framework protects national expenditure on programmes co-financed by the EU by excluding such expenditure from the main indicator of fiscal monitoring.
  - This means that national expenditure on investment projects co-financed by the EU can be increased without affecting compliance with the EU fiscal rules.
  - By the same token, Member States will no longer have an incentive to reduce expenditure on such investment projects to achieve their fiscal targets.

2.2. EU INVESTMENT SUPPORT IN PRACTICE: A BROADENING TOOLKIT

The way the EU supports investments can be schematised as having evolved with an acceleration following the Great Financial Crisis (GFC) and the COVID-19 shocks (Graph III.2.2). Beyond the long-standing financing of public investments, mainly in the form of grants to invest in structural policy areas, the EU recently broadened its arsenal of instruments in response to the challenging macroeconomic environment it had to face, notably in recent years. In practice, the broadening of instruments first entailed an increasing use of monetary incentives, mostly based on financial instruments (FIs), and in a second step the promotion of a more important role for economic reforms, which took place notably in the context of the RRF. In particular, the role of the EU exhibits a growing policy shift towards a more 'catalyst' role, in contrast with a past focus on a pure grant approach. The 'catalyst' approach seeks to both stimulate public investments and the crowding in of private investments to support, in particular, EU's long-term priorities such as the twin green and digital transitions.

This section will describe how the role of the EU in supporting investments has evolved around two main episodes. First, the section will shortly describe how the EU has supported investments before the GFC. Then, it will show that from the GFC onward, more emphasis was put on fostering private investments, mostly through the novel use of the EU budget as a guarantee for private projects. Finally, COVID-19 led to the establishment of a new temporary instrument, the RRF, which entailed a stronger role for economic reforms in fostering investments as well as a shift towards a performance-based method.

Graph III.2.2: **Schematic representation of the broadening of type of instruments used in the EU to support investments**



(1) This graphical representation is not meant to give a comprehensive overview of all EU initiatives related to investments, but rather to underscore, with selected instruments, the evolving role of the EU.

Source: Commission services.

2.2.1. The role of the EU before the GFC

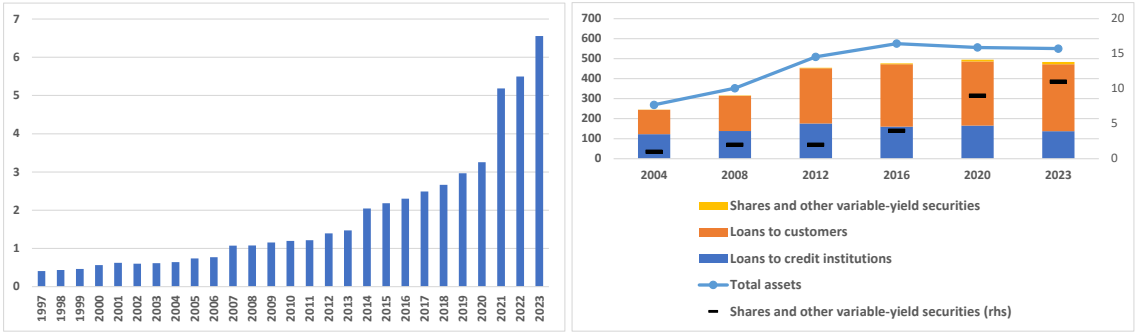
Before the financial crisis, the EU mainly focused on incentivising public investments through grants, focusing on the Common Agricultural Policy (CAP) and the Cohesion Policy. Both policies share strong distributional aspects but also feature a European public goods dimension (Fuest & Pisani-Ferry, 2019). Despite a recent growing use of financial instruments, the CAP and Cohesion Policy mostly rely on grant financing.

The EU public goods dimension of the EU's investment support to the agricultural sector spans a wide range of aspects. The support to the agricultural sector seeks to promote biodiversity protection, resilience to natural disasters, water regulation and quality, soil functionality, the protection of culturally valued landscape and landscape diversity, farm animal welfare, high-quality food and rural development (European Commission, 2010; European Parliament, 2011).

In turn, the Cohesion Policy ([126]) was considered the main EU investment policy, historically accounting for a large share of grant financing in the EU. Since its adoption in the late 1980s, the funding mix of the EU Cohesion Policy was mostly constituted of regional and national grants to support and strengthen economic, social and territorial cohesion.

The use of microeconomic instruments was relatively limited before the GFC. In 1994, the European Investment Fund (EIF) was established to finance small and medium-sized enterprises across Europe. Today the EIF forms a group with the European Investment Bank (EIB), which was already established in 1958 to facilitate equitable development in the EU through lending to regions that are less developed and to support the EU's internal market. The use of financial instruments only gradually increased over time (Graph III.2.3). Starting from the 2007-2013 MFF, through the EIF, the European Investment Bank (EIB) and other national investment banks, a more prominent role was given to such financial instruments, with a further significant increase (i.e., doubling) under the 2014-2020 MFF (European Parliament, 2017) ([127]).

Graph III.2.3: **Total assets of the European Investment Fund (LHS) and total assets breakdown of the European Investment Bank (RHS)**
(in nominal billion EUR)



Source: EIF and EIB Annual Reports.

2.2.2. First broadening after the GFC: "Doing more with less"

Economic context

In the aftermath of the GFC and European debt crisis, the EU's recovery appeared to be stalled compared to other major economies. The slump seemed markedly more protracted in the EU, showing a divergent path based on a combination of adverse shocks (Kollman et al, 2016) and an incomplete institutional architecture. Additionally, fiscal policy constraints in most of the EU hampered economic recovery, job creation and long-term growth and competitiveness (European Commission, 2015).

Public and private investments also took a strong hit. The EU had been recording a substantial decline in total investment that caused a large gap of around 15% compared to the pre-crisis peak level, with more constrained Member States posting an even significantly larger gap (European

([126]) The EU Cohesion Policy includes several funds that have varied over time in the different MFFs, currently encompassing under the 2021-2027 MFF: the European Regional Development Fund (ERDF), the Cohesion Fund, the European Social Fund+ (ESF+) and the Just Transition Fund (JTF).

([127]) The original programme MAP (Multiannual Programme for SMEs) was followed by CIP (Competitiveness and Innovation Framework Programme) and finally by COSME (Programme for the Competitiveness of enterprises and SMEs).

Commission, 2014). Weak investment became the weakness of the EU recovery process (Claeys et al, 2014). Far from being contained to the sectors associated with pre-crisis bubbles, weak investment was broad-based and affected most of the EU (Buti, 2014). The weakness of total investment throughout the EU could be explained by a combination of negative factors including the slow process of corporate deleveraging to reduce overcapacity in some sectors, the output dynamics caused by generally sluggish economic growth, high levels of economic uncertainty, fragmented financial markets (threatened by the fragility of banks), and, finally, a large decline in public investment caused by fiscal consolidation episodes (EIB, 2013; Buti, 2014; Barkbu et al, 2015; Rubio, 2016).

The 2014-2020 Multiannual financial framework and the Investment Plan for Europe

In this context, the EU adopted a "doing more with less" approach that featured both the 2014-2020 Multiannual Financial Framework (MFF) and the Investment Plan for Europe, the so-called Juncker Plan. Financial instruments and a budgetary guarantee were used as the key instruments to trigger a significant crowding-in of private investment thereby creating a leverage effect on EU budget allocated to the support of investment ([128]). Financial instruments triggering such leverage effects appear more efficient in many cases than the more traditional grant approach commonly used in the past. By maximising investment through a crowding-in of private investment while relying on public funds as a catalyst this approach constitutes a shift toward a "doing more with less" approach.

The main investment policy under the 2014-2020 MFF were the European Structural and Investment Funds (ESIFs), delivered primarily via public investments in the form of grants or subsidies. ESIFs include five funds ([129]), including the EU's Cohesion Policy, to support territorial, economic and social cohesion as well as recovery from different crises ([130]). At the end of 2022, EU-level funds under ESIF made available EUR 546 billion, rising to an overall amount of investment of EUR 741 billion including national co-financing (European Commission, 2024). Financial instruments under Cohesion Policy leveraged around EUR 62 billion worth of investments by the end of 2022 ([131]), which almost quadruples the contribution from the EU budget.

Along with traditional grants and subsidies support, the EU doubled the use of ESIF financial instruments in the 2014-2020 programming period compared to 2007-2013. These financial instruments included debt, equity, venture capital and risk-sharing facilities. Financial instruments were also encouraged through innovative programmes managed by the EIB Group, such as the Connecting Europe Facility (CEF) or InnovFin. CEF targeted infrastructure investment at EU level to support the development of high-performing, sustainable and efficiently interconnected trans-European networks in the field of energy, telecommunications and transport. Under the 2014-2020 programming period, CEF budget amounted to around EUR 30 billion in the form of grants, loans and project bonds ([132]), which created significant leverage in the use of EU budget and acted as a catalyst

([128]) Financial instruments are defined as Union measures of financial support provided on a complementary basis from the budget to address specific policy objectives, taking the form of loans, guarantees, equity or quasi-equity investments and other risk-sharing instruments, that can be combined with budget-based grants when appropriate. See "Financial regulation applicable to the general budget of the Union" available at https://op.europa.eu/en/publication-detail/-/publication/25153ebc-2b06-11ec-bd8e-01aa75ed71a1

([129]) The European Agricultural Fund for Rural Development (EAFRD) and the European Maritime and Fisheries Fund (EMFF) along with the EU's Cohesion Policy funds: the European Regional Development (ERDF), the European Social Fund (ESF) and the Cohesion Fund (CF).

([130]) ESI Funds also hosted support from REACT-EU, the very first instrument from NGEU to fund COVID-19 repair measures, amounting new resources around EUR 50 billion under the 2014-2020 structural funds.

([131]) See https://ec.europa.eu/regional_policy/whats-new/newsroom/02-09-2024-financial-instruments-under-cohesion-policy-are-delivering-real-results-for-the-european-economy-as-well-as-attract-considerable-additional-investment-towards-cohesion-policy-goals_en

([132]) The EIB managed and implemented the so-called CEF Debt Instrument, an EU financial instrument in the form of risk-sharing facility that mobilised more than EUR 16 billion in investment. In parallel, the CEF Equity Instrument 'Connecting Europe Broadband Fund', launched in mid-2018 until 2021, reached commitments of about EUR 555 million, overdelivering its initial target. See 'The Connecting Europe Facility – Supporting European infrastructure' available at: https://cinea.ec.europa.eu/system/files/2022-06/CEF%20Implementation%20Brochure%20-%20June%202022.pdf

attracting additional funding both from private and other public sector stakeholders ([133]). InnovFin was an initiative launched by the European Commission in cooperation with the EIB Group under Horizon 2020 ([134]), the EU's research and innovation funding programme for the 2014-2020 programming period. Through this initiative riskier, harder-to-assess projects than traditional investments were supported ([135]). Building on successful past experiences, InnovFin aimed at innovative projects from public and private entities and provided funding in the form of loans, guarantees and equity-type funding, whether directly or through financial intermediaries, based on thematic financing for different sectors. Both CEF and, more broadly, Horizon 2020 contributed to the provision of EU-level public goods (European Commission, 2017).

The Investment Plan for Europe (IPE) was launched in 2015 and mainly aimed at mobilising private investments through the European Fund for Strategic Investments (EFSI). The objective of IPE was to unlock additional public and private investments amounting to at least EUR 500 billion. To achieve this goal, IPE based its financial pillar ([136]) on the EFSI, a guarantee fund of EUR 33.5 billion that was expected to reach a multiplier effect of 1:15 ([137]). The EFSI also contributed to a broadening of the scope of investment as, via the EFSI, public resources assumed substantial risk to provide a greater risk-bearing capacity to investors, which fostered the take up of (economically viable) higher-risk profile projects that would not have otherwise been contemplated (EIB, 2021).

EFSI contributed to the unlocking of substantial additional public and private investments during 2015-2020. The guarantee provided by the EFSI managed to 'over-deliver' by mobilising over EUR 525 billion ([138]). It is expected that its macroeconomic impact will also be sizable, as by 2025 it is expected that the EFSI will have created 2.1 million jobs and increased EU GDP by 2.4%. It has also been particularly successful at crowding in private investment, as more than 70% of the additional investment raised comes from private sources. Finally, as intended, the EFSI budgetary guarantee, backed by the EU, allowed the EIB to perform riskier operations that would have otherwise would not have taken place (ECA, 2019), while the cumulative amount of guarantee called remained modest at around EUR 180 million (EIB, 2023).

The policy shift towards a broadening of the EU's investment instruments could also be seen in the increasing systematic combination of grants and financial instruments and in the growing use of other blending solutions, such as Public-Private-Partnerships (PPPs) ([139]). Grants and public investments were combined with financial instruments to boost the impact of EU spending in key investment areas. Funds under the 2014-2020 MFF (ESI Funds) were combined with EFSI guarantees. Meanwhile, 'blending' solutions also emerged as a suitable way to increase investments and referred to the combination of public EU funds with private resources in the form of PPPs. For national public authorities, EU public funds involvement render such PPP projects more affordable and/or lower the amount of private finance needed to set them up. Also, the use of PPP structure can enhance the management of publicly funded projects. Evidence suggest that PPPs may improve efficiency in the assessment, provision and maintenance phases of a project (European PPP Expertise Centre, 2016). PPP projects may also encourage more efficient risk management, thereby contributing to an overall enhancement of the quality and effectiveness of public spending.

([133]) See https://wayback.archive-it.org/12090/20221222151902/https://ec.europa.eu/inea/en/connecting-europe-facility

([134]) More information on 'Horizon 2020' programme available at: https://research-and-innovation.ec.europa.eu/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-2020_en

([135]) See https://www.eib.org/en/products/mandates-partnerships/legacy/index.htm.

([136]) Embedded in a broader policy strategy to boost long-term economic growth and competitiveness in the EU, the IPE relied on three main pillars: (i) mobilising finance for investment without creating new burden on Member States public finances or public debt, (ii) support for projects and investments in key policy areas; and (iii) the removing of sector-specific, financial and non-financial barriers to achieve an improved investment environment.

([137]) That is a guarantee fund of 33.5 billion would be used to attract 15 times that amount in investment, namely around 500 billion.

([138]) See European Commission (2022a) for a more detailed explanation of EFSI results.

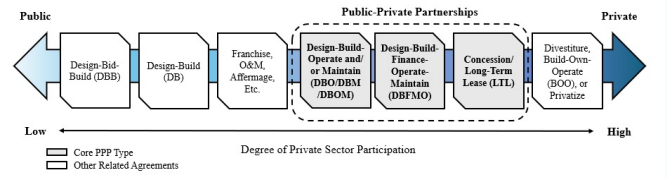
([139]) See also Box III.2.3 for a detailed discussion of the role of PPPs in the EU.

Finally, following the GFC, the European Semester for economic and social policy coordination was created as part of the EU's economic governance framework, in order to ensure sound public finances, prevent excessive budgetary deficits, prevent or reduce government debt, ensure convergence and stability in the EU, foster economic growth, prevent macroeconomic imbalances in the EU and coordinate and monitor employment and social policies. Under the Semester, Member States are issued c**ountry-specific** r**ecommendations (CSRs)**, including in the economic policy area, to guide Member States on how to adequately respond to new and existing challenges and deliver on key policy objectives. While CSRs do not only focus solely on boosting investments, policy guidance concerning investment has been increasing over time, both regarding the preconditions for investments (regulatory barriers, access to finance, etc) and the identification of priority areas for investments, including through EU funds ([140]).

([140]) See the Country-specific recommendations database at: https://ec.europa.eu/economy_finance/country-specific-recommendations-database/

Box III.2.3: **Public-Private Partnerships in the EU**

Graph 1: **Spectrum of PPPs model types**

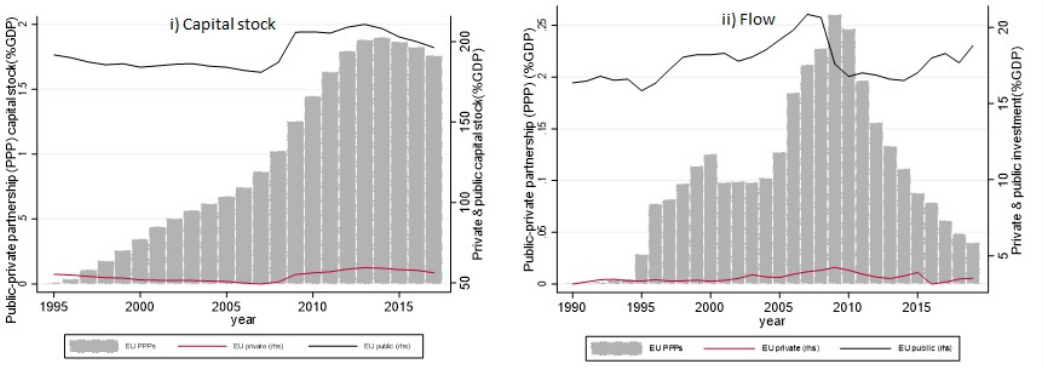


Source: Casady et al. (2020).

PPPs were developed in the 1990s as a key tool for improving the internal management of government infrastructure provision during the New Public Management era (Casady et al., 2020). They are broadly defined as long-term contracts between a private party and a government agency for the delivery of a public service (EPEC, 2021). These contracts have two primary features: the bundling of several project functions, for which the private party is responsible, and a significant risk transfer to private parties (Casady and Geddes, 2016; Casady et al., 2020). Based on these two elements, several varieties of these contracts can be observed in practice (OECD, 2008), ranging from Design and Build (DB) to long-term infrastructure contract partnerships (see Graph 1).

Investments in PPPs at the EU level have increased in absolute value since the 1990s.Two waves of growth (mid-90s to mid-2000s and an acceleration thereafter up until the GFC) are followed by a slump, when the quantity and value of PPPs fell dramatically (Graph 2).

Graph 2: **PPPs evolution in EU (1990-2019) ([1])**



Source: Own elaboration on IMF (2021a). See also IMF (2021b) for methodological aspects.

Following the financial crisis, the EU public-private partnership market witnessed a slowdown. The EIB (2018) interprets the decline in PPPs as an overreaction to the very strong enthusiasm prior to the crisis, motivated by "an excessive belief in the private sector as a generally superior vehicle to promote infrastructure projects and/or a desire on the part of governments to keep what were *de facto* (contingent) government liabilities off their balance sheets" (EIB, 2018, p. 73). Others point to mixed evidence on PPP performance (Hodge and Greve, 2018), noting that during the crisis, several failed PPPs in EU peripheral countries necessitated costly government bailouts, while increased capital constraints limited banks' exposure to infrastructure financing or made them more selective (EIB, 2018).

The use of PPPs is uneven across EU Member States. Although in its policy recommendation the EU has been supportive of the use of PPPs ([2]), with EU directives establishing very favourable laws for PPPs across the Union (Verhoest et al. Citation, 2015), the extent of the use of PPPs varies across Member States. The capital stock resulting from PPPs varies greatly across countries, with only a few (Portugal, Bulgaria, and

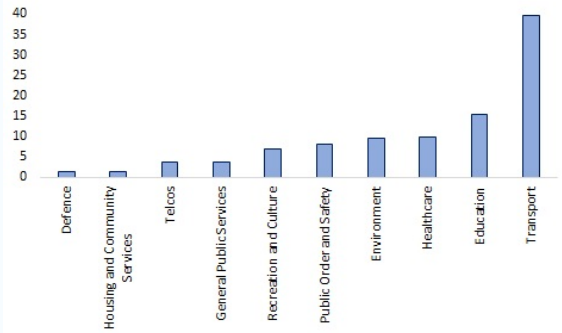
([1]) The IMF database includes only PPP projects planned by central governments.
([2]) Among others support to PPPs can be found in the Europe 2020 strategy, in the Digitising European strategy, in the 2014-2020 multi-annual financial framework, in the 2015 European Fund for Strategic Investments and more recently in the new European Partnerships, as part of the Horizon Europe's strategic planning and in the EU research and innovation programme (2021-2027).

(Continued on the next page)

Box (continued)

Greece) ([3]) accounting for the majority of PPP-related capital, while Luxembourg and Lithuania stand out with particularly low usage of PPPs and the Nordic countries also appear sceptical on the use of PPPs (Petersen, 2010; 2011).

Graph 3: **EU PPP projects by sector (% of total number)**



Source: EPEC.

In terms of sectors the majority of EU countries implemented PPPs in the transportation sector. PPPs in this sector account for approximately 40% of all PPP projects. Defence and Housing are the sectors with the lowest coverage (Graph 3).

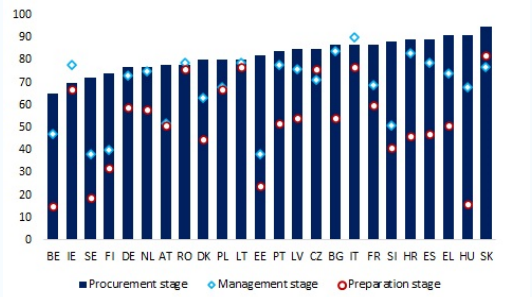
According to ECA (2018), EU funds have been largely underutilized for the setting up of PPPs ([4]). In turn, a growing body of the literature has stressed the inadequate public sector capability and lack of a supporting institutional context that causes PPP failures (for example, Opara et al., 2017; Soecipto and Verhoest, 2018). A World bank (2020) study assesses ([5]) the quality of regulatory frameworks for preparation, procurement (at either the national or federal level) and contract management of PPPs (Graph 4). EU ([6]) countries are fairing in line with the internationally recognized good practices only for the procurement phase, posting an average assessment of around 82 out of 100, with the Slovak Republic posting the highest score (95), closely followed by Hungary and Greece (91). For the contract management and preparation phase ([7]), with average scores of 68 and 52, respectively, the study points at room for improvement. In the preparation phase, there is large scope for improvement in three countries (Belgium:15, Hungary:16, and Sweden:19) in terms of delivering infrastructure services via PPPs. As noted by the World Bank (2020), during preparation, sound project appraisal is critical to ensure viable projects are brought to the market, while effectively managing the implementation of a PPP contract determines whether the project provides the expected outcome.

Graph 4: **Quality of the PPPs regulatory framework in the EU**

([3]) According to Van den Hurk et al. (2016) budgetary reasons were essential for the choice of PPPs in Southern EU member states.
([4]) Structural and Cohesion Fund grants were the primary EU funding sources, followed by financial instruments, which were frequently developed in collaboration with the European Investment Bank.
([5]) The assessment is based on a a standardized survey of 63 questions organised according to the main stages of the PPP project cycle. The score per stage goes from 0 to 100. The latest collection reports data on 140 economies. To ensure the comparability among countries, a standard case-study is used to provide a hypothetical scenario that guides the respondents in completing the questionnaire. The highest scores correspond to a perfect alignment with international good practices while scores close to 0 represents the existence of room for improvement.
([6]) The World Bank dataset on which the analysis is made does not include data for Malta, Cyprus and Luxemboug.
([7]) The preparation phase is assessed according to the performance of the following steps: central budgetary authority's approval, fiscal treatment of PPPs, PPPs' prioritization consistent with public investment prioritization, economic analysis assessment, fiscal affordability assessment, risk Identification, comparative assessment (value for money analysis), financial viability or bankability assessment, market sounding and/or assessment, environmental impact analysis, assessments included in the RFP and/or tender documents, draft PPP contract included in the RFP Standardized PPP model contracts and/or transaction documents.

(Continued on the next page)

Box (continued)



Note: Scores range from 0 to 100.
Source: World Bank (2020).

According to Rosell and Saz-Carranza (2019), the legal system ([8]) of a country, the quality of its institutions ([9]) and the fiscal and macroeconomic environment all influence the score reported in that study in the different stages of the PPPs. In particular, the Scandinavian legal tradition has a positive impact on the preparation stage while the French and German legal systems have a negative impact on the contract management and procurement stages. Lower corruption levels are associated with higher PPP policy scores. The impact of fiscal and macroeconomic variables is, instead, less clear.

([8]) The legal systems, according to La Porta et al. (1999) are divided into five categories: English common law, French Commercial Code, Socialist/Communist Laws, German civil law and Scandinavian law.
([9]) Which can be measured by the so-called Corruption Perception Index.

2.2.3. The second broadening episode: COVID-19, InvestEU and RRF

Economic context

The 2021-2027 MFF took shape in the context of an unprecedented economic shock caused by the Covid-19 pandemic. Nevertheless, the recovery strategy proposed by the EU was different compared to previous crises with an economic policy response that was swift and sizeable (Verwey et al, 2020) and with the reviving and boosting of public and private investment constituting a priority under the recovery process (Panetta, 2022, Rainone & Pochet, 2022). To help repair economic consequences of the crisis and to finance investment needs, the EU adopted a wide economic policy response, notably under the so-called "Recovery Plan for Europe". The latter featured the disbursement of public investments, the use of monetary incentives and a focus on structural reforms to incentivise investments. Altogether, grants, several financial instruments and budgetary guarantees, as well as non-monetary incentives, were put at the EU disposal to incentivise both public and private investments, rounding an ongoing broadening of its toolkit in that respect.

The so-called Recovery Plan for Europe ([141]) is composed of the temporary NGEU instrument, with the RRF as its core, embedded in the 2021-2027 EU Multiannual Financial Framework and flanked by the InvestEU Programme. As the pandemic crisis created huge financing needs, not only in terms of social distress and equity repair, but also in terms of further widening of investment gaps, NGEU and RRF were conceived as a centralised fiscal initiative to face urgency and '*build back better*' (Buti, 2020, Messori & Buti, 2022). In this sense, structural investments for the digital and green transitions were already among the EU priorities before the COVID-19 crisis, hence the recovery strategy followed a twofold goal: repair and invest for the future. Along with addressing the socio-economic consequences of the shock, NGEU aimed to support Member States public investments and reforms and incentivise private investments (European Commission, 2020).

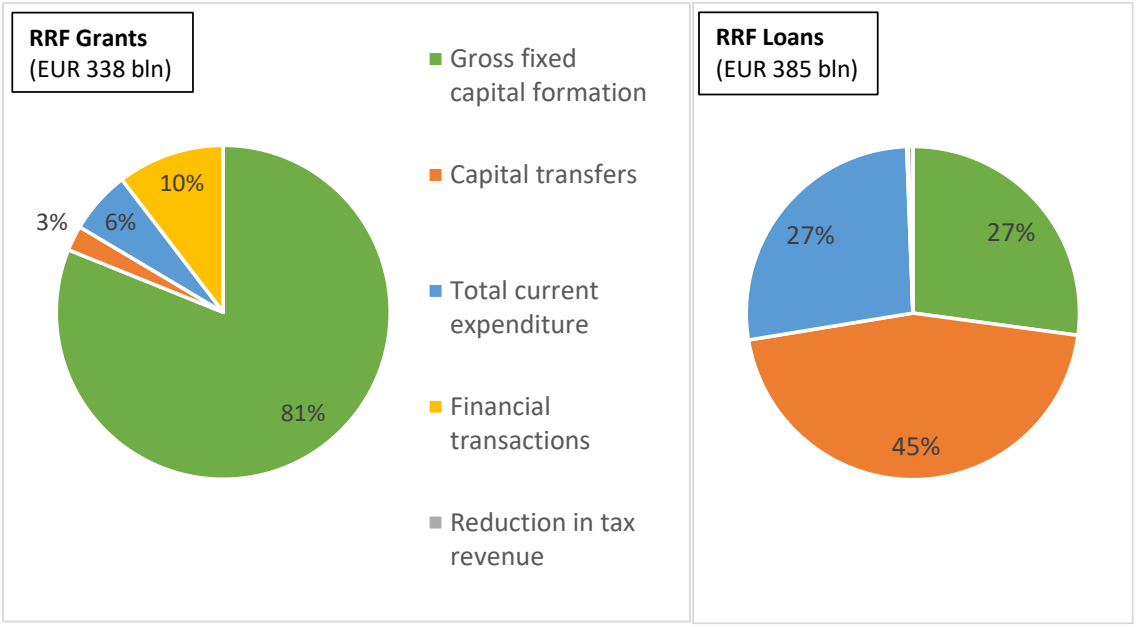
([141]) The Recovery Plan for Europe amounts up to EUR 2.018 trillion in current prices (around 1.8% of the EU's GNI) consisting of the 2021-2027 MFF (EUR 1211 trillion) and NGEU (EUR 806.9 billion). Within NGEU, the RRF instrument was set up to distribute up to EUR 338 billion in grants and EUR 385.8 billion in loans to Member States, leaving a contribution of EUR 83.1 billion from NGEU to other MFF programmes. Within the stimulus package, rather than a recovery-targeted plan, EU funds seek to transform economies while addressing the challenges regarding a greener, more digital and resilient Europe.

The RRF

The Recovery and Resilience Facility (RRF) is a temporary instrument that aims at incentivising public investments, private investments and relevant structural reforms. Through the Facility, the Commission raises funds on the capital markets (issuing bonds on behalf of the EU, see Box III.2.5 for details on EU debt developments). These funds are then made available to Member States, to implement ambitious reforms and investments that make their economies and societies more sustainable and resilient. In particular, these funds need to contribute to the green and digital transitions, in line with the EU's priorities and the need to address the all or a significant sub-set of country-specific recommendations issued under the European Semester framework of economic and social policy coordination. As such, it addresses all three strategies to support investments discussed in section 2, i.e. public investments, monetary and non-monetary incentives to private investments.

Approximately half of the RRF funds are financing public investments. Graph III.2.4 shows the decomposition of total RRF grants and loans (as recorded in the Stability and Convergence Programmes) into main spending categories. The category of 'gross fixed capital formation' broadly corresponds to funds allocated to public investments, whereas the category 'capital transfers' broadly corresponds to investment grants for the private sector. 'Total current expenditure' mainly comprehends subsidies to firms and households, compensation for public servants and intermediate consumption. Finally, financial transactions mainly refer to loans provided to the private sector (for more information on these categories, see ESA, 2010).

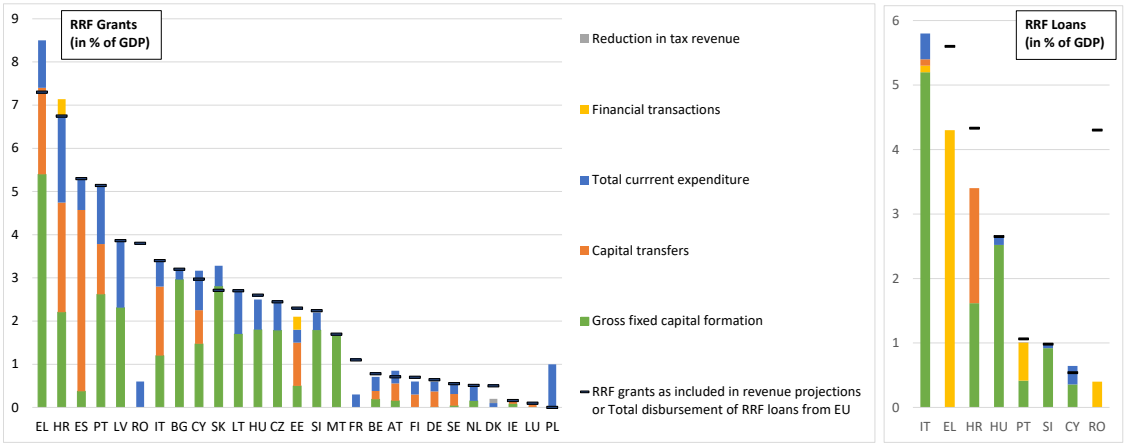
Graph III.2.4: **Decomposition of RRF grants (LHS) and loans (RHS) across the EU**



(1) Note that data is not available or incomplete for some Member States, therefore the EU aggregates that are shown do not perfectly correspond to the real EU aggregates.
(2) Sub-categories accounting for less than 1% are not shown in the graphs.
Source: Stability and Convergence Programmes (SCPs).

Most Member States chose to mainly finance public investments with the RRF funds. Graph III.2.5 shows that for most Member States, both in terms of grants and loans, the largest expenditure category is 'gross fixed capital formation', as was the case for the EU as whole. However, there is some cross-country heterogeneity. For example, Spain spends a small portion on this category, rather spending its allocated grants mostly on capital transfers. In turn, the largest measure in the Recovery and Resilience Plan of Greece is the RRF Loan Facility, through which hundreds of investment projects in Greece have been financed.

Graph III.2.5: **Decomposition of RRF grants (LHS) and loans (RHS) per Member State, % of GDP**



(1) Note that data is incomplete, as not all Member States have provided detailed information in the SCPs. In the case of grants, for some countries the total amount of RRF grants included in projections does not correspond to the sum of the individual components (the difference is particularly large in the cases of RO, FR and PL). For loans, this problem exists as well, and some countries have not provided any information at all. For example, Spain did not provide any information on the decomposition of loans. Total disbursement of loans was not mentioned for Italy.

Source: Stability and Convergence Programmes (SCPs).

Finally, one of the most notable successes of the RRF is its proven ability to incentivise the implementation of structural reforms. Making RRF disbursements conditional upon the implementation of coherent packages of investments and reforms has created effective incentives for reform implementation ([142]). This notably includes reforms recommended for many years by the EU in the context of the European Semester. All plans were required to address all or a significant subset of the relevant CSRs. The European Court of Auditors (ECA) confirmed that the recovery and resilience plans (RRPs) contribute to addressing a significant subset of the CSRs ([143]). In the two years preceding the RRF, the share of 2016-2017 CSRs reaching at least 'some progress' increased by only six percentage points from 53% in 2018 to 59% in 2020. In contrast, the share of 2019-2020 CSRs reaching at least 'some progress' increased by 17 percentage points from 52% in 2021 before the implementation of the RRF to almost 69% in 2023. Most progress has been made in the areas of access to finance and financial services, labour market functioning, anti-money laundering and the business environment. As Member States continue with the implementation of their plans, progress in addressing CSRs is expected to significantly further increase going forward.

Meanwhile, on top of the temporary NGEU, the 2021-2027 MFF works as a long-term budget both to finance the recovery and boost investments through Cohesion Policy. The new EU Cohesion Policy ([144]) remains the major investment policy of the EU, being a substantial contributor to public investment at EU level (European Commission, 2023a). It will allocate EUR 392 billion and has the potential of reaching half a trillion of investments over 2021-2027 when accounting for national co-financing ([145]). The "Doing more with less" approach is still reflected in the current Cohesion Policy as around EUR 18.5 billion are allocated in the form of financial instruments to mobilise public and private investments, building on the previous success under 2014-2020 MFF. Graph III.2.6 also shows the distribution of financial instruments under the Cohesion Policy across Member States, highlighting differences in terms of instrument mix across countries.

([142]) COM(2024) 82 final.

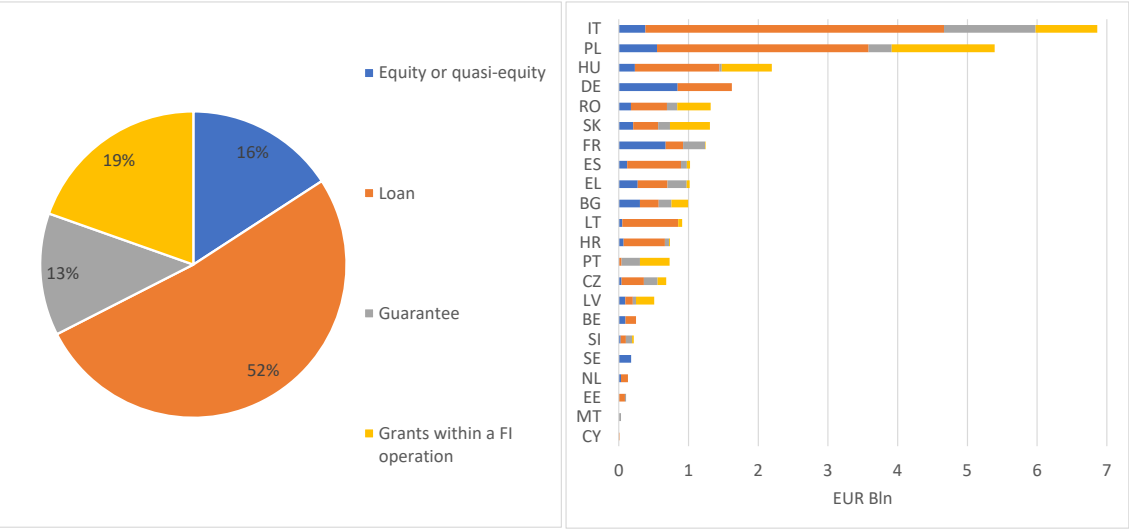
([143]) https://www.eca.europa.eu/Lists/ECADocuments/SR22_21/SR_NRRPs_EN.pdf.

([144]) Cohesion Policy under 2021-2027 MFF includes the European Regional Development Fund (ERDF, amounting up to around EUR 226 billion), the Cohesion Fund (EUR 48 billion), the European Social Fund+ (ESF+, around EUR 100 billion) and the Just Transition Fund (JTF, around EUR 19 billion with NGEU allocations).

([145]) See "Available budget of Cohesion Policy 2021-2027" at the European Commission webpage, available at: https://ec.europa.eu/regional_policy/funding/available-budget_en

Other existing investment grant programs, including the Connecting Europe Facility (CEF), Horizon Europe or REACT-EU, were continued over the period 2021-2027. The second generation of CEF brings together EUR 20.7 billion, plus EUR 11.3 billion for cohesion countries, for three policy areas (Transport, Energy and Digital). Horizon Europe takes over Horizon 2020 and remains the EU's key funding programme for research and innovation, allocating over EUR 95 billion, primarily via grants, although mobilisation of private investment is envisaged ([146]). REACT-EU provides additional funding with a budget of EUR 50.6 billion, topping up existing funds from 2014-2020 MFF, to support investment projects in crisis-repair capacities and contribute to the twin (green and digital) transitions.

Graph III.2.6: **Composition of financial instruments within Cohesion Policy at aggregate EU level (LHS) and across Member States (RHS)**



(1) Figures refer to sum of contributions by EU and Member States.

Source: Commission services.

Incentivising private investments: the continued use of InvestEU

Public and private investments continue to be incentivised by a budgetary guarantee-type instrument through the InvestEU Programme. Building on the success of EFSI, the InvestEU Fund grows larger with a guarantee of EUR 26.2 billion, provisioned both by the MFF and NGEU, and expected to mobilise at least EUR 372 billion in investments. Concretely, InvestEU broadens the number of Implementing Partners, opening the EU guarantee to National Promotional Banks and Institutions, as well as International Financial Institutions. In addition, InvestEU brings together the EFSI and 13 different financial instruments, covering a wide range of policy areas, clustered under four policy windows ([147]). To fulfil its objective, InvestEU relies on several financial products, including loans (i.e., intermediated and direct loans), guarantees or counter-guarantees, capital market instruments (i.e., venture debt) and equity, equity-type and quasi-equity participations, that can be combined with other EU-funded grants, including from ESIF, to mobilise public and private investment ([148]). As for EFSI, attracting more private and public investors will lead to trigger additional investment and reach the target of at least EUR 372 billion in total investment, meaning an estimated multiplier effect above 13x. Slightly below the EFSI multiplier of 15x, estimates account for a more conservative multiplier for InvestEU as there is a concrete target for higher risk innovation projects, SMEs and EU policy

([146]) See "Horizon Europe – budget" by the European Commission, available at: https://op.europa.eu/en/publication-detail/-/publication/1f107d76-acbe-11eb-9767-01aa75ed71a1

([147]) Sustainable Investment Window; Research, Innovation and Digitisation Window; SME Window; Social Investments and Skills Window.

([148]) See "InvestEU Risk Methodological Framework" by the European Commission, available at https://investeu.europa.eu/system/files/2022-07/InvestEU%20Steering%20Board%20-%20InvestEU%20Risk%20Methodological%20Framework.pdf

objectives ([149]). Box III.2.4 describes in more detail how InvestEU supports the venture capital market in the EU.

InvestEU supports economically viable projects that address market failures and investment gaps ([150]). With a specific focus on additionality, InvestEU is meant to attract extra financing targeting sub-optimal investment situations due to market failures or investment gaps.

As of end 2023, at its halfway, the InvestEU programme is on track to successfully achieve its aim of significantly raising investment. Around 90% of the EU guarantee has already been allocated across 14 Implementing Partners, of which 70% has been approved by the InvestEU Investment Committee to support 600 financing and investment operations, totalling a volume of EUR 19.2 billion, signed by Implementing Partners with financial intermediaries or final recipients. After only one year and a half of implementation, the InvestEU leveraged investments, based on approved operations, amount to EUR 217.6 billion. InvestEU is able to incentivise and support investments in various policy priority areas, flexibly adjusting to changing priorities.

InvestEU also presents a Member State compartment that allows Member States to take advantage of the InvestEU infrastructure, Implementing Partners or financial products to increase investment support at the country level. The Member State compartment builds on voluntary contributions from Member States. Seven Member States (RO, EL, BG, FI, CZ, MT and ES ([151])) have decided to opt in with national resources or with resources from RRF or ESIF. National Promotional Banks and International Financial Institutions have been used as Implementing Partners to deploy existing financial products or tailor-made ones. Altogether, EUR 2.4 billion of guarantee capacity will be deployed under the InvestEU Member State compartment.

2.3. CONCLUSIONS

In the context of the large existing investment gaps in Europe coexisting with a constrained macroeconomic environment for investment, this chapter discussed the main instruments governments have at their disposal to support investments and how the role of these instruments has evolved in the economic policies and budget of the EU.

There are three main reasons for governments to support investments. First, governments should focus on investments related to public goods (such as defence) or club goods (such as infrastructure). Second, the government should support public and private investments that exhibit positive externalities, such as investments in R&D. Finally, the government should intervene in case investments are hampered by financial or non-financial frictions.

In turn, we distinguished tree main options for the government to increase the capital stock. Governments can provide the required investment with public resources, through state-owned entities or public procurement. This allows the government to have more control over the investment outcomes and is particularly needed in case of public goods or club goods. Alternatively, the government can support investments by providing public resources to mobilise private investments, such as tax incentives, subsidies, loans, guarantees or equity injections, or by incentivising investments through regulation and reforms. These instruments are more cost effective compared to relying only on public investment and can help to internalise externalities or to address financial or non-financial frictions. The preferred instrument largely depends on the underlying reason of the underinvestment.

([149]) See "FAQ about the InvestEU Fund" available at https://investeu.europa.eu/investeu-programme/investeu-fund/frequently-asked-questions-about-investeu-fund_en

([150]) Operations need to respect other criteria and among other achieve additionality and meet EU policy objectives. Consult Annex II of InvestEU Regulation at https://eur-lex.europa.eu/eli/reg/2021/523/oj and the "Investment guidelines for the InvestEU Fund" at https://eur-lex.europa.eu/resource.html?uri=cellar:23dc7cb2-9d32-11eb-b85c-01aa75ed71a1.0008.02/DOC_2&format=PDF

([151]) In final phase of negotiations.

On a European level, pure public goods exist mostly in the field of climate change policy and pandemic prevention. However, due to economies of scale and externalities, there are other fields in which it is optimal from an economic point of view to coordinate investments at the European level, such as infrastructure, economic stabilisation, research, innovation and defence.

In the last decades, the EU has gradually taken a greater role in incentivising both public and private investments in Europe. Initially, the EU mostly focused on supporting investments in the context of agricultural and cohesion policies, mainly financed through grants, although a slow trend toward more diversified investment supports was seen. In the aftermath of the Great Financial Crisis (GFC) in particular, this trend gained momentum: EU policies broadened their support to private investments markedly, both through the extensive use of financial instruments and by stimulating economic reforms. Following the Covid-19 crisis, the setup of the Recovery and Resilience Facility at the EU level actively supports both public and private investments, as well as structural reforms. Approximately half of all RRF funds are directed towards public investments, and one third towards supporting private investments. Finally, making RRF disbursements conditional upon the implementation of coherent packages of investments and reforms has created effective incentives for reform implementation, as shown by the assessment of progress in implementing CSRs.

In addition to the RRF, economic regulatory reforms on a European level are also key to support investments in the EU. The new economic governance framework that entered recently into force provides more incentives for public investments. Reforms to complete the European Capital Markets and Banking Union can also provide a further impulse to private investments in Europe.

Box III.2.4: InvestEU support to Venture Capital – financing scale-ups for a resilient and autonomous Union

A well-functioning and efficient Venture Capital (VC) market is one of the key pillars to enhance European medium- and long-term economic growth, boosting innovation, productivity and competitiveness. In particular, VC supports promising innovative companies with high-growth potential and accompanies them in getting established (start-ups) and subsequently in their expansion phase (scale-ups). In the context of an overall growth of European financial markets in the latest decades, the VC segment experienced a sustained development, especially in the support of start-ups.

Centralised financial instruments and budgetary guarantees continue to be a fundamental tool to support the VC market in the Union. With the exception of financial hubs like Luxembourg and Switzerland, most of the investments of European private equity intermediaries remain largely within national borders ([1]). VC investments have a long-term time horizon of 10+ years and therefore need to be supported with patient capital mostly coming from the private sector. Financial support from the EU can help mitigate the risk associated with VC investments making them more attractive to private investors. As such, they provide a critical complement to the regulatory action undertaken under the Capital Markets Union. The EU has long provided support to the VC market through a series of financing support programmes, starting in 1998 and progressively developing its offer until the one currently provided under the InvestEU Programme ([2]).

The venture capital environment for European start-ups has significantly improved over the last years also due to support from these EU investment programmes. This is evidenced by the six-fold increase in VC investments in Europe to EUR 40 billion between 2010 and 2020 ([3]). However, VC investments in Europe experienced a sharp decline over the last two years from USD 100 billion in 2021 to USD 45 billion in 2023 ([4]), in particular due to rising interest rates environment.

EU investment programmes also allow for an efficient use of EU resources. For instance, the support through InvestEU requires limited resources as only 40% of the EU supported investments is provisioned by the EU budget. EU support is also complemented by co-financing of Implementing Partners, which increases its leverage effect ([5]), and is remunerated through gains of supported funds that could over the long-term yield a positive financial return. An internal analysis carried out in 2022 on the financial performance of past EU VC instruments showed how these instruments have supported the VC market while either being remunerative for the Union (for example, the MAP had paid back around one and a half times the initial amount invested) or expecting to be so after selling all positions in the companies still held.

The InvestEU Fund is continuing to support VC via new financial products providing equity to the market. The offer under InvestEU has been expanded thanks to the involvement of new Implementing Partners (International Financial Institutions and National Promotional Banks), in addition to the European Investment Fund as the historical partner providing the market with EU-backed equity. As of end 2023, after only two years of implementation, 168 VC funds and 2 VC investment platforms have been supported under InvestEU, with a total amount of more than EUR 4.12 billion of approved financing.

Public financial support to the VC market in Europe remains crucial, while needing to shift its focus to scaling-up European companies and retaining them and their innovations in the EU. The current fourth

([1]) Asdrubali P. (2023) 'Patterns of Cross-Border Venture Capital Flows in Europe', European Economy Discussion Paper 195.
([2]) The seven instruments preceding InvestEU include: the ETF Start-up Facility under the Growth and Employment initiative (1998-2000), the ETF Start-up Scheme under the Multiannual Programme for Enterprise and Entrepreneurship (2001-2005), the High-Growth and Innovative SME Facility under the Competitiveness and Innovation Framework Programme (2007-2013), the Technology Transfer Pilot Project (2009-2013), the Equity Facility for Growth under the Programme for the Competitiveness of Enterprises and small and medium-sized enterprises (2014-2020), the InnovFin Equity Facility for Early Stage under Horizon 2020 (2014-2020) and the sub-window 1 of the SME window Equity Product under the European Fund for Strategic Investments (2015-2020).
([3]) https://www.euractiv.com/section/economy-jobs/opinion/a-venture-capital-injection-for-european-technology/
([4]) https://www.economist.com/business/2023/12/07/europes-technology-startups-are-doing-just-fine
([5]) Leverage is defined as amount of investment by the implementing partner divided by the amount of EU guarantee provided.

(Continued on the next page)

Box (continued)

industrial revolution is characterised by extraordinary technological advances and VC continues to be the driving force for innovation and technological development. While relative performance vis-à-vis the US is affected by a host of factors, including non-financial aspects, it should be noted that a large investment gap with the US concerns more specifically scale-up investments which in 2023 in the US amounted to EUR 108 billion, whereas in the EU the figure is only EUR 25 billion ([6]). Only 6% of the world's unicorn companies ([7]) are European, as a challenge for EU companies arises post-startup stage, when they try to scale-up. At this stage, the financing requirements increase substantially (in the range of EUR 100-200 million) in order to propel those companies on the global scale. To meet such needs, the size of VC funds which can invest in these companies also needs to increase.

The Commission has designed a mechanism with the EIF to support the financing of European scale-ups, the European Scale-up Action for Risk capital (ESCALAR). Started under the EFSI as a small pilot, ESCALAR is now being continued under InvestEU to support fund managers who have a specific investment strategy covering scale-up financing of SMEs and Mid-Caps operating in the EU. Moreover, fund managers will need to be sufficiently experienced to have the ability to manage the increased risk capacity of ESCALAR - as well as having an extensive network to reach appropriate European scale-up enterprises.

Member States are also increasingly interested in the scaling-up of European companies. In 2023, some Member States ([8]) have mandated the EIF to create the European Tech Champions Initiative (ETCI), allocating EUR 3.75 billion to tackle the European scale-up gap. The ETCI targets funds with a size of at least EUR 1 billion to support companies that are raising at least EUR 50 million to compete on a global scale.

([6]) PitchBook data.
([7]) Unicorn is the term used in the venture capital industry to describe a start-up company with a value of over USD 1 billion.
([8]) Germany, France, Spain, Italy, Belgium.

Box III.2.5: Debt of the Institutions and bodies of the European Union – figures and projected development

This Box presents key statistics on EU level debt, based on Eurostat recent publication of data on debt liabilities from national accounts for the statistical sector '*Institutions and bodies of the European Union*', and stylised medium-term projections. In December 2023, Eurostat published, for the first time, data for the statistical sector 'Institutions and bodies of the European Union' in a format comparable with other fiscal statistics (i.e., based on national accounts /ESA 2010) ([1]). The annual accounts published by Eurostat cover the 'general government' subsector of the Institutions and bodies of the EU (S.1315), which includes institutions financed from the general budget of the EU (like the European Commission, the European Parliament and the Council), as well as the European Financial Stability Facility (the EFSF), and the European Stability Mechanism (the ESM) ([2]). The information includes revenue, expenditure, net lending/borrowing as well as Maastricht debt, and currently covers the years 2021 and 2022 ([3]).

Debt liabilities for 'Institutions and bodies of the European Union' at glance

The relevance of EU level debt has increased with the policy measures taken in response to the COVID-19 pandemic. Until 2020, debt raised by the sector of 'Institutions and bodies of the European Union' was modest, even though it had increased somewhat in the 2010s with the creation of the European Financial Stabilisation Mechanism (EFSM) ([4]). Supra-national EU debt increased further with the creation of the ESM, although the latter is an intergovernmental institution for euro area Member States only. Furthermore, the debt issued by the 'Institutions and bodies of the European Union' was on-lent to Member States and third countries, although to a lesser extent in the latter case. The introduction of Next Generation EU (NGEU), including the implementation of the Recovery and Resilience Facility (RRF), with a total potential size of about EUR 807 billion, implied a different magnitude of EU borrowing, which furthermore would be used not only for on-lending but also for providing grants to Member States, and hence would not be recorded as debt of the Member States.

According to the new set of accounts published by Eurostat, net lending/borrowing of the sector of Institutions and bodies of the EU was -0.2% and -0.3% of EU27 GDP in 2021 and 2022 respectively ([5]). Overall, this represents a fiscal impulse that is provided by NGEU grants to EU economies but not captured by the net lending / borrowing (B.9) of Member States, given that expenditure fully financed by EU grants is neutral for Member States' government balances. Given the legal provisions underpinning NGEU, such net borrowing from the sector of 'Institutions and bodies of the European Union' will continue until 2026 (see next sub-section in the box below).

To have a complete picture of EU debt (i.e., at Member State and Union level), one needs to consider both the 'aggregate consolidated debt of EU 27 Member States', and the debt of the sector of 'Institutions and bodies of the European Union'. Based on the new Eurostat statistical information, debt of the sector of 'Institutions and bodies of the European Union' stood at 3.7% and at 4.1% of EU27 GDP at the end of 2021 and 2022 respectively. After netting out the part of EU borrowing that is subsequently lent out to Member States (i.e., NGEU loans), the aggregate consolidated debt of the EU was only 0.6% of GDP higher in 2021

([1]) The new database is available here: https://ec.europa.eu/eurostat/data/database, dataset identifiers gov_eu_nfa, gov_eu_fa, gov_eu_debt.
([2]) The 'Institutions and bodies of the European Union' are part of the domestic economy of the European Union, but not of its Member States. The Manual on Government Deficit and Debt (Section 1.9 'European entities related to the euro area sovereign debt crisis') clarifies that the European Financial Stability Facility (the EFSF), and European Stability Mechanism (the ESM) also belong to the statistical sector 'Institutions and bodies of the European Union'. For more details see: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Annual_statistical_accounts_of_the_EU_institutions_and_bodies_subsector&oldid=625133
([3]) Importantly, this information remains *preliminary*, especially as regards revenue, expenditure and net lending/borrowing.
([4]) Council Regulation (EU) No 407/2010 of 11 May 2010 establishing a European financial stabilisation mechanism.
([5]) Respectively EUR -25.3 billion in 2021 and EUR -47.9 billion in 2022. The negative value implies net borrowing (i.e., a deficit) of the Institutions and bodies of the EU. These estimates were mainly derived from the 'Annual accounts' of the European Union for year 2022.

(Continued on the next page)

Box (continued)

and 0.9% of GDP in 2022 relative to the debt of EU-27 ([6]). NGEU loans are not explicitely modelled because they represent a liabilitiy of the EU individual Member States vis-à-vis the EU institutions and therefore cancel out when considering the consolidated EU debt (i.e., 27 Member States and EU institutions debt).

Stylised EU debt dynamics

This section presents stylised simulations of projected EU debt over the medium term. It presents projections for EU general government debt over the medium-term, considering the EU institutions and bodies [consolidated] debt i.e., grants to EU 27 Member States + loans to non-EU countries, and the aggregate total consolidated EU debt.

For the purpose of the debt simulations presented below, a number of stylised assumptions are considered, namely:

- The aggregate consolidated debt of the 27 EU Member States corresponds to the DSA baseline projections as presented in 2023 Debt Sustainability Monitor (Part I, Chapter 2).
- GDP growth rate and inflation projections are based on the same baseline assumptions as in the 2023 Debt Sustainability Monitor.
- For the borrowing to finance the NGEU **grants** to EU Member States, a number of assumptions are made:
  - We assume that the full envelope of NGEU grants will be disbursed. The total amount would reach around EUR 420 billion in 2026, representing 2.2% of EU GDP.
  - For the years 2024-2026, we assume that the remaining envelope of NGEU grants that has not been disbursed yet will be disbursed linearly. This is not based on a detailed forecast, but rather a working assumption.
  - The reimbursement of EU bonds linked to NGEU grants will start in 2028. For simplicity, we assume a broadly linear reimbursement profile until 2058, the limit date for amortising the NGEU-related debt ([7]).
- As regards debt issued to finance **loans** to third countries:
  - The outstanding stock of macro-financial assistance programmes (MFA) and its evolution until 2034 reflects the redemption profile of current MFAs ([8]). Furthermore, we assume for simplicity that no new MFAs will be granted beyond 2023.
  - EUR 18 billion were issued in 2023 for the programme MFA+ to Ukraine. No reimbursement of the principal is assumed until 2033. Beyond this point, we assume a linear repayment profile over the next 25 years.
  - For the Ukraine Facility, EUR 33 billion are to be issued in 2024-2027. In absence of public data on the disbursement profile, we assume that EUR 8.25 billion loans are issued every year. We assume that a linear repayment over 25 years as from 2034.

The projections indicate that beyond the NGEU horizon, and at unchanged policies, debt of the sector of 'Institutions and bodies of the European Union' would progressively decline over time. Until the end

([6]) According to Eurostat's database, the 'aggregate consolidated debt of EU 27 Member States' stood at 87.4% and 83.5% of GDP at the end of 2021 and 2022 respectively. https://ec.europa.eu/eurostat/databrowser/view/gov_10dd_edpt1__custom_10472721/default/table?lang=en

([7]) In line with current assumptions, the reimbursement profile of total NGEU debt is linear. This leads, however, to a somewhat non-linear profile at the subcomponents level (i.e., grants and loans). Moreover, in the absence of further information at this stage, we assume that the interest payment and principal repayment on the NGEU-grants related debt of the 'Institutions and bodies of the European Union' will be financed through new resources allocated the EU budget.

([8]) This information was provided by DG BUDG.

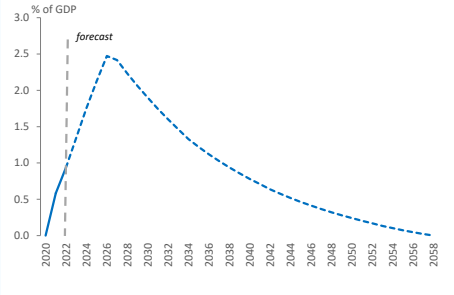
(Continued on the next page)

Box (continued)

of the NGEU (2026) and assuming unchanged EU policies, the debt of the sector of 'Institutions and bodies of the European Union' corresponding to the borrowing to finance the NGEU grants to EU Member States or loans to non-EU countries, will continue to increase, mainly reflecting NGEU commitments (see Graph 1).

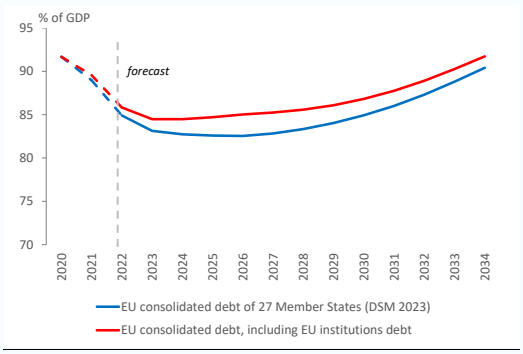
This will increase the overall aggregated EU debt including the debt of the sector of 'Institutions and bodies of the European Union' by a maximum of 2.5% of GDP in 2026 (see red-coloured line in Graph 2). However, beyond 2026, this debt will progressively return to the aggregate consolidated debt of EU 27 Member States once the repayment of the NGEU-related grants and the loans to third countries starts.

Graph 1: ***EU borrowing to finance NGEU non-payable support (grants) and loans to non-EU countries***



Source: Commission services.

Graph 2: ***EU consolidated debt projections***



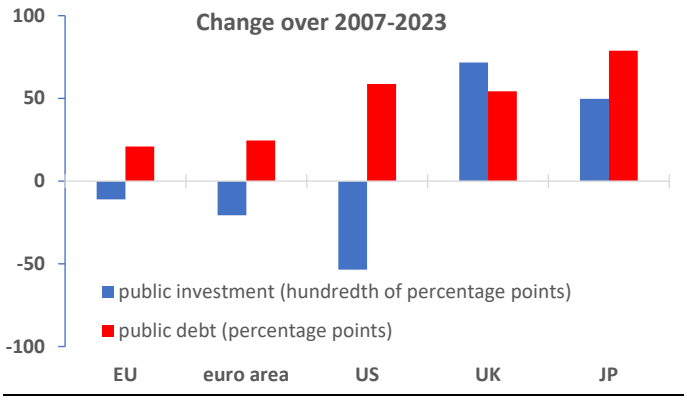
Source: Commission services.

3. FISCAL DRIVERS OF PUBLIC INVESTMENT WITH A FOCUS ON PUBLIC DEBT

In a context of historically low levels of public investment and historically high levels of public debt, this chapter reviews drivers of public investment with a particular focus on the impact of public debt. The need for large public and private investment, notably to support the green and digital transitions, calls for a careful identification of the factors driving public investment. Subdued investment dynamics are linked to several factors (European Commission 2018). In particular, public investment appears to be sensitive to the state of public finances, with the economic literature notably pointing at a negative impact of public debt on public investment (Heinemann 2006, Mehrotra and Välilä 2006, Bacchiocchi, Borghi, and Missale 2011).

Subdued public investment in conjunction with increasing public debt has been observed recently in the EU and in other parts of the world (Graph III.3.1**).** At the end of the 2010s, just before the Covid crisis, public debt had already reached high levels of close to or above 100% of GDP in one fourth of EU Member States. In that context, investment rates continued to decline and were on a decline towards levels below the depreciation rate, implying net investment rates close to zero and stagnation of the stock of capital. Given the negative impact of public debt on investment, the significant further rise in public debt seen in most Member States due to the Covid-19 pandemic may undermine the pick-up in investment seen as a result of efforts to foster it in the aftermath of the pandemic, notably via the setting-up of the Recovery and Resilience Facility (RRF). Risks of subdued investment developments in this context of high public debt may especially materialise after the end of the lifetime of the RRF.

Graph III.3.1: **Change in public investment and public investment in the EU and in other selected countries**



Source: AMECO database.

High public debt levels can weigh on public investment through several channels. This chapter focuses on the impact of fiscal variables on public investment, especially the impact of public debt. It starts by reviewing the existing theoretical and empirical literature. It then presents a small conceptual framework, based on a decomposition of the debt dynamics equation to highlight three key economic channels via which public debt affects investment. The empirical relation between debt and investment is then empirically tested using panel data for the EU Member States ([152]). Beyond assessing direct relationship across variables, we try to identify factors that affects the relationship between public investment and public debt. These factors include fiscal policy performance (i.e., quantitative indicator of compliance with EU fiscal rules), institutional aspects (i.e., indicator of quality of fiscal rules and governance), and fiscal sustainability risks (i.e., relying on measures that go beyond merely relying on the level of public debt to assess those risks). The existing literature tends to focus on the role of national institutional factors, while the main novelty of the present analysis is to also consider the role of compliance with EU fiscal rules and the role of fiscal sustainability. Compliance with EU fiscal rules (i.e., the Stability and Growth Pact) is a potentially more relevant factor than mere existence and design of fiscal rules, because (national or EU) fiscal rules may in effect not be complied with or only loosely so. EU fiscal rules, which are in place since 1997, also predate many national fiscal rules. Finally, we

([152]) The econometric analysis relies on annual time series covering almost three decades, pooled across 27 EU Member States.

examine whether the empirical relationship between debt and investment is also sensitive to the choice of the investment indicator ([153]).

The results of our empirical analysis confirm previous findings pointing at an adverse impact of public debt on public investment while also highlighting potential mitigating fiscal factors. Three aspects appear to mitigate the negative impact of public debt on investment: 1) the compliance with the EU fiscal rules, especially over the medium term; 2) an appropriate design of national fiscal rules; 3) and the (perceived) sustainability of public debt developments ([154]). The results are robust to sensitivity analysis that considers a large array of alternative investment indicators (productive spending, net investment, total investment including private investment).

The remainder of the chapter is structured as follows. Section 3.1 reviews the literature. Section 3.2 offers a small conceptual framework to depict the main channels via which public debt may influence public investment. Section 3.3 estimates the direct impact of public debt on public investment based on a large panel of EU countries. Section 3.4 extends this baseline empirical model by considering factors that may influence the impact of public debt on public investment. Section 3.5 tests robustness of the empirical findings, notably with respect to the choice of the investment indicator. Section 3.6 concludes.

3.1. LITERATURE REVIEW

The relationship between public debt and public investment has been widely explored in the literature (Table III.3.1**).** Many studies bring evidence of a direct negative impact of public debt on public investment among developed countries, including across EU Member States (e.g., Heinemann (2006), Marinescu et al. (2019), Bacchiocchi et al. (2011)) ([155]).

The literature also reviews the impact of fiscal rules in this context. Several articles have evaluated the impact of national or European fiscal rules on public investment. Bacchiocchi et al. (2011) do not report a significant impact of SGP rules on public investment, rather pointing at high debt as a key factor and pointing, instead, at the merit of SGP rules in preserving and fostering public investment. European Commission (2022 - i.e., PFR 2021) reports that the mere *existence* of national fiscal rules does not appear to have a significant (positive nor negative) impact on public investment in the EU. Using a larger set of countries, Vinturis (2023) shows that the impact of rules on public spending is conditioned on particular features of the rules and the impact also varies across categories of public spending, with a more significant impact on government consumption than on government investment. More recently, using the DG ECFIN's Fiscal Rules Strength Index (FSRI), Wijsman and Crombez (2021) point at a direct negative impact on public investment in the EU for *stronger* national fiscal rules. Delgado-Téllez et al. (2022) also identify rigid national fiscal rules as part of the explanation for the long-term decline in public investment. European Commission (2018 i.e. PFR 2017) innovates by interacting the impact of public debt with the strength of national fiscal rules and with the quality of governance, finding that the quality of national fiscal rules and the quality of governance reduces the negative impact of public debt on public investment, which makes the case for well-designed national fiscal rules and a sound governance framework to stimulate investment. The present study updates and extends the empirical literature by studying the interaction between public debt and other relevant factors, such as the compliance with EU rules, revealing that such factors may affect the relationship between public debt and public investment.

In particular, the relevance of debt sustainability as a potential determinant of public investment has attracted limited attention. Focusing on EU countries, Bacchiocchi et al. (2011)

([153]) The empirical analysis retains gross fixed capital formation of the general government as a share of GDP as its main investment indicator.

([154]) Sensitivity analysis is also reported, which confirm main results. In particular, we consider alternative measures of public investment aside from the ratio of public gross fixed capital formation (GFCF) to nominal GDP. We also explore results at a disaggregated subsector level.

([155]) Heinemann (2006) studies 20 OECD countries between 1960 and 2001, Marinescu et al. (2019) focuses on EU countries between 1995 and 2017, and Bacchiocchi et al. (2011) use a panel of 29 OECD countries between 1990 and 2008.

find that the effect of debt on investment is negative in high-debt countries, neutral in low-debt countries and positive in "new" Member States. They conclude that debt sustainability has a significant impact on public investment, relying on this basic (debt level threshold) definition of debt sustainability.

It is also relevant to consider that definitions of what constitutes public investment may vary. A common measure of public investment is the ratio between public gross fixed capital formation (GFCF) and GDP. However, this measure omits spendings that, arguably, also constitute a form of investment, such as spending to increase human capital (European Commission (2016), i.e. PFR 2016). Bacchiocchi et al. (2011) highlight that the relationship between public debt and public spending on education exhibits the same pattern as the one seen between public debt and public GFCF. In turn, some authors have put the emphasis on the composition of public spending, namely on the share of investment in public spending. This approach is particularly relevant when considering the impact of fiscal rules, as those can have heterogeneous effects across spending categories, while also triggering "artificial" reallocation of funds across categories (Burret & Feld, 2018). Evidence suggests that the negative debt-investment relationship is robust to the use of alternative investment measures such as the ratio between public GFCF and public expenditure (Bacchiocchi et al., 2011; Wijsman & Crombez, 2021), a variable focusing rather on composition of public expenditure. An alternative measure of the composition effect is the ratio between public consumption and public investment for which Bamba et al. (2020) report evidence that this ratio declines during episodes of fiscal consolidation, especially in among high-debt countries.

Table III.3.1: **Structured review of literature**

Study	Goal	Data	Methods	Model specifications	Results
Marinescu et al. (2019)	Investigating determinant of public investment.	EU, 1995-2017	Panel regression analysis. Unit root tests and panel-based unit root tests. Hausman test.	No logs. Controls: g, output gap, govt balance, revenue and expenditure, public debt, r, pop change and active pop. Country and year FE.	Little effect of debt on public investment (coef: -0.01).
Jäger and Schmidt (2016)	Estimating impact of demographic change on public investment.	19 OECD countries, 1971-2007	Cointegration test, dynamic OLS.	All variables in logs. Controls: elderly share, population, debt/GDP, private investment, real GDP. Country FE. Country-specific time trends or year FE.	Neg and sign impact of elderly share on public investment. Neg impact of debt on public investment (non-sign).
Wijsman and Crombez (2020)	Estimating effect of fiscal rules on public investment.	EU, 1997-2016 Use of FRSI	Bias-corrected least square dummy variable (LSDVC). GMM. Use of IV. Robustness: excluding EU cohesion funds.	Dpdt var: GFCF/GDP robustness: GFCF/expenditure). Controls: FRSI, NCS, GDP, r, debt, structural primary balance, EDP, pltcl vars. Country and year FE.	Neg and sign impact of debt (-0.01) and fiscal rules (coef for FRSI: -0.1).
Heinemann (2006)	Assessing the impact of globalization (through factor mobility) on public investment.	20 OECD countries, 1961-2001 (unbalanced panel)	Panel regression analysis.	Controls: debt, public capital stock, demography, pltcs, r, globalization vars, cyclical vars.	Neg impact of debt (btw -0.001 and -0.005) and globalization, but not of EMU.
Bacchiocchi, Borghi and Missale (2011)	Estimating impact of debt sustainability and SGP fiscal constraints on govt GFCF and expenditure in education and health.	29 OECD countries, 1990-2008	Panel regression with country FE and time trend.	All vars in logs. 2 definitions of public investment: GFCF and spending ins education/health. GFCF as GDP ratio or share of public exp. Time trend (instead of year FE). 4 groups of countries based on 2 criteria (EMU and debt level). Additional control in some regressions: public deficit.	Debt ratio decreases GFCF in all country groups. EU countries have been constrained in investment more by the need to ensure debt sustainability than by the rules of the SGP. Effect of debt on public GFCF in the EU is negative in high-debt, neutral in low-debt countries and positive in NMS; same pattern for spending on education. In NMS: deficits lead to reduction in spending on K, educ and health. Little effect of debt on health spending (when controlling for deficit): reduction in health exp seems to be related to need to contain budget deficit.
Burret and Feld (2018)	Studying the fiscal effects of cantonal debt brakes in Switzerland, including unintended ones (evasion).	26 Swiss cantons, 1980-2011	Two-way FE (for cantons and years).	Rich set of dependent fiscal variables: splitting of spending, deficit. Controls: debt brake dummy, pltcl variables, institutional variables, unemployment, income, demography.	Fiscal rules associated with sign increased revenue and sign decreased debt and deficits; they do not hurt public investment. Some form of evasion by shifting expenditure from current budget (generally more constrained) to investment budget.
Mehrotra and Välila (2006)	Investigating macroeconomic determinants of public investment.	14 EU countries, 1970-2003	2 types: panel estimation (with country-specific FE and time trends) vs single country estimation. Cointegration analysis.	Control variables: GDP, r, debt, EMU dummy, public expenditure and receipts. No logs (except real GDP). Lag of dependent variable only in the single country estimation.	Pro-cyclical behaviour of public investment. Negative impact of debt (coef: -0.01 to -0.02). In single-country estimations, individual coefs vary across countries.
Bamba et al (2019)	Assessing the impact of fiscal consolidation programmes on the composition of govt spending.	53 developed and emerging countries, 1980-2011	Panel regression with system-GMM estimator. Various definitions of consolidation (using CAPB or narrative approach).	Controls: debt, g, trade, private I, IMF programmes, govt stability, transfers&subsidies Dependent variable: public investment-to-consumption ratio	Neg and sign impact of consolidation programmes on GI/GC ratio: composition effect. Impact is more significant for high-debt countries. High debt is associated with lower GI/GC ratio.
Delgado-Téllez et al (2020)	Testing 2 hypotheses on the decline of public investment: social dominance or rigid fiscal rules' frameworks.	22 OECD countries, 1960-2015	LSDV regression with variables in first-difference.	Social expenditure = health, pensions, unemployment, family support Controls: ideology, g, output gap, debt, stock of K, fiscal consolidation, r-g No lag of the dpdt var	Crowding-out of public investment by social spending. Fiscal rules and fiscal consolidation have a negative impact on public investment.
Jürgens (2022)	Assessing the impact of fiscal rules on govt investment, with focus on their effect over the business cycle.	23 EU countries, 1985-2019 IMF Fiscal Rules dataset	Panel regression with country and year FE.	Measure of business cycle: HP filter. Data on flexibility features of rules. Controls: lagged dpdt variable, election year, ideology, r, debt, trend GDP. Dpdt var: GFCF in $. Robustness: meadure of cycle, 2SLS, GMM.	Govt investment is strongly procyclical, especially in downturns. Only rigid rules have a significant impact of GI. Coeff for debt (log % of GDP) : -0.451.
Vinturis (2022)	Estimating the impact of fiscal rules on public spending (level and composition).	185 countries, 30 years	Entropy balancing method (method to build a synthetic control group).	Dpdt variable: public spending, GC, GI, GC/GI. Controls vars: lag dpdt var, govt revenue, public debt, g, private I, inflation, trade, pop growth, bureaucracy quality.	FR decrease public spending, but only consumption (not GI). Impact depends on the type of rule, level of economic dvpt, FR features (indpdt fiscal bodies, legal basis, escape clauses…).
PFR 2017	Identify the determinants of public investment and focus on the impact of institutional factors (governance and fiscal rules).	28 EU countries, 1995-2016	Panel OLS with country and year FE. SGMM for robustness.	Dpdt var: GI/GDP. Controls: lag dpdt var, debt, GDP per capita, output gap, r, primary balance, pltcl vars, FRSI WGI, interaction FRSI×debt and WGI×debt. Most vars are logged.	Public debt hampers GI. Institutional quality has no signif impact on GI, but its interaction with debt is positive: good institutions mitigate the negative impact of debt on GI. Estimation of short-term and lg-term impact of debt (using persistence coeff), for each value of institutional quality.
PFR 2021	Assessing the impact of r-g on the quality of public finances.	28 EU countries, 2001-2018	2SLS estimation. Year and country FE.	3 ways to measure quality (dpdt var), including the share of GFCF in primary expenditure. Controls: lag dpdt var, r-g, output gap, election. 2 ways to measure r-g: "profitability" and "fiscal space" approaches.	Negative and sign (but small) impact of r-g on the share of GFCF or growth-friendly spending in primary expenditure.
PFR 2021	Assessing the impact of fiscal rules on public investment.	28 EU countries, 2004-2016	Panel regression with country and year FE. SGMM. Large nbr of regressions (24,000).	Dependent variable: GI / potential GDP. Controls: lagged dependent var., debt, fiscal rules, macro factors (output gap, GDP per capita, r), demographic and political variables. Interaction of rules with r-g and with debt. Fiscal rules: EU, national, Golden rules; FRSI.	No signif impact of rules on GI. Neg and signif impact of debt on GI. Interaction debt × FRSI: FRSI has a positive impact on GI below 60% and a negative impact above 60%. FRSI decreases the negative impact of debt on GI.

Source: Commission services.

3.2. A SMALL CONCEPTUAL FRAMEWORK WITH THREE MAIN CHANNELS

A simple conceptual framework, based on a standard decomposition of debt dynamics, helps highlight three key economic channels via which public debt affects public investment (Graph III.3.2**).** The increase in the debt ratio can be related to: (i) the snowball effect, induced by the difference between interest rate and output growth, (ii) the primary deficit as a percentage of GDP (iii) and the stock-flow impact (which will not be investigated in this study). These three key drivers of public debt developments are also relevant channels to identify ways in which higher public debt can affect public investment developments.

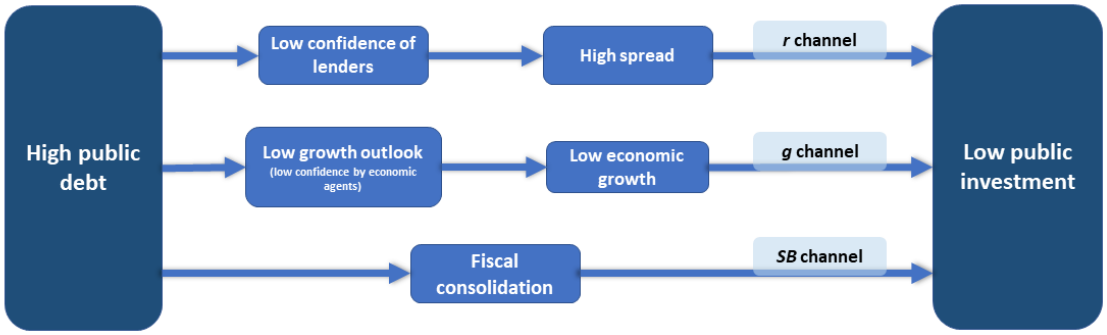
The **r channel**: A higher level of public debt could decrease the confidence of lenders. It could also increase the interest rates at which governments can borrow money. These developments, in turn, could reduce the fiscal space for public investment, notably as it becomes gradually crowded out by debt servicing. In terms of individual project management, a higher borrowing cost also reduces the amount of profitable investment opportunities (i.e., whose social return is superior to its financing cost).

The **g channel**: A higher level of public debt could depress the growth outlook, by lowering confidence of economic agents, including via neo-Ricardian expectation effects – i.e., perceived necessity for fiscal consolidation in the medium run may depress current demand. Lower growth rate of the economy would reduce the fiscal space for investment by pushing the debt ratio further up, potentially creating a vicious circle, since lower public investment is likely to generate, over time, lower economic growth. Weak growth outlook also decreases expected returns on investment, as (some) investment projects become less profitable in a context of slower economic growth.

The **Structural Balance (SB) channel**: A higher level of public debt may lead to episodes of fiscal consolidation with improvements in the (structural) primary balance partly achieved through cuts in public investment.

Several circumstances are likely to influence the relevance and interplay of the channels via which public debt affects public investment. Circumstances may thus reinforce or mitigate the effect of public debt on public investment. Sustained compliance with EU fiscal rules leading to prudent fiscal policy, the quality of governance, the existence and design of (EU and national) fiscal rules and signs of low fiscal sustainability risks are all relevant circumstances. For instance, the impact of a high level of public debt on the confidence of lenders is influenced by the existence (or not) of fiscal sustainability risks. Compliance with the EU fiscal rules and the quality of governance can have an impact through each of these channels highlighted above: it can support the confidence of lenders (*r channel*), support the general confidence of economic actors (*g channel*) and improve the efficiency and timeliness of the fiscal consolidation (*SB channel*). An efficient consolidation will mitigate the negative impact on economic growth and will seek to preserve needed investment expenditure. Furthermore, a delayed fiscal consolidation may require more brutal adjustment, possibly under market pressures, entailing the risk of letting debt increase further, thus aggravating the impact of debt on investment through the three mentioned channels. Finally, the 'structural balance' channel is affected by a wide range of factors, including political considerations. The extent to which a fiscal consolidation is achieved via increased revenues or decreased expenditure, and in the latter case via a lowering of public investment, is determined by a range of factors including political considerations (e.g., electoral cycles).

Graph III.3.2: **Transmission channels from public debt to public investment**



Source: Commission services.

3.3. FISCAL DRIVERS OF PUBLIC INVESTMENT WITH A FOCUS ON PUBLIC DEBT: EMPIRICAL RESULTS

We estimate the direct impact of a high public debt ratio on public investment, using a dynamic panel regression with two-way fixed effects (see Box III.3.1**).** The dependent variable is the ratio between public GFCF and GDP, while our key explanatory variable of interest is the debt-to-GDP ratio. A set of control variables is also included, namely the lag of the dependent variable and various fiscal, macroeconomic, institutional, political and demographic variables ([156]). We also include year and country fixed effects in the specification of the model.

Table III.3.2 **shows that control variables are either insignificant or have the expect impact on public investment.** Among macroeconomic variables, interest rates, GDP per capita and net capital stock all have a negative impact on public investment, confirming that financing cost and catching-up effects (or lack thereof) are relevant drivers of public investment. The economic cycle (captured either by the output gap or by the GDP growth rate) does not have any significant impact, implying that public investment is neither (significantly) pro- nor countercyclical in our sample. Additional fiscal variables have little impact on public investment (except public revenue). Political variables also have little impact, and their inclusion reduces the size of the sample (due to missing data for 2022 and 2023), thus we decide not to retain them in our baseline model. We note that the old-age dependency ratio ([157]) has a negative impact on public investment, in line with results reported by Jäger and Schmidt (2016).

Under our baseline model, an increase in public debt by 10 pp of GDP will lead to a decrease in public investment by almost 0.1 pp of GDP. Given that public investment accounts for 2 to 6% of GDP across countries in 2023, a 10 pp increase public debt would thus bring total public investment down to 1 to 5% of GDP, a moderate though non-negligible effect. Moreover, the estimated coefficient corresponds to the short-term impact of public debt on public investment. The long-term impact is around twice higher (a fall of around 0.2 pp of GDP), according to our results ([158]).

([156]) Details on the variables can be found in the appendix (see Table III.3.13).

([157]) This variable is defined as the ratio between the number of people aged 65 and over, and the number of people aged 15 to 64. This variable is missing for the year 2022, and is therefore imputed using a linear trend based on the values for the years 2020 and 2021. We chose this variable rather than the share of elderly people in the population due to its higher level of significance in our model and to its more direct relevance in terms of public finance.

([158]) In the baseline model, the long-term impact of a variable is the ratio between its associated coefficient and $(1-\beta_0)$.

Table III.3.2: **Direct impact of public debt on public investment**

	(1)	(2a)	(2b)	(3a)	(3b)	(3c)	(4)	(5)
public investment (t-1)	0.6710 ***	0.5837 ***	0.5802 ***	0.5903 ***	0.5878 ***	0.5734 ***	0.5760 ***	**0.5879 *** **
	(0.0490)	(0.0390)	(0.0370)	(0.0385)	(0.0391)	(0.0408)	(0.0447)	**(0.0390)**
public debt (t-1)	-0.0054 **	-0.0082 ***	-0.0080 ***	-0.0080 ***	-0.0082 ***	-0.0094 ***	-0.0092 ***	**-0.0080 *** **
	(0.0026)	(0.0026)	(0.0027)	(0.0025)	(0.0026)	(0.0028)	(0.0027)	**(0.0026)**
Net capital stock (t-1)		-0.2940	-0.3325	-0.2755	-0.2864	-0.3894 *	-0.2892	**-0.3210**
		(0.2004)	(0.2141)	(0.2086)	(0.2051)	(0.2036)	(0.2523)	**(0.2086)**
real GDP per capita (t-1)		-0.0104 **	-0.0106 **	-0.0099 **	-0.0103 **	-0.0081 **	-0.0129 ***	**-0.0121 *** **
		(0.0043)	(0.0042)	(0.0041)	(0.0042)	(0.0034)	(0.0042)	**(0.0042)**
output gap (t-1)		0.0001		-0.0007	-0.0006	0.0010	-0.0011	**-0.0017**
		(0.0115)		(0.0111)	(0.0112)	(0.0105)	(0.0124)	**(0.0112)**
GDP growth rate (t-1)			-0.0081					
			(0.0116)					
long-term interest rate (t-1)		-0.0149 *	-0.0175 *	-0.0143	-0.0146	-0.0142	-0.0158	**-0.0156**
		(0.0090)	(0.0099)	(0.0094)	(0.0093)	(0.0094)	(0.0100)	**(0.0095)**
headline balance (t-1)				0.0065				
				(0.0104)				
primary balance (t-1)					0.0037		0.0045	**0.0045**
					(0.0112)		(0.0127)	**(0.0119)**
total revenue (t-1)						0.0235		
						(0.0164)		
total expenditure (t-1)						0.0008		
						(0.0096)		
election year (t)							0.0002	
							(0.0006)	
government left (t)							-0.0000	
							(0.0009)	
old dependency ratio (t-1)							-0.0197	**-0.0178**
							(0.0235)	**(0.0217)**
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	**Yes**
Time trend	No	No	No	No	No	No	No	**No**
R^2	0.5273	0.4982	0.4984	0.4986	0.4983	0.5011	0.5006	**0.4991**
Adj. R^2	0.4897	0.4492	0.4494	0.4487	0.4485	0.4507	0.4451	**0.4485**
Num. obs.	749	665	664	665	665	665	611	**665**

(1) ***p<0.01; **p<0.05 ; *p<0.1.
(2) The sample includes 27 EU countries. The full period is 1996-2023. All estimations use heteroskedasticity-robust standard errors and country fixed effects. The dependent variable is the GFCF-to-GDP ratio. The baseline model specification corresponds to column (5). Control variables are added gradually to the model. Due to missing data, we remove the political variables from the baseline specification.

Source: Commission services.

When considering the public debt-investment nexus, it should be noted that while public debt has a bearing on public investment, the reverse is also true. For our empirical analysis this implies that the technical issue of endogeneity arises and its potential impact on our results needs to be checked. In addition, the question of to what extent and in what way public investment affects debt dynamics is also a fundamental issue that deserves attention on its own merits, as we illustrate in Box III.3.2, where QUEST-based simulations highlight circumstances that will affect the way and the extent to which public investment affects public debt developments ([159]).

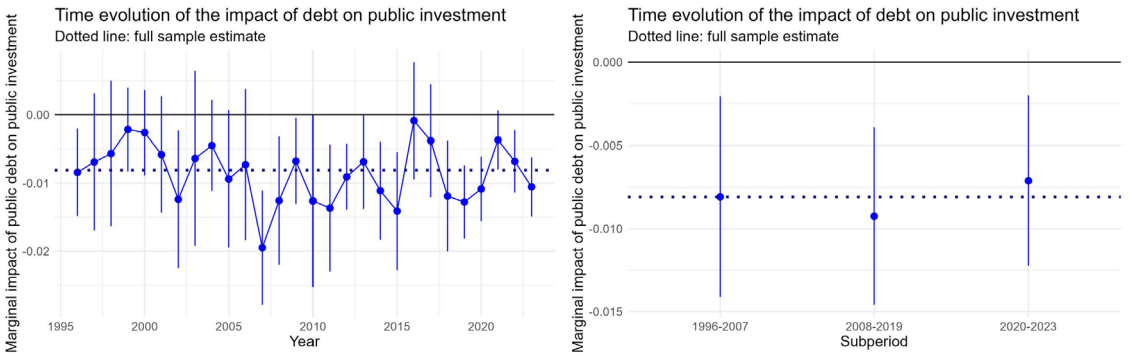
To control for possible endogeneity issues, we implement one-step SGMM estimation ([160]). The results are consistent with our "within estimators" (see Table III.3.14 in the appendix). Another usual sensitivity check is to express investment as a ratio to total public expenditure (instead of as a ratio to GDP, as done in our baseline model). This check is relevant for two reasons (as stressed in Wijsman and Crombez (2021)). First, it avoids issues of endogeneity across variables capturing the economic cycle and the dependent variable (when the latter is expressed as a share of GDP, as is the case in our baseline regression). Second, it controls for Wagner's law, i.e., the long-term increase of government expenditures as a share of GDP which is typically observed under economic development. Our results confirm that when scaling our dependent using total expenditure rather than GDP the estimated coefficients retain the same sign and level of significance, while their larger magnitude mainly reflects the ratio between public expenditure and GDP. Lastly, we confirm the stability of the debt-investment relationship over time by including an interaction term multiplying time and public debt, which could be interpreted as a time-varying coefficient of debt in our investment equation. Over the period, the estimated coefficients vary between 0 and -0.2, without exhibiting any clear trend nor

([159]) For evidence on EU public debt see Box III.2.5.

([160]) Endogeneity issues could be related to reverse causality and the Nickell bias in dynamic equations.

structural break (Graph III.3.3). Moreover, when the sample is split in three subperiods, the difference between the estimated coefficients across subperiods are not statistically significant.

Graph III.3.3: **Evolution of the impact of debt on investment by year and by subperiod**



Source: Commission services.

Box III.3.1: Empirical framework

This box describes the empirical approach used in the chapter, to estimate the impact of our variables of interest on public investment.

Baseline model

Our baseline model to estimate the direct impact of debt on public investment is a dynamic panel regression with two-way fixed effects.

Equation 1, Baseline model:

$$\text{public\_inv}_{i,t} = \beta_0\, \text{public\_inv}_{i,t-1} + \beta_1\, \text{public\_debt}_{i,t-1} + \beta_x\, X_{i,t} + \upsilon_i + \theta_t + \varepsilon_{i,t}$$

The dependent variable, $\text{public\_inv}_{i,t}$, is the ratio between public GFCF and GDP. We include the lag of the dependent variable to capture the persistence of public investment. Most control variables, including the level of public debt, are lagged by one year, to avoid endogeneity problems and because their impact on public investment is expected to appear with a delay of one year. The vector $X_{i,t}$ includes a set of control variables. The country and year (i.e. time) fixed effects are captured by υ_i and θ_t respectively.

Interaction model

The interacted model is used to explore the interaction between public debt and another variable of interest y. With this specification, for a candidate variable **y**, we estimate both its direct impact on public investment and its indirect impact via the debt channel. The model is specified as follows.

Equation 2, Interacted model:

$$\text{public\_inv}_{i,t} = \beta_0\, \text{public\_inv}_{i,t-1} + \beta_1\, \text{public\_debt}_{i,t-1} + \beta_2\, y_{i,t-1} + \beta_3\, y_{i,t-1}\, \text{public\_debt}_{i,t-1} + \beta_x\, X_{i,t} + \upsilon_i + \theta_t + \varepsilon_{i,t}$$

The set of control variables X is the one chosen after having explored various specifications of the baseline model. It includes net capital stock, real GDP per capita, output gap, long-term interest rate, headline balance and old-age dependency ratio. Most of these control variables are lagged by one year.

Equation 2 describes an interaction model. One should be cautious in the interpretation of the estimated coefficients for interacted variables, namely β_1, β_2 and β_3. We follow the guidelines presented in Brambor et al. (2006). In an interaction model, all constitutive terms should be included. The coefficients associated with the constitutive terms cannot be interpreted as unconditional marginal effects. Traditional results table are not sufficient to convey a thorough understanding of the marginal effects of the variables of interest. The short-term marginal impact of the interacted variables can be computed using the following formulae:

$$\frac{\partial \text{public\_inv}}{\partial \text{public\_debt}} = \beta_1 + \beta_3\, y_{i,t-1} \qquad \frac{\partial \text{public\_inv}}{\partial y} = \beta_2 + \beta_3\, \text{public\_debt}_{i,t-1}$$

Based on these formulae, we can compute the conditional marginal impacts of both variables on public investment and display them using interaction plots. Such plots make it possible to visualise on one hand the direct impact of variable y on public investment (conditional on public debt) and on the other hand the indirect impact of variable y on public investment via the public debt channel (i.e., the variations in the direct impact of public debt on public investment conditional on the value of y). In each interaction plot, we draw a fitted line and confidence intervals for the whole range of observed values for variable on the x-axis, and we add circles that correspond to the nine deciles of this variable.

3.4. IDENTIFYING THE FISCAL FACTORS MITIGATING THE ADVERSE IMPACT OF DEBT

In this section we explore the circumstances that potentially mitigate (or reinforce) the negative impact of public debt on public investment. We focus on three sets of variables that help identify such circumstances: fiscal rules compliance indicators, national institutional factors, and debt sustainability risks. For each, we compute both its direct impact on public investment and its indirect impact via the debt channel (i.e., as a mitigator or reinforcer of the negative impact of public debt on public investment) ([161]).

3.4.1. Compliance with fiscal rules at the EU level

The existing literature focuses on the role of design of national rules, which arguably provides only partial control for the impact of these rules. While a rule can be well-conceived, lack of (full) enforcement will affect its relevance in practice. It is necessary to go beyond the design of rules and account also for the degree/quality of its implementation. It is also relevant to consider the performance of EU fiscal rules and not only that of national fiscal rules, since the EU fiscal rules have long been in place (i.e., since the creation of the Stability and Growth Pact in 1997), predating national fiscal rules, with the latter mostly put in place following the 2011 Directive on national budgetary frameworks.

We focus on the four EU fiscal rules defined in the Stability and Growth Pact. Those are defined in the 6-Pack regulations of 2011: (i) the public expenditure rule ('expenditure benchmark'), (ii) the deficit rule, (iii) the debt rule, (iv) and the structural balance rule. Our objective is to assess whether past compliance with EU fiscal rules had a direct impact on public investment and/or an indirect impact on public investment via the debt channel. For our purpose, we use data on numerical compliance with fiscal rules produced by the European Fiscal Board ([162]), covering the period 1998-2022. Numerical compliance measures the deviation of the fiscal outturn data from the quantitative requirement at face value (i.e., without taking into account the overall assessment that also includes qualitative dimensions). We measure compliance by using dummy variables, taking the value of 1 (resp. 0) in case of compliance (resp. deviation).

Based on our small conceptual framework, we can expect compliance to have both a direct negative impact and an indirect positive impact, via the debt channel, on public investment. On the one hand, a country with a higher degree of compliance with EU fiscal rules will have *ceteris paribus* a tighter fiscal constraint, which might weigh on its level of public investment (via the SB channel), namely a direct negative impact on public investment. On the other hand, being compliant with EU fiscal rules will mitigate the adverse effect that high debt has (through the r channel) on public investment, since it might foster confidence by economic agents, including lenders. If a country is known to be compliant, the confidence of lenders might be less affected when the level of public debt increases.

Concretely, we compute a synthetic compliance index which is the simple mean of the compliance dummies across the different rules. In practice, we exclude from that computation the debt rule, due to its high correlation with the public debt variable (i.e., to reduce risks of endogeneity for our compliance index variable). The compliance index can therefore take the values 0, 1/3, 2/3 and 1. A possible drawback of this approach is that it assumes an equal importance of compliance across the different rules when it comes to the impact of rule compliance on public investment.

Results show that our compliance index has a highly significant impact on public investment, especially when the Covid-19 pandemic is excluded from the analysis (see Table III.3.3**).** More specifically, fiscal compliance taken in isolation has a negative direct impact on public investment, but it also has a large indirect positive impact by reducing the negative effect of

([161]) Note that the interaction model provides the conditional marginal effects of the interacted variables, i.e., the marginal impact of one variable on public investment, conditional on the values of the other variable. See Box III.3.1 for details.

([162]) Data can be found on the website of the European Commission.

public debt on public investment (see Graph III.3.4). Moving from full non-compliance to full compliance almost halves the negative impact of public debt on public investment. In particular, when public debt levels exceed 100%, the positive indirect impact outweighs the negative direct impact of fiscal compliance.

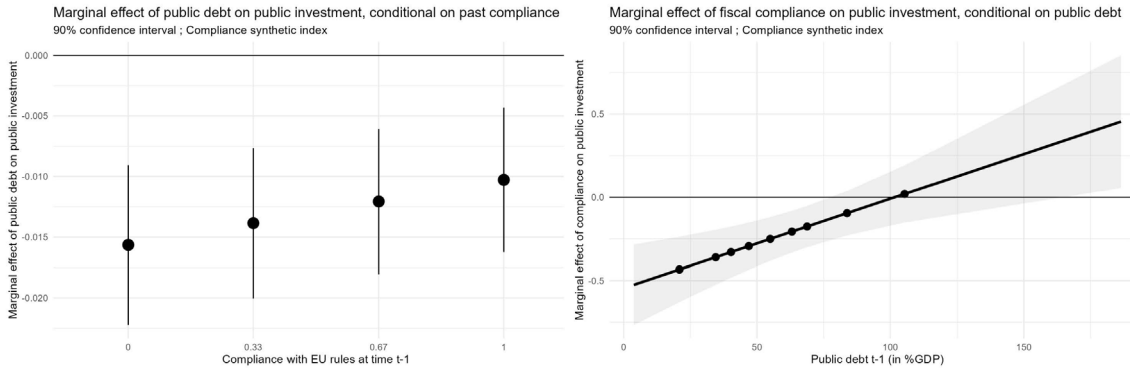
Table III.3.3: **The impact of compliance with EU rules on public investment: synthetic compliance index**

	Compliance Index	
	Full	**No Covid**
public investment (t-1)	0.5804 ***	0.5430 ***
	(0.0408)	(0.0544)
public debt (t-1)	-0.0091 ***	-0.0156 ***
	(0.0030)	(0.0040)
Compliance index (t-1)	-0.1727	-0.5454 ***
	(0.1120)	(0.1530)
public debt x compliance index (t-1)	0.0007	0.0054 ***
	(0.0015)	(0.0020)
Control variables	Yes	Yes
Wald test	0.1545	0.0013
R^2	0.5011	0.5079
Adj. R^2	0.4480	0.4502
Num. obs.	625	544

(1) ***p < 0.01; **p < 0.05; *p < 0.1.
(2) The sample includes 27 EU countries. The Full time period is 1999-2022; the No Covid time period is 1999-2020. All estimations include country and time fixed effects and control variables. Control variables: real GDP per capita, net capital stock, output gap, long term interest rate, primary balance, old dependency ratio. The Wald test row indicates the p-value of a Wald test of the null hypothesis that the compliance variable and its interaction with debt are jointly nonsignificant.

Source: Commission services.

Graph III.3.4: **Interaction between public debt and past compliance with EU fiscal rules using the synthetic compliance index (period 1999-2020)**



Source: Commission services.

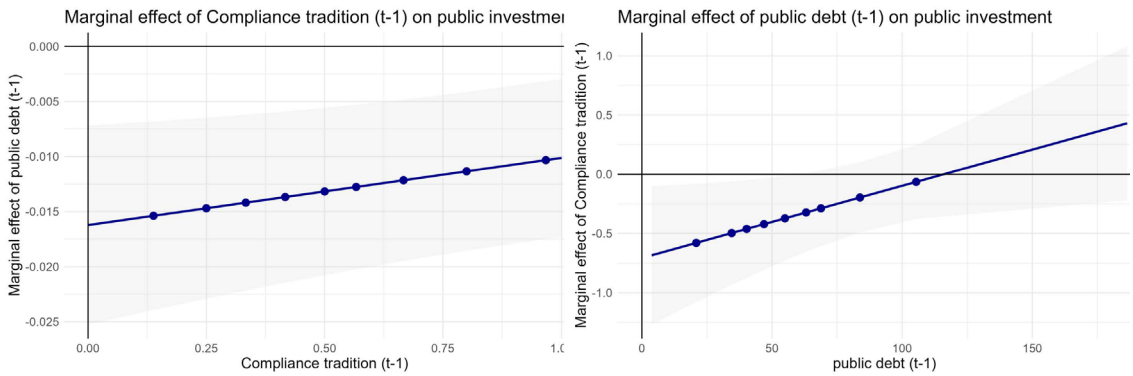
Beyond compliance at a given point in time, consistent compliance with EU fiscal rules over a sustained period may also play a specific role. A theoretical explanation is that having a compliance track record points at a tradition of fiscal prudence and fiscal compliance with rules. This

would tend to further reinforce the confidence of lenders, making them less sensitive to an increase in the public debt ratio. Moreover, this good fiscal track record could also point at good economic and fiscal governance overall. In turn, it could be hypothesised that countries enjoying such sound economic governance also seek to promote growth-enhancing expenditure, including public investment. In such countries, in case of high debt, the government would possibly still seek to preserve public investment while confronting its need to consolidate. Thus, the impact of sustained compliance would operate not only through the *r* channel but also the *g* channel.

To test this hypothesis, we compute the 'fiscal compliance tradition' index as the mean of the compliance index over several years ([163]). We test alternative ways of computing this mean, including by varying the number of lags to retain in the computation and by changing the weights ascribed to each lag (either linear or decreasing as lags increase). We choose to compute the compliance tradition index as a 4-year moving average with non-uniform weights ([164]). Both the direct and indirect impacts are slightly larger for the compliance tradition index than the for the plain compliance index (see Graph III.3.5), while the observed pattern across degree of compliance and across debt levels is the same across the two indicators of compliance – i.e., increasing impact as compliance or debt level increase.

To sum up, the compliance with EU fiscal rules has a significant positive indirect impact on public investment, mitigating the adverse debt-investment relationship. The result is even stronger when considering the compliance track record, pointing at the merit of building a "tradition of fiscal compliance" to shield public investment for adverse fiscal circumstances. Reputation of fiscal compliance generates economic confidence and signals sound economic and fiscal governance, likely associated with a high quality of public finance and investment-friendly policy. For countries with a high level of public debt, the favourable indirect impact can outweigh the negative direct impact of fiscal compliance on public investment.

Graph III.3.5: **Interaction between public debt and compliance tradition (time period 1999-2020)**



Source: Commission services.

3.4.2. Institutional factors across Member States

The second subset of factors we consider is the role of national institutions. Following European Commission (2018) and as done in the previous section, we interact institutional variables with the level of debt, to distinguish their direct effect on investment and their indirect effect, via the reduction of the impact of public debt on public investment. To account for this subset of factors, we use two indices that capture, respectively, the strength of national fiscal rules and the quality of overall governance.

([163]) When computing the mean, some terms prior to 1998 will be missing. We replace them by their value in 1998.

([164]) The respective weights for the years t-1, t-2, t-3, t-4 are 0.5, 0.25, 0.15, 0.1.

The first index we use is the Fiscal Rules Strength Index (FRSI), developed by the DG ECFIN of the European Commission ([165]). This composite numerical indicator captures the design strength of national fiscal rules in EU Member States. It is based on a comprehensive dataset covering all types of fiscal rules (budget balance, debt, expenditure, and revenue rules) and at all levels of government (central/regional/local government, and social security). The level of the FRSI is heterogeneous across countries but increased markedly in most Member States, notably between 2012 and 2015.

The second index we use is the Worldwide Governance Indicator (WGI) of the World Bank. The WGI is also a composite index. It covers six dimensions of governance: accountability, political stability, governance effectiveness, regulatory quality, rule of law, control of corruption ([166]). The level of the WGI is also very heterogeneous across EU countries, while its evolution over time does not show any clear trend nor structural break.

The strength of national fiscal rules seems to have a significant impact on public investment (see Table III.3.4**).** This result is in line with earlier findings reported in European Commission (2018) (i.e. the PFR 2017). Specifically, stronger national fiscal rules mitigate the negative debt-investment relationship, implying a positive indirect impact on investment. Concretely, as the FRSI increases from the first to the ninth decile of its scale, it mitigates the negative impact of debt on investment by around a third. However, there is also evidence that stronger fiscal rules have a negative and significant direct impact on public investment (see Graph III.3.6). This latter result is in line with Wijsman and Crombez (2021) ([167]). Our contribution is to show that this direct negative impact of stronger national fiscal rules on investment is partly compensated by an indirect positive impact through a mitigation of the debt-investment channel. In particular, for high levels of public debt, the marginal impact of an increase in FRSI could become slightly positive, with the indirect positive effect of stronger national fiscal rules on public investment more than compensating the negative direct effect. This result is of particular importance for Member states that are now confronted with relatively high levels of public debt.

The quality of overall governance, as measured by the World Bank's WGI, brings less significant results. Better governance has neither a mitigating impact on the link between public debt and public investment (i.e., the indirect effect), nor a significant direct impact on public investment (see Graph III.3.7). This also confirms that a more precise measure of economic and fiscal governance – e.g., the compliance tradition indicator presented above – is more relevant.

([165]) Details on this index is provided in the related Fiscal Governance Database available linked here: https://economy-finance.ec.europa.eu/economic-research-and-databases/economic-databases/fiscal-governance-database_en

([166]) Compared with the indicator of 'tradition of fiscal compliance' mentioned above, this indicator of governance is an explicit indicator of quality of governance. As such, its scope is broader than the *economic and fiscal* governance dimension indirectly captured by the indicator of 'tradition of fiscal compliance'.

([167]) Their model specification is very similar to ours, although they use the bias-corrected least square dummy variable (LSDVC) estimator and a shorter time period. They estimate a slightly lower coefficient, around -0.1.

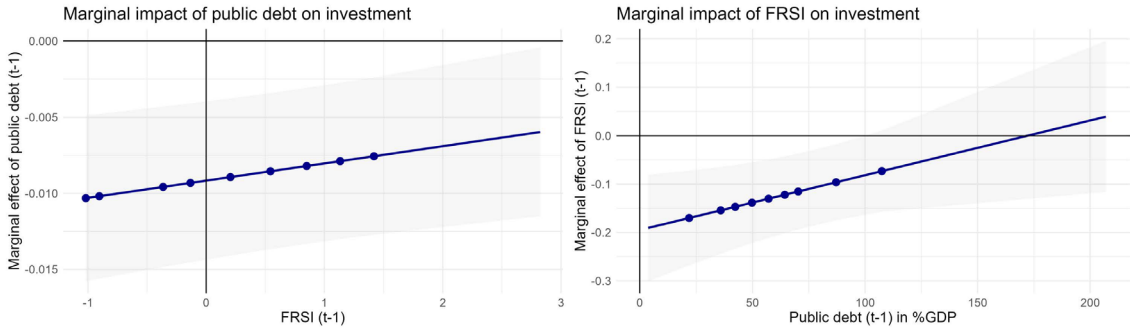
Table III.3.4: **Impact of fiscal rules and governance quality on public investment**

	Fiscal rules		Governance	
	Full	**No Covid**	**Full**	**No Covid**
public investment (t-1)	0.5729 ***	0.5452 ***	0.5855 ***	0.5517 ***
	(0.0415)	(0.0493)	(0.0402)	(0.0529)
public debt (t-1)	-0.0092 ***	-0.0112 ***	-0.0089 **	-0.0126 **
	(0.0026)	(0.0031)	(0.0038)	(0.0049)
fiscal rules (t-1)	-0.1948 ***	-0.1750 ***		
	(0.0577)	(0.0640)		
public debt x fiscal rules (t-1)	0.0011 **	0.0008		
	(0.0005)	(0.0006)		
governance (t-1)			-0.1041	-0.3324
			(0.3512)	(0.5137)
public debt x governance (t-1)			0.0006	0.0012
			(0.0026)	(0.0031)
Control variables	Yes	Yes	Yes	Yes
Wald test	0.0030	0.0157	0.9566	0.8081
R^2	0.5083	0.4895	0.4976	0.4836
Adj. R^2	0.4553	0.4290	0.4447	0.4220
Num. obs.	638	558	652	545

(1) ***p < 0.01; **p < 0.05; *p < 0.1.
(2) The sample includes 27 EU countries. The full time period is 1996-2022 for the FRSI variable and 1997-2022 for the WGI variable. The No Covid time period ends in 2019. All estimations include year and country fixed effects. Control variables: real GDP per capita, net capital stock, output gap, long term interest rate, primary balance, old dependency ratio. The Wald test row indicates the p-value of a Wald test of the null hypothesis that the institutional variable and its interaction with debt are jointly non-significant. "Fiscal rulers" and "governance" are measured respectively with FRSI and WGI.

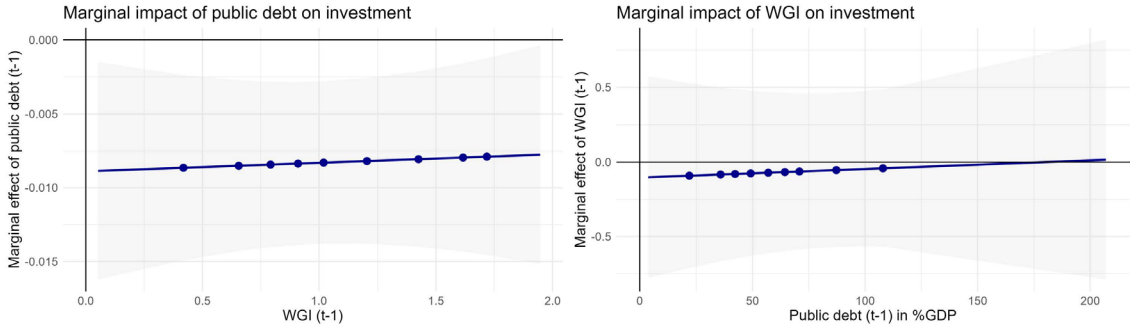
Source: Commission services.

Graph III.3.6: **Interaction between public debt and strength of fiscal rules (period: 1996-2022)**



Source: Commission services.

Graph III.3.7: **Interaction between public debt and governance quality (period: 1997-2022)**



Source: Commission services.

3.4.3. Sustainability of public finances

Fiscal sustainability is likely to affect the debt-investment relationship. While the level of public debt has a strong impact on fiscal sustainability, it is not the only relevant factor. In other words, a given level of public debt may imply a different degree of fiscal sustainability risk. As such, measures of fiscal sustainability risks may be relevant factors to consider when assessing the impact of public debt on public investment. In particular, as highlighted under section 3.2, fiscal sustainability can affect investment via various channels, notably via it impact on confidence of investors and lenders. For instance, for a given level of debt, a lower level of fiscal sustainability might further reduce confidence of the lenders (r channel) and of investors (g channel) and trigger a need to launch a fiscal consolidation (SB channel). Despite the likely significant relevance of fiscal sustainability its impact on the debt-investment relationship has attracted limited attention in the literature.

Fiscal sustainability refers to the ability of a government to sustain its current spending, tax and other policies in the long run without threatening the government's solvency or without defaulting on some of the government's liabilities or promised expenditures. More specifically, debt sustainability refers to the government's ability to meet all its current and future payment obligations. There are various ways to measure fiscal sustainability. We consider alternative indicators of fiscal sustainability, namely i) debt-to-GDP thresholds, ii) demographic fundamentals capturing the effect of population ageing, iii) indicators reported in the debt sustainability analysis (DSA) by the European Commission and iv) credit ratings by S&P Global Ratings, as a proxy of the *perceived* sustainability of debt.

We find some evidence of an effect of fiscal sustainability on the debt-investment relationship. On the one hand, there is no clear effect of fiscal sustainability, as measured by conventional thresholds or range of debts or by the European Commission's DSA indicators tested here; the latter result is however to consider with caution due to limited data availability. On the other hand, there is an effect of *perceived* fiscal sustainability, as measured by credit rating agencies.

First, the most basic approach of defining debt sustainability using a threshold for the debt-to-GDP ratio does not influence the debt-investment relationship. Estimating the impact of public debt on public investment distinguishing observations that are below and above given debt thresholds (60%, 90% or 100% of GDP) show that being above a threshold only slightly reinforces the negative impact of debt on public investment, though not significantly (see Table III.3.5). In other words, exceeding some specific level of public debt-to-GDP ratio does not significantly alter the negative relationship with public investment.

Second, attempting to use variables that have a bearing on long term fiscal sustainability also fails to yield a significant impact on the debt-investment relationship. In particular, a high old-age dependency ratio could pose a fiscal sustainability by raising pension financing needs. As described in section 3.2, increases in such variables can thus cause both a direct negative impact on public investment and an indirect impact via confidence effects notably related to fiscal sustainability

concerns. Using the old dependency ratio as an interaction term, to proxy for long-run fiscal sustainability, we find no significant impact (see Table III.3.6), meaning that the negative debt-investment relationship is not significantly larger when the dependency ratio is higher.

Table III.3.5: **Impact of debt level on public investment: role of a debt-to-GDP threshold**

	60 percent	90 percent	100 percent
public investment (t-1)	0.5714 ***	0.5641 ***	0.5655 ***
	(0.0459)	(0.0460)	(0.0475)
public debt (t-1)	-0.0094	-0.0070 **	-0.0077 ***
	(0.0060)	(0.0032)	(0.0030)
High debt dummy (t-1)	0.2372	0.0961	-0.0850
	(0.3180)	(0.3198)	(0.2814)
public debt x high debt dummy (t-1)	-0.0024	-0.0034	-0.0013
	(0.0060)	(0.0036)	(0.0030)
Control variables	Yes	Yes	Yes
R^2	0.4890	0.4901	0.4898
Adj. R^2	0.4305	0.4317	0.4314
Num. obs.	585	585	585

(1) ***p < 0.01; **p < 0.05; *p < 0.1.
(2) The sample includes 27 EU countries. The full time period is 1996-2022. All estimations include year and country fixed effects. Control variables: real GDP per capita, net capital stock, output gap, long term interest rate, primary balance, old dependency ratio. The definition of the "high debt" dummy variable is based on a debt-to-GDP ratio threshold.
Source: Commission services.

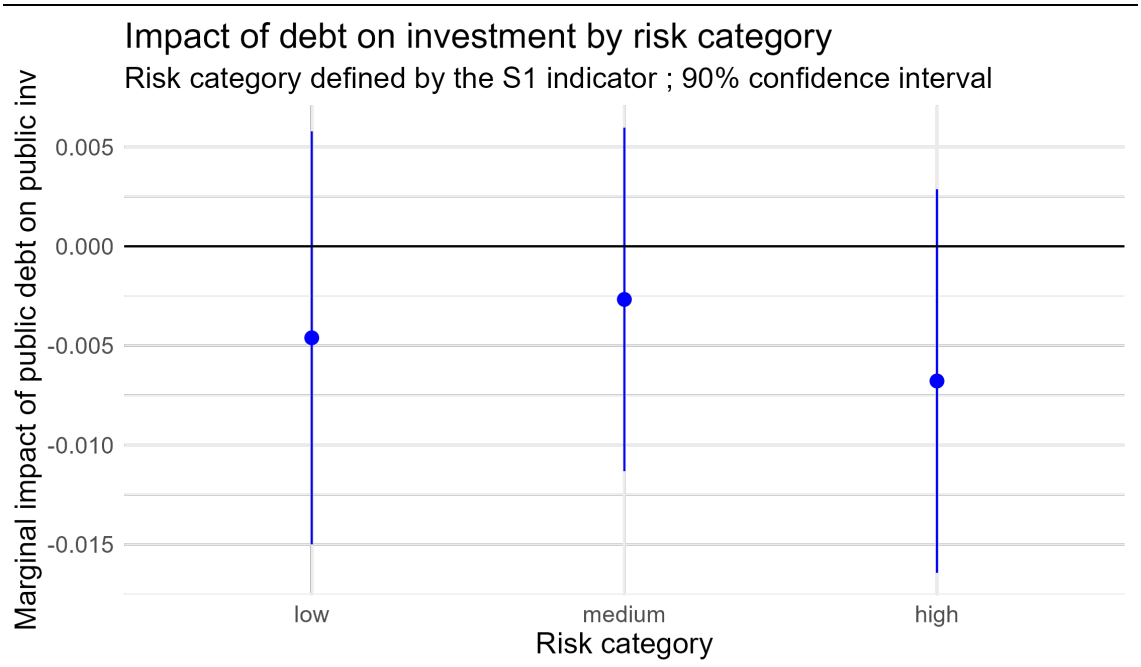
Table III.3.6: **Impact of debt level on public investment: role of the old dependency ratio**

	Cost of ageing
public investment (t-1)	0.58808 ***
	(0.03961)
public debt (t-1)	-0.01046 **
	(0.00466)
dependency ratio (t-1)	-0.02262
	(0.02303)
public debt x age dependency ratio (t-1)	0.00008
	(0.00013)
Control variables	Yes
R^2	0.49939
Adj. R^2	0.44783
Num. obs.	665

(1) ***p < 0.01; **p < 0.05; *p < 0.1.
(2) The sample includes 27 EU countries. The full time period is 1996-2022. All estimations include year and country fixed effects. Control variables: real GDP per capita, net capital stock, output gap, long term interest rate, primary balance, old dependency ratio.
Source: Commission services.

Third, relying on fiscal sustainability risk measures based on the European Commission's comprehensive DSA framework also fails to reveal a significant impact of fiscal sustainability on the debt-investment relationship. The outcome of the Commission's fiscal sustainability analysis is presented annually in the Debt Sustainability Monitor or in the Fiscal Sustainability Report (see for example European Commission, 2023). In our regression we focus on the so-called S1 indicator, which measures the consolidation effort needed to reduce debt to 60% of GDP in 15 years' time. As such, the S1 indicator offers a measure of medium-term fiscal sustainability risks. It has been computed by the Commission since 2010. Based on its numerical value, countries are attributed a risk category: low, medium or high. We estimate the relationship between public debt and public investment grouping countries according to their risk category ([168]) (see Graph III.3.8). The negative relationship between debt and investment appears slightly larger for countries facing a high fiscal sustainability risk than for those facing a low risk, although the difference is not significant in the regression. This result means that diminishing the level of fiscal sustainability risk (as measured by the S1 indicator) does not significantly reduce the negative relationship between public debt and public investment. An important limitation of this approach is the size of the sample with S1 data available only over the period 2010-2022, which drastically reduces the size of our panel and thus the efficiency of our econometric estimations.

Graph III.3.8: **The marginal effect of public debt on public investment, conditional on fiscal sustainability (defined by the S1 indicator); period: 2011-2023**



Source: Commission services.

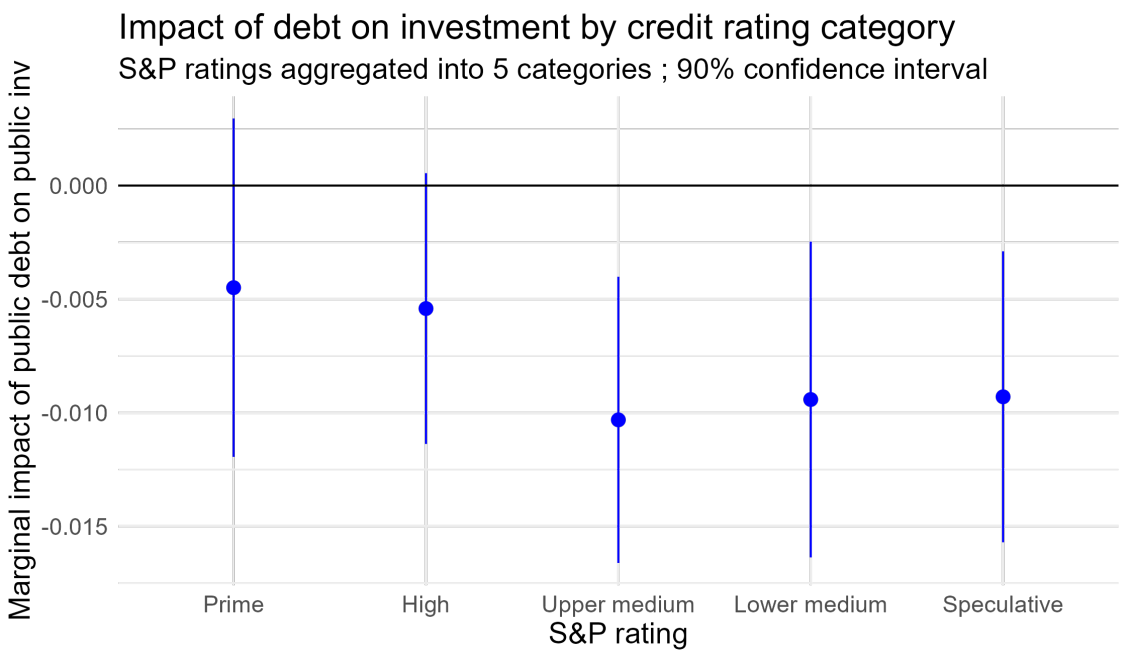
Lastly, we rely on *perceived* fiscal sustainability indicator, as measured by private credit rating agencies. These agencies regularly publish their own appraisal of debt sustainability and rate long-term obligations based on the obligator's capacity to meet its financial commitments. We use the credit rating data from S&P Global Ratings. It produces ratings for EU Member States on a scale ranging from AAA to D ([169]). In turn, we aggregate grades into five categories, to obtain sufficient observations across categories (see Table III.3.16), and estimate the impact of public debt on public investment within each category. It appears that the impact of public debt on public investment is more negative and significant when the S&P rating is lower, namely around twice as negative for lower risk categories than for the "Prime" category (see Graph III.3.9). Moreover, the *direct* impact of the

([168]) Due to methodological changes, we use the risk categories rather than the numerical values of the S1 indicator.

([169]) For a given year, we consider the grade on December 31st.

grade on public investment seems to be small and non-significant. Therefore, improving the credit rating could significantly mitigate the debt-to-investment channel. Some caveats however surround the use of such ratings data to proxy for the role of fiscal sustainability. First, there is a potential issue of endogeneity, insofar as agencies adjust their grades based on economic developments, which reflect public investment, our dependent variable. Second, the correspondence between S&P ratings and the European Commission's S1 indicator, which is a true measure of fiscal sustainability, appears loose at best (see Table III.3.7), suggesting that ratings are only a loose proxy of fiscal sustainability risks.

Graph III.3.9: **The interaction between S&P credit rating and public debt**



Source: Commission services.

Table III.3.7: **Contingency table of S1 risk categories and S&P credit rating categories**

		S&P credit rating category					
		Prime	High	Upper medium	Lower medium	Speculative	**Total**
S1 risk category	Low	47	25	33	20	9	**134**
	Medium	19	27	24	27	10	**107**
	High	5	30	18	27	10	**90**
	Total	**71**	**82**	**75**	**74**	**29**	**331**

Source: Commission services.

3.5. ROBUSTNESS: USING OTHER DEFINITIONS OF INVESTMENT

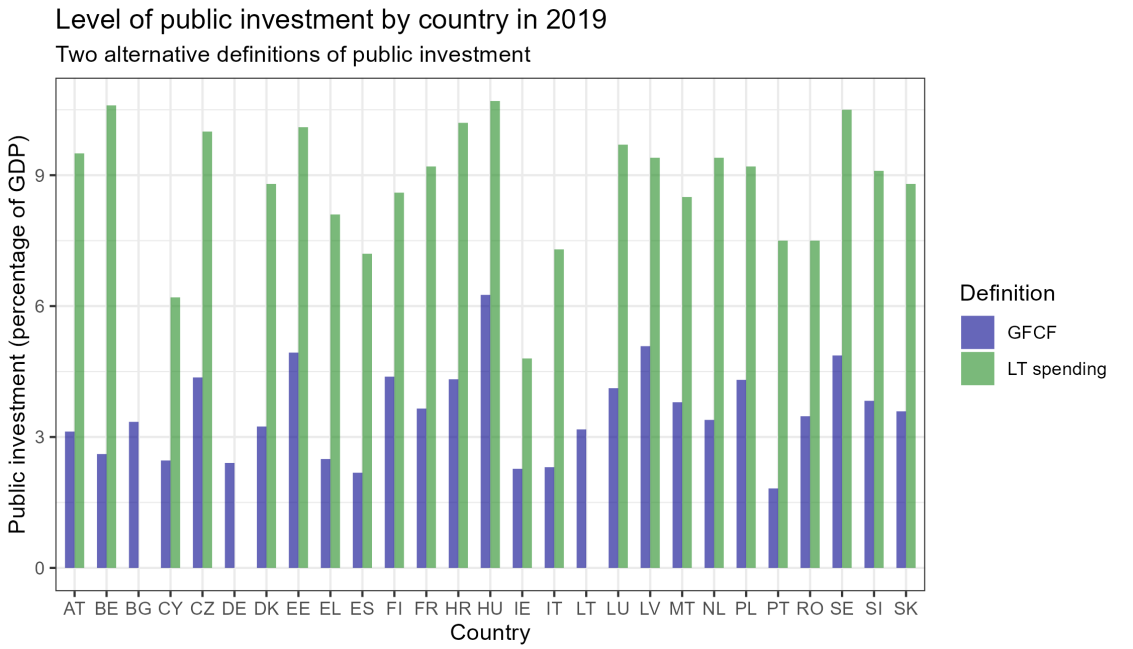
We test the robustness of our results along several dimensions. We use alternative definitions of public investment, namely growth-friendly spending and net fixed capital formation, and we explore whether our results would also broadly hold for private investment rather than public investment as our dependent variable.

3.5.1. Growth-friendly spending as a broader definition of public investment

A broader definition of government investment could encompass all forms of growth-friendly spendings. For instance, spending on education can be seen as a form of investment, namely investment in human capital. Along those lines and following European Commission (2016), we

build a new definition of government investment comprising a wide range of productive spending which we label "Long-term spending". This variable bundles together spending on education, R&D, environment protection, transport and education ([170]). Long-term spending is a much broader definition of public investment than Gross Fixed Capital Formation (GFCF), covering around 10% of GDP in most European countries (see Graph III.3.10).

Graph III.3.10: **Two alternative definitions of public investment, Gross Fixed Capital Formation (GFCF) and Long-Term spending (LT spending)**



Source: Commission services.

Table 6 and 7 compare results across the two definitions of public investment, namely the standard definition based on GFCF and our alternative measure based on the long-term spending variable. Importantly, due to missing data for some of the subcategories of the long-term spending variable, series can only be computed over a short timespan. To ensure sound comparison with the GFCF based regressions, we impose same period across all regressions ([171]). The estimated impact of the regressors is very similar with two exceptions (see Table III.3.8): net capital stock and the share of old people in the population. Net capital stock is, as expected, more tightly related to GFCF, as they both measure physical capital, while long-term spending covers also other dimensions of capital (e.g., human capital). In turn, the impact of the old dependency ratio is stronger when relying on long-term spending as the dependent variable. As education spending represents a substantial part of Long-term spending, it should indeed be expected an increase in the old-age dependency ratio will be associated with lower long-term spending if only on account of a drop in the relevance of that sub-category. Turning to the regression that include the interaction terms (see Table III.3.9), we note that the direct impact of fiscal rules strength is somewhat smaller on Long-term spending than on GFCF, while no significant difference is discernible for the fiscal compliance indicator. Overall, similar results across the two sets of dependent variables observed in those tables tend to point at robustness of the results regarding the relevance of the channels highlighted in these regressions.

([170])More precisely, in terms of COFOG classification, "Long term spending" includes categories GF09, GF05, GF0405, GF0406 and the sum of GF0105, GF0204, GF0305, GF0408, GF0505, GF0605, GF0705, GF0805, GF0907 and GF1008.

([171]) For the time period 1996-2001, the lagged value of Long-Term spending is missing for more than ten countries.

Table III.3.8: **Baseline model for two alternative definitions of public investment**

	Gov GFCF	Gov LT spending
public investment (t-1)	0.5616 ***	0.5013 ***
	(0.0430)	(0.0884)
public debt (t-1)	-0.0090 ***	-0.0100 **
	(0.0030)	(0.0042)
Net capital stock (t-1)	-0.4206	0.2801
	(0.2845)	(0.4641)
real GDP per capita (t-1)	-0.0153 ***	-0.0224 **
	(0.0048)	(0.0087)
output gap (t-1)	-0.0046	-0.0017
	(0.0125)	(0.0215)
long-term interest rate (t-1)	-0.0125	-0.0055
	(0.0096)	(0.0209)
primary balance (t-1)	0.0001	-0.0062
	(0.0139)	(0.0184)
old dependency ratio (t-1)	-0.0166	-0.0445 *
	(0.0281)	(0.0258)
R^2	0.4787	0.3453
Adj. R^2	0.4213	0.2649
Num. obs.	546	467

(1) ***p < 0.01; **p < 0.05; *p < 0.1.
(2) The sample includes 27 EU countries. The full time period is 2002-2022. All estimations use heteroskedasticity-robust standard errors and country fixed effects. The dependent variable is the ratio between government GFCF (resp. government long term spending) and GDP.
Source: Commission services.

Table III.3.9: **Mitigators of public debt by definition of public investment**

	Fiscal rules strength		Fiscal compliance	
	Gov GFCF	Gov LT spending	Gov GFCF	Gov LT spending
public investment (t-1)	0.5522 ***	0.5011 ***	0.5072 ***	0.4577 ***
	(0.0434)	(0.0878)	(0.0577)	(0.0925)
public debt (t-1)	-0.0101 ***	-0.0102 ***	-0.0171 ***	-0.0163 ***
	(0.0029)	(0.0039)	(0.0040)	(0.0048)
FRSI (t-1)	-0.2032 ***	-0.1481	-0.0956 *	-0.0703
	(0.0675)	(0.1228)	(0.0496)	(0.0720)
public debt x FRSI (t-1)	0.0014 **	0.0012		
	(0.0007)	(0.0010)		
Compliance index (t-1)			-0.6486 ***	-0.6182 **
			(0.1397)	(0.2602)
public debt x compliance index (t-1)			0.0067 ***	0.0069 *
			(0.0020)	(0.0039)
Control variables	Yes	Yes	Yes	Yes
R^2	0.4861	0.3483	0.4935	0.3450
Adj. R^2	0.4272	0.2647	0.4296	0.2564
Num. obs.	546	467	492	446

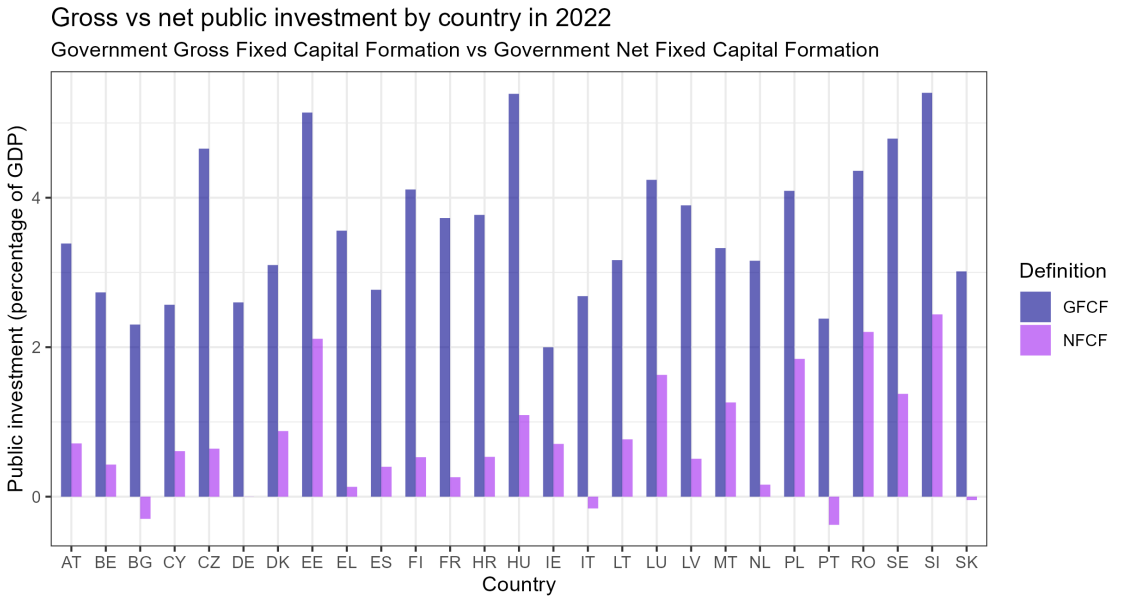
(1) ***p < 0.01; **p < 0.05; *p < 0.1.
(2) The sample includes 27 EU countries. The full period is 2002-2022; the Compliance columns exclude the Covid pandemic. All estimations use heteroskedasticity-robust standard errors and country fixed effects. The dependent variable is the GFCF-to-GDP ratio (source: Eurostat). Control variables: real GDP per capita, net capital stock, output gap, long term interest rate, primary balance, old dependency ratio.
Source: Commission services.

3.5.2. Gross *versus* net public investment

Measuring investment by gross fixed capital formation does not take into account the consumption of fixed capital by the public sector. The consumption of fixed capital is defined as

the "decline, during the course of the reporting period, of the current value of the stock of fixed assets as a result of physical deterioration, normal obsolescence, or normal accidental damage" (Fund 2014). By subtracting the consumption of fixed capital from the gross capital formation, one can compute the net fixed capital formation. NFCF is substantially lower than GFCF, and even negative in some countries (see Graph III.3.11).

Graph III.3.11: **Comparison of GFCF and NFCF by country**



Source: Commission services.

Government GFCF and NFCF might be driven by different determinants. Intuitively, investment in new infrastructure (NFCF) and investment in maintaining existing infrastructure (also covered by GFCF) are investment of a somewhat different nature. We test the implication of using NFCF as the dependent variable. The estimated coefficients remain broadly similar in the regressions both without (Table III.3.10) and with the interaction terms (see Table III.3.11). Again, stability of the results across these slightly different types of investment dependent variables points at robustness of our results.

Table III.3.10: **Baseline model for two alternative definitions of public investment**

	Gov GFCF	Gov NFCF
gross public investment (t-1)	0.5839 ***	
	(0.0339)	
net public investment (t-1)		0.5834 ***
		(0.0325)
public debt (t-1)	-0.0084 ***	-0.0092 ***
	(0.0020)	(0.0021)
Net capital stock (t-1)	-0.2779	-0.5706 ***
	(0.1784)	(0.1823)
real GDP per capita (t-1)	-0.0120 ***	-0.0134 ***
	(0.0043)	(0.0044)
output gap (t-1)	0.0009	0.0017
	(0.0118)	(0.0119)
long-term interest rate	-0.0146	-0.0142
	(0.0107)	(0.0107)
primary balance (t-1)	0.0053	0.0129
	(0.0097)	(0.0096)
old dependency ratio (t-1)	-0.0210	-0.0222
	(0.0191)	(0.0191)
R^2	0.5013	0.5881
Adj. R^2	0.4495	0.5452
Num. obs.	638	638

(1) ***p < 0.01; **p < 0.05; *p < 0.1.
(2) The sample includes 27 EU countries. The full time period is 1996-2022. All estimations use heteroskedasticity-robust standard errors and country fixed effects. The dependent variable is the ratio between government GFCF (resp. government long term spending) and GDP.
Source: Commission services.

Table III.3.11: **Mitigators of public debt definition of public investment**

	Fiscal rules strength		Fiscal compliance	
	Gov GFCF	**Gov NFCF**	**Gov GFCF**	**Gov NFCF**
gross public investment (t-1)	0.5729 ***		0.5323 ***	
	(0.0415)		(0.0542)	
net public investment (t-1)		0.5781 ***		0.5489 ***
		(0.0397)		(0.0485)
public debt (t-1)	-0.0092 ***	-0.0097 ***	-0.0157 ***	-0.0153 ***
	(0.0026)	(0.0028)	(0.0040)	(0.0041)
FRSI (t-1)	-0.1948 ***	-0.1725 ***	-0.1048 **	-0.0951 **
	(0.0577)	(0.0599)	(0.0455)	(0.0448)
public debt x FRSI (t-1)	0.0011 **	0.0010 *		
	(0.0005)	(0.0006)		
Compliance index (t-1)			-0.5497 ***	-0.4593 ***
			(0.1504)	(0.1479)
public debt x compliance index (t-1)			0.0053 ***	0.0042 **
			(0.0020)	(0.0019)
Control variables	Yes	Yes	Yes	Yes
R^2	0.5083	0.5927	0.5112	0.5965
Adj. R^2	0.4553	0.5487	0.4528	0.5483
Num. obs.	638	638	544	544

(1) ***p < 0.01; **p < 0.05; *p < 0.1.
(2) The sample includes 27 EU countries. The full time period is 1996-2022; the Compliance columns exclude the Covid pandemic. All estimations use heteroskedasticity-robust standard errors and country fixed effects. The dependent variable is the GFCF-to-GDP ratio (source: Eurostat). Control variables: real GDP per capita, net capital stock, output gap, long term interest rate, primary balance, old dependency ratio.
Source: Commission services.

3.5.3. Public *versus* private investment

We also test whether our set of results would broadly hold when substituting private for public investment, as the dependent variable. Public investment only represents a minor part of total investment (3-5% of GDP as compared with 12-25% for private investment). Substantial investment, mostly private, will be needed to support the twin transition (green and digital). It is therefore of interest to investigate whether public debt also affects investment and whether certain circumstances can also mitigate this impact on private investment. Public and private investment are typically of a different kind. They can also be, occasionally, substitutes or complements for each other. All this implies that they can be influenced by different mechanisms. As such, we complement our analysis by investigating to what extent the channels highlighted in our regressions would differ when applied to private investment.

Our regression (Table III.3.12**) suggests that public debt has no significant impact on private investment.** The regression also shows that private investment appears more sensitive than public investment to interest rates and the level of the capital stock. Intuitively, as the private sector is more sensitive to the profitability of an investment (whereas the public sector also considers other aspects than financial returns) it appears plausible that it is more sensitive interest rates. Second, the net capital stock of an economy is made of an accumulation of private investments. Consequently, a higher level of stock can induce a smaller need for private investment (if capital exhibits decreasing marginal returns).

Table III.3.12: **Baseline model for public and private GFCF**

	Public	Private
public investment (t-1)	0.5879 ***	
	(0.0330)	
private investment (t-1)		0.6427 ***
		(0.0315)
public debt (t-1)	-0.0080 ***	0.0069
	(0.0020)	(0.0068)
Net capital stock (t-1)	-0.3210 *	-2.6669 ***
	(0.1689)	(0.5959)
real GDP per capita (t-1)	-0.0121 ***	-0.0105
	(0.0041)	(0.0143)
output gap (t-1)	-0.0017	-0.0455
	(0.0116)	(0.0406)
long-term interest rate	-0.0156	-0.1374 ***
	(0.0101)	(0.0362)
primary balance (t-1)	0.0045	0.0392
	(0.0095)	(0.0318)
old dependency ratio (t-1)	-0.0178	-0.1285 **
	(0.0180)	(0.0634)
R^2	0.4991	0.5530
Adj. R^2	0.4485	0.5078
Num. obs.	665	665

(1) p < 0.01; **p < 0.05; *p < 0.1.
(2) The sample includes 27 EU countries. The full time period is 1996-2022. All estimations use heteroskedasticity-robust standard errors and country and year fixed effects. The dependent variable is the ratio between government GFCF (resp. government long term spending) and GDP.
Source: Commission services.

3.6. CONCLUSION

Four conclusions can be drawn from the chapter.

First, the negative impact of public debt on public investment is confirmed in the chapter and appears robust to many different specifications (e.g., dependent variables, addition of many controls, estimation period, and econometric method, etc.). *Ceteris paribus*, a very large level of public indebtedness would thus have a non-negligible effect on the level of public investment. As expected and due to different determinants, the impact of public debt on private investment is mute.

Second, this negative relationship could be mitigated by some fiscal factors, not least fiscal compliance, especially if consistent over time. One of the novelties of this chapter is to show that the compliance with the EU rules, especially over the medium term ('compliance tradition'), would significantly reduce the negative effect of public debt on public investment. The more the public

indebtedness, the stronger the impact of the fiscal mitigator on reducing its negative impact on public investment.

Third, the quality of the design of national fiscal rules could further mitigate the negative impact of high public debt on public investment. Other institutional variables, such as the quality of general governance, shows less statistically significant effect.

Lastly, the dynamic of public debt seems to matter as well, on top of the level of public debt. The negative effect of the level of public debt on public investment will be lower if the debt dynamic is sustainable. The statistical significance of the findings depends on the indicator used. In particular, the mitigating role of perceived sustainability is highly significant. This suggests that public investment is crowded out not only by the need of consolidation to stabilise high debt and restore fiscal sustainability but possibly also by the aggravating effect of rising interest rate spreads, generally associated with the increase in sustainability risks.

Box III.3.2: Public investments and debt sustainability – QUEST simulations

This box assesses the impact of a public investment stimulus on debt dynamics, based on simulations using the Commission's QUEST model ([1]). Public investment needs are rising in Europe. In a context of elevated public debt, the question arises as to what the implications are for fiscal sustainability of addressing those investment needs. While negative interest-growth differentials over recent years have kept the fiscal costs of public spending low, financing conditions might become less favourable going forward, implying harsher trade-offs between spending needs and debt sustainability. In contrast, a more optimistic viewpoint argues that by boosting economic growth, increased public investment spending can create (some) funding for itself, either via higher tax bases or beneficial denominator effects – even if interest rates are above GDP growth in the long run. This box contributes to this debate by quantitatively assessing the implications of public investment for debt dynamics using QUEST, a rich general equilibrium macro model, calibrated to the German economy.

A temporary six-year rise in public investment, *without offsetting fiscal action*, leads to a sustained increase in the debt-to-GDP ratio under conventional assumptions. Public investment affects debt-to-GDP via two broad channels: the primary balance and the interest-growth differential (r-g or "snowball term") ([2]). Investment spending incurs a direct budgetary cost, but at the same time it also leads to a persistent expansion of real GDP that could endogenously reduce the snowball term (reactions of inflation, monetary policy and other budgetary items also have an influence). Our simulations show that, while higher growth can provide some backing for the additional public debt, the cumulative primary deficits from the stimulus outweigh this denominator effect, leading to rising debt-to-GDP (left panel of Graph 1). In other words, debt stabilisation would eventually require higher primary surpluses, implying that public investments must be paid for by subsequent fiscal adjustments.

The public investment stimulus lowers the primary budget balance (Graph 1, right panel). Additional spending on government investments (pink bars) raises the public expenditures share of GDP. Other non-investment expenditures, such as transfers (e.g., pensions) and government consumption (e.g., public sector wages), are assumed to be indexed to output in our central scenario, implying that their GDP shares remain unchanged and thus they do not contribute to movements in the primary balance-to-GDP ratio. On the revenue side, taxes (from consumption, labour income and corporate profits) grow roughly in line with GDP as tax bases rise with output, implying a relatively stable ratio to GDP ([3]). As a result, the primary balance-to-GDP decreases during the fiscal expansion and returns close to its baseline value thereafter, entailing large cumulative deficits (purple bars in the left panel of Graph 1) that contribute to higher public debt.

([1]) The details of these simulations are published in Motyovszki, Gergő, Philipp Pfeiffer and Jan in 't Veld (2024). The implications of public investment for debt sustainability. *European Economy Discussion Papers*, June 2024, DP 204.

([2]) The snowball effect can be further split into an *endogenous* response to the fiscal shock (i.e. deviations from baseline values) by effective nominal interest rates on outstanding public debt $i^g_{t-1} - i^g$, real GDP growth $\hat{g}_t$ and GDP-deflator inflation $\hat{\pi}_t$ on the one hand, and the contribution of the (exogenous) *steady-state* interest-growth differential $i^g - G$ on the other hand. Accordingly, the dynamics of the cumulative change in the public debt-to-GDP ratio $\hat{d}_T$ can be decomposed (as displayed on the left panel of Graph 1) based on the following equation, where pb_t is the primary budget balance as a percent of GDP, while G is trend nominal growth. The last four terms sum up to the snowball effect, which operates *on top of* the effects of inflation and real growth on the primary balance itself.

$$\hat{d}_T = \sum_{t=2024}^{T} \Delta d_t = -\sum_{t=2024}^{T} (pb_t - pb) + \sum_{t=2024}^{T} \frac{i^g_{t-1} - i^g}{(1+\hat{\pi}_t)(1+\hat{g}_t)(1+\mathrm{G})} d_{t-1} - \sum_{t=2024}^{T} \frac{\hat{g}_t}{(1+\hat{\pi}_t)(1+\hat{g}_t)} d_{t-1} - \sum_{t=2024}^{T} \frac{\hat{\pi}_t}{1+\hat{\pi}_t} d_{t-1} + \sum_{t=2024}^{T} \frac{i^g - G}{(1+\mathrm{G})} \left[\frac{d_{t-1}}{(1+\hat{\pi}_t)(1+\hat{g}_t)} - d\right]$$

([3]) This is consistent with budgetary revenue semi-elasticity estimates of close to zero. The tax-to-GDP ratio declines slightly only while the stimulus lasts, mainly driven by the VAT channel as the GDP share of investments grows at the expense of the consumption share. Shifts in tax-to-GDP could also result from composition effects through varying labour and profit shares to the extent that they are taxed at different rates. This is not the case in the current German calibration of the model.

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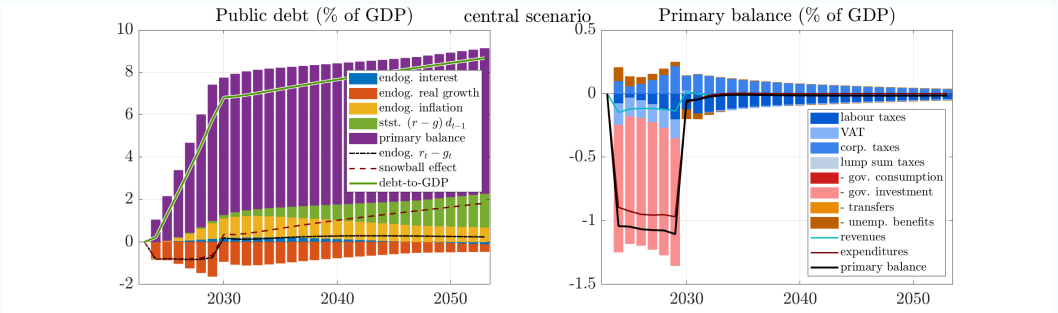
Box (continued)

Graph 1: **Fiscal effects of a public investment stimulus**

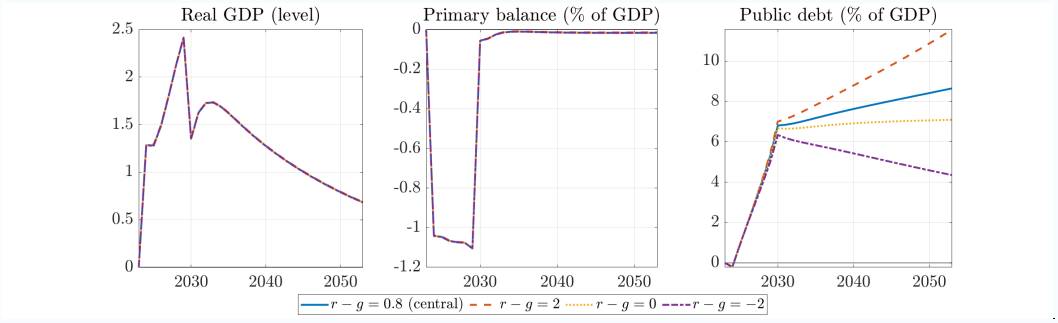


The left panel reports pp deviations of public debt-to-GDP from baseline after raising the GDP-share of public investment by 1 pp for six years. Coloured bars depict cumulative contributions to this deviation based on the decomposition shown before. The endogenous deviation in the interest-growth differential (blue, red, and yellow bars, summing up to the black dash-dotted line) and the term due to the steady-state interest-growth differential (green bars) sum up to the snowball effect (red dashed line). The right panel reports pp deviations of the primary balance-to-GDP ratio from baseline.

Source: European Commission staff calculations - simulations by QUEST, calibrated for Germany.

The snowball effect is a relatively smaller contributor to debt-to-GDP dynamics (Graph 1, left panel). Initially, the snowball term is negative, driven mainly by higher real GDP (red bars). Beyond the Keynesian demand-boosting effects of public spending, government investments augment private sector productivity, crowding in private investments in the medium term, which results in large fiscal multipliers. However, gradually expanding supply capacities also exert a deflationary pressure (yellow bars) which moderates the rise in nominal GDP and weakens the denominator effect in the medium run. Monetary tightening (in response to higher euro area inflation) has a limited effect on government interest expenditures (blue bars) due to long average debt maturities, as is typically observed in the EU. In the long run, as these *endogenous* effects on the interest-growth differential fade, assumptions about the exogenous *steady-state* r-g (green bars) start dominating the dynamics of the snowball term. In our central scenario with a positive long-run r-g ([4]), interest rates compound faster on the additional debt stemming from the stimulus than growth can erode it, putting debt-to-GDP on an increasing trajectory.

Graph 2: **The effect of the steady-state r-g differential**



The panels report pp deviations (% deviations for real GDP level) from baseline after raising the GDP-share of public investment by 1 pp for six years, for different values of the steady-state interest-growth differential r-g.

Source: European Commission staff calculations - simulations by QUEST, calibrated for Germany.

The long-term interest growth differential (r-g) assumption is an important driver of the fiscal outcome (Graph 2). In contrast to our central scenario (blue lines), under the assumption of a negative long-term r-g, debt-to-GDP could converge back to its baseline level in the medium to long run, even without subsequent budgetary adjustments (Blanchard, 2019). As interest payments accumulate relatively slower, it is possible to outgrow debt, independently of the endogenous effects of the fiscal shock. Graph 2 illustrates that these differences stem entirely from the steady-state component of the snowball term,

([4]) The steady-state interest growth differential (r-g=0.8%) assumed in our central scenario is the result of a real growth rate of 1.2% and a real interest rate of 2% for government bonds, which corresponds to long-run assumptions in the Commission's Debt Sustainability Analysis (DSA) framework.

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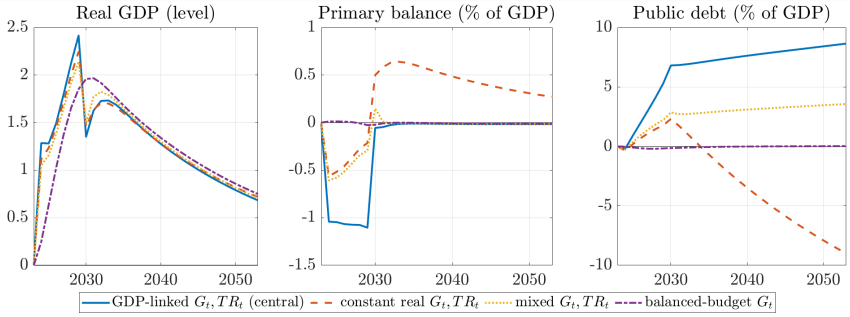
Box (continued)

while the endogenous response of the economy to the investment stimulus is otherwise identical across these scenarios ([5]).

Graph 3: **The effect of different expenditure indexation rules**



The panels report pp deviations (% deviations for real GDP level) from baseline after raising the GDP-share of public investment by 1 pp for six years. For GDP-linked expenditure (blue), transfers and government consumption grow in line with GDP, while for constant expenditures (red dashed) they are fixed in real terms at their baseline level permanently. The mixed scenario (yellow dotted) keeps these expenditures constant only while the stimulus lasts (yielding a cyclical response of the primary balance in the short run), which then catch up with GDP-indexation within 3 years (constant structural component). Explicit fiscal adjustments by cutting gov. consumption (purple dash-dotted) ex-ante cover the cost of the investment stimulus.
Source: European Commission staff calculations - QUEST simulations, calibrated for Germany.

Assumptions on the evolution of non-investment spending carry significant implications as well (Graph 3). In our central scenario (blue solid lines), these are assumed to grow in line with additional output, by construction eliminating any endogenous effect on the primary balance-to-GDP beyond the direct impact of the stimulus. Alternatively, keeping non-investment spending constant in real terms (red dashed lines) implies a declining expenditure share within a growing GDP. The resulting higher primary balances contribute to debt stabilisation. Yet, despite being automatic, these increased primary balances reflect the inherent fiscal costs of achieving debt reduction, challenging the notion of a "free lunch". Instead, this scenario represents a form of fiscal *quasi-consolidation*, as the beneficiaries of fixed public spending items (e.g., government employees, pensioners, and other transfer recipients) see their income persistently falling behind the rest of the economy. While often implicitly adopted in short-term analyses, the assumption of falling spending shares for non-stimulus items (i.e., non-investment in the present case) appears less plausible when considering long-term projections. A more plausible combined scenario (yellow dotted lines), that allows for a short-term cyclical increase in the primary balance via non-stimulus spending items while maintaining a constant spending share in the long run, would still lead to an increase in debt-to-GDP.

Explicit fiscal adjustments to cover the cost of public investments and stabilise debt, would maintain most of the GDP gains. We consider a scenario with an ex-ante balanced-budget fiscal shock, where a cut in government consumption exactly offsets the costs of the investment stimulus (purple dash-dotted line on Graph 3). In effect, the government implements a fiscally neutral shift from unproductive towards productive spending ("prioritisation"), such that the net demand-side effect of the stimulus is zero: the macroeconomic responses therefore isolate the supply-side effects of public investments, which feature persistent GDP gains. Behind these aggregate outcomes, however, policymakers might face challenging distributional trade-offs, underscoring the potential costliness of the required fiscal adjustment.

The need for public investments to be eventually paid for in a narrow fiscal sense should also be weighed against their potential to improve societal welfare. The resulting future productivity gains (e.g., by mitigating climate damages) could outweigh the consumption and leisure sacrifices that have to be made in the present to undertake these investments. In addition, financing investments via additional debt issuance (instead of in a budgetary-neutral way) might be advisable for tax-smoothing or "pay-as-you-use" generational fairness.

([5]) Note that the model responses to the public investment shock are set against a *constant* steady state, which features the same *r-g* initially as in the long run. However, in reality, the "no-investment" baseline scenario could look very different in the short run (e.g., featuring lower interest-growth differentials) than in the long run. Our stylised simulations do not capture this variability, but the sensitivity analyses could help to form a more nuanced picture.

3.7. APPENDIX

3.7.1. Variables

Table III.3.13: **Description of variables used**

Name	Unit	AMECO code	Source	Time period	Details
public investment	%GDP	1 0 310 0 UIGG0	Ameco	1995-2023	General government Gross Fixed Capital Formation
public debt	%GDP	1 0 310 0 UDGG	Ameco	1995-2023	
real GDP per capita	1,000 USD	1 0 30 0 HVGDP	Ameco	1995-2023	
net capital stock	%GDP	1 0 0 0 AKNDV	Ameco	1995-2023	
output gap	%GDP	1 0 0 0 AVGDGP	Ameco	1995-2023	
GDP growth rate	in %	5 1 0 0 RVGDP	Ameco	1996-2023	
long-term interest rate	in %	1 1 0 0 ILRV	Ameco	1995-2022	
primary balance	%GDP	1 0 310 0 UBLGI	Ameco	1995-2023	Value for IE in 2010 is dropped
headline balance	%GDP	1 0 310 0 UBLG	Ameco	1995-2023	Value for IE in 2010 is dropped
total revenue	%GDP	1 0 310 0 URTG	Ameco	1995-2023	
total expenditure	%GDP	1 0 310 0 UUTG	Ameco	1995-2023	
old dependency ratio	in %		Ameco	1995-2021	Ratio between share of population above 65 (1 0 410 0 NPON) and share of population 15 to 64 (1 0 410 0 NPAN)
election year	Index		Comparative political dataset[1]	1995-2021	Election of national parliament (lower house): 0 if no election; proportion of the year elapsed by the date of the election
government left	% of cabinet posts		Comparative political dataset	1995-2021	Share of social democrats and other left parties in government
snowball effect	%GDP	1 0 0 0 ADGGI		1996-2023	
FRSI	Index		DG Ecfin	1995-2021	DG Ecfin's Fiscal rules Strength Index
WGI	Index		World Bank	1996-2022	World Bank Worldwide Governance Index
public investment GG	%GDP		Eurostat	1995-2022	
public investment CG	%GDP		Eurostat	1995-2022	
public investment LG	%GDP		Eurostat	1995-2022	
Gov LT spending	%GDP		Eurostat	1995-2021	Spending on education, R&D, environmental protection and transport and communication[2]
Expenditure / Debt / Deficit / Structural Balance Rule compliance	Dummy (0,1)		European Fiscal Board Compliance Tracker	1998-2023	Compliance with EU fiscal rules[3]

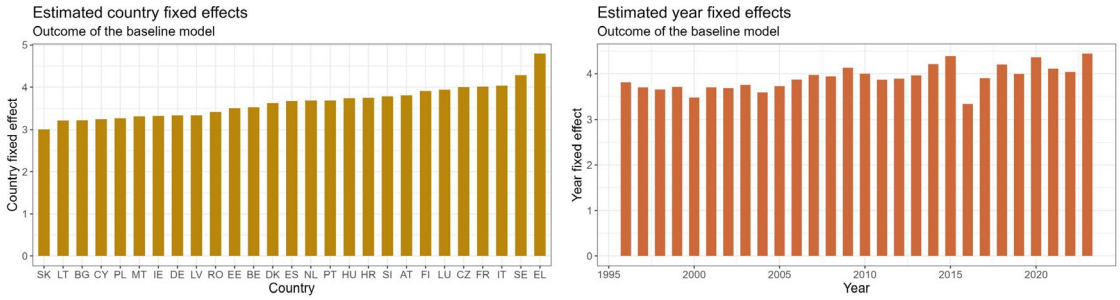
(1) Source: Data – Comparative Political Data Set (cpds-data.org)
(2) Sum of the following Cofog categories: COFOG classification: GF09, GF05, GF0405, GF0406, GF0105, GF0204, GF0305, GF0408, GF0505, GF0605, GF0705, GF0805, GF0907, GF1008.
(3) Source: Compliance Tracker (europa.eu)

Source: see Table.

3.8. BASELINE MODEL

3.8.1. Fixed effects

Graph III.3.12: **Estimated country and year fixed effects in the baseline model**



Source: Commission services.

3.8.2. Robustness checks

Table III.3.14: **Robustness check of the baseline model: system GMM**

	Baseline (FE)	SGMM
public investment (t-1)	0.5879 ***	0.7208 ***
	(0.0330)	(0.0505)
public debt (t-1)	-0.0080 ***	-0.0088 **
	(0.0020)	(0.0038)
Net capital stock (t-1)	-0.3210 *	0.1008
	(0.1689)	(0.1241)
real GDP per capita (t-1)	-0.0121 ***	-0.0051 *
	(0.0041)	(0.0027)
output gap (t-1)	-0.0017	-0.0138
	(0.0116)	(0.0170)
long-term interest rate (t-1)	-0.0156	0.0031
	(0.0101)	(0.0119)
primary balance (t-1)	0.0045	0.0100
	(0.0095)	(0.0126)
old dependency ratio (t-1)	-0.0178	0.0097
	(0.0180)	(0.0091)
R^2	0.4991	
Adj. R^2	0.4485	
Num. obs.	665	783
Sargan Test: p-value		0.7975
Wald Test Time Dummies: p-value		0.0000
AR(1): p-value		0.0053
AR(2): p-value		0.0939
Num. obs. used		1302

(1) ***p < 0.01; **p < 0.05; *p < 0.1.
(2) The sample includes 27 EU countries. The full time period is 1995-2022. All estimations use heteroskedasticity-robust standard errors and country fixed effects. The dependent variable is the GFCF-to-GDP ratio. One-step system GMM estimator, controlling for endogeneity of the lagged dependent variable, public debt and real GDP per capita. The set of instruments is restricted up to 8 lags and the matrix of instruments is collapsed to limit instrument proliferation.

Source: Commission services.

3.8.3. Model with fiscal compliance

Impact of past compliance with EU fiscal rules on public investment. The four EU fiscal rules are studied separately. For each rule, two time-periods are considered, either including or excluding the Covid-19 pandemic.

Table III.3.15: **The impact of compliance with EU rules on public investment**

	Expenditure rule		Debt rule		Deficit rule		Structural Balance rule	
	Full	No Covid	Full	No Covid	Full	No Covid	Full	No Covid
public investment (t-1)	0.5792 ***	0.5500 ***	0.5851 ***	0.5593 ***	0.5892 ***	0.5594 ***	0.5841 ***	0.5570 ***
	(0.0404)	(0.0527)	(0.0382)	(0.0473)	(0.0396)	(0.0499)	(0.0405)	(0.0539)
public debt (t-1)	-0.0090 ***	-0.0134 ***	-0.0088 ***	-0.0127 ***	-0.0080 ***	-0.0122 ***	-0.0092 ***	-0.0139 ***
	(0.0029)	(0.0038)	(0.0026)	(0.0032)	(0.0028)	(0.0032)	(0.0031)	(0.0040)
Expenditure Rule (ER) compl. (t-1)	-0.1269	-0.2816 ***						
	(0.0778)	(0.1023)						
Debt Rule (DR) compl. (t-1)			-0.0356	-0.1809				
			(0.1610)	(0.2112)				
Deficit Rule (DefR) compl. (t-1)					0.0694	-0.0722		
					(0.0816)	(0.0921)		
Structural Balance Rule (SBR) compl. (t-1)							-0.1316	-0.3132 ***
							(0.0910)	(0.1000)
public debt x ER compl. (t-1)	0.0007	0.0027 **						
	(0.0010)	(0.0013)						
public debt x DR compl. (t-1)			0.0010	0.0032				
			(0.0020)	(0.0030)				
public debt x DefR compl. (t-1)					-0.0007	0.0015		
					(0.0012)	(0.0015)		
public debt x SBR compl. (t-1)							0.0010	0.0032 ***
							(0.0010)	(0.0012)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Wald test	0.1043	0.0079	0.8653	0.5791	0.6932	0.5896	0.3387	0.0071
R^2	0.5015	0.5047	0.4994	0.4988	0.4994	0.4983	0.5012	0.5062
Adj. R^2	0.4484	0.4466	0.4462	0.4400	0.4462	0.4395	0.4481	0.4483
Num. obs.	625	544	625	544	625	544	625	544

(1) ***p < 0.01; **p < 0.05; *p < 0.1.
(2) The sample includes 27 EU countries. The Full time period is 1999-2022; the No Covid time period is 1999-2020. All estimations include country and time fixed effects and control variables. Control variables: real GDP per capita, net capital stock, output gap, long term interest rate, primary balance, old dependency ratio. The Wald test row indicates the p-value of a Wald test of the null hypothesis that the compliance variable and its interaction with debt are jointly non-significant.

Source: Commission services.

Estimation results for the compliance tradition with EU fiscal rules. The regression tables explore various ways to compute the compliance tradition, as weighted means of past values of the compliance dummy variable. The plots represent the conditional effects computed using the most relevant computation of compliance tradition (i.e., column (7)).

Table III.3.16: **The impact of the tradition of compliance with EU rules on public investment (using the synthetic compliance index)**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
public investment (t-1)	0.5430 ***	0.5484 ***	0.5434 ***	0.5461 ***	0.5417 ***	0.5459 ***	0.5394 ***	0.5470 ***	0.5426 ***
	(0.0544)	(0.0507)	(0.0522)	(0.0522)	(0.0527)	(0.0516)	(0.0529)	(0.0509)	(0.0519)
public debt (t-1)	-0.0156 ***	-0.0136 ***	-0.0148 ***	-0.0150 ***	-0.0155 ***	-0.0158 ***	-0.0162 ***	-0.0157 ***	-0.0161 ***
	(0.0040)	(0.0045)	(0.0043)	(0.0050)	(0.0047)	(0.0048)	(0.0046)	(0.0044)	(0.0047)
Compliance tradition (t-1)	-0.5454 ***	-0.3698	-0.4967 **	-0.5520	-0.6225 **	-0.6284 *	-0.7069 **	-0.6205 *	-0.6983 *
	(0.1530)	(0.2954)	(0.2418)	(0.3696)	(0.3148)	(0.3624)	(0.3073)	(0.3367)	(0.3626)
public debt x compliance tradition (t-1)	0.0054 ***	0.0027	0.0041	0.0047	0.0052 *	0.0060 *	0.0061 **	0.0062 *	0.0063 *
	(0.0020)	(0.0030)	(0.0026)	(0.0035)	(0.0031)	(0.0032)	(0.0030)	(0.0033)	(0.0034)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of lags	1	2	2	3	3	4	4	5	5
Weights	NA	Uniform	Non-uniform	Uniform	Non-uniform	Uniform	Non-uniform	Uniform	Non-uniform
R^2	0.5079	0.5010	0.5037	0.5030	0.5048	0.5030	0.5058	0.5020	0.5036
Adj. R^2	0.4502	0.4425	0.4455	0.4447	0.4467	0.4448	0.4478	0.4436	0.4454
Num. obs.	544	544	544	544	544	544	544	544	544

(1) ***p < 0.01; **p < 0.05; *p < 0.1.
(2) The sample includes 27 EU countries. Time period: 1999-2020 (exclusion of compliance during the Covid pandemic). All estimations include country and time fixed effects as well as control variables. All estimations use heteroskedasticity-robust standard errors. Control variables: real GDP per capita, net capital stock, output gap, long term interest rate, primary balance, old dependency ratio.

Source: Commission services.

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